

BOORLEY GARDENS, HEDGE END, HAMPSHIRE

PHASE 3 RESERVED MATTERS APPLICATION - 236 DWELLINGS

DRAINAGE STATEMENT

1. Introduction

- 1.1. This drainage statement has been prepared by PFA Consulting on behalf of Miller Homes and Gleeson Developments in support of their Reserved Matters planning application for Phase 3 comprising 236 dwellings and associated infrastructure forming the final part of the application site known as Boorley Gardens, Hedge End.
- 1.2. The first Reserved Matters application (Application Ref. RM/17/81628) comprising 301 dwellings has planning consent. Phase 1 of the proposed development was supported by a Flood Risk Assessment and Surface Water and Foul Drainage Strategy Update (Document reference, M380-DOC02-Issue 1, September 2017). The Phase 2 Reserved Matters application for 145 dwellings (Application Ref O/15/75953) has also been approved by Eastleigh Borough Council. Within the Phase 2 application area is the Waste Water Treatment Works (WWTW) whose location was covered by Phase 1 consent. However, under application reference X/18/82986 consent was granted to vary Condition 12 of outline planning permission (O/15/75953) to enable foul drainage to be carried out in accordance either with the approved Flood Risk Assessment (December 2014), or detailed set out in a Foul Sewerage Assessment (March 2018, ref. M380-DOC05).

2. Foul Water Drainage

- 2.1. The foul drainage proposals approved under the first Reserved Matters comprise a standard gravity foul sewer network collecting effluent from the properties and discharging it to the WWTW for treatment and subsequent disposal to the Moorgreen Stream. Under application reference X/18/82986, all matters relating to the WWTW and its disposal effluent were thoroughly assessed and subsequently approved. For further information on the WWTW refer to the documents prepared in support of that application.
- 2.2. The gravity sewer network proposed to serve Phase 3, the subject of this application, will outfall to a Foul Water Pumping Station located within the Phase 2 Reserved Matters application area. That pumping station was identified to be sized to accommodate both Phase 2 and Phase 3. The location and form of the pumping station have been assessed as part of the Phase 2 application. For the record, the pumping station will pump the sewage via a rising main into the gravity sewers and thereafter into the WWTW, or pumped to a point of connection offsite in Winchester Road. The sewers in Phase 3 and those upon which it relies in Phase 2 will be designed in accordance with 'Sewers for Adoption' as required by Icosa Water, the regulated company who will maintain the sewers and/or the WWTW for the development site overall. Icosa will also procure any offsite sewer reinforcement works should the offsite option be followed.

3. Surface Water Drainage and SuDS

Overview

- 3.1. As with the first and second Reserved Matters applications area, the surface water drainage proposals for Phase 3 will comprise a standard gravity sewer network discharging to surface water SuDS features in the form of swales and a detention basin which in turn control the rate of discharge and aid water quality prior to discharge into the Moorgreen Stream. The overall strategy for the site and thus applicable to Phase 3 Reserved Matters means that the proposals do not increase flood risk downstream and upholds water quality. The detention basin (Basin D) is a landscaped depression which is dry except during the immediate period following storm events. The design of the basin will satisfy the criteria of 1 in 100 year rainfall event plus 40% for climate change. The design of the basin follows that developed for Basin C in Phase 2 where the emphasis is on the side slopes being as organic as possible, which is the preference of Eastleigh Borough Council. The location and layout of the basin is such that during an extreme rainfall event beyond the design event, natural exceedance route is towards the Moorgreen Stream located on the northern boundary, which is the point of discharge for all basins.
- 3.2. The Phase 3 drainage details can be seen on Drawing Nos. M380/114 Rev A and M380/115 Rev A. These are attached as **Appendix 1**.

Drainage Catchments

- 3.3. Phase 3 of the proposed development covers a small area of catchments A1 and C and the entirety of catchment D. The location of the catchments are set out on **Figure 1** below.

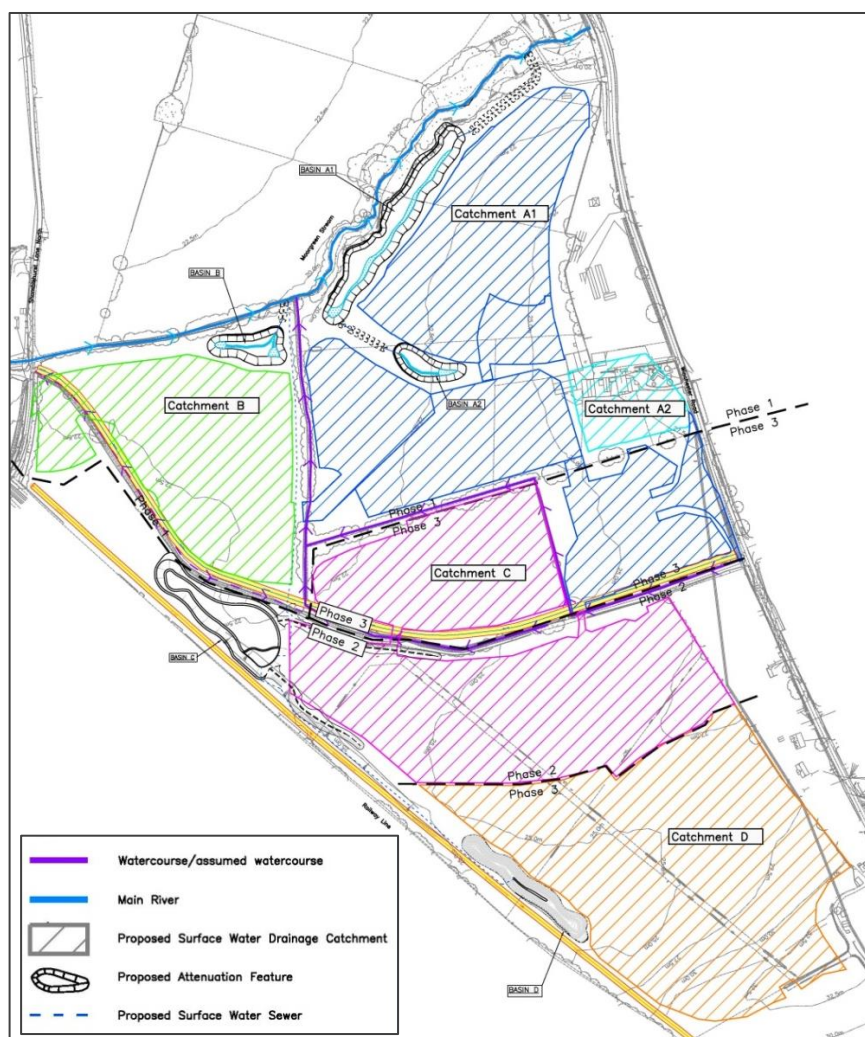


Figure 1: Drainage Catchments

Allowable Discharge Rate

- 3.4. The outline planning application was supported by a Flood Risk and Surface Water Drainage Strategy report which was prepared by FMW Consultancy Ltd (Document reference: FMW1467F, December 2014). The Flood Risk and Surface Water Drainage Strategy report contains a drainage strategy which proposes that runoff will be attenuated to runoff rates of 5 l/s/ha.
- 3.5. Phases 1, 2 and 3 utilise flow controls which limit runoff rates from the proposed development areas to 5 l/s/ha.
- 3.6. A small area of Phase 3 falls within Catchment A1. Catchment A1 and A2 drain to the same outfall location into the Moorgreen Stream via Detention Basins A1 and A2. The total development area for Catchment A1 and A2 is 12.409 Ha and the allowable discharge is 62.0 l/s. This has been consented under the Phase 1 Reserved Matters application (Application Ref. RM/17/81628) as set out in the 'Flood Risk Assessment and Surface Water and Foul Drainage Strategy Update' (Document reference, M380-DOC02-Issue 1, September 2017).
- 3.7. Catchments C and D drain to the same outfall location into the Moorgreen Stream via Detention Basins C and D. The total development area for Catchment C and D is 15.727 Ha and the allowable discharge is 78.6 l/s.

Catchment A1

- 3.8. The surface water drainage network for Catchments A1 and A2 have been modelled in the Network module of MicroDrainage. A copy of the MicroDrainage simulations are contained in **Appendix 2** and summarised in **Table A**. Simulations have been run for the 1:1, 1:30, 1:100, and 1:100 year (+ climate change) storm events.

Table A: Catchments A1 + A2 - Proposed Surface Water Drainage Network Details

	Critical Storm Event				
	1	30	100	100 + 20%	100 +40%
Allowable Discharge Rate (l/s) ^a	62.0	62.0	62.0	-	-
Approximate Attenuation (m ³) ^b	1,436	2,621	3,304	4,070	4,837
Calculated Discharge Rate (l/s)	24.9	51.6	55.2	55.6	55.7

Notes: ^a 5 l/s/ha as per approved FRA.

^b Includes storage in pipe network.

Catchment C and D

- 3.9. The surface water drainage network for Catchments C and D have been modelled in the Network module of MicroDrainage. A copy of the MicroDrainage simulations are contained in **Appendix 3** and summarised in **Table B**. Simulations have been run for the 1:1, 1:30, 1:100, and 1:100 year (+ climate change) storm events.

Table B: Catchment C+ D - Proposed Surface Water Drainage Network Details

	Critical Storm Event				
	1	30	100	100 + 20%	100 +40% ^c
Allowable Discharge Rate (l/s) ^a	78.6	78.6	78.6	-	-
Approximate Attenuation Volume Utilised (m ³) ^b	1,170	3,210	4,165	5,265	6,290
Calculated Discharge Rate (l/s)	45.6	54.2	56.7	59.8	63.6

Notes: ^a 5 l/s/ha as per approved FRA.

^b Includes storage in pipe network.

^c MicroDrainage Simulation results identify a flood event during the 60minute 1:100+40% storm event (~12m³) on pipe number 1.015 which is situated to the north of Basin D. This flood event does not occur during longer duration storm events. Inspection of proposed site levels show that the exceedance flow would be directed into Basin D and away from proposed properties. Basin D has sufficient capacity to accommodate the 12m³ 'flood' volume. The design of the site levels ensure that the exceedance flow can be safely managed on the development site and the proposed design is acceptable in terms of flood risk.

Water Quality Assessment

- 3.10. The application site drains into Moorgreen Stream which via Ford Lake is a tributary to the River Hamble, a water body where maintenance and improvement of water quality is a requirement.
- 3.11. The use of a SuDS based surface water drainage strategy provides water quality benefits when compared with traditional standard gravity pipe network with an uncontrolled outfall.
- 3.12. The Flood Risk Assessment update dated September 2017 prepared for Phase 1 Reserved Matters covers water quality in paragraphs 3.9-3.11. Paragraph 3.10 sets out the four elements comprising the management train but paragraph 3.11 duly acknowledges that the first element of trapped gullies is not a naturalised treatment, leaving the other three as follows.
- Above ground detention basins.
 - Wetland areas within basins.
 - Above ground swale between basin and outfall to watercourse, and between basins.
- 3.13. As part of the first Reserved Matters application, the details of the detention basins were developed and approved and thus has been extended into Phase 2 application area and again now into Phase 3 application area, including the following elements.
- Forebays introduced to each inlet to the basin.
 - A filter material introduced into the forebay (Gabions filled with 4-20 crushed stone).
 - Wetland areas moved to the outlet end of the basin.

Exceedance Flow Routes

- 3.14. The location and topographical layout of the basins is such that in an extreme rainfall event beyond the design event, the natural exceedance route is northwards towards the detention basins away from the built development. Indicative exceedance flow routes have been identified on Drawing No. M380/128 and M380/129 contained in **Appendix 4**. The detention basins are designed to attenuate water up to the 1:100 year rainfall event including a 40% allowance for climate change.

Maintenance Strategy

- 3.15. Paragraph 165 of the NPPF states that for major developments the sustainable drainage systems used should have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development.
- 3.16. In terms of the maintenance strategy for the proposed drainage measures, the main surface water drainage systems would be adopted by Icosa Water, in its role as sewerage undertaker, under a Section 104 Agreement of the Water Industry Act 1991. Icosa Water would therefore be responsible for the future maintenance of the adopted drainage systems.
- 3.17. It is proposed that the SuDS system, comprising swales and detention basins, would be adopted and maintained by a Management Company. The Management Company would be responsible for putting in place a suitable maintenance plan in accordance with the requirements of The SuDS Manual 2015 (CIRIA C753).
- 3.18. Guidance on the operation and maintenance requirements of sustainable drainage systems is contained in The SuDS Manual 2015 (CIRIA C753). There are three categories of maintenance: regular, occasional and remedial.
- 3.19. Regular maintenance consists of basic tasks including litter and debris removal, grass cutting, and vegetation management, and includes inspections and monitoring to identify potential system failures such as blockages, silt and sediment build-up, eroded or damaged areas, and condition of inlets and outlets.

- 3.20. Occasional Maintenance comprises tasks that are likely to be required periodically for example sediment removal and vegetation replacement.
- 3.21. Remedial Maintenance comprises intermittent tasks to rectify faults and would comprise inlet/outlet repairs, erosion repairs, and dealing with a spillage event.

4. Summary

- 4.1. In summary, this Drainage Statement sets out a strategy proposed for the Phase 3 Reserved Matters application site area, which concurs with that approved under the first and second Reserved Matters, and upholds the key elements of no increase in flood risk downstream with no deterioration in water quality overall as a consequence of the development of this site. The foul drainage strategy for Phase 3 discharges to the network forming part of Phase 2 application area where the pumping station is to be sized to accommodate both phases. All mains foul drainage works will accord with 'Sewers for Adoption'.

5. Appendices

- Appendix 1** **Drawing No. M380/114 Rev A – Main Drainage Sheet 1 of 2**
 Drawing No. M380/115 Rev A – Main Drainage Sheet 2 of 2
- Appendix 2** **Catchments A1 + A2 MicroDrainage Network Details and Simulation Results**
- Appendix 3** **Catchments C + D MicroDrainage Network Details and Simulation Results**
- Appendix 4** **Drawing No. M380/128 – Phase 3 Exceedance Flow Routes 1 of 2**
 Drawing No. M380/129 – Phase 3 Exceedance Flow Routes Sheet 2 of 2





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Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

- Indicates pipe length does not match coordinates

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	92.333	0.540	171.0	0.104	5.00	0.0	0.600		o	225	Pipe/Conduit	
1.001	28.414	0.150	189.4	0.040	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.002	22.012	0.150	146.7	0.072	0.00	0.0	0.600		o	300	Pipe/Conduit	
2.000	31.419	0.500	62.8	0.054	5.00	0.0	0.600		o	225	Pipe/Conduit	
2.001	57.002	1.900	30.0	0.080	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.003	48.298	1.325	36.5	0.063	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.004	42.379	0.994	42.6	0.023	0.00	0.0	0.600		o	300	Pipe/Conduit	
3.000	12.600	0.170	74.1	0.049	5.00	0.0	0.600		o	150	Pipe/Conduit	
4.000	8.746	0.133	65.8	0.082	5.00	0.0	0.600		o	150	Pipe/Conduit	
3.001	69.312	0.945	73.3	0.082	0.00	0.0	0.600		o	225	Pipe/Conduit	
5.000	20.548	0.091	225.8	0.133	5.00	0.0	0.600		o	225	Pipe/Conduit	
3.002	47.297	0.141	335.4	0.153	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.005	16.677	0.150	111.2	0.018	0.00	0.0	0.600		o	525	Pipe/Conduit	
6.000	13.927	0.167	83.3	0.090	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	57.89	6.54	26.365	0.104	0.0	0.0	0.0	1.00	39.6	16.3
1.001	56.28	6.96	25.750	0.144	0.0	0.0	0.0	1.14	80.5	22.0
1.002	55.25	7.24	25.600	0.216	0.0	0.0	0.0	1.30	91.6	32.3
2.000	63.32	5.32	27.925	0.054	0.0	0.0	0.0	1.65	65.7	9.3
2.001	61.44	5.71	27.425	0.134	0.0	0.0	0.0	2.40	95.3	22.3
1.003	54.18	7.55	25.450	0.413	0.0	0.0	0.0	2.61	184.7	60.6
1.004	53.20	7.84	24.125	0.436	0.0	0.0	0.0	2.41	170.7	62.8
3.000	64.01	5.18	24.537	0.049	0.0	0.0	0.0	1.17	20.7	8.5
4.000	64.32	5.12	24.500	0.082	0.0	0.0	0.0	1.24	21.9	14.3
3.001	60.44	5.94	24.292	0.213	0.0	0.0	0.0	1.53	60.8	34.9
5.000	62.94	5.40	23.438	0.133	0.0	0.0	0.0	0.87	34.4	22.7
3.002	57.47	6.65	23.122	0.499	0.0	0.0	0.0	1.10	175.6	77.7
1.005	52.78	7.97	22.906	0.953	0.0	0.0	0.0	2.12	459.7	136.2
6.000	64.10	5.16	23.559	0.090	0.0	0.0	0.0	1.43	57.0	15.6

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Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
6.001	11.510	0.050	230.2	0.049	0.00	0.0	0.600		o	300	Pipe/Conduit	
6.002	11.510	0.065	177.1	0.007	0.00	0.0	0.600		o	300	Pipe/Conduit	
6.003	16.954	0.089	191.6	0.099	0.00	0.0	0.600		o	450	Pipe/Conduit	
6.004	23.475	0.043	545.9	0.017	0.00	0.0	0.600		o	450	Pipe/Conduit	
1.006	16.001	0.048	336.9	0.116	0.00	0.0	0.600		o	750	Pipe/Conduit	
1.007	25.441	0.048	530.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
7.000	66.663	1.244	53.6	0.315	5.00	0.0	0.600		o	300	Pipe/Conduit	
1.008	44.468	0.135	329.4	0.022	0.00	0.0	0.600		o	750	Pipe/Conduit	
8.000	18.163	0.121	150.0	0.000	5.00	0.0	0.600		o	150	Pipe/Conduit	
8.001	22.544	0.150	150.3	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
8.002	25.569	0.170	150.4	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
8.003	12.760	0.085	150.1	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
8.004	26.122	0.154	170.0	0.160	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.005	49.178	0.289	170.0	0.033	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.006	11.357	0.067	170.0	0.003	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.007	9.948	0.059	170.0	0.007	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.008	11.164	0.675	16.5	0.057	0.00	0.0	0.600		o	225	Pipe/Conduit	
8.009	26.506	0.110	241.0	0.011	0.00	0.0	0.600		o	300	Pipe/Conduit	
8.010	19.991	1.393	14.4	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.009	33.101	0.090	367.8	0.033	0.00	0.0	0.600		o	750	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
6.001	63.17	5.35	23.392	0.139	0.0	0.0	0.0	1.03	72.9	23.7
6.002	62.38	5.51	23.342	0.146	0.0	0.0	0.0	1.18	83.3	24.6
6.003	61.48	5.70	23.051	0.245	0.0	0.0	0.0	1.47	233.1	40.8
6.004	59.48	6.16	22.874	0.262	0.0	0.0	0.0	0.86	137.3	42.2
1.006	52.23	8.15	22.756	1.331	0.0	0.0	0.0	1.52	671.1	188.3
1.007	51.16	8.50	22.709	1.331	0.0	0.0	0.0	1.21	533.9	188.3
7.000	62.36	5.52	24.405	0.315	0.0	0.0	0.0	2.15	152.1	53.2
1.008	49.77	8.98	22.661	1.668	0.0	0.0	0.0	1.54	678.7	224.9
8.000	63.06	5.37	26.450	0.000	0.0	0.0	0.0	0.82	14.5	0.0
8.001	60.91	5.83	26.329	0.000	0.0	0.0	0.0	0.82	14.4	0.0
8.002	58.66	6.35	26.179	0.000	0.0	0.0	0.0	0.82	14.4	0.0
8.003	57.62	6.61	26.009	0.000	0.0	0.0	0.0	0.82	14.5	0.0
8.004	55.96	7.05	25.849	0.160	0.0	0.0	0.0	1.00	39.8	24.2
8.005	53.13	7.87	25.695	0.193	0.0	0.0	0.0	1.00	39.8	27.8
8.006	52.52	8.06	25.406	0.196	0.0	0.0	0.0	1.00	39.8	27.9
8.007	52.00	8.22	25.339	0.203	0.0	0.0	0.0	1.00	39.8	28.6
8.008	51.83	8.28	25.205	0.260	0.0	0.0	0.0	3.23	128.6	36.5
8.009	50.53	8.72	24.530	0.271	0.0	0.0	0.0	1.01	71.3	37.1
8.010	50.30	8.80	24.420	0.304	0.0	0.0	0.0	4.17	294.9	41.4
1.009	48.74	9.36	22.526	2.005	0.0	0.0	0.0	1.45	642.0	264.7

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Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.010	19.233	0.090	213.7	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
9.000	8.554	0.144	59.4	0.034	5.00	0.0	0.600		o	150	Pipe/Conduit	
9.001	6.880	0.174	39.5	0.025	0.00	0.0	0.600		o	150	Pipe/Conduit	
9.002	44.129	2.320	19.0	0.125	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.011	6.947	0.013	534.4	0.135	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.012	9.158	0.017	538.7	0.025	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.013	8.101	0.017	476.5	0.020	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.014	11.725	0.016	732.8	0.016	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.015	47.015	0.839	56.0	0.010	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.016	22.656	0.041	552.6	0.184	0.00	0.0	0.600		o	900	Pipe/Conduit	
10.000	12.582	0.125	100.7	0.028	5.00	0.0	0.600		o	150	Pipe/Conduit	
10.001	13.006	0.401	32.4	0.086	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.017	25.070#	0.150	167.1	0.005	0.00	0.0	0.600		o	900	Pipe/Conduit	
1.018	10.176	0.100	101.8	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.019	7.577	0.080	94.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.020	40.502	0.081	500.0	0.000	0.00	0.0	0.600	0.045 3 \=/		300	1:3 Swale	
1.021	9.086	0.050	181.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.022	3.620#	0.012	301.7	0.000	0.00	0.0	0.600	0.045 3 \=/		300	1:3 Swale	
11.000	34.361	0.615	55.9	0.109	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.010	48.30	9.53	22.436	2.005	0.0	0.0	0.0	1.91	844.0	264.7
9.000	64.37	5.11	25.635	0.034	0.0	0.0	0.0	1.31	23.1	5.9
9.001	64.00	5.18	25.491	0.059	0.0	0.0	0.0	1.61	28.4	10.2
9.002	62.80	5.42	25.242	0.184	0.0	0.0	0.0	3.01	119.9	31.3
1.011	48.08	9.62	22.247	2.324	0.0	0.0	0.0	1.35	857.8	302.7
1.012	47.79	9.73	22.217	2.349	0.0	0.0	0.0	1.34	854.3	304.1
1.013	47.56	9.82	22.201	2.369	0.0	0.0	0.0	1.43	908.8	305.1
1.014	47.14	9.99	22.184	2.385	0.0	0.0	0.0	1.15	731.4	305.1
1.015	46.69	10.18	22.168	2.395	0.0	0.0	0.0	4.19	2665.9	305.1
1.016	46.03	10.47	21.329	2.579	0.0	0.0	0.0	1.33	843.4	321.6
10.000	63.86	5.21	22.564	0.028	0.0	0.0	0.0	1.00	17.7	4.8
10.001	63.39	5.30	22.364	0.114	0.0	0.0	0.0	2.31	91.7	19.6
1.017	45.65	10.64	21.288	2.698	0.0	0.0	0.0	2.42	1540.2	333.6
1.018	45.41	10.75	21.000	2.698	0.0	0.0	0.0	1.56	110.2	333.6
1.019	45.24	10.83	20.900	2.698	0.0	0.0	0.0	1.62	114.2	333.6
1.020	39.11	14.21	20.820	2.698	0.0	0.0	0.0	0.20	22.5	333.6
1.021	38.91	14.34	20.739	2.698	0.0	0.0	0.0	1.16	82.2	333.6
1.022	38.56	14.57	20.689	2.698	0.0	0.0	0.0	0.26	28.9	333.6
11.000	63.27	5.33	22.304	0.109	0.0	0.0	0.0	1.75	69.7	18.7

PFA Consulting		Page 4
Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
12.000	14.433	0.143	100.9	0.043	5.00	0.0	0.600		o	150	Pipe/Conduit	
11.001	18.287	0.219	83.5	0.025	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.002	11.426	0.304	37.6	0.019	0.00	0.0	0.600		o	225	Pipe/Conduit	
11.003	11.455	0.267	42.9	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.004	39.407	0.960	41.0	0.060	0.00	0.0	0.600		o	300	Pipe/Conduit	
11.005	14.440#	0.363	39.8	0.130	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.000	26.930	0.267	100.9	0.007	5.00	0.0	0.600		o	150	Pipe/Conduit	
13.001	20.549	0.122	168.4	0.088	0.00	0.0	0.600		o	225	Pipe/Conduit	
13.002	10.051	0.060	167.5	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
13.003	38.528	0.230	167.5	0.058	0.00	0.0	0.600		o	300	Pipe/Conduit	
14.000	28.841	0.297	97.1	0.070	5.00	0.0	0.600		o	225	Pipe/Conduit	
15.000	9.235	0.463	19.9	0.041	5.00	0.0	0.600		o	150	Pipe/Conduit	
14.001	44.776	0.755	59.3	0.076	0.00	0.0	0.600		o	300	Pipe/Conduit	
16.000	12.264	0.122	100.5	0.046	5.00	0.0	0.600		o	150	Pipe/Conduit	
14.002	25.201	0.108	233.3	0.026	0.00	0.0	0.600		o	375	Pipe/Conduit	
14.003	14.752	0.044	335.3	0.042	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.004	18.636	0.058	321.3	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.005	10.371	0.032	324.1	0.016	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
12.000	63.70	5.24	21.907	0.043	0.0	0.0	0.0	1.00	17.7	7.4
11.001	62.42	5.50	21.689	0.177	0.0	0.0	0.0	1.72	121.7	29.9
11.002	62.00	5.59	21.469	0.196	0.0	0.0	0.0	2.14	85.1	32.9
11.003	61.63	5.67	21.166	0.229	0.0	0.0	0.0	2.41	170.2	38.2
11.004	60.42	5.94	20.899	0.289	0.0	0.0	0.0	2.46	174.0	47.3
11.005	60.00	6.04	19.863	0.419	0.0	0.0	0.0	2.50	176.7	68.1
13.000	62.68	5.45	21.063	0.007	0.0	0.0	0.0	1.00	17.7	1.2
13.001	61.09	5.79	20.746	0.095	0.0	0.0	0.0	1.00	39.9	15.7
13.002	60.35	5.96	20.624	0.104	0.0	0.0	0.0	1.01	40.1	17.0
13.003	58.12	6.49	20.564	0.162	0.0	0.0	0.0	1.21	85.7	25.5
14.000	63.10	5.36	22.393	0.070	0.0	0.0	0.0	1.33	52.8	12.0
15.000	64.58	5.07	22.559	0.041	0.0	0.0	0.0	2.27	40.0	7.2
14.001	61.37	5.73	22.021	0.187	0.0	0.0	0.0	2.05	144.6	31.1
16.000	63.88	5.20	21.463	0.046	0.0	0.0	0.0	1.00	17.7	8.0
14.002	59.79	6.08	21.117	0.259	0.0	0.0	0.0	1.18	130.5	41.9
14.003	58.86	6.31	21.009	0.301	0.0	0.0	0.0	1.10	175.7	48.0
14.004	57.74	6.58	20.965	0.340	0.0	0.0	0.0	1.13	179.5	53.2
14.005	57.14	6.73	20.907	0.356	0.0	0.0	0.0	1.12	178.7	55.1

PFA Consulting		Page 5
Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
14.006	19.435	0.065	299.0	0.019	0.00	0.0	0.600		o	450	Pipe/Conduit	
17.000	20.953	0.342	61.3	0.086	5.00	0.0	0.600		o	225	Pipe/Conduit	
17.001	7.032	0.294	23.9	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
14.007	11.915	0.037	322.0	0.012	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.008	46.478	0.318	146.2	0.175	0.00	0.0	0.600		o	450	Pipe/Conduit	
14.009	7.319	0.341	21.5	0.006	0.00	0.0	0.600		o	375	Pipe/Conduit	
18.000	18.630	0.263	70.8	0.045	5.00	0.0	0.600		o	150	Pipe/Conduit	
18.001	24.342	1.064	22.9	0.030	0.00	0.0	0.600		o	150	Pipe/Conduit	
19.000	12.132	0.120	101.1	0.059	5.00	0.0	0.600		o	225	Pipe/Conduit	
19.001	20.642	0.122	169.2	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
18.002	69.434	0.574	121.0	0.110	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.004	34.492	0.078	442.2	0.159	0.00	0.0	0.600		o	675	Pipe/Conduit	
13.005	12.517	0.028	447.0	0.026	0.00	0.0	0.600		o	675	Pipe/Conduit	
13.006	14.415	0.029	497.1	0.038	0.00	0.0	0.600		o	675	Pipe/Conduit	
20.000	11.024	0.080	137.8	0.020	5.00	0.0	0.600		o	225	Pipe/Conduit	
21.000	9.669	0.096	100.7	0.053	5.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
14.006	56.09	7.01	20.875	0.375	0.0	0.0	0.0	1.17	186.2	57.0
17.000	63.86	5.21	21.671	0.086	0.0	0.0	0.0	1.67	66.6	14.9
17.001	63.64	5.25	21.254	0.095	0.0	0.0	0.0	2.69	106.8	16.4
14.007	55.45	7.19	20.810	0.482	0.0	0.0	0.0	1.13	179.3	72.4
14.008	53.85	7.65	20.773	0.657	0.0	0.0	0.0	1.68	267.1	95.8
14.009	53.75	7.68	20.455	0.663	0.0	0.0	0.0	3.93	433.6	96.5
18.000	63.61	5.26	22.310	0.045	0.0	0.0	0.0	1.20	21.1	7.8
18.001	62.67	5.45	22.047	0.075	0.0	0.0	0.0	2.11	37.4	12.7
19.000	64.13	5.16	21.225	0.059	0.0	0.0	0.0	1.30	51.7	10.2
19.001	62.44	5.50	21.030	0.093	0.0	0.0	0.0	1.00	39.9	15.7
18.002	58.84	6.31	20.833	0.278	0.0	0.0	0.0	1.43	101.0	44.3
13.004	52.25	8.14	20.034	1.262	0.0	0.0	0.0	1.24	443.7	178.6
13.005	51.73	8.31	19.956	1.288	0.0	0.0	0.0	1.23	441.2	180.4
13.006	51.11	8.52	19.928	1.326	0.0	0.0	0.0	1.17	418.2	183.5
20.000	64.08	5.17	20.051	0.020	0.0	0.0	0.0	1.11	44.2	3.5
21.000	64.10	5.16	20.117	0.053	0.0	0.0	0.0	1.00	17.7	9.2

PFA Consulting		Page 6
Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
20.001	12.117	0.072	168.3	0.025	0.00	0.0	0.600		o	225	Pipe/Conduit	
20.002	21.954	0.150	146.4	0.054	0.00	0.0	0.600		o	300	Pipe/Conduit	
13.007	19.439	0.039	498.4	0.018	0.00	0.0	0.600		o	750	Pipe/Conduit	
13.008	14.965	0.030	498.8	0.021	0.00	0.0	0.600		o	750	Pipe/Conduit	
13.009	22.269	0.045	494.9	0.089	0.00	0.0	0.600		o	750	Pipe/Conduit	
13.010	47.812	0.096	498.0	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
22.000	31.242	0.185	168.9	0.047	5.00	0.0	0.600		o	225	Pipe/Conduit	
13.011	10.500#	0.021	500.0	0.000	0.00	0.0	0.600		o	675	Pipe/Conduit	
23.000	35.896	1.035	34.7	0.101	5.00	0.0	0.600		o	225	Pipe/Conduit	
23.001	8.580	0.211	40.7	0.008	0.00	0.0	0.600		o	225	Pipe/Conduit	
23.002	21.319	0.391	54.5	0.067	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.003	9.259	0.299	31.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.004	30.836	0.553	55.8	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
24.000	9.167	0.126	72.8	0.033	5.00	0.0	0.600		o	150	Pipe/Conduit	
23.005	41.037	0.244	168.2	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.006	9.158	0.035	261.7	0.070	0.00	0.0	0.600		o	300	Pipe/Conduit	
25.000	19.893	0.225	88.4	0.038	5.00	0.0	0.600		o	150	Pipe/Conduit	
25.001	19.602	0.246	79.7	0.042	0.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
20.001	63.08	5.37	19.971	0.098	0.0	0.0	0.0	1.00	40.0	16.7
20.002	61.74	5.65	19.899	0.152	0.0	0.0	0.0	1.30	91.7	25.4
13.007	50.35	8.78	19.749	1.496	0.0	0.0	0.0	1.25	550.7	204.0
13.008	49.79	8.98	19.710	1.517	0.0	0.0	0.0	1.25	550.5	204.5
13.009	48.98	9.27	19.680	1.606	0.0	0.0	0.0	1.25	552.7	213.0
13.010	47.33	9.91	19.635	1.606	0.0	0.0	0.0	1.25	551.0	213.0
22.000	62.34	5.52	19.724	0.047	0.0	0.0	0.0	1.00	39.9	7.9
13.011	46.97	10.06	19.539	1.653	0.0	0.0	0.0	1.17	417.0	213.0
23.000	63.56	5.27	22.990	0.101	0.0	0.0	0.0	2.23	88.6	17.4
23.001	63.22	5.34	21.955	0.109	0.0	0.0	0.0	2.06	81.8	18.7
23.002	62.41	5.50	21.744	0.176	0.0	0.0	0.0	2.13	150.8	29.7
23.003	62.15	5.56	21.278	0.176	0.0	0.0	0.0	2.84	200.4	29.7
23.004	61.03	5.80	20.979	0.176	0.0	0.0	0.0	2.11	149.1	29.7
24.000	64.26	5.13	20.703	0.033	0.0	0.0	0.0	1.18	20.9	5.7
23.005	58.60	6.37	20.427	0.209	0.0	0.0	0.0	1.21	85.5	33.2
23.006	57.96	6.53	20.183	0.279	0.0	0.0	0.0	0.97	68.4	43.8
25.000	63.36	5.31	23.694	0.038	0.0	0.0	0.0	1.07	18.9	6.5
25.001	62.28	5.53	23.469	0.080	0.0	0.0	0.0	1.47	58.3	13.5

PFA Consulting		Page 7
Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
25.002	16.803	0.068	247.1	0.022	0.00	0.0	0.600		o	225	Pipe/Conduit	
26.000	9.248	0.081	114.2	0.025	5.00	0.0	0.600		o	150	Pipe/Conduit	
25.003	28.520	0.688	41.5	0.037	0.00	0.0	0.600		o	225	Pipe/Conduit	
25.004	13.310	0.329	40.5	0.014	0.00	0.0	0.600		o	225	Pipe/Conduit	
25.005	18.021	0.499	36.1	0.021	0.00	0.0	0.600		o	225	Pipe/Conduit	
27.000	10.328	0.074	139.6	0.041	5.00	0.0	0.600		o	150	Pipe/Conduit	
27.001	10.370	0.424	24.5	0.020	0.00	0.0	0.600		o	150	Pipe/Conduit	
25.006	20.225	0.246	82.2	0.069	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.007	13.512	0.105	128.7	0.031	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.008	16.296	0.114	142.9	0.038	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.009	14.567	0.176	82.8	0.025	0.00	0.0	0.600		o	375	Pipe/Conduit	
25.010	14.882	0.700	21.3	0.025	0.00	0.0	0.600		o	300	Pipe/Conduit	
23.007	9.874	0.023	429.3	0.010	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.008	8.787	0.131	67.1	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.009	8.819	0.077	114.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.010	17.779	0.049	362.8	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
23.011	17.230#	0.168	102.6	0.083	0.00	0.0	0.600		o	450	Pipe/Conduit	
28.000	9.559	0.414	23.1	0.087	5.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
25.002	60.72	5.87	23.148	0.102	0.0	0.0	0.0	0.83	32.9	16.8
26.000	64.09	5.16	23.236	0.025	0.0	0.0	0.0	0.94	16.6	4.3
25.003	59.70	6.10	23.081	0.164	0.0	0.0	0.0	2.04	81.0	26.5
25.004	59.24	6.21	22.392	0.178	0.0	0.0	0.0	2.06	82.0	28.6
25.005	58.67	6.35	22.063	0.199	0.0	0.0	0.0	2.18	86.8	31.6
27.000	63.89	5.20	22.137	0.041	0.0	0.0	0.0	0.85	15.0	7.1
27.001	63.47	5.29	22.063	0.061	0.0	0.0	0.0	2.04	36.1	10.5
25.006	57.99	6.52	21.489	0.329	0.0	0.0	0.0	2.00	220.9	51.7
25.007	57.43	6.66	21.242	0.360	0.0	0.0	0.0	1.60	176.2	56.0
25.008	56.74	6.84	21.137	0.398	0.0	0.0	0.0	1.51	167.2	61.2
25.009	56.28	6.96	21.023	0.423	0.0	0.0	0.0	1.99	220.1	64.5
25.010	56.01	7.03	20.847	0.448	0.0	0.0	0.0	3.42	242.1	68.0
23.007	55.40	7.20	19.997	0.737	0.0	0.0	0.0	0.97	155.0	110.6
23.008	55.19	7.26	19.974	0.737	0.0	0.0	0.0	2.49	395.3	110.6
23.009	54.91	7.34	19.843	0.737	0.0	0.0	0.0	1.90	302.0	110.6
23.010	53.95	7.62	19.766	0.737	0.0	0.0	0.0	1.06	168.8	110.6
23.011	53.48	7.76	19.717	0.820	0.0	0.0	0.0	2.01	319.3	118.8
28.000	64.54	5.08	24.164	0.087	0.0	0.0	0.0	2.10	37.2	15.2

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Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
29.000	15.520	0.153	101.4	0.031	5.00	0.0	0.600		o	150	Pipe/Conduit	
28.001	21.433	0.440	48.7	0.041	0.00	0.0	0.600		o	225	Pipe/Conduit	
28.002	8.283	0.260	31.9	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
28.003	30.938	0.490	63.1	0.036	0.00	0.0	0.600		o	300	Pipe/Conduit	
28.004	13.620	0.098	139.0	0.030	0.00	0.0	0.600		o	300	Pipe/Conduit	
30.000	11.853	0.118	100.4	0.040	5.00	0.0	0.600		o	150	Pipe/Conduit	
30.001	11.835	0.117	101.2	0.030	0.00	0.0	0.600		o	225	Pipe/Conduit	
28.005	57.782	1.524	37.9	0.135	0.00	0.0	0.600		o	300	Pipe/Conduit	
28.006	19.501	0.338	57.7	0.050	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.007	3.946	0.062	63.6	0.018	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.008	4.967	0.096	51.7	0.018	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.009	14.725	0.273	53.9	0.013	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.010	7.909	0.095	83.3	0.004	0.00	0.0	0.600		o	375	Pipe/Conduit	
28.011	3.178	0.184	17.3	0.006	0.00	0.0	0.600		o	375	Pipe/Conduit	
31.000	15.244	0.226	67.5	0.046	5.00	0.0	0.600		o	150	Pipe/Conduit	
28.012	6.826	0.026	262.5	0.006	0.00	0.0	0.600		o	375	Pipe/Conduit	
32.000	18.802	0.186	101.1	0.028	5.00	0.0	0.600		o	150	Pipe/Conduit	
28.013	16.120#	0.140	115.1	0.015	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
29.000	63.61	5.26	23.903	0.031	0.0	0.0	0.0	1.00	17.6	5.3
28.001	62.68	5.45	23.675	0.159	0.0	0.0	0.0	1.88	74.7	27.0
28.002	62.39	5.51	23.235	0.174	0.0	0.0	0.0	2.33	92.5	29.4
28.003	61.18	5.77	22.975	0.210	0.0	0.0	0.0	1.98	140.1	34.8
28.004	60.42	5.94	22.410	0.240	0.0	0.0	0.0	1.33	94.1	39.3
30.000	63.92	5.20	22.697	0.040	0.0	0.0	0.0	1.00	17.7	6.9
30.001	63.16	5.35	22.580	0.070	0.0	0.0	0.0	1.30	51.7	12.0
28.005	58.81	6.32	22.312	0.445	0.0	0.0	0.0	2.56	181.1	70.9
28.006	58.26	6.45	20.788	0.495	0.0	0.0	0.0	2.39	263.9	78.1
28.007	58.14	6.48	20.375	0.513	0.0	0.0	0.0	2.27	251.2	80.8
28.008	58.01	6.51	20.313	0.531	0.0	0.0	0.0	2.52	278.8	83.4
28.009	57.61	6.61	20.218	0.544	0.0	0.0	0.0	2.47	273.0	84.9
28.010	57.35	6.68	19.945	0.548	0.0	0.0	0.0	1.99	219.5	85.1
28.011	57.31	6.69	19.850	0.554	0.0	0.0	0.0	4.38	483.5	86.0
31.000	63.87	5.21	20.042	0.046	0.0	0.0	0.0	1.23	21.7	8.0
28.012	56.91	6.79	19.666	0.606	0.0	0.0	0.0	1.11	123.0	93.4
32.000	63.34	5.31	20.051	0.028	0.0	0.0	0.0	1.00	17.7	4.8
28.013	56.31	6.95	19.640	0.649	0.0	0.0	0.0	1.69	186.4	99.0

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Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for M380-CATCHMENT A-SW.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
33.000	37.361	0.386	96.8	0.043	5.00	0.0	0.600		o	150	Pipe/Conduit	
33.001	14.941	0.134	111.5	0.111	0.00	0.0	0.600		o	300	Pipe/Conduit	
33.002	36.246	0.388	93.4	0.085	0.00	0.0	0.600		o	300	Pipe/Conduit	
33.003	31.170#	0.342	91.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.023	8.756	0.050	175.1	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.024	6.724	0.013	517.2	0.000	0.00	0.0		0.045 3 \=/		300	1:3 Swale	
1.025	38.389	0.077	498.6	0.000	0.00	0.0		0.045 3 \=/		300	1:3 Swale	
1.026	42.073	0.084	500.9	0.000	0.00	0.0		0.045 3 \=/		300	1:3 Swale	
1.027	7.094	0.014	506.7	0.000	0.00	0.0		0.045 3 \=/		300	1:3 Swale	
1.028	5.149	0.010	514.9	0.000	0.00	0.0		0.045 3 \=/		300	1:3 Swale	
1.029	21.813	1.582	13.8	0.000	0.00	0.0		0.045 3 \=/		300	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
33.000	61.92	5.61	20.901	0.043	0.0	0.0	0.0	1.02	18.1	7.2
33.001	61.15	5.78	20.364	0.154	0.0	0.0	0.0	1.49	105.2	25.5
33.002	59.51	6.15	20.230	0.239	0.0	0.0	0.0	1.63	115.0	38.5
33.003	58.21	6.46	19.842	0.239	0.0	0.0	0.0	1.65	116.5	38.5
1.023	38.38	14.69	19.400	6.478	0.0	0.0	0.0	1.19	83.8<	673.4
1.024	37.57	15.26	19.350	6.478	0.0	0.0	0.0	0.20	22.1<	673.4
1.025	33.69	18.46	19.350	6.478	0.0	0.0	0.0	0.20	22.5<	673.4
1.026	30.39	21.98	19.260	6.478	0.0	0.0	0.0	0.20	22.4<	673.4
1.027	29.91	22.57	19.176	6.478	0.0	0.0	0.0	0.20	22.3<	673.4
1.028	29.56	23.01	19.162	6.478	0.0	0.0	0.0	0.20	22.1<	673.4
1.029	29.33	23.31	19.152	6.478	0.0	0.0	0.0	1.20	135.3<	673.4

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PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	1000	28.090	26.365	1.500	Open Manhole	1200
1.001	o	300	1001	27.700	25.750	1.650	Open Manhole	1200
1.002	o	300	1002	27.650	25.600	1.750	Open Manhole	1200
2.000	o	225	1003	29.650	27.925	1.500	Open Manhole	1200
2.001	o	225	1004	29.150	27.425	1.500	Open Manhole	1200
1.003	o	300	1005	27.400	25.450	1.650	Open Manhole	1200
1.004	o	300	1006	25.900	24.125	1.475	Open Manhole	1200
3.000	o	150	1010	25.950	24.537	1.263	Open Manhole	1200
4.000	o	150	1011	26.150	24.500	1.500	Open Manhole	1200
3.001	o	225	1012	26.060	24.292	1.543	Open Manhole	1200
5.000	o	225	1014	25.177	23.438	1.514	Open Manhole	1200
3.002	o	450	1015	25.292	23.122	1.720	Open Manhole	1350
1.005	o	525	1016	25.132	22.906	1.701	Open Manhole	1500
6.000	o	225	1017	24.684	23.559	0.900	Open Manhole	1200
6.001	o	300	1018	24.517	23.392	0.825	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	92.333	171.0	1001	27.700	25.825	1.650	Open Manhole	1200
1.001	28.414	189.4	1002	27.650	25.600	1.750	Open Manhole	1200
1.002	22.012	146.7	1005	27.400	25.450	1.650	Open Manhole	1200
2.000	31.419	62.8	1004	29.150	27.425	1.500	Open Manhole	1200
2.001	57.002	30.0	1005	27.400	25.525	1.650	Open Manhole	1200
1.003	48.298	36.5	1006	25.900	24.125	1.475	Open Manhole	1200
1.004	42.379	42.6	1016	25.132	23.131	1.701	Open Manhole	1500
3.000	12.600	74.1	1012	26.060	24.367	1.543	Open Manhole	1200
4.000	8.746	65.8	1012	26.060	24.367	1.543	Open Manhole	1200
3.001	69.312	73.3	1015	25.292	23.347	1.720	Open Manhole	1350
5.000	20.548	225.8	1015	25.292	23.347	1.720	Open Manhole	1350
3.002	47.297	335.4	1016	25.132	22.981	1.701	Open Manhole	1500
1.005	16.677	111.2	1022	24.781	22.756	1.500	Open Manhole	1800
6.000	13.927	83.3	1018	24.517	23.392	0.900	Open Manhole	1200
6.001	11.510	230.2	1019	24.483	23.342	0.841	Open Manhole	1200

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
6.002	o	300	1019	24.483	23.342	0.841	Open Manhole	1200
6.003	o	450	1020	24.401	23.051	0.900	Open Manhole	1350
6.004	o	450	1021	24.792	22.874	1.468	Open Manhole	1350
1.006	o	750	1022	24.781	22.756	1.275	Open Manhole	1800
1.007	o	750	1022-1	24.777	22.709	1.319	Open Manhole	1800
7.000	o	300	1023	26.130	24.405	1.425	Open Manhole	1200
1.008	o	750	1024	24.772	22.661	1.361	Open Manhole	1800
8.000	o	150	1200	27.500	26.450	0.900	Open Manhole	1200
8.001	o	150	1201	27.500	26.329	1.021	Open Manhole	1200
8.002	o	150	1202	27.500	26.179	1.171	Open Manhole	1200
8.003	o	150	1203	27.500	26.009	1.341	Open Manhole	1200
8.004	o	225	1204	29.087	25.849	3.013	Open Manhole	1200
8.005	o	225	1205	27.811	25.695	1.891	Open Manhole	1200
8.006	o	225	1206	27.524	25.406	1.893	Open Manhole	1200
8.007	o	225	1207	27.426	25.339	1.862	Open Manhole	1200
8.008	o	225	1208	26.998	25.205	1.568	Open Manhole	1200
8.009	o	300	1209	26.379	24.530	1.549	Open Manhole	1200
8.010	o	300	1210	26.215	24.420	1.495	Open Manhole	1200
1.009	o	750	1025	25.088	22.526	1.812	Open Manhole	1800
1.010	o	750	1026	25.289	22.436	2.103	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
6.002	11.510	177.1	1020	24.401	23.277	0.824	Open Manhole	1350
6.003	16.954	191.6	1021	24.792	22.963	1.380	Open Manhole	1350
6.004	23.475	545.9	1022	24.781	22.831	1.500	Open Manhole	1800
1.006	16.001	336.9	1022-1	24.777	22.709	1.319	Open Manhole	1800
1.007	25.441	530.0	1024	24.772	22.661	1.362	Open Manhole	1800
7.000	66.663	53.6	1024	24.772	23.161	1.311	Open Manhole	1800
1.008	44.468	329.4	1025	25.088	22.526	1.812	Open Manhole	1800
8.000	18.163	150.0	1201	27.500	26.329	1.021	Open Manhole	1200
8.001	22.544	150.3	1202	27.500	26.179	1.171	Open Manhole	1200
8.002	25.569	150.4	1203	27.500	26.009	1.341	Open Manhole	1200
8.003	12.760	150.1	1204	29.087	25.924	3.013	Open Manhole	1200
8.004	26.122	170.0	1205	27.811	25.695	1.891	Open Manhole	1200
8.005	49.178	170.0	1206	27.524	25.406	1.893	Open Manhole	1200
8.006	11.357	170.0	1207	27.426	25.339	1.862	Open Manhole	1200
8.007	9.948	170.0	1208	26.998	25.280	1.493	Open Manhole	1200
8.008	11.164	16.5	1209	26.379	24.530	1.624	Open Manhole	1200
8.009	26.506	241.0	1210	26.215	24.420	1.495	Open Manhole	1200
8.010	19.991	14.4	1025	25.088	23.027	1.761	Open Manhole	1800
1.009	33.101	367.8	1026	25.289	22.436	2.103	Open Manhole	1800
1.010	19.233	213.7	1027	25.490	22.346	2.394	Open Manhole	1800

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
9.000	o	150	1220	27.285	25.635	1.500	Open Manhole	1200
9.001	o	150	1221	27.141	25.491	1.500	Open Manhole	1200
9.002	o	225	1222	26.967	25.242	1.500	Open Manhole	1200
1.011	o	900	1027	25.490	22.247	2.343	Open Manhole	1800
1.012	o	900	1028	25.502	22.217	2.385	Open Manhole	1800
1.013	o	900	1029	25.379	22.201	2.278	Open Manhole	1800
1.014	o	900	1030	25.208	22.184	2.124	Open Manhole	1800
1.015	o	900	1031	25.038	22.168	1.970	Open Manhole	1800
1.016	o	900	1032	23.804	21.329	1.575	Open Manhole	1800
10.000	o	150	1230	24.214	22.564	1.500	Open Manhole	1200
10.001	o	225	1231	24.092	22.364	1.503	Open Manhole	1200
1.017	o	900	1033	23.962	21.288	1.774	Open Manhole	1800
1.018	o	300	1040-Basin A2	22.300	21.000	1.000	Open Manhole	1800
1.019	o	300	1041-Con	22.043	20.900	0.843	Open Manhole	1200
1.020	3 \=/	300	1042	22.030	20.820	1.060	Junction	
1.021	o	300	1043-GR	21.545	20.739	0.506	Junction	
1.022	3 \=/	300	1044	21.456	20.689	0.617	Junction	
11.000	o	225	1240	24.028	22.304	1.499	Open Manhole	1200
12.000	o	150	1270	23.557	21.907	1.500	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
9.000	8.554	59.4	1221	27.141	25.491	1.500	Open Manhole	1200
9.001	6.880	39.5	1222	26.967	25.317	1.500	Open Manhole	1200
9.002	44.129	19.0	1027	25.490	22.922	2.343	Open Manhole	1800
1.011	6.947	534.4	1028	25.502	22.234	2.368	Open Manhole	1800
1.012	9.158	538.7	1029	25.379	22.200	2.279	Open Manhole	1800
1.013	8.101	476.5	1030	25.208	22.184	2.124	Open Manhole	1800
1.014	11.725	732.8	1031	25.038	22.168	1.970	Open Manhole	1800
1.015	47.015	56.0	1032	23.804	21.329	1.575	Open Manhole	1800
1.016	22.656	552.6	1033	23.962	21.288	1.774	Open Manhole	1800
10.000	12.582	100.7	1231	24.092	22.439	1.503	Open Manhole	1200
10.001	13.006	32.4	1033	23.962	21.963	1.774	Open Manhole	1800
1.017	25.070#	167.1	1040-Basin A2	22.300	21.138	0.262	Open Manhole	1800
1.018	10.176	101.8	1041-Con	22.043	20.900	0.843	Open Manhole	1200
1.019	7.577	94.7	1042	22.030	20.820	0.910	Junction	
1.020	40.502	500.0	1043-GR	21.545	20.739	0.656	Junction	
1.021	9.086	181.7	1044	21.456	20.689	0.467	Junction	
1.022	3.620#	301.7	1100-Basin A1	20.600	20.677	-0.227	Open Manhole	1200
11.000	34.361	55.9	1241	23.690	21.689	1.776	Open Manhole	1200
12.000	14.433	100.9	1241	23.690	21.764	1.776	Open Manhole	1200

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
11.001	o	300	1241	23.690	21.689	1.701	Open Manhole	1200
11.002	o	225	1242	23.194	21.469	1.500	Open Manhole	1200
11.003	o	300	1243	22.891	21.166	1.425	Open Manhole	1200
11.004	o	300	1244	22.624	20.899	1.425	Open Manhole	1200
11.005	o	300	1245	21.663	19.863	1.500	Open Manhole	1200
13.000	o	150	1250	22.519	21.063	1.306	Open Manhole	1200
13.001	o	225	1251	22.756	20.746	1.785	Open Manhole	1200
13.002	o	225	1252	22.692	20.624	1.843	Open Manhole	1200
13.003	o	300	1253	22.582	20.564	1.718	Open Manhole	1200
14.000	o	225	1300	24.043	22.393	1.425	Open Manhole	1200
15.000	o	150	1320	24.209	22.559	1.500	Open Manhole	1200
14.001	o	300	1302	24.056	22.021	1.735	Open Manhole	1200
16.000	o	150	1390	23.113	21.463	1.500	Open Manhole	1200
14.002	o	375	1303	23.316	21.117	1.824	Open Manhole	1350
14.003	o	450	1304	23.510	21.009	2.051	Open Manhole	1350
14.004	o	450	1305	23.373	20.965	1.958	Open Manhole	1350
14.005	o	450	1306	23.150	20.907	1.793	Open Manhole	1350
14.006	o	450	1307	23.042	20.875	1.717	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
11.001	18.287	83.5	1242	23.194	21.470	1.424	Open Manhole	1200
11.002	11.426	37.6	1243	22.891	21.165	1.501	Open Manhole	1200
11.003	11.455	42.9	1244	22.624	20.899	1.425	Open Manhole	1200
11.004	39.407	41.0	1245	21.663	19.939	1.424	Open Manhole	1200
11.005	14.440#	39.8	1100-Basin A1	20.600	19.500	0.800	Open Manhole	1200
13.000	26.930	100.9	1251	22.756	20.796	1.810	Open Manhole	1200
13.001	20.549	168.4	1252	22.692	20.624	1.843	Open Manhole	1200
13.002	10.051	167.5	1253	22.582	20.564	1.793	Open Manhole	1200
13.003	38.528	167.5	1254	22.251	20.334	1.617	Open Manhole	1500
14.000	28.841	97.1	1302	24.056	22.096	1.735	Open Manhole	1200
15.000	9.235	19.9	1302	24.056	22.096	1.810	Open Manhole	1200
14.001	44.776	59.3	1303	23.316	21.266	1.750	Open Manhole	1350
16.000	12.264	100.5	1303	23.316	21.341	1.825	Open Manhole	1350
14.002	25.201	233.3	1304	23.510	21.009	2.126	Open Manhole	1350
14.003	14.752	335.3	1305	23.373	20.965	1.958	Open Manhole	1350
14.004	18.636	321.3	1306	23.150	20.907	1.793	Open Manhole	1350
14.005	10.371	324.1	1307	23.042	20.875	1.717	Open Manhole	1350
14.006	19.435	299.0	1308	22.897	20.810	1.637	Open Manhole	1350

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
17.000	o	225	1330	23.321	21.671	1.425	Open Manhole	1200
17.001	o	225	1331	22.979	21.254	1.500	Open Manhole	1200
14.007	o	450	1308	22.897	20.810	1.637	Open Manhole	1350
14.008	o	450	1309	22.785	20.773	1.562	Open Manhole	1350
14.009	o	375	1310	22.330	20.455	1.500	Open Manhole	1350
18.000	o	150	1340	23.064	22.310	0.604	Open Manhole	1200
18.001	o	150	1341	22.933	22.047	0.736	Open Manhole	1200
19.000	o	225	1350	22.334	21.225	0.884	Open Manhole	1200
19.001	o	225	1351	22.453	21.030	1.198	Open Manhole	1200
18.002	o	300	1352	22.711	20.833	1.578	Open Manhole	1200
13.004	o	675	1254	22.251	20.034	1.542	Open Manhole	1500
13.005	o	675	1255	21.929	19.956	1.298	Open Manhole	1500
13.006	o	675	1256	21.861	19.928	1.258	Open Manhole	1500
20.000	o	225	1360	21.191	20.051	0.915	Open Manhole	1200
21.000	o	150	1370	21.457	20.117	1.190	Open Manhole	1200
20.001	o	225	1361	21.339	19.971	1.143	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
17.000	20.953	61.3	1331	22.979	21.329	1.425	Open Manhole	1200
17.001	7.032	23.9	1308	22.897	20.960	1.712	Open Manhole	1350
14.007	11.915	322.0	1309	22.785	20.773	1.562	Open Manhole	1350
14.008	46.478	146.2	1310	22.330	20.455	1.425	Open Manhole	1350
14.009	7.319	21.5	1254	22.251	20.114	1.762	Open Manhole	1500
18.000	18.630	70.8	1341	22.933	22.047	0.736	Open Manhole	1200
18.001	24.342	22.9	1352	22.711	20.983	1.578	Open Manhole	1200
19.000	12.132	101.1	1351	22.453	21.105	1.123	Open Manhole	1200
19.001	20.642	169.2	1352	22.711	20.908	1.578	Open Manhole	1200
18.002	69.434	121.0	1254	22.251	20.259	1.692	Open Manhole	1500
13.004	34.492	442.2	1255	21.929	19.956	1.298	Open Manhole	1500
13.005	12.517	447.0	1256	21.861	19.928	1.258	Open Manhole	1500
13.006	14.415	497.1	1257	21.952	19.899	1.378	Open Manhole	1500
20.000	11.024	137.8	1361	21.339	19.971	1.143	Open Manhole	1200
21.000	9.669	100.7	1361	21.339	20.021	1.168	Open Manhole	1200
20.001	12.117	168.3	1362	21.676	19.899	1.552	Open Manhole	1200

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
20.002	o	300	1362	21.676	19.899	1.477	Open Manhole	1200
13.007	o	750	1257	21.952	19.749	1.453	Open Manhole	1500
13.008	o	750	1258	22.067	19.710	1.607	Open Manhole	1500
13.009	o	750	1259	21.898	19.680	1.468	Open Manhole	1500
13.010	o	750	1260	21.877	19.635	1.492	Open Manhole	1500
22.000	o	225	1380-GR	20.784	19.724	0.835	Open Manhole	1200
13.011	o	675	1261	21.281	19.539	1.067	Open Manhole	1500
23.000	o	225	1400	24.601	22.990	1.386	Open Manhole	1200
23.001	o	225	1401	23.616	21.955	1.436	Open Manhole	1200
23.002	o	300	1402	23.461	21.744	1.417	Open Manhole	1200
23.003	o	300	1403	22.404	21.278	0.826	Open Manhole	1200
23.004	o	300	1404	22.405	20.979	1.126	Open Manhole	1200
24.000	o	150	1420	21.753	20.703	0.900	Open Manhole	1200
23.005	o	300	1405	21.881	20.427	1.154	Open Manhole	1200
23.006	o	300	1406	22.088	20.183	1.605	Open Manhole	1200
25.000	o	150	1430	25.344	23.694	1.500	Open Manhole	1200
25.001	o	225	1431	25.284	23.469	1.590	Open Manhole	1200
25.002	o	225	1432	24.984	23.148	1.611	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
20.002	21.954	146.4	1257	21.952	19.749	1.903	Open Manhole	1500
13.007	19.439	498.4	1258	22.067	19.710	1.607	Open Manhole	1500
13.008	14.965	498.8	1259	21.898	19.680	1.468	Open Manhole	1500
13.009	22.269	494.9	1260	21.877	19.635	1.492	Open Manhole	1500
13.010	47.812	498.0	1261	21.281	19.539	0.992	Open Manhole	1500
22.000	31.242	168.9	1261	21.281	19.539	1.517	Open Manhole	1500
13.011	10.500#	500.0	1100-Basin A1	20.600	19.518	0.407	Open Manhole	1200
23.000	35.896	34.7	1401	23.616	21.955	1.436	Open Manhole	1200
23.001	8.580	40.7	1402	23.461	21.744	1.492	Open Manhole	1200
23.002	21.319	54.5	1403	22.404	21.353	0.751	Open Manhole	1200
23.003	9.259	31.0	1404	22.405	20.979	1.126	Open Manhole	1200
23.004	30.836	55.8	1405	21.881	20.426	1.155	Open Manhole	1200
24.000	9.167	72.8	1405	21.881	20.577	1.154	Open Manhole	1200
23.005	41.037	168.2	1406	22.088	20.183	1.605	Open Manhole	1200
23.006	9.158	261.7	1407	22.008	20.148	1.560	Open Manhole	1350
25.000	19.893	88.4	1431	25.284	23.469	1.665	Open Manhole	1200
25.001	19.602	79.7	1432	24.984	23.223	1.536	Open Manhole	1200
25.002	16.803	247.1	1433	24.846	23.080	1.541	Open Manhole	1200

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
26.000	o	150	1450	24.890	23.236	1.504	Open Manhole	1200
25.003	o	225	1433	24.846	23.081	1.540	Open Manhole	1200
25.004	o	225	1434	24.117	22.392	1.500	Open Manhole	1200
25.005	o	225	1435	23.788	22.063	1.500	Open Manhole	1200
27.000	o	150	1460	23.295	22.137	1.008	Open Manhole	1200
27.001	o	150	1461	23.213	22.063	1.000	Open Manhole	1200
25.006	o	375	1436	23.289	21.489	1.425	Open Manhole	1200
25.007	o	375	1437	23.164	21.242	1.547	Open Manhole	1200
25.008	o	375	1438	23.066	21.137	1.554	Open Manhole	1200
25.009	o	375	1439	22.833	21.023	1.435	Open Manhole	1200
25.010	o	300	1440	22.579	20.847	1.432	Open Manhole	1200
23.007	o	450	1407	22.008	19.997	1.561	Open Manhole	1350
23.008	o	450	1408	21.925	19.974	1.501	Open Manhole	1350
23.009	o	450	1409	21.794	19.843	1.501	Open Manhole	1350
23.010	o	450	1410	21.717	19.766	1.501	Open Manhole	1350
23.011	o	450	1411	21.740	19.717	1.573	Open Manhole	1350
28.000	o	150	1470	25.814	24.164	1.500	Open Manhole	1200
29.000	o	150	1490	25.553	23.903	1.500	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
26.000	9.248	114.2	1433	24.846	23.155	1.541	Open Manhole	1200
25.003	28.520	41.5	1434	24.117	22.393	1.499	Open Manhole	1200
25.004	13.310	40.5	1435	23.788	22.063	1.500	Open Manhole	1200
25.005	18.021	36.1	1436	23.289	21.564	1.500	Open Manhole	1200
27.000	10.328	139.6	1461	23.213	22.063	1.000	Open Manhole	1200
27.001	10.370	24.5	1436	23.289	21.639	1.500	Open Manhole	1200
25.006	20.225	82.2	1437	23.164	21.243	1.546	Open Manhole	1200
25.007	13.512	128.7	1438	23.066	21.137	1.554	Open Manhole	1200
25.008	16.296	142.9	1439	22.833	21.023	1.435	Open Manhole	1200
25.009	14.567	82.8	1440	22.579	20.847	1.357	Open Manhole	1200
25.010	14.882	21.3	1407	22.008	20.147	1.561	Open Manhole	1350
23.007	9.874	429.3	1408	21.925	19.974	1.501	Open Manhole	1350
23.008	8.787	67.1	1409	21.794	19.843	1.501	Open Manhole	1350
23.009	8.819	114.5	1410	21.717	19.766	1.501	Open Manhole	1350
23.010	17.779	362.8	1411	21.740	19.717	1.573	Open Manhole	1350
23.011	17.230#	102.6	1100-Basin A1	20.600	19.549	0.601	Open Manhole	1200
28.000	9.559	23.1	1471	25.718	23.750	1.818	Open Manhole	1200
29.000	15.520	101.4	1471	25.718	23.750	1.818	Open Manhole	1200

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
28.001	o	225	1471	25.718	23.675	1.818	Open Manhole	1200
28.002	o	225	1472	24.960	23.235	1.500	Open Manhole	1200
28.003	o	300	1473	24.700	22.975	1.425	Open Manhole	1200
28.004	o	300	1474	24.210	22.410	1.500	Open Manhole	1200
30.000	o	150	1500	24.347	22.697	1.500	Open Manhole	1200
30.001	o	225	1501	24.421	22.580	1.616	Open Manhole	1200
28.005	o	300	1475	24.340	22.312	1.728	Open Manhole	1200
28.006	o	375	1476	22.588	20.788	1.425	Open Manhole	1200
28.007	o	375	1477	22.250	20.375	1.500	Open Manhole	1350
28.008	o	375	1478	22.189	20.313	1.501	Open Manhole	1350
28.009	o	375	1479	22.093	20.218	1.500	Open Manhole	1350
28.010	o	375	1480	21.820	19.945	1.500	Open Manhole	1350
28.011	o	375	1481	21.725	19.850	1.500	Open Manhole	1350
31.000	o	150	1510	21.692	20.042	1.500	Open Manhole	1200
28.012	o	375	1482	21.596	19.666	1.555	Open Manhole	1350
32.000	o	150	1520	21.536	20.051	1.335	Open Manhole	1200
28.013	o	375	1483	21.528	19.640	1.513	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
28.001	21.433	48.7	1472	24.960	23.235	1.500	Open Manhole	1200
28.002	8.283	31.9	1473	24.700	22.975	1.500	Open Manhole	1200
28.003	30.938	63.1	1474	24.210	22.485	1.425	Open Manhole	1200
28.004	13.620	139.0	1475	24.340	22.312	1.728	Open Manhole	1200
30.000	11.853	100.4	1501	24.421	22.579	1.692	Open Manhole	1200
30.001	11.835	101.2	1475	24.340	22.463	1.652	Open Manhole	1200
28.005	57.782	37.9	1476	22.588	20.788	1.500	Open Manhole	1200
28.006	19.501	57.7	1477	22.250	20.450	1.425	Open Manhole	1350
28.007	3.946	63.6	1478	22.189	20.313	1.501	Open Manhole	1350
28.008	4.967	51.7	1479	22.093	20.217	1.501	Open Manhole	1350
28.009	14.725	53.9	1480	21.820	19.945	1.500	Open Manhole	1350
28.010	7.909	83.3	1481	21.725	19.850	1.500	Open Manhole	1350
28.011	3.178	17.3	1482	21.596	19.666	1.555	Open Manhole	1350
31.000	15.244	67.5	1482	21.596	19.816	1.630	Open Manhole	1350
28.012	6.826	262.5	1483	21.528	19.640	1.513	Open Manhole	1350
32.000	18.802	101.1	1483	21.528	19.865	1.513	Open Manhole	1350
28.013	16.120#	115.1	1100-Basin A1	20.600	19.500	0.725	Open Manhole	1200

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Causeway	Network 2019.1	

PIPELINE SCHEDULES for M380-CATCHMENT A-SW.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
33.000	o	150	1530	22.551	20.901	1.500	Open Manhole	1200
33.001	o	300	1531	22.187	20.364	1.523	Open Manhole	1200
33.002	o	300	1532	22.030	20.230	1.500	Open Manhole	1200
33.003	o	300	1533	21.642	19.842	1.500	Open Manhole	1200
1.023	o	300	1100-Basin A1	20.600	19.400	0.900	Open Manhole	1200
1.024	3 \=/	300	1101-Con	21.144	19.350	1.644	Open Manhole	1200
1.025	3 \=/	300	1102	21.298	19.350	1.798	Junction	
1.026	3 \=/	300	1103	21.261	19.260	1.851	Junction	
1.027	3 \=/	300	1104	21.175	19.176	1.849	Junction	
1.028	3 \=/	300	1105	21.018	19.162	1.706	Junction	
1.029	3 \=/	300	1106	20.969	19.152	1.667	Junction	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
33.000	37.361	96.8	1531	22.187	20.515	1.522	Open Manhole	1200
33.001	14.941	111.5	1532	22.030	20.230	1.500	Open Manhole	1200
33.002	36.246	93.4	1533	21.642	19.842	1.500	Open Manhole	1200
33.003	31.170#	91.1	1100-Basin A1	20.600	19.500	0.800	Open Manhole	1200
1.023	8.756	175.1	1101-Con	21.144	19.350	1.494	Open Manhole	1200
1.024	6.724	517.2	1102	21.298	19.337	1.811	Junction	
1.025	38.389	498.6	1103	21.261	19.273	1.838	Junction	
1.026	42.073	500.9	1104	21.175	19.176	1.849	Junction	
1.027	7.094	506.7	1105	21.018	19.162	1.706	Junction	
1.028	5.149	514.9	1106	20.969	19.152	1.667	Junction	
1.029	21.813	13.8	Moorgreen Stream	17.630	17.570	-0.090	Open Manhole	0

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Causeway	Network 2019.1	

Area Summary for M380-CATCHMENT A-SW.SWS

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.104	0.104	0.104
1.001	-	-	100	0.040	0.040	0.040
1.002	-	-	100	0.072	0.072	0.072
2.000	-	-	100	0.054	0.054	0.054
2.001	-	-	100	0.080	0.080	0.080
1.003	-	-	100	0.063	0.063	0.063
1.004	-	-	100	0.023	0.023	0.023
3.000	-	-	100	0.049	0.049	0.049
4.000	-	-	100	0.082	0.082	0.082
3.001	-	-	100	0.082	0.082	0.082
5.000	-	-	100	0.133	0.133	0.133
3.002	-	-	100	0.153	0.153	0.153
1.005	-	-	100	0.018	0.018	0.018
6.000	-	-	100	0.090	0.090	0.090
6.001	-	-	100	0.049	0.049	0.049
6.002	-	-	100	0.007	0.007	0.007
6.003	-	-	100	0.099	0.099	0.099
6.004	-	-	100	0.017	0.017	0.017
1.006	-	-	100	0.116	0.116	0.116
1.007	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.315	0.315	0.315
1.008	-	-	100	0.022	0.022	0.022
8.000	-	-	100	0.000	0.000	0.000
8.001	-	-	100	0.000	0.000	0.000
8.002	-	-	100	0.000	0.000	0.000
8.003	-	-	100	0.000	0.000	0.000
8.004	-	-	100	0.160	0.160	0.160
8.005	-	-	100	0.033	0.033	0.033
8.006	-	-	100	0.003	0.003	0.003
8.007	-	-	100	0.007	0.007	0.007
8.008	-	-	100	0.057	0.057	0.057
8.009	-	-	100	0.011	0.011	0.011
8.010	-	-	100	0.033	0.033	0.033
1.009	-	-	100	0.033	0.033	0.033
1.010	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.034	0.034	0.034
9.001	-	-	100	0.025	0.025	0.025
9.002	-	-	100	0.125	0.125	0.125
1.011	-	-	100	0.135	0.135	0.135
1.012	-	-	100	0.025	0.025	0.025
1.013	-	-	100	0.020	0.020	0.020
1.014	-	-	100	0.016	0.016	0.016
1.015	-	-	100	0.010	0.010	0.010
1.016	-	-	100	0.184	0.184	0.184
10.000	-	-	100	0.028	0.028	0.028
10.001	-	-	100	0.086	0.086	0.086
1.017	-	-	100	0.005	0.005	0.005
1.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
11.000	-	-	100	0.109	0.109	0.109
12.000	-	-	100	0.043	0.043	0.043
11.001	-	-	100	0.025	0.025	0.025
11.002	-	-	100	0.019	0.019	0.019
11.003	-	-	100	0.033	0.033	0.033
11.004	-	-	100	0.060	0.060	0.060
11.005	-	-	100	0.130	0.130	0.130
13.000	-	-	100	0.007	0.007	0.007

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Area Summary for M380-CATCHMENT A-SW.SWS

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
13.001	-	-	100	0.088	0.088	0.088
13.002	-	-	100	0.009	0.009	0.009
13.003	-	-	100	0.058	0.058	0.058
14.000	-	-	100	0.070	0.070	0.070
15.000	-	-	100	0.041	0.041	0.041
14.001	-	-	100	0.076	0.076	0.076
16.000	-	-	100	0.046	0.046	0.046
14.002	-	-	100	0.026	0.026	0.026
14.003	-	-	100	0.042	0.042	0.042
14.004	-	-	100	0.039	0.039	0.039
14.005	-	-	100	0.016	0.016	0.016
14.006	-	-	100	0.019	0.019	0.019
17.000	-	-	100	0.086	0.086	0.086
17.001	-	-	100	0.009	0.009	0.009
14.007	-	-	100	0.012	0.012	0.012
14.008	-	-	100	0.175	0.175	0.175
14.009	-	-	100	0.006	0.006	0.006
18.000	-	-	100	0.045	0.045	0.045
18.001	-	-	100	0.030	0.030	0.030
19.000	-	-	100	0.059	0.059	0.059
19.001	-	-	100	0.034	0.034	0.034
18.002	-	-	100	0.110	0.110	0.110
13.004	-	-	100	0.159	0.159	0.159
13.005	-	-	100	0.026	0.026	0.026
13.006	-	-	100	0.038	0.038	0.038
20.000	-	-	100	0.020	0.020	0.020
21.000	-	-	100	0.053	0.053	0.053
20.001	-	-	100	0.025	0.025	0.025
20.002	-	-	100	0.054	0.054	0.054
13.007	-	-	100	0.018	0.018	0.018
13.008	-	-	100	0.021	0.021	0.021
13.009	-	-	100	0.089	0.089	0.089
13.010	-	-	100	0.000	0.000	0.000
22.000	-	-	100	0.047	0.047	0.047
13.011	-	-	100	0.000	0.000	0.000
23.000	-	-	100	0.101	0.101	0.101
23.001	-	-	100	0.008	0.008	0.008
23.002	-	-	100	0.067	0.067	0.067
23.003	-	-	100	0.000	0.000	0.000
23.004	-	-	100	0.000	0.000	0.000
24.000	-	-	100	0.033	0.033	0.033
23.005	-	-	100	0.000	0.000	0.000
23.006	-	-	100	0.070	0.070	0.070
25.000	-	-	100	0.038	0.038	0.038
25.001	-	-	100	0.042	0.042	0.042
25.002	-	-	100	0.022	0.022	0.022
26.000	-	-	100	0.025	0.025	0.025
25.003	-	-	100	0.037	0.037	0.037
25.004	-	-	100	0.014	0.014	0.014
25.005	-	-	100	0.021	0.021	0.021
27.000	-	-	100	0.041	0.041	0.041
27.001	-	-	100	0.020	0.020	0.020
25.006	-	-	100	0.069	0.069	0.069
25.007	-	-	100	0.031	0.031	0.031
25.008	-	-	100	0.038	0.038	0.038
25.009	-	-	100	0.025	0.025	0.025
25.010	-	-	100	0.025	0.025	0.025
23.007	-	-	100	0.010	0.010	0.010
23.008	-	-	100	0.000	0.000	0.000
23.009	-	-	100	0.000	0.000	0.000

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Area Summary for M380-CATCHMENT A-SW.SWS

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
23.010	-	-	100	0.000	0.000	0.000
23.011	-	-	100	0.083	0.083	0.083
28.000	-	-	100	0.087	0.087	0.087
29.000	-	-	100	0.031	0.031	0.031
28.001	-	-	100	0.041	0.041	0.041
28.002	-	-	100	0.015	0.015	0.015
28.003	-	-	100	0.036	0.036	0.036
28.004	-	-	100	0.030	0.030	0.030
30.000	-	-	100	0.040	0.040	0.040
30.001	-	-	100	0.030	0.030	0.030
28.005	-	-	100	0.135	0.135	0.135
28.006	-	-	100	0.050	0.050	0.050
28.007	-	-	100	0.018	0.018	0.018
28.008	-	-	100	0.018	0.018	0.018
28.009	-	-	100	0.013	0.013	0.013
28.010	-	-	100	0.004	0.004	0.004
28.011	-	-	100	0.006	0.006	0.006
31.000	-	-	100	0.046	0.046	0.046
28.012	-	-	100	0.006	0.006	0.006
32.000	-	-	100	0.028	0.028	0.028
28.013	-	-	100	0.015	0.015	0.015
33.000	-	-	100	0.043	0.043	0.043
33.001	-	-	100	0.111	0.111	0.111
33.002	-	-	100	0.085	0.085	0.085
33.003	-	-	100	0.000	0.000	0.000
1.023	-	-	100	0.000	0.000	0.000
1.024	-	-	100	0.000	0.000	0.000
1.025	-	-	100	0.000	0.000	0.000
1.026	-	-	100	0.000	0.000	0.000
1.027	-	-	100	0.000	0.000	0.000
1.028	-	-	100	0.000	0.000	0.000
1.029	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				6.478	6.478	6.478

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Free Flowing Outfall Details for M380-CATCHMENT A-SW.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.029	Moorgreen Stream	17.630	17.570	18.620	0	0

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Online Controls for M380-CATCHMENT A-SW.SWS

Orifice Manhole: 1040-Basin A2, DS/PN: 1.018, Volume (m³): 18.1

Diameter (m) 0.300 Discharge Coefficient 0.600 Invert Level (m) 21.000

Hydro-Brake® Optimum Manhole: 1101-Con, DS/PN: 1.024, Volume (m³): 2.6

Unit Reference	MD-SFF-0308-6200-1250-5580
Design Head (m)	1.250
Design Flow (l/s)	62.0
Flush-Flo™	User Defined
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	308
Invert Level (m)	19.350
Minimum Outlet Pipe Diameter (mm)	375
Suggested Manhole Diameter (mm)	1800

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.250	62.0	Kick-Flo®	0.795	49.8
Flush-Flo™	0.459	55.8	Mean Flow over Head Range	-	47.4

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	9.3	0.800	50.0	2.000	77.8	4.000	109.0	7.000	143.3
0.200	31.6	1.000	55.7	2.200	81.5	4.500	115.5	7.500	148.3
0.300	53.8	1.200	60.8	2.400	85.0	5.000	121.6	8.000	153.0
0.400	55.6	1.400	65.5	2.600	88.4	5.500	127.4	8.500	157.6
0.500	55.7	1.600	69.9	3.000	94.8	6.000	132.9	9.000	162.1
0.600	54.9	1.800	74.0	3.500	102.2	6.500	138.2	9.500	166.5

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Storage Structures for M380-CATCHMENT A-SW.SWS

Tank or Pond Manhole: 1040-Basin A2, DS/PN: 1.018

Invert Level (m) 21.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	717.5	0.300	893.0	0.600	1077.9	0.900	1272.3	1.200	1476.1
0.100	775.0	0.400	953.6	0.700	1141.7	1.000	1339.1	1.300	1539.0
0.200	833.5	0.500	1015.2	0.800	1206.4	1.100	1407.1		

Tank or Pond Manhole: 1100-Basin A1, DS/PN: 1.023

Invert Level (m) 19.400

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	3151.7	0.300	3749.5	0.600	4356.5	0.900	4972.8	1.200	5577.3
0.100	3349.9	0.400	3950.8	0.700	4560.9	1.000	5170.3		
0.200	3549.2	0.500	4153.2	0.800	4766.4	1.100	5388.8		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.000
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.800 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
 DTS Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1
 Climate Change (%) 0

				Water Surcharged			Flooded		Pipe			
PN	US/MH Name	Event	US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Flow (l/s)	Status		
1.000	1000	15 minute 1 year Winter I+0%	28.090	26.458	-0.132	0.000	0.35	0.099	13.4	OK		
1.001	1001	15 minute 1 year Winter I+0%	27.700	25.850	-0.200	0.000	0.24	0.111	17.4	OK		
1.002	1002	15 minute 1 year Winter I+0%	27.650	25.714	-0.186	0.000	0.31	0.336	24.8	OK		
2.000	1003	15 minute 1 year Winter I+0%	29.650	27.976	-0.174	0.000	0.11	0.052	7.0	OK		
2.001	1004	15 minute 1 year Winter I+0%	29.150	27.488	-0.162	0.000	0.17	0.091	15.9	OK		
1.003	1005	15 minute 1 year Winter I+0%	27.400	25.556	-0.194	0.000	0.27	0.237	46.4	OK		
1.004	1006	15 minute 1 year Winter I+0%	25.900	24.238	-0.187	0.000	0.31	0.163	48.7	OK		
3.000	1010	15 minute 1 year Winter I+0%	25.950	24.598	-0.089	0.000	0.34	0.063	6.4	OK		
4.000	1011	15 minute 1 year Winter I+0%	26.150	24.581	-0.069	0.000	0.56	0.086	10.7	OK		
3.001	1012	15 minute 1 year Winter I+0%	26.060	24.398	-0.119	0.000	0.45	0.118	26.5	OK		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	15 minute 1 year Winter I+0%	25.177	23.559	-0.104	0.000	0.55	0.132	17.3	OK
3.002	1015	15 minute 1 year Winter I+0%	25.292	23.314	-0.258	0.000	0.37	0.268	58.7	OK
1.005	1016	15 minute 1 year Winter I+0%	25.132	23.129	-0.302	0.000	0.36	1.291	108.2	OK
6.000	1017	15 minute 1 year Winter I+0%	24.684	23.634	-0.150	0.000	0.24	0.079	11.8	OK
6.001	1018	15 minute 1 year Winter I+0%	24.517	23.504	-0.188	0.000	0.29	0.191	17.2	OK
6.002	1019	15 minute 1 year Winter I+0%	24.483	23.451	-0.191	0.000	0.28	0.259	18.1	OK
6.003	1020	15 minute 1 year Winter I+0%	24.401	23.176	-0.325	0.000	0.17	0.171	29.0	OK
6.004	1021	15 minute 1 year Winter I+0%	24.792	23.100	-0.224	0.000	0.27	0.682	28.9	OK
1.006	1022	15 minute 1 year Winter I+0%	24.781	23.079	-0.427	0.000	0.33	3.751	144.7	OK
1.007	1022-1	15 minute 1 year Winter I+0%	24.777	23.039	-0.420	0.000	0.37	2.676	143.9	OK
7.000	1023	15 minute 1 year Winter I+0%	26.130	24.515	-0.190	0.000	0.28	0.118	41.2	OK
1.008	1024	15 minute 1 year Winter I+0%	24.772	22.969	-0.442	0.000	0.31	3.484	173.1	OK
8.000	1200	60 minute 1 year Winter I+0%	27.500	26.450	-0.150	0.000	0.00	0.000	0.0	OK
8.001	1201	60 minute 1 year Winter I+0%	27.500	26.329	-0.150	0.000	0.00	0.000	0.0	OK
8.002	1202	60 minute 1 year Winter I+0%	27.500	26.179	-0.150	0.000	0.00	0.000	0.0	OK
8.003	1203	60 minute 1 year Winter I+0%	27.500	26.009	-0.150	0.000	0.00	0.000	0.0	OK
8.004	1204	15 minute 1 year Winter I+0%	29.087	25.960	-0.114	0.000	0.48	0.130	17.8	OK
8.005	1205	15 minute 1 year Winter I+0%	27.811	25.815	-0.105	0.000	0.55	0.312	20.8	OK
8.006	1206	15 minute 1 year Winter I+0%	27.524	25.535	-0.096	0.000	0.62	0.372	21.0	OK
8.007	1207	15 minute 1 year Winter I+0%	27.426	25.473	-0.091	0.000	0.65	0.309	21.7	OK
8.008	1208	15 minute 1 year Winter I+0%	26.998	25.281	-0.149	0.000	0.25	0.083	26.8	OK
8.009	1209	15 minute 1 year Winter I+0%	26.379	24.669	-0.161	0.000	0.44	0.177	27.9	OK
8.010	1210	15 minute 1 year Winter I+0%	26.215	24.489	-0.231	0.000	0.12	0.198	30.9	OK
1.009	1025	15 minute 1 year Winter I+0%	25.088	22.866	-0.410	0.000	0.39	6.712	200.0	OK
1.010	1026	15 minute 1 year Winter I+0%	25.289	22.773	-0.413	0.000	0.33	5.081	196.4	OK
9.000	1220	15 minute 1 year Winter I+0%	27.285	25.683	-0.102	0.000	0.22	0.049	4.5	OK
9.001	1221	15 minute 1 year Winter I+0%	27.141	25.548	-0.093	0.000	0.30	0.073	7.2	OK
9.002	1222	15 minute 1 year Winter I+0%	26.967	25.308	-0.159	0.000	0.18	0.069	21.1	OK
1.011	1027	15 minute 1 year Winter I+0%	25.490	22.734	-0.413	0.000	0.47	4.223	215.6	OK
1.012	1028	15 minute 1 year Winter I+0%	25.502	22.721	-0.396	0.000	0.56	2.642	216.7	OK
1.013	1029	15 minute 1 year Winter I+0%	25.379	22.700	-0.401	0.000	0.52	3.309	216.6	OK
1.014	1030	15 minute 1 year Winter I+0%	25.208	22.684	-0.400	0.000	0.66	3.009	217.4	OK
1.015	1031	15 minute 1 year Winter I+0%	25.038	22.363	-0.705	0.000	0.11	0.916	218.5	OK

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Causeway	Network 2019.1	

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.016	1032	15 minute 1 year Winter I+0%	23.804	21.741	-0.488	0.000	0.43	3.641	225.3	OK
10.000	1230	15 minute 1 year Winter I+0%	24.214	22.613	-0.101	0.000	0.23	0.050	3.7	OK
10.001	1231	15 minute 1 year Winter I+0%	24.092	22.426	-0.163	0.000	0.17	0.066	13.2	OK
1.017	1033	15 minute 1 year Winter I+0%	23.962	21.587	-0.601	0.000	0.24	3.045	229.5	OK
1.018	1040-Basin A2	240 minute 1 year Winter I+0%	22.300	21.308	0.008	0.000	0.65	249.567	51.2	SURCHARGED
1.019	1041-Con	240 minute 1 year Winter I+0%	22.043	21.092	-0.108	0.000	0.72	0.488	51.2	OK
1.020	1042	240 minute 1 year Winter I+0%	22.030	21.049	-0.981	0.000	0.02	0.536	51.2	OK
1.021	1043-GR	240 minute 1 year Winter I+0%	21.545	20.949	-0.090	0.000	0.83	3.909	51.1	OK*
1.022	1044	240 minute 1 year Winter I+0%	21.456	20.880	-0.576	0.000	0.03	0.524	51.1	OK
11.000	1240	15 minute 1 year Winter I+0%	24.028	22.375	-0.154	0.000	0.22	0.075	14.2	OK
12.000	1270	15 minute 1 year Winter I+0%	23.557	21.968	-0.089	0.000	0.35	0.064	5.6	OK
11.001	1241	15 minute 1 year Winter I+0%	23.690	21.784	-0.205	0.000	0.22	0.138	22.5	OK
11.002	1242	15 minute 1 year Winter I+0%	23.194	21.561	-0.133	0.000	0.34	0.154	24.9	OK
11.003	1243	15 minute 1 year Winter I+0%	22.891	21.261	-0.205	0.000	0.22	0.126	28.6	OK
11.004	1244	15 minute 1 year Winter I+0%	22.624	20.994	-0.205	0.000	0.22	0.131	35.2	OK
11.005	1245	15 minute 1 year Winter I+0%	21.663	19.983	-0.180	0.000	0.34	0.139	49.4	OK
13.000	1250	15 minute 1 year Winter I+0%	22.519	21.086	-0.127	0.000	0.05	0.020	0.9	OK
13.001	1251	15 minute 1 year Winter I+0%	22.756	20.830	-0.141	0.000	0.29	0.097	10.7	OK
13.002	1252	15 minute 1 year Winter I+0%	22.692	20.716	-0.133	0.000	0.35	0.198	11.7	OK
13.003	1253	15 minute 1 year Winter I+0%	22.582	20.661	-0.203	0.000	0.23	0.191	18.0	OK
14.000	1300	15 minute 1 year Winter I+0%	24.043	22.459	-0.159	0.000	0.18	0.069	9.1	OK
15.000	1320	15 minute 1 year Winter I+0%	24.209	22.598	-0.111	0.000	0.15	0.039	5.4	OK
14.001	1302	15 minute 1 year Winter I+0%	24.056	22.104	-0.217	0.000	0.17	0.091	23.1	OK
16.000	1390	15 minute 1 year Winter I+0%	23.113	21.527	-0.086	0.000	0.38	0.067	6.0	OK
14.002	1303	15 minute 1 year Winter I+0%	23.316	21.253	-0.239	0.000	0.28	0.190	31.8	OK
14.003	1304	15 minute 1 year Winter I+0%	23.510	21.177	-0.282	0.000	0.28	0.916	35.3	OK
14.004	1305	15 minute 1 year Winter I+0%	23.373	21.136	-0.279	0.000	0.27	0.721	38.9	OK
14.005	1306	15 minute 1 year Winter I+0%	23.150	21.088	-0.269	0.000	0.33	0.946	39.9	OK
14.006	1307	15 minute 1 year Winter I+0%	23.042	21.056	-0.269	0.000	0.28	0.610	41.8	OK
17.000	1330	15 minute 1 year Winter I+0%	23.321	21.737	-0.159	0.000	0.19	0.069	11.3	OK
17.001	1331	15 minute 1 year Winter I+0%	22.979	21.315	-0.164	0.000	0.16	0.064	12.2	OK
14.007	1308	15 minute 1 year Winter I+0%	22.897	21.011	-0.249	0.000	0.41	1.141	52.1	OK
14.008	1309	15 minute 1 year Winter I+0%	22.785	20.937	-0.286	0.000	0.28	0.581	67.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

						Water		Surcharged	Flooded					Pipe
	US/MH					US/CL	Level	Depth	Volume	Flow /	Maximum	Flow		
PN	Name		Event			(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)	Status	
14.009	1310	15 minute	1 year	Winter	I+0%	22.330	20.594	-0.236	0.000	0.30	0.573	68.0	OK	
18.000	1340	15 minute	1 year	Winter	I+0%	23.064	22.366	-0.094	0.000	0.29	0.058	5.8	OK	
18.001	1341	15 minute	1 year	Winter	I+0%	22.933	22.099	-0.098	0.000	0.26	0.071	9.2	OK	
19.000	1350	15 minute	1 year	Winter	I+0%	22.334	21.289	-0.161	0.000	0.17	0.066	7.7	OK	
19.001	1351	15 minute	1 year	Winter	I+0%	22.453	21.118	-0.137	0.000	0.32	0.096	11.5	OK	
18.002	1352	15 minute	1 year	Winter	I+0%	22.711	20.954	-0.179	0.000	0.33	0.166	32.1	OK	
13.004	1254	15 minute	1 year	Winter	I+0%	22.251	20.382	-0.327	0.000	0.35	1.028	126.6	OK	
13.005	1255	15 minute	1 year	Winter	I+0%	21.929	20.333	-0.298	0.000	0.54	5.832	125.2	OK	
13.006	1256	15 minute	1 year	Winter	I+0%	21.861	20.300	-0.303	0.000	0.58	2.342	127.1	OK	
20.000	1360	15 minute	1 year	Winter	I+0%	21.191	20.140	-0.136	0.000	0.07	0.095	2.6	OK	
21.000	1370	15 minute	1 year	Winter	I+0%	21.457	20.188	-0.079	0.000	0.44	0.074	6.9	OK	
20.001	1361	15 minute	1 year	Winter	I+0%	21.339	20.138	-0.058	0.000	0.35	0.470	12.0	OK	
20.002	1362	15 minute	1 year	Winter	I+0%	21.676	20.131	-0.068	0.000	0.20	0.619	16.0	OK	
13.007	1257	15 minute	1 year	Winter	I+0%	21.952	20.122	-0.377	0.000	0.40	2.798	136.3	OK	
13.008	1258	15 minute	1 year	Winter	I+0%	22.067	20.081	-0.379	0.000	0.49	3.513	135.9	OK	
13.009	1259	15 minute	1 year	Winter	I+0%	21.898	20.035	-0.395	0.000	0.36	2.613	138.2	OK	
13.010	1260	15 minute	1 year	Winter	I+0%	21.877	19.995	-0.390	0.000	0.29	3.775	132.8	OK	
22.000	1380-GR	15 minute	1 year	Winter	I+0%	20.784	19.940	-0.009	0.000	0.16	0.239	6.0	OK	
13.011	1261	15 minute	1 year	Winter	I+0%	21.281	19.939	-0.275	0.000	0.66	10.210	129.4	OK	
23.000	1400	15 minute	1 year	Winter	I+0%	24.601	23.050	-0.165	0.000	0.16	0.062	13.2	OK	
23.001	1401	15 minute	1 year	Winter	I+0%	23.616	22.027	-0.153	0.000	0.22	0.091	14.0	OK	
23.002	1402	15 minute	1 year	Winter	I+0%	23.461	21.825	-0.219	0.000	0.16	0.106	21.6	OK	
23.003	1403	15 minute	1 year	Winter	I+0%	22.404	21.358	-0.220	0.000	0.16	0.086	21.7	OK	
23.004	1404	15 minute	1 year	Winter	I+0%	22.405	21.059	-0.220	0.000	0.16	0.102	21.7	OK	
24.000	1420	15 minute	1 year	Winter	I+0%	21.753	20.753	-0.100	0.000	0.24	0.050	4.3	OK	
23.005	1405	15 minute	1 year	Winter	I+0%	21.881	20.544	-0.183	0.000	0.32	0.199	25.3	OK	
23.006	1406	15 minute	1 year	Winter	I+0%	22.088	20.363	-0.120	0.000	0.61	0.773	31.8	OK	
25.000	1430	15 minute	1 year	Winter	I+0%	25.344	23.748	-0.096	0.000	0.28	0.056	4.9	OK	
25.001	1431	15 minute	1 year	Winter	I+0%	25.284	23.534	-0.160	0.000	0.18	0.096	9.6	OK	
25.002	1432	15 minute	1 year	Winter	I+0%	24.984	23.249	-0.124	0.000	0.41	0.110	12.1	OK	
26.000	1450	15 minute	1 year	Winter	I+0%	24.890	23.284	-0.102	0.000	0.22	0.049	3.3	OK	
25.003	1433	15 minute	1 year	Winter	I+0%	24.846	23.158	-0.148	0.000	0.26	0.198	19.4	OK	
25.004	1434	15 minute	1 year	Winter	I+0%	24.117	22.475	-0.142	0.000	0.29	0.110	20.9	OK	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name		Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
25.005	1435	15 minute	1 year Winter I+0%	23.788	22.147	-0.141	0.000	0.30	0.110	23.1	OK
27.000	1460	15 minute	1 year Winter I+0%	23.295	22.204	-0.083	0.000	0.40	0.070	5.4	OK
27.001	1461	15 minute	1 year Winter I+0%	23.213	22.113	-0.100	0.000	0.23	0.080	7.6	OK
25.006	1436	15 minute	1 year Winter I+0%	23.289	21.604	-0.260	0.000	0.21	0.130	38.2	OK
25.007	1437	15 minute	1 year Winter I+0%	23.164	21.390	-0.227	0.000	0.33	0.370	41.3	OK
25.008	1438	15 minute	1 year Winter I+0%	23.066	21.289	-0.223	0.000	0.34	0.463	45.3	OK
25.009	1439	15 minute	1 year Winter I+0%	22.833	21.162	-0.236	0.000	0.29	0.435	48.2	OK
25.010	1440	15 minute	1 year Winter I+0%	22.579	20.949	-0.198	0.000	0.25	0.181	50.7	OK
23.007	1407	15 minute	1 year Winter I+0%	22.008	20.338	-0.109	0.000	0.92	0.849	82.9	OK
23.008	1408	15 minute	1 year Winter I+0%	21.925	20.174	-0.250	0.000	0.41	0.681	83.2	OK
23.009	1409	15 minute	1 year Winter I+0%	21.794	20.067	-0.226	0.000	0.49	0.674	83.5	OK
23.010	1410	15 minute	1 year Winter I+0%	21.717	20.025	-0.191	0.000	0.62	0.907	82.7	OK
23.011	1411	15 minute	1 year Winter I+0%	21.740	19.912	-0.255	0.000	0.39	1.015	89.6	OK
28.000	1470	15 minute	1 year Winter I+0%	25.814	24.225	-0.089	0.000	0.35	0.064	11.4	OK
29.000	1490	15 minute	1 year Winter I+0%	25.553	23.954	-0.099	0.000	0.25	0.052	4.0	OK
28.001	1471	15 minute	1 year Winter I+0%	25.718	23.759	-0.141	0.000	0.29	0.091	19.9	OK
28.002	1472	15 minute	1 year Winter I+0%	24.960	23.320	-0.140	0.000	0.30	0.118	21.7	OK
28.003	1473	15 minute	1 year Winter I+0%	24.700	23.067	-0.208	0.000	0.20	0.115	25.8	OK
28.004	1474	15 minute	1 year Winter I+0%	24.210	22.537	-0.173	0.000	0.38	0.159	29.2	OK
30.000	1500	15 minute	1 year Winter I+0%	24.347	22.757	-0.090	0.000	0.33	0.062	5.2	OK
30.001	1501	15 minute	1 year Winter I+0%	24.421	22.648	-0.157	0.000	0.19	0.104	8.6	OK
28.005	1475	15 minute	1 year Winter I+0%	24.340	22.425	-0.187	0.000	0.30	0.260	52.3	OK
28.006	1476	15 minute	1 year Winter I+0%	22.588	20.918	-0.245	0.000	0.26	0.206	57.5	OK
28.007	1477	15 minute	1 year Winter I+0%	22.250	20.576	-0.174	0.000	0.55	0.366	59.1	OK
28.008	1478	15 minute	1 year Winter I+0%	22.189	20.503	-0.185	0.000	0.51	0.371	61.3	OK
28.009	1479	15 minute	1 year Winter I+0%	22.093	20.360	-0.233	0.000	0.31	0.279	62.9	OK
28.010	1480	15 minute	1 year Winter I+0%	21.820	20.138	-0.182	0.000	0.52	0.495	63.2	OK
28.011	1481	15 minute	1 year Winter I+0%	21.725	20.010	-0.215	0.000	0.38	0.404	63.5	OK
31.000	1510	15 minute	1 year Winter I+0%	21.692	20.099	-0.093	0.000	0.30	0.059	6.0	OK
28.012	1482	15 minute	1 year Winter I+0%	21.596	19.931	-0.110	0.000	0.84	0.513	68.7	OK
32.000	1520	15 minute	1 year Winter I+0%	21.536	20.099	-0.102	0.000	0.22	0.049	3.6	OK
28.013	1483	15 minute	1 year Winter I+0%	21.528	19.829	-0.186	0.000	0.50	0.484	73.1	OK
33.000	1530	15 minute	1 year Winter I+0%	22.551	20.960	-0.091	0.000	0.32	0.061	5.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol	Pipe Flow (l/s)	Status
33.001	1531	15 minute 1 year Winter I+0%	22.187	20.456	-0.208	0.000	0.20	0.099	17.9	OK
33.002	1532	15 minute 1 year Winter I+0%	22.030	20.334	-0.196	0.000	0.26	0.198	27.4	OK
33.003	1533	15 minute 1 year Winter I+0%	21.642	19.945	-0.197	0.000	0.26	0.186	27.3	OK
1.023	1100-Basin A1	1440 minute 1 year Winter I+0%	20.600	19.710	0.010	0.000	0.41	1074.662	24.9	SURCHARGED
1.024	1101-Con	1440 minute 1 year Winter I+0%	21.144	19.695	-1.449	0.000	0.00	0.900	24.9	OK
1.025	1102	1440 minute 1 year Winter I+0%	21.298	19.519	-1.779	0.000	0.00	0.222	24.9	OK
1.026	1103	1440 minute 1 year Winter I+0%	21.261	19.431	-1.830	0.000	0.00	0.928	24.9	OK
1.027	1104	1440 minute 1 year Winter I+0%	21.175	19.339	-1.836	0.000	0.00	1.017	24.9	OK
1.028	1105	1440 minute 1 year Winter I+0%	21.018	19.319	-1.699	0.000	0.00	0.190	24.9	OK
1.029	1106	1440 minute 1 year Winter I+0%	20.969	19.215	-1.754	0.000	0.00	0.073	24.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.000
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Site Location GB 450306 114752 Cv (Summer) 0.750
 FEH Rainfall Version 2013 Data Type Point Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 299.0 DVD Status OFF
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
 DTS Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 30
 Climate Change (%) 0

PN	US/MH		Event				Water		Surcharged		Flooded		Pipe	
	Name						US/CL	Level	Depth	Volume	Flow /	Maximum	Flow	Status
							(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)	
1.000	1000	60 minute	30 year	Summer	I+0%	28.090	26.493	-0.097	0.000	0.59	0.139	22.8	OK	
1.001	1001	60 minute	30 year	Summer	I+0%	27.700	25.889	-0.161	0.000	0.43	0.223	31.4	OK	
1.002	1002	60 minute	30 year	Summer	I+0%	27.650	25.766	-0.134	0.000	0.58	0.713	47.1	OK	
2.000	1003	60 minute	30 year	Summer	I+0%	29.650	27.993	-0.157	0.000	0.20	0.072	12.4	OK	
2.001	1004	60 minute	30 year	Summer	I+0%	29.150	27.516	-0.134	0.000	0.34	0.134	31.1	OK	
1.003	1005	60 minute	30 year	Summer	I+0%	27.400	25.606	-0.144	0.000	0.53	0.548	91.6	OK	
1.004	1006	60 minute	30 year	Summer	I+0%	25.900	24.295	-0.130	0.000	0.61	0.299	96.9	OK	
3.000	1010	60 minute	30 year	Summer	I+0%	25.950	24.621	-0.066	0.000	0.60	0.089	11.3	OK	
4.000	1011	60 minute	30 year	Summer	I+0%	26.150	24.618	-0.032	0.000	0.98	0.128	18.9	OK	
3.001	1012	60 minute	30 year	Summer	I+0%	26.060	24.451	-0.066	0.000	0.83	0.236	48.7	OK	

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Causeway	Network 2019.1	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	60 minute 30 year Summer I+0%	25.177	23.615	-0.048	0.000	0.98	0.195	30.5	OK
3.002	1015	60 minute 30 year Summer I+0%	25.292	23.407	-0.165	0.000	0.71	0.482	112.5	OK
1.005	1016	60 minute 30 year Summer I+0%	25.132	23.312	-0.119	0.000	0.69	5.117	205.9	OK
6.000	1017	60 minute 30 year Summer I+0%	24.684	23.660	-0.124	0.000	0.42	0.108	20.7	OK
6.001	1018	60 minute 30 year Summer I+0%	24.517	23.552	-0.140	0.000	0.55	0.344	32.2	OK
6.002	1019	60 minute 30 year Summer I+0%	24.483	23.497	-0.145	0.000	0.53	0.450	33.8	OK
6.003	1020	60 minute 30 year Summer I+0%	24.401	23.301	-0.201	0.000	0.33	0.379	55.5	OK
6.004	1021	60 minute 30 year Summer I+0%	24.792	23.284	-0.041	0.000	0.52	2.135	55.2	OK
1.006	1022	60 minute 30 year Summer I+0%	24.781	23.263	-0.243	0.000	0.64	7.212	279.1	OK
1.007	1022-1	60 minute 30 year Summer I+0%	24.777	23.230	-0.228	0.000	0.71	5.149	276.0	OK
7.000	1023	60 minute 30 year Summer I+0%	26.130	24.555	-0.150	0.000	0.50	0.164	72.5	OK
1.008	1024	60 minute 30 year Summer I+0%	24.772	23.171	-0.240	0.000	0.60	7.472	339.2	OK
8.000	1200	240 minute 30 year Winter I+0%	27.500	26.450	-0.150	0.000	0.00	0.000	0.0	OK
8.001	1201	240 minute 30 year Winter I+0%	27.500	26.329	-0.150	0.000	0.00	0.000	0.0	OK
8.002	1202	240 minute 30 year Winter I+0%	27.500	26.179	-0.150	0.000	0.00	0.000	0.0	OK
8.003	1203	60 minute 30 year Summer I+0%	27.500	26.100	-0.059	0.000	0.09	0.165	1.2	OK
8.004	1204	60 minute 30 year Summer I+0%	29.087	26.123	0.049	0.000	0.95	0.481	34.9	SURCHARGED
8.005	1205	60 minute 30 year Summer I+0%	27.811	25.994	0.074	0.000	1.05	1.235	39.8	SURCHARGED
8.006	1206	60 minute 30 year Summer I+0%	27.524	25.679	0.048	0.000	1.18	1.333	39.9	SURCHARGED
8.007	1207	60 minute 30 year Summer I+0%	27.426	25.585	0.021	0.000	1.24	0.626	41.1	SURCHARGED
8.008	1208	60 minute 30 year Summer I+0%	26.998	25.315	-0.115	0.000	0.48	0.129	51.7	OK
8.009	1209	60 minute 30 year Summer I+0%	26.379	24.743	-0.087	0.000	0.84	0.291	53.8	OK
8.010	1210	60 minute 30 year Summer I+0%	26.215	24.518	-0.202	0.000	0.24	0.290	60.4	OK
1.009	1025	60 minute 30 year Summer I+0%	25.088	23.095	-0.181	0.000	0.78	14.400	395.2	OK
1.010	1026	60 minute 30 year Summer I+0%	25.289	23.019	-0.167	0.000	0.66	11.290	391.3	OK
9.000	1220	60 minute 30 year Summer I+0%	27.285	25.700	-0.085	0.000	0.39	0.067	7.8	OK
9.001	1221	60 minute 30 year Summer I+0%	27.141	25.572	-0.069	0.000	0.57	0.108	13.7	OK
9.002	1222	60 minute 30 year Summer I+0%	26.967	25.338	-0.129	0.000	0.38	0.104	43.2	OK
1.011	1027	60 minute 30 year Summer I+0%	25.490	22.975	-0.172	0.000	0.95	7.849	435.8	OK
1.012	1028	60 minute 30 year Summer I+0%	25.502	22.956	-0.161	0.000	1.14	4.293	439.2	OK
1.013	1029	60 minute 30 year Summer I+0%	25.379	22.931	-0.170	0.000	1.06	5.364	441.7	OK
1.014	1030	60 minute 30 year Summer I+0%	25.208	22.908	-0.176	0.000	1.34	4.812	443.3	OK
1.015	1031	60 minute 30 year Summer I+0%	25.038	22.450	-0.618	0.000	0.22	1.688	444.2	OK

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Causeway	Network 2019.1	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.016	1032	60 minute 30 year Summer I+0%	23.804	21.989	-0.240	0.000	0.89	9.510	466.0	OK
10.000	1230	60 minute 30 year Summer I+0%	24.214	22.630	-0.084	0.000	0.40	0.069	6.4	OK
10.001	1231	60 minute 30 year Summer I+0%	24.092	22.454	-0.135	0.000	0.34	0.098	26.7	OK
1.017	1033	60 minute 30 year Summer I+0%	23.962	21.739	-0.449	0.000	0.50	6.043	480.3	OK
1.018	1040-Basin A2	60 minute 30 year Winter I+0%	22.300	21.608	0.308	0.000	1.17	552.174	92.4	SURCHARGED
1.019	1041-Con	60 minute 30 year Winter I+0%	22.043	21.297	0.097	0.000	1.30	1.050	92.4	SURCHARGED
1.020	1042	60 minute 30 year Winter I+0%	22.030	21.161	-0.869	0.000	0.03	0.802	92.4	OK
1.021	1043-GR	60 minute 30 year Winter I+0%	21.545	21.109	0.070	0.000	1.50	14.201	92.1	SURCHARGED*
1.022	1044	60 minute 30 year Winter I+0%	21.456	20.938	-0.518	0.000	0.05	0.722	92.1	OK
11.000	1240	60 minute 30 year Summer I+0%	24.028	22.400	-0.129	0.000	0.38	0.103	25.1	OK
12.000	1270	60 minute 30 year Summer I+0%	23.557	21.992	-0.065	0.000	0.61	0.090	9.9	OK
11.001	1241	60 minute 30 year Summer I+0%	23.690	21.819	-0.170	0.000	0.39	0.240	40.8	OK
11.002	1242	60 minute 30 year Summer I+0%	23.194	21.598	-0.096	0.000	0.63	0.272	45.2	OK
11.003	1243	60 minute 30 year Summer I+0%	22.891	21.299	-0.167	0.000	0.41	0.197	52.8	OK
11.004	1244	60 minute 30 year Summer I+0%	22.624	21.033	-0.166	0.000	0.41	0.218	66.6	OK
11.005	1245	60 minute 30 year Summer I+0%	21.663	20.041	-0.122	0.000	0.66	0.238	96.7	OK
13.000	1250	60 minute 30 year Summer I+0%	22.519	21.094	-0.119	0.000	0.10	0.029	1.6	OK
13.001	1251	60 minute 30 year Summer I+0%	22.756	20.875	-0.096	0.000	0.62	0.179	22.3	OK
13.002	1252	60 minute 30 year Summer I+0%	22.692	20.768	-0.081	0.000	0.73	0.418	24.5	OK
13.003	1253	60 minute 30 year Summer I+0%	22.582	20.727	-0.137	0.000	0.47	0.384	37.6	OK
14.000	1300	60 minute 30 year Summer I+0%	24.043	22.481	-0.137	0.000	0.33	0.094	16.1	OK
15.000	1320	60 minute 30 year Summer I+0%	24.209	22.611	-0.098	0.000	0.27	0.054	9.4	OK
14.001	1302	60 minute 30 year Summer I+0%	24.056	22.138	-0.183	0.000	0.32	0.144	43.2	OK
16.000	1390	60 minute 30 year Summer I+0%	23.113	21.552	-0.061	0.000	0.66	0.095	10.6	OK
14.002	1303	60 minute 30 year Summer I+0%	23.316	21.325	-0.167	0.000	0.52	0.306	59.3	OK
14.003	1304	60 minute 30 year Summer I+0%	23.510	21.264	-0.195	0.000	0.53	1.752	67.6	OK
14.004	1305	60 minute 30 year Summer I+0%	23.373	21.229	-0.186	0.000	0.53	1.374	75.3	OK
14.005	1306	60 minute 30 year Summer I+0%	23.150	21.189	-0.168	0.000	0.64	1.823	77.6	OK
14.006	1307	60 minute 30 year Summer I+0%	23.042	21.160	-0.165	0.000	0.54	1.159	81.5	OK
17.000	1330	60 minute 30 year Summer I+0%	23.321	21.759	-0.137	0.000	0.33	0.094	19.8	OK
17.001	1331	60 minute 30 year Summer I+0%	22.979	21.336	-0.143	0.000	0.29	0.088	21.9	OK
14.007	1308	60 minute 30 year Summer I+0%	22.897	21.123	-0.137	0.000	0.82	2.223	103.8	OK
14.008	1309	60 minute 30 year Summer I+0%	22.785	21.019	-0.204	0.000	0.57	1.052	137.3	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.009	1310	60 minute 30 year Summer I+0%	22.330	20.804	-0.026	0.000	0.59	3.373	134.5	OK
18.000	1340	60 minute 30 year Summer I+0%	23.064	22.387	-0.073	0.000	0.52	0.081	10.3	OK
18.001	1341	60 minute 30 year Summer I+0%	22.933	22.121	-0.076	0.000	0.49	0.104	17.3	OK
19.000	1350	60 minute 30 year Summer I+0%	22.334	21.310	-0.140	0.000	0.31	0.091	13.6	OK
19.001	1351	60 minute 30 year Summer I+0%	22.453	21.156	-0.099	0.000	0.59	0.161	21.5	OK
18.002	1352	60 minute 30 year Summer I+0%	22.711	21.014	-0.119	0.000	0.65	0.347	63.3	OK
13.004	1254	60 minute 30 year Summer I+0%	22.251	20.687	-0.022	0.000	0.68	6.029	244.1	OK
13.005	1255	60 minute 30 year Summer I+0%	21.929	20.633	0.002	0.000	1.06	12.173	247.6	SURCHARGED
13.006	1256	60 minute 30 year Summer I+0%	21.861	20.603	0.000	0.000	1.16	4.844	251.9	OK
20.000	1360	60 minute 30 year Summer I+0%	21.191	20.426	0.150	0.000	0.10	0.419	3.8	SURCHARGED
21.000	1370	60 minute 30 year Summer I+0%	21.457	20.445	0.178	0.000	0.70	0.365	10.9	SURCHARGED
20.001	1361	60 minute 30 year Summer I+0%	21.339	20.422	0.226	0.000	0.57	1.045	19.5	SURCHARGED
20.002	1362	60 minute 30 year Summer I+0%	21.676	20.404	0.205	0.000	0.37	0.999	30.2	SURCHARGED
13.007	1257	60 minute 30 year Summer I+0%	21.952	20.385	-0.114	0.000	0.80	5.524	273.3	OK
13.008	1258	60 minute 30 year Summer I+0%	22.067	20.349	-0.111	0.000	0.97	7.407	270.4	OK
13.009	1259	60 minute 30 year Summer I+0%	21.898	20.308	-0.122	0.000	0.73	5.729	275.8	OK
13.010	1260	60 minute 30 year Summer I+0%	21.877	20.270	-0.115	0.000	0.59	8.340	271.3	OK
22.000	1380-GR	60 minute 30 year Winter I+0%	20.784	20.230	0.281	0.000	0.21	0.567	7.8	SURCHARGED
13.011	1261	60 minute 30 year Summer I+0%	21.281	20.214	0.000	0.000	1.40	19.646	276.4	OK
23.000	1400	60 minute 30 year Summer I+0%	24.601	23.070	-0.145	0.000	0.28	0.085	23.2	OK
23.001	1401	60 minute 30 year Summer I+0%	23.616	22.052	-0.128	0.000	0.39	0.126	25.1	OK
23.002	1402	60 minute 30 year Summer I+0%	23.461	21.858	-0.186	0.000	0.31	0.158	40.7	OK
23.003	1403	60 minute 30 year Summer I+0%	22.404	21.390	-0.188	0.000	0.30	0.127	40.8	OK
23.004	1404	60 minute 30 year Summer I+0%	22.405	21.091	-0.188	0.000	0.30	0.151	40.7	OK
24.000	1420	60 minute 30 year Summer I+0%	21.753	20.770	-0.083	0.000	0.41	0.070	7.6	OK
23.005	1405	60 minute 30 year Summer I+0%	21.881	20.599	-0.128	0.000	0.60	0.370	47.6	OK
23.006	1406	60 minute 30 year Summer I+0%	22.088	20.517	0.034	0.000	1.17	2.297	61.5	SURCHARGED
25.000	1430	60 minute 30 year Summer I+0%	25.344	23.768	-0.076	0.000	0.49	0.078	8.7	OK
25.001	1431	60 minute 30 year Summer I+0%	25.284	23.562	-0.132	0.000	0.35	0.139	18.5	OK
25.002	1432	60 minute 30 year Summer I+0%	24.984	23.303	-0.070	0.000	0.81	0.216	23.7	OK
26.000	1450	60 minute 30 year Summer I+0%	24.890	23.301	-0.085	0.000	0.39	0.068	5.8	OK
25.003	1433	60 minute 30 year Summer I+0%	24.846	23.194	-0.112	0.000	0.50	0.319	38.1	OK
25.004	1434	60 minute 30 year Summer I+0%	24.117	22.515	-0.102	0.000	0.58	0.182	41.2	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name		Event					US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
25.005	1435	60 minute	30 year	Summer	I+0%			23.788	22.188	-0.100	0.000	0.59	0.183	46.0	OK
27.000	1460	60 minute	30 year	Summer	I+0%			23.295	22.230	-0.057	0.000	0.70	0.100	9.4	OK
27.001	1461	60 minute	30 year	Summer	I+0%			23.213	22.133	-0.080	0.000	0.44	0.115	14.1	OK
25.006	1436	60 minute	30 year	Summer	I+0%			23.289	21.656	-0.208	0.000	0.41	0.210	76.0	OK
25.007	1437	60 minute	30 year	Summer	I+0%			23.164	21.464	-0.153	0.000	0.65	0.737	82.8	OK
25.008	1438	60 minute	30 year	Summer	I+0%			23.066	21.368	-0.144	0.000	0.69	0.872	91.1	OK
25.009	1439	60 minute	30 year	Summer	I+0%			22.833	21.231	-0.167	0.000	0.59	0.837	97.0	OK
25.010	1440	60 minute	30 year	Summer	I+0%			22.579	20.999	-0.148	0.000	0.51	0.386	102.5	OK
23.007	1407	60 minute	30 year	Summer	I+0%			22.008	20.456	0.009	0.000	1.85	1.365	166.0	SURCHARGED
23.008	1408	60 minute	30 year	Summer	I+0%			21.925	20.322	-0.102	0.000	0.81	1.435	165.5	OK
23.009	1409	60 minute	30 year	Summer	I+0%			21.794	20.271	-0.022	0.000	0.98	1.591	165.2	OK
23.010	1410	60 minute	30 year	Summer	I+0%			21.717	20.220	0.004	0.000	1.25	1.731	165.5	SURCHARGED
23.011	1411	60 minute	30 year	Summer	I+0%			21.740	20.020	-0.147	0.000	0.78	1.937	181.1	OK
28.000	1470	60 minute	30 year	Summer	I+0%			25.814	24.248	-0.066	0.000	0.61	0.090	20.0	OK
29.000	1490	60 minute	30 year	Summer	I+0%			25.553	23.972	-0.081	0.000	0.44	0.073	7.1	OK
28.001	1471	60 minute	30 year	Summer	I+0%			25.718	23.793	-0.107	0.000	0.54	0.144	36.7	OK
28.002	1472	60 minute	30 year	Summer	I+0%			24.960	23.356	-0.104	0.000	0.56	0.185	40.3	OK
28.003	1473	60 minute	30 year	Summer	I+0%			24.700	23.104	-0.171	0.000	0.38	0.177	48.7	OK
28.004	1474	60 minute	30 year	Summer	I+0%			24.210	22.598	-0.112	0.000	0.72	0.281	55.6	OK
30.000	1500	60 minute	30 year	Summer	I+0%			24.347	22.779	-0.068	0.000	0.57	0.087	9.2	OK
30.001	1501	60 minute	30 year	Summer	I+0%			24.421	22.675	-0.130	0.000	0.37	0.148	16.2	OK
28.005	1475	60 minute	30 year	Summer	I+0%			24.340	22.480	-0.132	0.000	0.60	0.512	103.0	OK
28.006	1476	60 minute	30 year	Summer	I+0%			22.588	20.980	-0.183	0.000	0.52	0.358	114.4	OK
28.007	1477	60 minute	30 year	Summer	I+0%			22.250	20.762	0.012	0.000	1.10	1.291	117.4	SURCHARGED
28.008	1478	60 minute	30 year	Summer	I+0%			22.189	20.645	-0.043	0.000	1.00	0.700	121.2	OK
28.009	1479	60 minute	30 year	Summer	I+0%			22.093	20.429	-0.164	0.000	0.61	0.459	123.8	OK
28.010	1480	60 minute	30 year	Summer	I+0%			21.820	20.322	0.002	0.000	1.03	1.473	123.8	SURCHARGED
28.011	1481	60 minute	30 year	Summer	I+0%			21.725	20.215	-0.010	0.000	0.74	1.140	124.7	OK
31.000	1510	60 minute	30 year	Summer	I+0%			21.692	20.167	-0.025	0.000	0.51	0.135	10.2	OK
28.012	1482	60 minute	30 year	Summer	I+0%			21.596	20.115	0.074	0.000	1.64	1.035	134.6	SURCHARGED
32.000	1520	60 minute	30 year	Summer	I+0%			21.536	20.116	-0.085	0.000	0.39	0.068	6.4	OK
28.013	1483	60 minute	30 year	Summer	I+0%			21.528	19.936	-0.079	0.000	0.97	0.873	142.5	OK
33.000	1530	60 minute	30 year	Summer	I+0%			22.551	20.982	-0.069	0.000	0.57	0.086	9.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol	Pipe Flow (l/s)	Status
33.001	1531	60 minute 30 year Summer	I+0% 22.187	20.498	-0.166	0.000	0.41	0.149	35.8	OK
33.002	1532	60 minute 30 year Summer	I+0% 22.030	20.386	-0.144	0.000	0.53	0.425	55.9	OK
33.003	1533	60 minute 30 year Summer	I+0% 21.642	19.997	-0.145	0.000	0.53	0.404	55.8	OK
1.023	1100-Basin A1	480 minute 30 year Winter	I+0% 20.600	19.899	0.199	0.000	0.84	1828.072	51.6	SURCHARGED
1.024	1101-Con	480 minute 30 year Winter	I+0% 21.144	19.866	-1.278	0.000	0.01	1.112	51.6	OK
1.025	1102	480 minute 30 year Winter	I+0% 21.298	19.576	-1.722	0.000	0.00	0.480	51.6	OK
1.026	1103	480 minute 30 year Winter	I+0% 21.261	19.488	-1.773	0.000	0.00	1.888	51.6	OK
1.027	1104	480 minute 30 year Winter	I+0% 21.175	19.392	-1.783	0.000	0.00	2.004	51.6	OK
1.028	1105	480 minute 30 year Winter	I+0% 21.018	19.371	-1.647	0.000	0.00	0.282	51.6	OK
1.029	1106	480 minute 30 year Winter	I+0% 20.969	19.246	-1.723	0.000	0.00	0.111	51.6	OK

M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)
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Designed by DRB
Checked by BF



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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	2	Number of Storage Structures	2	Number of Real Time Controls	0

Rainfall Model	FEH	FEH	Rainfall Version	2013	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100		Site Location	GB 450306 114752	Cv (Summer)	0.750		

Margin for Flood Risk Warning (mm)	299.0	DVD Status	OFF
Analysis Timestep 2.5 Second Increment (Extended)		Inertia Status	OFF
DTS Status			OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%)	0, +20, +40

								Water	Surcharged	Flooded					Pipe
US/MH								US/CL	Level	Depth	Volume	Flow /	Maximum	Flow	
PN	Name	Event					(m)	(m)	(m)	(m³)	Cap.	Vol	(m³)	(1/s)	Status
1.000	1000	60 minute	100 year	Summer	Q+0%	28.090	26.516	-0.074	0.000	0.75	0.165	29.0		OK	
1.001	1001	60 minute	100 year	Summer	Q+0%	27.700	25.910	-0.140	0.000	0.55	0.290	39.9		OK	
1.002	1002	60 minute	100 year	Summer	Q+0%	27.650	25.795	-0.105	0.000	0.74	0.922	59.9		OK	
2.000	1003	60 minute	100 year	Summer	Q+0%	29.650	28.002	-0.148	0.000	0.26	0.082	15.8		OK	
2.001	1004	60 minute	100 year	Summer	Q+0%	29.150	27.529	-0.121	0.000	0.43	0.155	39.6		OK	
1.003	1005	60 minute	100 year	Summer	Q+0%	27.400	25.632	-0.118	0.000	0.67	0.706	116.3		OK	
1.004	1006	60 minute	100 year	Summer	Q+0%	25.900	24.325	-0.100	0.000	0.77	0.371	123.2		OK	
3.000	1010	60 minute	100 year	Summer	Q+0%	25.950	24.639	-0.048	0.000	0.76	0.110	14.3		OK	
4.000	1011	60 minute	100 year	Summer	Q+0%	26.150	24.738	0.088	0.000	1.21	0.263	23.2	SURCHARGED		
3.001	1012	60 minute	100 year	Summer	Q+0%	26.060	24.546	0.029	0.000	1.01	0.483	59.8	SURCHARGED		

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event				US/CL (m)	Water	Surcharged	Flooded	Flow / Cap.	Maximum Vol (m³)	Pipe	Status
							Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
5.000	1014	60 minute	100 year	Summer Q+0%		25.177	23.702	0.039	0.000	1.24	0.293	38.7	SURCHARGED
3.002	1015	60 minute	100 year	Summer Q+0%		25.292	23.601	0.029	0.000	0.85	1.746	134.3	SURCHARGED
1.005	1016	60 minute	100 year	Summer Q+0%		25.132	23.520	0.089	0.000	0.84	8.938	248.4	SURCHARGED
6.000	1017	60 minute	100 year	Summer Q+0%		24.684	23.675	-0.109	0.000	0.53	0.126	26.3	OK
6.001	1018	60 minute	100 year	Summer Q+0%		24.517	23.578	-0.114	0.000	0.70	0.430	40.9	OK
6.002	1019	60 minute	100 year	Summer Q+0%		24.483	23.523	-0.119	0.000	0.67	0.553	43.0	OK
6.003	1020	60 minute	100 year	Summer Q+0%		24.401	23.492	-0.009	0.000	0.41	1.062	69.2	OK
6.004	1021	60 minute	100 year	Summer Q+0%		24.792	23.473	0.149	0.000	0.65	3.305	68.8	SURCHARGED
1.006	1022	60 minute	100 year	Summer Q+0%		24.781	23.451	-0.055	0.000	0.78	8.485	339.4	OK
1.007	1022-1	60 minute	100 year	Summer Q+0%		24.777	23.417	-0.041	0.000	0.84	7.374	329.1	OK
7.000	1023	60 minute	100 year	Summer Q+0%		26.130	24.579	-0.126	0.000	0.63	0.191	92.2	OK
1.008	1024	60 minute	100 year	Summer Q+0%		24.772	23.363	-0.048	0.000	0.71	11.226	401.0	OK
8.000	1200	240 minute	100 year	Winter Q+0%		27.500	26.450	-0.150	0.000	0.00	0.000	0.0	OK
8.001	1201	60 minute	100 year	Summer Q+0%		27.500	26.335	-0.144	0.000	0.00	0.003	0.0	OK
8.002	1202	60 minute	100 year	Summer Q+0%		27.500	26.344	0.015	0.000	0.18	0.392	2.4	SURCHARGED
8.003	1203	60 minute	100 year	Summer Q+0%		27.500	26.361	0.202	0.000	0.44	0.822	5.8	SURCHARGED
8.004	1204	60 minute	100 year	Summer Q+0%		29.087	26.392	0.318	0.000	1.09	0.813	39.9	SURCHARGED
8.005	1205	60 minute	100 year	Summer Q+0%		27.811	26.211	0.291	0.000	1.25	1.569	47.7	SURCHARGED
8.006	1206	60 minute	100 year	Summer Q+0%		27.524	25.759	0.128	0.000	1.41	1.873	47.6	SURCHARGED
8.007	1207	60 minute	100 year	Summer Q+0%		27.426	25.625	0.061	0.000	1.49	0.705	49.2	SURCHARGED
8.008	1208	60 minute	100 year	Summer Q+0%		26.998	25.328	-0.102	0.000	0.57	0.163	62.0	OK
8.009	1209	60 minute	100 year	Summer Q+0%		26.379	24.814	-0.016	0.000	1.00	0.413	64.0	OK
8.010	1210	60 minute	100 year	Summer Q+0%		26.215	24.529	-0.191	0.000	0.28	0.337	72.5	OK
1.009	1025	60 minute	100 year	Summer Q+0%		25.088	23.293	0.017	0.000	0.92	19.827	465.3	SURCHARGED
1.010	1026	60 minute	100 year	Summer Q+0%		25.289	23.216	0.030	0.000	0.79	15.187	465.8	SURCHARGED
9.000	1220	60 minute	100 year	Summer Q+0%		27.285	25.709	-0.076	0.000	0.49	0.078	10.0	OK
9.001	1221	60 minute	100 year	Summer Q+0%		27.141	25.586	-0.055	0.000	0.72	0.128	17.4	OK
9.002	1222	60 minute	100 year	Summer Q+0%		26.967	25.353	-0.114	0.000	0.48	0.122	54.9	OK
1.011	1027	60 minute	100 year	Summer Q+0%		25.490	23.160	0.013	0.000	1.14	9.952	522.4	SURCHARGED
1.012	1028	60 minute	100 year	Summer Q+0%		25.502	23.137	0.020	0.000	1.36	5.396	527.4	SURCHARGED
1.013	1029	60 minute	100 year	Summer Q+0%		25.379	23.110	0.009	0.000	1.27	6.722	531.2	SURCHARGED
1.014	1030	60 minute	100 year	Summer Q+0%		25.208	23.084	0.000	0.000	1.62	6.033	534.0	OK

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

								Water	Surcharged	Flooded	Pipe				
	US/MH							US/CL	Level	Depth	Volume	Flow /	Maximum	Pipe	
PN	Name	Event						(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	Flow (l/s)	Status
1.015	1031	60 minute	100	year	Summer	Q+0%	25.038	22.478	-0.590	0.000	0.26	1.953	535.3	OK	
1.016	1032	60 minute	100	year	Summer	Q+0%	23.804	22.178	-0.051	0.000	1.02	15.687	533.8	OK	
10.000	1230	60 minute	100	year	Summer	Q+0%	24.214	22.640	-0.074	0.000	0.51	0.080	8.2	OK	
10.001	1231	60 minute	100	year	Summer	Q+0%	24.092	22.467	-0.122	0.000	0.43	0.113	34.0	OK	
1.017	1033	60 minute	100	year	Summer	Q+0%	23.962	21.777	-0.411	0.000	0.57	6.835	548.0	OK	
1.018	1040-Basin A2	60 minute	100	year	Winter	Q+0%	22.300	21.749	0.449	0.000	1.31	714.556	103.5	SURCHARGED	
1.019	1041-Con	60 minute	100	year	Winter	Q+0%	22.043	21.359	0.159	0.000	1.46	1.127	103.5	SURCHARGED	
1.020	1042	60 minute	100	year	Winter	Q+0%	22.030	21.189	-0.841	0.000	0.03	0.842	103.4	OK	
1.021	1043-GR	60 minute	100	year	Winter	Q+0%	21.545	21.143	0.104	0.000	1.68	16.872	103.0	SURCHARGED*	
1.022	1044	60 minute	100	year	Winter	Q+0%	21.456	20.951	-0.505	0.000	0.06	0.762	103.0	OK	
11.000	1240	60 minute	100	year	Summer	Q+0%	24.028	22.415	-0.114	0.000	0.49	0.119	31.9	OK	
12.000	1270	60 minute	100	year	Summer	Q+0%	23.557	22.007	-0.050	0.000	0.77	0.107	12.6	OK	
11.001	1241	60 minute	100	year	Summer	Q+0%	23.690	21.839	-0.150	0.000	0.50	0.308	51.9	OK	
11.002	1242	60 minute	100	year	Summer	Q+0%	23.194	21.622	-0.072	0.000	0.80	0.362	57.5	OK	
11.003	1243	60 minute	100	year	Summer	Q+0%	22.891	21.319	-0.147	0.000	0.52	0.239	67.1	OK	
11.004	1244	60 minute	100	year	Summer	Q+0%	22.624	21.054	-0.145	0.000	0.52	0.270	84.7	OK	
11.005	1245	60 minute	100	year	Summer	Q+0%	21.663	20.074	-0.089	0.000	0.84	0.301	123.1	OK	
13.000	1250	60 minute	100	year	Summer	Q+0%	22.519	21.098	-0.115	0.000	0.12	0.033	2.0	OK	
13.001	1251	60 minute	100	year	Summer	Q+0%	22.756	20.906	-0.065	0.000	0.78	0.251	28.1	OK	
13.002	1252	60 minute	100	year	Summer	Q+0%	22.692	20.836	-0.013	0.000	0.89	0.745	29.8	OK	
13.003	1253	60 minute	100	year	Summer	Q+0%	22.582	20.788	-0.076	0.000	0.57	0.545	45.5	OK	
14.000	1300	60 minute	100	year	Summer	Q+0%	24.043	22.494	-0.124	0.000	0.42	0.109	20.5	OK	
15.000	1320	60 minute	100	year	Summer	Q+0%	24.209	22.619	-0.090	0.000	0.34	0.062	12.0	OK	
14.001	1302	60 minute	100	year	Summer	Q+0%	24.056	22.154	-0.167	0.000	0.41	0.184	55.0	OK	
16.000	1390	60 minute	100	year	Summer	Q+0%	23.113	21.568	-0.045	0.000	0.84	0.114	13.5	OK	
14.002	1303	60 minute	100	year	Summer	Q+0%	23.316	21.371	-0.121	0.000	0.67	0.439	75.2	OK	
14.003	1304	60 minute	100	year	Summer	Q+0%	23.510	21.322	-0.137	0.000	0.67	2.323	85.1	OK	
14.004	1305	60 minute	100	year	Summer	Q+0%	23.373	21.293	-0.122	0.000	0.66	1.835	94.4	OK	
14.005	1306	60 minute	100	year	Summer	Q+0%	23.150	21.260	-0.097	0.000	0.80	2.444	96.1	OK	
14.006	1307	60 minute	100	year	Summer	Q+0%	23.042	21.235	-0.090	0.000	0.66	1.550	99.0	OK	
17.000	1330	60 minute	100	year	Summer	Q+0%	23.321	21.772	-0.124	0.000	0.42	0.108	25.2	OK	
17.001	1331	60 minute	100	year	Summer	Q+0%	22.979	21.348	-0.131	0.000	0.36	0.102	27.8	OK	

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+0% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event					US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.007	1308	60 minute	100 year	Summer	Q+0%	22.897	21.197	-0.063	0.000	1.00	2.934	125.9		OK
14.008	1309	60 minute	100 year	Summer	Q+0%	22.785	21.063	-0.160	0.000	0.71	1.322	172.0		OK
14.009	1310	60 minute	100 year	Summer	Q+0%	22.330	20.903	0.073	0.000	0.75	5.237	171.8		SURCHARGED
18.000	1340	60 minute	100 year	Summer	Q+0%	23.064	22.400	-0.060	0.000	0.66	0.096	13.2		OK
18.001	1341	60 minute	100 year	Summer	Q+0%	22.933	22.133	-0.064	0.000	0.62	0.122	22.1		OK
19.000	1350	60 minute	100 year	Summer	Q+0%	22.334	21.322	-0.128	0.000	0.39	0.104	17.3		OK
19.001	1351	60 minute	100 year	Summer	Q+0%	22.453	21.178	-0.077	0.000	0.76	0.210	27.4		OK
18.002	1352	60 minute	100 year	Summer	Q+0%	22.711	21.101	-0.032	0.000	0.81	0.761	78.7		OK
13.004	1254	60 minute	100 year	Summer	Q+0%	22.251	20.711	0.002	0.000	0.92	6.464	331.1		SURCHARGED
13.005	1255	60 minute	100 year	Summer	Q+0%	21.929	20.643	0.012	0.000	1.44	12.346	336.1		SURCHARGED
13.006	1256	60 minute	100 year	Summer	Q+0%	21.861	20.603	0.000	0.000	1.57	4.844	342.6		OK
20.000	1360	60 minute	100 year	Summer	Q+0%	21.191	20.587	0.311	0.000	0.13	0.600	4.8		SURCHARGED
21.000	1370	60 minute	100 year	Summer	Q+0%	21.457	20.646	0.379	0.000	0.87	0.593	13.7		SURCHARGED
20.001	1361	60 minute	100 year	Summer	Q+0%	21.339	20.580	0.384	0.000	0.70	1.223	23.9		SURCHARGED
20.002	1362	60 minute	100 year	Summer	Q+0%	21.676	20.547	0.348	0.000	0.48	1.162	38.4		SURCHARGED
13.007	1257	60 minute	100 year	Summer	Q+0%	21.952	20.513	0.014	0.000	1.11	6.735	379.3		SURCHARGED
13.008	1258	60 minute	100 year	Summer	Q+0%	22.067	20.471	0.011	0.000	1.37	8.770	381.2		SURCHARGED
13.009	1259	60 minute	100 year	Summer	Q+0%	21.898	20.430	0.000	0.000	1.04	6.837	394.3		OK
13.010	1260	60 minute	100 year	Summer	Q+0%	21.877	20.329	-0.056	0.000	0.84	9.217	387.4		OK
22.000	1380-GR	60 minute	100 year	Summer	Q+0%	20.784	20.244	0.295	0.000	0.32	0.582	12.0		SURCHARGED
13.011	1261	60 minute	100 year	Winter	Q+0%	21.281	20.214	0.000	0.000	1.80	19.647	354.0		OK
23.000	1400	60 minute	100 year	Summer	Q+0%	24.601	23.082	-0.133	0.000	0.35	0.099	29.5		OK
23.001	1401	60 minute	100 year	Summer	Q+0%	23.616	22.067	-0.113	0.000	0.49	0.151	31.9		OK
23.002	1402	60 minute	100 year	Summer	Q+0%	23.461	21.875	-0.169	0.000	0.39	0.193	51.8		OK
23.003	1403	60 minute	100 year	Summer	Q+0%	22.404	21.406	-0.172	0.000	0.38	0.158	51.9		OK
23.004	1404	60 minute	100 year	Summer	Q+0%	22.405	21.107	-0.172	0.000	0.38	0.184	51.8		OK
24.000	1420	60 minute	100 year	Summer	Q+0%	21.753	20.881	0.028	0.000	0.52	0.196	9.5		SURCHARGED
23.005	1405	60 minute	100 year	Summer	Q+0%	21.881	20.853	0.126	0.000	0.70	1.646	56.0		SURCHARGED
23.006	1406	60 minute	100 year	Summer	Q+0%	22.088	20.737	0.254	0.000	1.37	3.427	72.0		SURCHARGED
25.000	1430	60 minute	100 year	Summer	Q+0%	25.344	23.780	-0.064	0.000	0.63	0.092	11.1		OK
25.001	1431	60 minute	100 year	Summer	Q+0%	25.284	23.575	-0.119	0.000	0.45	0.161	23.6		OK
25.002	1432	60 minute	100 year	Summer	Q+0%	24.984	23.362	-0.011	0.000	1.00	0.348	29.3		OK

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH		Event					US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
	Name														
26.000	1450	60 minute	100 year	Summer	Q+0%		24.890	23.311	-0.075	0.000	0.50	0.079	7.3		OK
25.003	1433	60 minute	100 year	Summer	Q+0%		24.846	23.211	-0.095	0.000	0.63	0.408	47.6		OK
25.004	1434	60 minute	100 year	Summer	Q+0%		24.117	22.536	-0.081	0.000	0.73	0.227	51.8		OK
25.005	1435	60 minute	100 year	Summer	Q+0%		23.788	22.209	-0.079	0.000	0.75	0.228	58.0		OK
27.000	1460	60 minute	100 year	Summer	Q+0%		23.295	22.248	-0.039	0.000	0.90	0.120	12.0		OK
27.001	1461	60 minute	100 year	Summer	Q+0%		23.213	22.143	-0.070	0.000	0.56	0.134	18.0		OK
25.006	1436	60 minute	100 year	Summer	Q+0%		23.289	21.682	-0.182	0.000	0.52	0.250	96.4		OK
25.007	1437	60 minute	100 year	Summer	Q+0%		23.164	21.504	-0.113	0.000	0.83	1.015	105.2		OK
25.008	1438	60 minute	100 year	Summer	Q+0%		23.066	21.411	-0.101	0.000	0.87	1.114	115.6		OK
25.009	1439	60 minute	100 year	Summer	Q+0%		22.833	21.268	-0.130	0.000	0.75	1.079	123.1		OK
25.010	1440	60 minute	100 year	Summer	Q+0%		22.579	21.023	-0.124	0.000	0.64	0.490	130.2		OK
23.007	1407	60 minute	100 year	Summer	Q+0%		22.008	20.655	0.208	0.000	2.22	1.977	200.0		SURCHARGED
23.008	1408	60 minute	100 year	Summer	Q+0%		21.925	20.526	0.102	0.000	0.98	2.133	200.7		SURCHARGED
23.009	1409	60 minute	100 year	Summer	Q+0%		21.794	20.398	0.105	0.000	1.19	1.952	200.9		SURCHARGED
23.010	1410	60 minute	100 year	Summer	Q+0%		21.717	20.270	0.054	0.000	1.51	1.892	199.9		SURCHARGED
23.011	1411	60 minute	100 year	Summer	Q+0%		21.740	20.064	-0.103	0.000	0.94	2.302	218.1		OK
28.000	1470	60 minute	100 year	Summer	Q+0%		25.814	24.263	-0.051	0.000	0.77	0.107	25.5		OK
29.000	1490	60 minute	100 year	Summer	Q+0%		25.553	23.983	-0.070	0.000	0.56	0.085	9.1		OK
28.001	1471	60 minute	100 year	Summer	Q+0%		25.718	23.813	-0.087	0.000	0.69	0.186	46.7		OK
28.002	1472	60 minute	100 year	Summer	Q+0%		24.960	23.377	-0.083	0.000	0.71	0.235	51.3		OK
28.003	1473	60 minute	100 year	Summer	Q+0%		24.700	23.123	-0.152	0.000	0.49	0.214	62.0		OK
28.004	1474	60 minute	100 year	Summer	Q+0%		24.210	22.634	-0.076	0.000	0.91	0.384	70.8		OK
30.000	1500	60 minute	100 year	Summer	Q+0%		24.347	22.793	-0.054	0.000	0.73	0.102	11.7		OK
30.001	1501	60 minute	100 year	Summer	Q+0%		24.421	22.689	-0.116	0.000	0.47	0.174	20.7		OK
28.005	1475	60 minute	100 year	Summer	Q+0%		24.340	22.510	-0.102	0.000	0.76	0.647	130.9		OK
28.006	1476	60 minute	100 year	Summer	Q+0%		22.588	21.065	-0.098	0.000	0.65	0.637	143.9		OK
28.007	1477	60 minute	100 year	Summer	Q+0%		22.250	20.934	0.184	0.000	1.35	2.387	144.8		SURCHARGED
28.008	1478	60 minute	100 year	Summer	Q+0%		22.189	20.804	0.116	0.000	1.23	0.982	148.6		SURCHARGED
28.009	1479	60 minute	100 year	Summer	Q+0%		22.093	20.665	0.072	0.000	0.73	1.024	148.4		SURCHARGED
28.010	1480	60 minute	100 year	Summer	Q+0%		21.820	20.522	0.202	0.000	1.24	2.256	149.2		SURCHARGED
28.011	1481	60 minute	100 year	Summer	Q+0%		21.725	20.377	0.152	0.000	0.90	1.472	150.4		SURCHARGED
31.000	1510	60 minute	100 year	Summer	Q+0%		21.692	20.312	0.120	0.000	0.62	0.300	12.3		SURCHARGED

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+0% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
28.012	1482	60 minute 100 year Summer Q+0%	21.596	20.229	0.188	0.000	1.99	1.246	163.4	SURCHARGED
32.000	1520	60 minute 100 year Summer Q+0%	21.536	20.126	-0.075	0.000	0.49	0.079	8.2	OK
28.013	1483	60 minute 100 year Summer Q+0%	21.528	20.054	0.039	0.000	1.19	1.357	174.0	SURCHARGED
33.000	1530	60 minute 100 year Summer Q+0%	22.551	20.996	-0.055	0.000	0.72	0.101	12.6	OK
33.001	1531	60 minute 100 year Summer Q+0%	22.187	20.519	-0.145	0.000	0.52	0.174	45.5	OK
33.002	1532	60 minute 100 year Summer Q+0%	22.030	20.411	-0.119	0.000	0.67	0.539	71.1	OK
33.003	1533	60 minute 100 year Summer Q+0%	21.642	20.022	-0.120	0.000	0.67	0.513	71.0	OK
1.023	1100-Basin A1	480 minute 100 year Winter Q+0%	20.600	20.005	0.305	0.000	0.90	2281.086	55.2	SURCHARGED
1.024	1101-Con	480 minute 100 year Winter Q+0%	21.144	19.967	-1.177	0.000	0.01	1.227	55.2	OK
1.025	1102	480 minute 100 year Winter Q+0%	21.298	19.581	-1.717	0.000	0.00	0.518	55.2	OK
1.026	1103	480 minute 100 year Winter Q+0%	21.261	19.493	-1.768	0.000	0.00	2.017	55.2	OK
1.027	1104	480 minute 100 year Winter Q+0%	21.175	19.397	-1.778	0.000	0.00	2.137	55.2	OK
1.028	1105	480 minute 100 year Winter Q+0%	21.018	19.375	-1.643	0.000	0.00	0.318	55.2	OK
1.029	1106	480 minute 100 year Winter Q+0%	20.969	19.249	-1.720	0.000	0.00	0.115	55.2	OK

M380 Boorley Gardens
Phase 1 - Catchment A
Planning (RM3 Submission)

Designed by DRB
Checked by BF



Causeway	Network 2019.1
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+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	2	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	FEH	Rainfall Version	2013	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100		Site Location	GB 450306 114752	Cv (Summer)	0.750		

Margin for Flood Risk Warning (mm)	299.0	DVD Status	OFF
Analysis Timestep 2.5 Second Increment (Extended)		Inertia Status	OFF
DTS Status			OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%)	0, +20, +40

								Water	Surcharged	Flooded	Pipe				
US/MH								US/CL	Level	Depth	Volume	Flow /	Maximum	Flow	
PN	Name	Event					(m)	(m)	(m)	(m³)	Cap.	Vol	(m³)	(l/s)	Status
1.000	1000	60 minute	100 year	Summer	Q+20%	28.090	26.537	-0.053	0.000	0.90	0.189	34.9		OK	
1.001	1001	60 minute	100 year	Summer	Q+20%	27.700	25.930	-0.120	0.000	0.66	0.352	48.0		OK	
1.002	1002	60 minute	100 year	Summer	Q+20%	27.650	25.823	-0.077	0.000	0.89	1.146	72.0		OK	
2.000	1003	60 minute	100 year	Summer	Q+20%	29.650	28.010	-0.140	0.000	0.31	0.091	19.0		OK	
2.001	1004	60 minute	100 year	Summer	Q+20%	29.150	27.541	-0.109	0.000	0.52	0.187	47.6		OK	
1.003	1005	60 minute	100 year	Summer	Q+20%	27.400	25.657	-0.093	0.000	0.81	0.863	139.8		OK	
1.004	1006	60 minute	100 year	Summer	Q+20%	25.900	24.504	0.079	0.000	0.90	0.986	142.5	SURCHARGED		
3.000	1010	60 minute	100 year	Summer	Q+20%	25.950	24.990	0.303	0.000	0.79	0.506	14.9	SURCHARGED		
4.000	1011	60 minute	100 year	Summer	Q+20%	26.150	25.111	0.461	0.000	1.29	0.685	24.8	SURCHARGED		
3.001	1012	60 minute	100 year	Summer	Q+20%	26.060	24.891	0.374	0.000	1.06	1.007	62.6	SURCHARGED		

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Causeway	Network 2019.1	

+20% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
5.000	1014	60 minute 100 year Summer Q+20%	25.177	23.988	0.325	0.000	1.41	0.616	44.0	SURCHARGED
3.002	1015	60 minute 100 year Summer Q+20%	25.292	23.845	0.273	0.000	0.92	2.884	145.3	SURCHARGED
1.005	1016	60 minute 100 year Summer Q+20%	25.132	23.731	0.300	0.000	0.97	10.045	289.6	SURCHARGED
6.000	1017	60 minute 100 year Summer Q+20%	24.684	23.746	-0.038	0.000	0.64	0.206	31.6	OK
6.001	1018	60 minute 100 year Summer Q+20%	24.517	23.701	0.009	0.000	0.82	0.807	48.3	SURCHARGED
6.002	1019	60 minute 100 year Summer Q+20%	24.483	23.672	0.030	0.000	0.78	1.065	49.9	SURCHARGED
6.003	1020	60 minute 100 year Summer Q+20%	24.401	23.643	0.141	0.000	0.47	1.549	79.0	SURCHARGED
6.004	1021	60 minute 100 year Summer Q+20%	24.792	23.619	0.295	0.000	0.72	3.540	76.4	SURCHARGED
1.006	1022	60 minute 100 year Summer Q+20%	24.781	23.591	0.085	0.000	0.91	8.847	395.7	SURCHARGED
1.007	1022-1	60 minute 100 year Summer Q+20%	24.777	23.548	0.090	0.000	0.99	8.311	388.9	SURCHARGED
7.000	1023	60 minute 100 year Summer Q+20%	26.130	24.602	-0.103	0.000	0.76	0.217	110.4	OK
1.008	1024	60 minute 100 year Summer Q+20%	24.772	23.501	0.090	0.000	0.86	13.108	486.9	SURCHARGED
8.000	1200	60 minute 100 year Summer Q+20%	27.500	26.559	-0.041	0.000	0.07	0.118	0.9	OK
8.001	1201	60 minute 100 year Summer Q+20%	27.500	26.569	0.090	0.000	0.29	0.543	4.0	SURCHARGED
8.002	1202	60 minute 100 year Summer Q+20%	27.500	26.579	0.250	0.000	0.49	0.824	6.7	SURCHARGED
8.003	1203	60 minute 100 year Summer Q+20%	27.500	26.628	0.469	0.000	0.75	1.125	9.9	SURCHARGED
8.004	1204	60 minute 100 year Summer Q+20%	29.087	26.674	0.600	0.000	1.24	1.132	45.4	SURCHARGED
8.005	1205	60 minute 100 year Summer Q+20%	27.811	26.448	0.528	0.000	1.44	1.837	54.9	SURCHARGED
8.006	1206	60 minute 100 year Summer Q+20%	27.524	25.849	0.218	0.000	1.64	2.303	55.3	SURCHARGED
8.007	1207	60 minute 100 year Summer Q+20%	27.426	25.670	0.106	0.000	1.72	0.773	57.0	SURCHARGED
8.008	1208	60 minute 100 year Summer Q+20%	26.998	25.342	-0.088	0.000	0.67	0.196	72.8	OK
8.009	1209	60 minute 100 year Summer Q+20%	26.379	24.862	0.032	0.000	1.18	0.495	75.8	SURCHARGED
8.010	1210	60 minute 100 year Summer Q+20%	26.215	24.539	-0.181	0.000	0.33	0.419	85.1	OK
1.009	1025	60 minute 100 year Summer Q+20%	25.088	23.399	0.123	0.000	1.14	21.132	577.3	SURCHARGED
1.010	1026	60 minute 100 year Summer Q+20%	25.289	23.281	0.095	0.000	0.98	15.788	576.1	SURCHARGED
9.000	1220	60 minute 100 year Summer Q+20%	27.285	25.718	-0.067	0.000	0.59	0.088	12.0	OK
9.001	1221	60 minute 100 year Summer Q+20%	27.141	25.600	-0.041	0.000	0.87	0.149	20.9	OK
9.002	1222	60 minute 100 year Summer Q+20%	26.967	25.366	-0.101	0.000	0.58	0.141	66.0	OK
1.011	1027	60 minute 100 year Summer Q+20%	25.490	23.195	0.048	0.000	1.43	10.125	654.5	SURCHARGED
1.012	1028	60 minute 100 year Summer Q+20%	25.502	23.160	0.043	0.000	1.71	5.498	659.8	SURCHARGED
1.013	1029	60 minute 100 year Summer Q+20%	25.379	23.122	0.021	0.000	1.59	6.781	663.3	SURCHARGED
1.014	1030	60 minute 100 year Summer Q+20%	25.208	23.084	0.000	0.000	2.02	6.033	665.2	OK

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Causeway	Network 2019.1	

+20% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.015	1031	60 minute 100 year Summer	Q+20% 25.038	22.520	-0.548	0.000	0.32	2.394	668.6	OK
1.016	1032	60 minute 100 year Summer	Q+20% 23.804	22.229	0.000	0.000	1.34	17.512	707.1	OK
10.000	1230	60 minute 100 year Summer	Q+20% 24.214	22.649	-0.065	0.000	0.61	0.090	9.9	OK
10.001	1231	60 minute 100 year Summer	Q+20% 24.092	22.479	-0.110	0.000	0.52	0.135	40.8	OK
1.017	1033	60 minute 100 year Winter	Q+20% 23.962	21.884	-0.304	0.000	0.71	9.096	675.0	OK
1.018	1040-Basin A2	60 minute 100 year Winter	Q+20% 22.300	21.875	0.575	0.000	1.42	870.805	112.6	SURCHARGED
1.019	1041-Con	60 minute 100 year Winter	Q+20% 22.043	21.414	0.214	0.000	1.59	1.188	112.6	SURCHARGED
1.020	1042	60 minute 100 year Winter	Q+20% 22.030	21.213	-0.817	0.000	0.03	0.876	112.6	OK
1.021	1043-GR	60 minute 100 year Winter	Q+20% 21.545	21.174	0.135	0.000	1.82	19.989	111.8	SURCHARGED*
1.022	1044	60 minute 100 year Winter	Q+20% 21.456	20.960	-0.496	0.000	0.06	0.793	111.8	OK
11.000	1240	60 minute 100 year Summer	Q+20% 24.028	22.428	-0.101	0.000	0.58	0.134	38.3	OK
12.000	1270	60 minute 100 year Summer	Q+20% 23.557	22.021	-0.036	0.000	0.93	0.123	15.1	OK
11.001	1241	60 minute 100 year Summer	Q+20% 23.690	21.856	-0.133	0.000	0.60	0.369	62.4	OK
11.002	1242	60 minute 100 year Summer	Q+20% 23.194	21.644	-0.050	0.000	0.96	0.447	69.1	OK
11.003	1243	60 minute 100 year Summer	Q+20% 22.891	21.338	-0.128	0.000	0.62	0.278	80.7	OK
11.004	1244	60 minute 100 year Summer	Q+20% 22.624	21.072	-0.127	0.000	0.63	0.316	101.9	OK
11.005	1245	480 minute 100 year Winter	Q+20% 21.663	20.132	-0.031	0.000	0.15	0.465	22.7	OK
13.000	1250	60 minute 100 year Summer	Q+20% 22.519	21.101	-0.112	0.000	0.15	0.037	2.5	OK
13.001	1251	60 minute 100 year Summer	Q+20% 22.756	21.006	0.035	0.000	0.89	0.509	32.2	SURCHARGED
13.002	1252	60 minute 100 year Summer	Q+20% 22.692	20.908	0.059	0.000	1.04	1.013	34.7	SURCHARGED
13.003	1253	60 minute 100 year Summer	Q+20% 22.582	20.847	-0.017	0.000	0.67	0.651	53.5	OK
14.000	1300	60 minute 100 year Summer	Q+20% 24.043	22.506	-0.112	0.000	0.50	0.122	24.6	OK
15.000	1320	60 minute 100 year Summer	Q+20% 24.209	22.626	-0.083	0.000	0.41	0.070	14.4	OK
14.001	1302	60 minute 100 year Summer	Q+20% 24.056	22.170	-0.151	0.000	0.49	0.221	66.1	OK
16.000	1390	60 minute 100 year Summer	Q+20% 23.113	21.593	-0.020	0.000	1.00	0.142	16.0	OK
14.002	1303	60 minute 100 year Summer	Q+20% 23.316	21.482	-0.010	0.000	0.78	0.922	88.0	OK
14.003	1304	60 minute 100 year Summer	Q+20% 23.510	21.422	-0.037	0.000	0.79	3.094	100.3	OK
14.004	1305	60 minute 100 year Summer	Q+20% 23.373	21.389	-0.026	0.000	0.77	2.456	110.3	OK
14.005	1306	60 minute 100 year Summer	Q+20% 23.150	21.349	-0.008	0.000	0.94	3.096	113.8	OK
14.006	1307	60 minute 100 year Summer	Q+20% 23.042	21.320	-0.005	0.000	0.80	1.924	119.1	OK
17.000	1330	60 minute 100 year Summer	Q+20% 23.321	21.784	-0.112	0.000	0.50	0.122	30.3	OK
17.001	1331	60 minute 100 year Summer	Q+20% 22.979	21.358	-0.121	0.000	0.44	0.114	33.5	OK

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+20% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.007	1308	60 minute 100 year Summer Q+20%	22.897	21.275	0.015	0.000	1.21	3.493	151.7	SURCHARGED
14.008	1309	60 minute 100 year Summer Q+20%	22.785	21.227	0.004	0.000	0.83	2.181	199.6	SURCHARGED
14.009	1310	60 minute 100 year Summer Q+20%	22.330	21.013	0.183	0.000	0.87	6.917	199.5	SURCHARGED
18.000	1340	60 minute 100 year Summer Q+20%	23.064	22.412	-0.048	0.000	0.80	0.110	15.8	OK
18.001	1341	60 minute 100 year Summer Q+20%	22.933	22.145	-0.052	0.000	0.75	0.139	26.5	OK
19.000	1350	60 minute 100 year Summer Q+20%	22.334	21.376	-0.074	0.000	0.46	0.165	20.4	OK
19.001	1351	60 minute 100 year Summer Q+20%	22.453	21.346	0.091	0.000	0.87	0.697	31.5	SURCHARGED
18.002	1352	60 minute 100 year Summer Q+20%	22.711	21.266	0.133	0.000	0.94	1.334	91.0	SURCHARGED
13.004	1254	60 minute 100 year Summer Q+20%	22.251	20.753	0.044	0.000	1.05	7.152	379.1	SURCHARGED
13.005	1255	60 minute 100 year Summer Q+20%	21.929	20.667	0.036	0.000	1.65	12.666	384.3	SURCHARGED
13.006	1256	60 minute 100 year Summer Q+20%	21.861	20.616	0.013	0.000	1.81	4.927	393.7	SURCHARGED
20.000	1360	60 minute 100 year Summer Q+20%	21.191	20.652	0.376	0.000	0.17	0.674	6.2	SURCHARGED
21.000	1370	60 minute 100 year Summer Q+20%	21.457	20.758	0.491	0.000	1.08	0.719	17.0	SURCHARGED
20.001	1361	60 minute 100 year Summer Q+20%	21.339	20.642	0.446	0.000	0.89	1.294	30.5	SURCHARGED
20.002	1362	60 minute 100 year Summer Q+20%	21.676	20.589	0.390	0.000	0.58	1.209	47.2	SURCHARGED
13.007	1257	60 minute 100 year Summer Q+20%	21.952	20.543	0.044	0.000	1.29	6.997	440.2	SURCHARGED
13.008	1258	60 minute 100 year Summer Q+20%	22.067	20.493	0.033	0.000	1.59	8.974	444.6	SURCHARGED
13.009	1259	60 minute 100 year Summer Q+20%	21.898	20.446	0.016	0.000	1.22	6.951	464.2	SURCHARGED
13.010	1260	60 minute 100 year Summer Q+20%	21.877	20.385	0.000	0.000	1.00	9.831	460.4	OK
22.000	1380-GR	60 minute 100 year Summer Q+20%	20.784	20.270	0.321	0.000	0.40	0.612	15.1	SURCHARGED
13.011	1261	60 minute 100 year Summer Q+20%	21.281	20.247	0.033	0.000	2.36	20.626	466.0	SURCHARGED
23.000	1400	60 minute 100 year Summer Q+20%	24.601	23.092	-0.123	0.000	0.42	0.110	35.5	OK
23.001	1401	60 minute 100 year Summer Q+20%	23.616	22.080	-0.100	0.000	0.59	0.178	38.4	OK
23.002	1402	60 minute 100 year Summer Q+20%	23.461	21.890	-0.154	0.000	0.47	0.224	62.3	OK
23.003	1403	60 minute 100 year Summer Q+20%	22.404	21.420	-0.158	0.000	0.46	0.184	62.3	OK
23.004	1404	60 minute 100 year Summer Q+20%	22.405	21.197	-0.082	0.000	0.45	0.381	61.7	OK
24.000	1420	60 minute 100 year Summer Q+20%	21.753	21.145	0.292	0.000	0.57	0.494	10.5	SURCHARGED
23.005	1405	60 minute 100 year Summer Q+20%	21.881	21.108	0.381	0.000	0.81	2.812	64.6	SURCHARGED
23.006	1406	60 minute 100 year Summer Q+20%	22.088	20.948	0.465	0.000	1.59	3.676	83.7	SURCHARGED
25.000	1430	60 minute 100 year Summer Q+20%	25.344	23.792	-0.052	0.000	0.75	0.105	13.4	OK
25.001	1431	60 minute 100 year Summer Q+20%	25.284	23.588	-0.106	0.000	0.54	0.193	28.4	OK
25.002	1432	60 minute 100 year Summer Q+20%	24.984	23.398	0.025	0.000	1.23	0.478	36.1	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

										Water	Surcharged	Flooded	Pipe		
US/MH							US/CL	Level	Depth	Volume	Flow /	Maximum	Flow		
PN	Name	Event					(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)	Status	
26.000	1450	60 minute	100 year	Summer	Q+20%	24.890	23.320	-0.066	0.000	0.60	0.089	8.8	SURCHARGED	OK	
25.003	1433	60 minute	100 year	Summer	Q+20%	24.846	23.230	-0.076	0.000	0.77	0.505	57.9			
25.004	1434	60 minute	100 year	Summer	Q+20%	24.117	22.557	-0.060	0.000	0.88	0.274	62.7			
25.005	1435	60 minute	100 year	Summer	Q+20%	23.788	22.230	-0.058	0.000	0.90	0.274	69.8			
27.000	1460	60 minute	100 year	Summer	Q+20%	23.295	22.291	0.004	0.000	1.07	0.169	14.3	SURCHARGED	OK	
27.001	1461	60 minute	100 year	Summer	Q+20%	23.213	22.153	-0.060	0.000	0.66	0.151	21.3			
25.006	1436	60 minute	100 year	Summer	Q+20%	23.289	21.705	-0.159	0.000	0.62	0.296	115.1			
25.007	1437	60 minute	100 year	Summer	Q+20%	23.164	21.592	-0.025	0.000	0.96	1.646	121.5			
25.008	1438	60 minute	100 year	Summer	Q+20%	23.066	21.498	-0.014	0.000	1.00	1.544	132.2	OK	OK	
25.009	1439	60 minute	100 year	Summer	Q+20%	22.833	21.311	-0.087	0.000	0.86	1.366	141.0	OK	OK	
25.010	1440	60 minute	100 year	Summer	Q+20%	22.579	21.187	0.040	0.000	0.71	1.384	143.9	SURCHARGED	OK	
23.007	1407	60 minute	100 year	Summer	Q+20%	22.008	20.836	0.389	0.000	2.55	2.483	229.2	SURCHARGED	OK	
23.008	1408	60 minute	100 year	Summer	Q+20%	21.925	20.670	0.246	0.000	1.12	2.344	229.2	SURCHARGED	OK	
23.009	1409	60 minute	100 year	Summer	Q+20%	21.794	20.504	0.211	0.000	1.36	2.122	229.2	SURCHARGED	OK	
23.010	1410	60 minute	100 year	Summer	Q+20%	21.717	20.340	0.124	0.000	1.73	1.999	229.1	SURCHARGED	OK	
23.011	1411	60 minute	100 year	Summer	Q+20%	21.740	20.175	0.008	0.000	1.08	3.058	249.3	SURCHARGED	OK	
28.000	1470	60 minute	100 year	Summer	Q+20%	25.814	24.278	-0.036	0.000	0.93	0.123	30.6	OK	OK	
29.000	1490	60 minute	100 year	Summer	Q+20%	25.553	23.993	-0.060	0.000	0.67	0.096	10.9	OK	OK	
28.001	1471	60 minute	100 year	Summer	Q+20%	25.718	23.832	-0.068	0.000	0.83	0.227	56.2	OK	OK	
28.002	1472	60 minute	100 year	Summer	Q+20%	24.960	23.397	-0.063	0.000	0.86	0.283	61.6	OK	OK	
28.003	1473	60 minute	100 year	Summer	Q+20%	24.700	23.140	-0.135	0.000	0.58	0.247	74.5	OK	OK	
28.004	1474	60 minute	100 year	Summer	Q+20%	24.210	22.717	0.007	0.000	1.10	0.695	85.1	SURCHARGED	OK	
30.000	1500	60 minute	100 year	Summer	Q+20%	24.347	22.806	-0.041	0.000	0.88	0.118	14.1	OK	OK	
30.001	1501	60 minute	100 year	Summer	Q+20%	24.421	22.702	-0.103	0.000	0.56	0.204	24.8	OK	OK	
28.005	1475	60 minute	100 year	Summer	Q+20%	24.340	22.567	-0.045	0.000	0.90	0.976	154.5	OK	OK	
28.006	1476	60 minute	100 year	Summer	Q+20%	22.588	21.466	0.303	0.000	0.73	2.135	161.1	SURCHARGED	OK	
28.007	1477	60 minute	100 year	Summer	Q+20%	22.250	21.295	0.545	0.000	1.53	3.322	164.4	SURCHARGED	OK	
28.008	1478	60 minute	100 year	Summer	Q+20%	22.189	21.122	0.434	0.000	1.39	1.437	168.5	SURCHARGED	OK	
28.009	1479	60 minute	100 year	Summer	Q+20%	22.093	20.937	0.344	0.000	0.84	1.423	171.5	SURCHARGED	OK	
28.010	1480	60 minute	100 year	Summer	Q+20%	21.820	20.745	0.425	0.000	1.43	2.615	172.3	SURCHARGED	OK	
28.011	1481	60 minute	100 year	Summer	Q+20%	21.725	20.550	0.325	0.000	1.04	1.720	174.0	SURCHARGED	OK	
31.000	1510	60 minute	100 year	Summer	Q+20%	21.692	20.455	0.263	0.000	0.72	0.461	14.4	SURCHARGED	OK	

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Causeway	Network 2019.1	

+20% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Surcharged Flooded			Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
				Level (m)	Depth (m)	Volume (m³)				
28.012	1482	60 minute 100 year Summer Q+20%	21.596	20.353	0.312	0.000	2.29	1.425	188.6	SURCHARGED
32.000	1520	60 minute 100 year Summer Q+20%	21.536	20.166	-0.035	0.000	0.58	0.124	9.6	OK
28.013	1483	480 minute 100 year Winter Q+20%	21.528	20.132	0.117	0.000	0.24	1.579	34.9	SURCHARGED
33.000	1530	60 minute 100 year Summer Q+20%	22.551	21.009	-0.042	0.000	0.86	0.116	15.0	OK
33.001	1531	60 minute 100 year Summer Q+20%	22.187	20.537	-0.127	0.000	0.62	0.196	54.6	OK
33.002	1532	60 minute 100 year Summer Q+20%	22.030	20.436	-0.094	0.000	0.80	0.651	85.4	OK
33.003	1533	480 minute 100 year Winter Q+20%	21.642	20.132	-0.010	0.000	0.12	1.195	12.9	OK
1.023	1100-Basin A1	480 minute 100 year Winter Q+20%	20.600	20.130	0.430	0.000	0.91	2843.905	55.6	SURCHARGED
1.024	1101-Con	480 minute 100 year Winter Q+20%	21.144	20.092	-1.052	0.000	0.01	1.367	55.6	OK
1.025	1102	480 minute 100 year Winter Q+20%	21.298	19.582	-1.716	0.000	0.00	0.522	55.6	OK
1.026	1103	480 minute 100 year Winter Q+20%	21.261	19.493	-1.768	0.000	0.00	2.031	55.6	OK
1.027	1104	480 minute 100 year Winter Q+20%	21.175	19.398	-1.777	0.000	0.00	2.151	55.6	OK
1.028	1105	480 minute 100 year Winter Q+20%	21.018	19.376	-1.642	0.000	0.00	0.321	55.6	OK
1.029	1106	480 minute 100 year Winter Q+20%	20.969	19.249	-1.720	0.000	0.00	0.115	55.6	OK

M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)
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Designed by DRB
Checked by BF



Causeway	Network 2019.1
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+40% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

Simulation Criteria

Areal Reduction Factor	1.000	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	2	Number of Storage Structures	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH	FEH	Rainfall Version	2013	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100		Site Location	GB 450306 114752	Cv (Summer)	0.750		

Margin for Flood Risk Warning (mm)	299.0	DVD Status	OFF
Analysis Timestep 2.5 Second Increment (Extended)		Inertia Status	OFF
DTS Status			OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%)	0, +20, +40

							Water	Surcharged	Flooded					Pipe
US/MH							US/CL	Level	Depth	Volume	Flow /	Maximum	Flow	
PN	Name	Event					(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)	Status
1.000	1000	60 minute	100 year	Summer	Q+40%	28.090	26.671	0.081	0.000	1.04	0.341	40.3	SURCHARGED	
1.001	1001	60 minute	100 year	Summer	Q+40%	27.700	25.992	-0.058	0.000	0.73	0.679	53.5	OK	
1.002	1002	60 minute	100 year	Summer	Q+40%	27.650	25.913	0.013	0.000	0.98	1.892	79.1	SURCHARGED	
2.000	1003	60 minute	100 year	Summer	Q+40%	29.650	28.018	-0.132	0.000	0.36	0.100	22.2	OK	
2.001	1004	60 minute	100 year	Summer	Q+40%	29.150	27.552	-0.098	0.000	0.61	0.220	55.6	OK	
1.003	1005	60 minute	100 year	Summer	Q+40%	27.400	25.785	0.035	0.000	0.89	1.786	153.7	SURCHARGED	
1.004	1006	60 minute	100 year	Summer	Q+40%	25.900	24.876	0.451	0.000	0.96	2.340	152.9	SURCHARGED	
3.000	1010	60 minute	100 year	Summer	Q+40%	25.950	25.487	0.800	0.000	0.87	1.069	16.4	SURCHARGED	
4.000	1011	60 minute	100 year	Summer	Q+40%	26.150	25.631	0.981	0.000	1.40	1.273	27.0	SURCHARGED	
3.001	1012	60 minute	100 year	Summer	Q+40%	26.060	25.368	0.851	0.000	1.14	1.546	67.3	SURCHARGED	

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+40% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

							Water	Surcharged	Flooded	Pipe				
	US/MH						US/CL	Level	Depth	Volume	Flow /	Maximum	Flow	
PN	Name	Event					(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)	Status
5.000	1014	60 minute	100 year	Summer	Q+40%	25.177	24.318		0.655	0.000	1.51	0.990	47.2	SURCHARGED
3.002	1015	60 minute	100 year	Summer	Q+40%	25.292	24.125		0.553	0.000	1.01	4.089	160.2	SURCHARGED
1.005	1016	60 minute	100 year	Summer	Q+40%	25.132	23.981		0.550	0.000	1.06	11.216	316.3	SURCHARGED
6.000	1017	60 minute	100 year	Summer	Q+40%	24.684	24.006		0.222	0.000	0.70	0.500	34.6	SURCHARGED
6.001	1018	60 minute	100 year	Summer	Q+40%	24.517	23.943		0.251	0.000	0.89	1.124	52.3	SURCHARGED
6.002	1019	60 minute	100 year	Summer	Q+40%	24.483	23.909		0.267	0.000	0.83	1.364	52.9	SURCHARGED
6.003	1020	60 minute	100 year	Summer	Q+40%	24.401	23.873		0.372	0.000	0.50	1.893	83.9	SURCHARGED
6.004	1021	60 minute	100 year	Summer	Q+40%	24.792	23.845		0.521	0.000	0.79	3.864	83.9	SURCHARGED
1.006	1022	60 minute	100 year	Summer	Q+40%	24.781	23.811		0.305	0.000	0.99	9.408	431.3	SURCHARGED
1.007	1022-1	60 minute	100 year	Summer	Q+40%	24.777	23.764		0.305	0.000	1.10	8.946	431.0	SURCHARGED
7.000	1023	60 minute	100 year	Summer	Q+40%	26.130	24.625		-0.080	0.000	0.89	0.244	128.9	OK
1.008	1024	60 minute	100 year	Summer	Q+40%	24.772	23.707		0.296	0.000	0.97	14.545	545.7	SURCHARGED
8.000	1200	60 minute	100 year	Summer	Q+40%	27.500	26.865		0.265	0.000	0.15	0.464	2.1	SURCHARGED
8.001	1201	60 minute	100 year	Summer	Q+40%	27.500	26.868		0.389	0.000	0.40	0.904	5.4	SURCHARGED
8.002	1202	60 minute	100 year	Summer	Q+40%	27.500	26.879		0.550	0.000	0.63	1.164	8.6	SURCHARGED
8.003	1203	60 minute	100 year	Summer	Q+40%	27.500	26.932		0.773	0.000	0.91	1.469	12.0	SURCHARGED
8.004	1204	60 minute	100 year	Summer	Q+40%	29.087	26.996		0.922	0.000	1.38	1.496	50.7	SURCHARGED
8.005	1205	60 minute	100 year	Summer	Q+40%	27.811	26.710		0.790	0.000	1.61	2.133	61.4	SURCHARGED
8.006	1206	60 minute	100 year	Summer	Q+40%	27.524	25.949		0.318	0.000	1.85	2.515	62.5	SURCHARGED
8.007	1207	60 minute	100 year	Summer	Q+40%	27.426	25.719		0.155	0.000	1.96	0.828	64.8	SURCHARGED
8.008	1208	60 minute	100 year	Summer	Q+40%	26.998	25.356		-0.074	0.000	0.77	0.233	83.8	OK
8.009	1209	60 minute	100 year	Summer	Q+40%	26.379	24.916		0.086	0.000	1.37	0.589	87.7	SURCHARGED
8.010	1210	60 minute	100 year	Summer	Q+40%	26.215	24.549		-0.171	0.000	0.38	0.498	98.7	OK
1.009	1025	60 minute	100 year	Summer	Q+40%	25.088	23.580		0.304	0.000	1.29	21.893	652.6	SURCHARGED
1.010	1026	60 minute	100 year	Summer	Q+40%	25.289	23.405		0.219	0.000	1.11	16.282	652.8	SURCHARGED
9.000	1220	60 minute	100 year	Summer	Q+40%	27.285	25.727		-0.058	0.000	0.69	0.098	14.0	OK
9.001	1221	60 minute	100 year	Summer	Q+40%	27.141	25.626		-0.015	0.000	1.00	0.198	24.1	OK
9.002	1222	60 minute	100 year	Summer	Q+40%	26.967	25.378		-0.089	0.000	0.67	0.158	77.0	OK
1.011	1027	60 minute	100 year	Summer	Q+40%	25.490	23.231		0.084	0.000	1.63	10.300	746.6	SURCHARGED
1.012	1028	60 minute	100 year	Summer	Q+40%	25.502	23.185		0.068	0.000	1.95	5.609	755.0	SURCHARGED
1.013	1029	60 minute	100 year	Summer	Q+40%	25.379	23.134		0.033	0.000	1.82	6.840	761.7	SURCHARGED
1.014	1030	60 minute	100 year	Summer	Q+40%	25.208	23.084		0.000	0.000	2.33	6.033	766.7	OK

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Causeway	Network 2019.1	

+40% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
1.015	1031	60 minute 100 year Summer Q+40%	25.038	22.547	-0.521	0.000	0.37	2.685	769.8	OK
1.016	1032	60 minute 100 year Winter Q+40%	23.804	22.229	0.000	0.000	1.45	17.513	763.3	OK
10.000	1230	60 minute 100 year Summer Q+40%	24.214	22.658	-0.056	0.000	0.71	0.101	11.5	OK
10.001	1231	60 minute 100 year Summer Q+40%	24.092	22.491	-0.098	0.000	0.60	0.158	47.7	OK
1.017	1033	60 minute 100 year Winter Q+40%	23.962	22.006	-0.182	0.000	0.83	11.574	796.9	OK
1.018	1040-Basin A2	60 minute 100 year Winter Q+40%	22.300	21.995	0.695	0.000	1.52	1029.050	120.6	SURCHARGED
1.019	1041-Con	60 minute 100 year Winter Q+40%	22.043	21.467	0.267	0.000	1.70	1.249	120.5	SURCHARGED
1.020	1042	60 minute 100 year Winter Q+40%	22.030	21.238	-0.792	0.000	0.04	0.906	120.5	OK
1.021	1043-GR	60 minute 100 year Winter Q+40%	21.545	21.206	0.167	0.000	1.95	23.275	119.4	SURCHARGED*
1.022	1044	60 minute 100 year Winter Q+40%	21.456	20.968	-0.488	0.000	0.07	0.820	119.4	OK
11.000	1240	60 minute 100 year Summer Q+40%	24.028	22.441	-0.088	0.000	0.68	0.149	44.8	OK
12.000	1270	60 minute 100 year Summer Q+40%	23.557	22.075	0.018	0.000	1.08	0.185	17.5	SURCHARGED
11.001	1241	60 minute 100 year Summer Q+40%	23.690	21.873	-0.116	0.000	0.69	0.428	72.6	OK
11.002	1242	60 minute 100 year Summer Q+40%	23.194	21.746	0.052	0.000	1.10	0.968	79.3	SURCHARGED
11.003	1243	60 minute 100 year Summer Q+40%	22.891	21.355	-0.111	0.000	0.71	0.312	91.8	OK
11.004	1244	60 minute 100 year Summer Q+40%	22.624	21.089	-0.110	0.000	0.71	0.358	114.7	OK
11.005	1245	60 minute 100 year Summer Q+40%	21.663	20.263	0.100	0.000	1.14	0.922	167.2	SURCHARGED
13.000	1250	60 minute 100 year Summer Q+40%	22.519	21.160	-0.053	0.000	0.17	0.104	2.8	OK
13.001	1251	60 minute 100 year Summer Q+40%	22.756	21.147	0.176	0.000	1.00	0.875	36.3	SURCHARGED
13.002	1252	60 minute 100 year Summer Q+40%	22.692	21.037	0.188	0.000	1.17	1.231	39.0	SURCHARGED
13.003	1253	60 minute 100 year Summer Q+40%	22.582	20.974	0.110	0.000	0.77	0.810	60.8	SURCHARGED
14.000	1300	60 minute 100 year Summer Q+40%	24.043	22.517	-0.101	0.000	0.58	0.134	28.7	OK
15.000	1320	60 minute 100 year Summer Q+40%	24.209	22.632	-0.077	0.000	0.48	0.077	16.8	OK
14.001	1302	60 minute 100 year Summer Q+40%	24.056	22.184	-0.137	0.000	0.57	0.256	77.2	OK
16.000	1390	60 minute 100 year Summer Q+40%	23.113	21.849	0.236	0.000	1.09	0.431	17.6	SURCHARGED
14.002	1303	60 minute 100 year Summer Q+40%	23.316	21.732	0.240	0.000	0.84	2.331	95.2	SURCHARGED
14.003	1304	60 minute 100 year Summer Q+40%	23.510	21.667	0.208	0.000	0.85	3.569	108.4	SURCHARGED
14.004	1305	60 minute 100 year Summer Q+40%	23.373	21.631	0.216	0.000	0.83	3.078	118.5	SURCHARGED
14.005	1306	60 minute 100 year Summer Q+40%	23.150	21.587	0.230	0.000	1.02	3.716	123.1	SURCHARGED
14.006	1307	60 minute 100 year Summer Q+40%	23.042	21.555	0.230	0.000	0.86	2.401	128.5	SURCHARGED
17.000	1330	60 minute 100 year Summer Q+40%	23.321	21.795	-0.101	0.000	0.58	0.134	35.3	OK
17.001	1331	60 minute 100 year Summer Q+40%	22.979	21.554	0.075	0.000	0.50	0.584	38.4	SURCHARGED

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+40% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)	Status
14.007	1308	60 minute 100 year Summer Q+40%	22.897	21.507	0.247	0.000	1.31	4.095	165.2	SURCHARGED
14.008	1309	60 minute 100 year Summer Q+40%	22.785	21.450	0.227	0.000	0.92	2.642	221.6	SURCHARGED
14.009	1310	60 minute 100 year Summer Q+40%	22.330	21.191	0.361	0.000	0.97	8.182	221.4	SURCHARGED
18.000	1340	60 minute 100 year Summer Q+40%	23.064	22.424	-0.036	0.000	0.93	0.123	18.5	OK
18.001	1341	60 minute 100 year Summer Q+40%	22.933	22.190	-0.007	0.000	0.85	0.234	30.2	OK
19.000	1350	60 minute 100 year Summer Q+40%	22.334	21.629	0.179	0.000	0.50	0.451	22.2	SURCHARGED
19.001	1351	60 minute 100 year Summer Q+40%	22.453	21.594	0.339	0.000	0.95	1.067	34.4	SURCHARGED
18.002	1352	60 minute 100 year Summer Q+40%	22.711	21.486	0.353	0.000	1.06	1.668	102.7	SURCHARGED
13.004	1254	60 minute 100 year Summer Q+40%	22.251	20.876	0.167	0.000	1.18	8.592	427.5	SURCHARGED
13.005	1255	60 minute 100 year Summer Q+40%	21.929	20.777	0.146	0.000	1.85	13.247	431.9	SURCHARGED
13.006	1256	60 minute 100 year Summer Q+40%	21.861	20.716	0.113	0.000	2.02	5.301	441.2	SURCHARGED
20.000	1360	60 minute 100 year Summer Q+40%	21.191	20.756	0.480	0.000	0.19	0.791	7.2	SURCHARGED
21.000	1370	60 minute 100 year Summer Q+40%	21.457	20.890	0.623	0.000	1.28	0.869	20.1	SURCHARGED
20.001	1361	60 minute 100 year Summer Q+40%	21.339	20.747	0.551	0.000	1.05	1.413	36.1	SURCHARGED
20.002	1362	60 minute 100 year Summer Q+40%	21.676	20.694	0.495	0.000	0.69	1.327	56.0	SURCHARGED
13.007	1257	60 minute 100 year Summer Q+40%	21.952	20.646	0.147	0.000	1.45	7.590	494.9	SURCHARGED
13.008	1258	60 minute 100 year Summer Q+40%	22.067	20.585	0.125	0.000	1.78	9.411	496.4	SURCHARGED
13.009	1259	60 minute 100 year Summer Q+40%	21.898	20.528	0.098	0.000	1.37	7.366	519.7	SURCHARGED
13.010	1260	60 minute 100 year Summer Q+40%	21.877	20.453	0.068	0.000	1.11	10.441	515.5	SURCHARGED
22.000	1380-GR	60 minute 100 year Summer Q+40%	20.784	20.368	0.419	0.000	0.49	0.722	18.4	SURCHARGED
13.011	1261	60 minute 100 year Summer Q+40%	21.281	20.333	0.119	0.000	2.68	22.392	527.7	SURCHARGED
23.000	1400	60 minute 100 year Summer Q+40%	24.601	23.102	-0.113	0.000	0.50	0.121	41.5	OK
23.001	1401	60 minute 100 year Summer Q+40%	23.616	22.093	-0.087	0.000	0.69	0.206	44.8	OK
23.002	1402	60 minute 100 year Summer Q+40%	23.461	21.904	-0.140	0.000	0.55	0.254	72.7	OK
23.003	1403	60 minute 100 year Summer Q+40%	22.404	21.546	-0.032	0.000	0.53	0.511	72.0	OK
23.004	1404	60 minute 100 year Summer Q+40%	22.405	21.489	0.210	0.000	0.48	1.120	65.8	SURCHARGED
24.000	1420	60 minute 100 year Summer Q+40%	21.753	21.421	0.568	0.000	0.60	0.807	11.1	SURCHARGED
23.005	1405	60 minute 100 year Summer Q+40%	21.881	21.375	0.648	0.000	0.92	3.304	73.3	SURCHARGED
23.006	1406	60 minute 100 year Summer Q+40%	22.088	21.169	0.686	0.000	1.81	3.926	94.9	SURCHARGED
25.000	1430	60 minute 100 year Summer Q+40%	25.344	23.803	-0.041	0.000	0.88	0.118	15.6	OK
25.001	1431	60 minute 100 year Summer Q+40%	25.284	23.600	-0.094	0.000	0.63	0.223	33.1	OK
25.002	1432	60 minute 100 year Summer Q+40%	24.984	23.435	0.062	0.000	1.44	0.611	42.1	SURCHARGED

PFA Consulting		Page 5
Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020	Designed by DRB	
File M380-Catch A-V3.2 (Ph 3).MDX	Checked by BF	
Causeway	Network 2019.1	

+40% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

						Water		Surcharged	Flooded				Pipe		
		US/MH					US/CL	Level	Depth	Volume	Flow /	Maximum	Pipe		
PN	Name	Event				(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)	Status		
26.000	1450	60 minute	100 year	Summer	Q+40%	24.890	23.329	-0.057	0.000	0.70	0.099	10.3	OK		
25.003	1433	60 minute	100 year	Summer	Q+40%	24.846	23.247	-0.059	0.000	0.90	0.598	67.5	OK		
25.004	1434	60 minute	100 year	Summer	Q+40%	24.117	22.671	0.054	0.000	1.00	0.565	70.8	SURCHARGED		
25.005	1435	60 minute	100 year	Summer	Q+40%	23.788	22.365	0.077	0.000	0.99	0.607	77.4	SURCHARGED		
27.000	1460	60 minute	100 year	Summer	Q+40%	23.295	22.322	0.035	0.000	1.25	0.204	16.8	SURCHARGED		
27.001	1461	60 minute	100 year	Summer	Q+40%	23.213	22.163	-0.050	0.000	0.78	0.170	25.1	OK		
25.006	1436	60 minute	100 year	Summer	Q+40%	23.289	21.913	0.049	0.000	0.69	0.858	128.5	SURCHARGED		
25.007	1437	60 minute	100 year	Summer	Q+40%	23.164	21.814	0.197	0.000	1.08	2.702	136.8	SURCHARGED		
25.008	1438	60 minute	100 year	Summer	Q+40%	23.066	21.708	0.196	0.000	1.13	2.000	149.6	SURCHARGED		
25.009	1439	60 minute	100 year	Summer	Q+40%	22.833	21.581	0.183	0.000	0.90	2.292	148.4	SURCHARGED		
25.010	1440	60 minute	100 year	Summer	Q+40%	22.579	21.438	0.291	0.000	0.77	2.137	155.8	SURCHARGED		
23.007	1407	60 minute	100 year	Summer	Q+40%	22.008	21.025	0.578	0.000	2.81	2.944	253.0	SURCHARGED		
23.008	1408	60 minute	100 year	Summer	Q+40%	21.925	20.822	0.398	0.000	1.24	2.563	252.7	SURCHARGED		
23.009	1409	60 minute	100 year	Summer	Q+40%	21.794	20.620	0.327	0.000	1.50	2.288	252.9	SURCHARGED		
23.010	1410	60 minute	100 year	Summer	Q+40%	21.717	20.420	0.204	0.000	1.91	2.116	252.6	SURCHARGED		
23.011	1411	480 minute	100 year	Winter	Q+40%	21.740	20.247	0.080	0.000	0.22	3.348	51.5	SURCHARGED		
28.000	1470	60 minute	100 year	Summer	Q+40%	25.814	24.371	0.057	0.000	1.06	0.228	35.0	SURCHARGED		
29.000	1490	60 minute	100 year	Summer	Q+40%	25.553	24.003	-0.050	0.000	0.78	0.108	12.7	OK		
28.001	1471	60 minute	100 year	Summer	Q+40%	25.718	23.849	-0.051	0.000	0.95	0.263	64.6	OK		
28.002	1472	60 minute	100 year	Summer	Q+40%	24.960	23.445	-0.015	0.000	0.98	0.402	70.7	OK		
28.003	1473	60 minute	100 year	Summer	Q+40%	24.700	23.227	-0.048	0.000	0.67	0.423	85.1	OK		
28.004	1474	60 minute	100 year	Summer	Q+40%	24.210	23.048	0.338	0.000	1.14	2.430	88.4	SURCHARGED		
30.000	1500	60 minute	100 year	Summer	Q+40%	24.347	23.051	0.204	0.000	0.97	0.394	15.6	SURCHARGED		
30.001	1501	60 minute	100 year	Summer	Q+40%	24.421	22.966	0.161	0.000	0.61	0.620	26.7	SURCHARGED		
28.005	1475	60 minute	100 year	Summer	Q+40%	24.340	22.930	0.318	0.000	0.92	1.994	157.8	SURCHARGED		
28.006	1476	60 minute	100 year	Summer	Q+40%	22.588	21.710	0.547	0.000	0.77	3.054	169.0	SURCHARGED		
28.007	1477	60 minute	100 year	Summer	Q+40%	22.250	21.512	0.762	0.000	1.62	3.633	174.1	SURCHARGED		
28.008	1478	60 minute	100 year	Summer	Q+40%	22.189	21.314	0.626	0.000	1.48	1.712	179.2	SURCHARGED		
28.009	1479	60 minute	100 year	Summer	Q+40%	22.093	21.103	0.510	0.000	0.90	1.661	183.1	SURCHARGED		
28.010	1480	60 minute	100 year	Summer	Q+40%	21.820	20.883	0.563	0.000	1.53	2.813	184.4	SURCHARGED		
28.011	1481	60 minute	100 year	Summer	Q+40%	21.725	20.662	0.437	0.000	1.11	1.879	186.1	SURCHARGED		
31.000	1510	60 minute	100 year	Summer	Q+40%	21.692	20.591	0.399	0.000	0.85	0.616	17.0	SURCHARGED		

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Stratton Park House Wanborough Road Swindon SN3 4HG	M380 Boorley Gardens Phase 1 - Catchment A Planning (RM3 Submission)	
Date 01/01/2020 File M380-Catch A-V3.2 (Ph 3).MDX	Designed by DRB Checked by BF	
Causeway	Network 2019.1	

+40% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for M380-CATCHMENT A-SW.SWS

PN	US/MH Name	Event	US/CL (m)	Water	Surcharged	Flooded	Flow / Cap.	Maximum Vol (m³)	Pipe	Status
				Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
28.012	1482	60 minute 100 year Summer Q+40%	21.596	20.436	0.395	0.000	2.47	1.544	203.2	SURCHARGED
32.000	1520	480 minute 100 year Winter Q+40%	21.536	20.247	0.046	0.000	0.11	0.216	1.8	SURCHARGED
28.013	1483	480 minute 100 year Winter Q+40%	21.528	20.247	0.232	0.000	0.28	1.776	40.6	SURCHARGED
33.000	1530	60 minute 100 year Summer Q+40%	22.551	21.034	-0.017	0.000	1.00	0.145	17.4	OK
33.001	1531	60 minute 100 year Summer Q+40%	22.187	20.556	-0.108	0.000	0.72	0.219	63.7	OK
33.002	1532	60 minute 100 year Summer Q+40%	22.030	20.461	-0.069	0.000	0.94	0.771	99.6	OK
33.003	1533	480 minute 100 year Winter Q+40%	21.642	20.246	0.104	0.000	0.14	2.045	15.1	SURCHARGED
1.023	1100-Basin A1	480 minute 100 year Winter Q+40%	20.600	20.247	0.547	0.000	0.91	3397.828	55.7	SURCHARGED
1.024	1101-Con	480 minute 100 year Winter Q+40%	21.144	20.208	-0.936	0.000	0.01	1.499	55.7	OK
1.025	1102	960 minute 100 year Winter Q+40%	21.298	19.582	-1.716	0.000	0.00	0.523	55.7	OK
1.026	1103	960 minute 100 year Winter Q+40%	21.261	19.494	-1.767	0.000	0.00	2.034	55.7	OK
1.027	1104	960 minute 100 year Winter Q+40%	21.175	19.398	-1.777	0.000	0.00	2.154	55.7	OK
1.028	1105	960 minute 100 year Winter Q+40%	21.018	19.376	-1.642	0.000	0.00	0.322	55.7	OK
1.029	1106	960 minute 100 year Winter Q+40%	20.969	19.249	-1.720	0.000	0.00	0.115	55.7	OK

PFA Consulting		Page 1
Stratton Park House Wanborough Road Swindon SN3 4HG	M380: Boorley Gardens SW Drainage - Planning Catchments C + D	
Date 01/03/2020	Designed by PS	
File M380-Catch C&D-V5.10 (RM)	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

- Indicates pipe length does not match coordinates

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	35.949	0.512	70.2	0.096	5.00	0.0	0.600		o	225	Pipe/Conduit	
S1.001	37.616	0.156	241.1	0.066	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.002	60.836	0.190	320.2	0.126	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.003	15.123	0.048	317.4	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	
S2.000	19.287	0.115	167.7	0.105	5.00	0.0	0.600		o	225	Pipe/Conduit	
S2.001	33.215	1.103	30.1	0.060	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.002	15.620	0.797	19.6	0.024	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.003	21.369	1.015	21.1	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.004	36.334	1.246	29.2	0.043	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.005	13.620	0.436	31.2	0.018	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.006	14.675	2.323	6.3	0.009	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.004	14.479	0.029	499.3	0.022	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.005	45.757	0.093	492.0	0.138	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.006	10.237	0.843	12.1	0.017	0.00	0.0	0.600		o	525	Pipe/Conduit	
S3.000	53.557	0.659	81.3	0.147	5.00	0.0	0.600		o	225	Pipe/Conduit	
S3.001	41.576	0.211	197.0	0.082	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.002	14.948	0.047	318.0	0.047	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.003	36.706	0.114	322.0	0.070	0.00	0.0	0.600		o	375	Pipe/Conduit	
S3.004	12.697	0.041	309.7	0.009	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	80.71	5.38	26.053	0.096	0.0	0.0	0.0	1.56	62.1	20.9
S1.001	77.08	6.01	25.466	0.161	0.0	0.0	0.0	1.01	71.3	33.7
S1.002	71.96	7.01	25.235	0.287	0.0	0.0	0.0	1.01	111.2	56.0
S1.003	70.81	7.26	25.045	0.296	0.0	0.0	0.0	1.01	111.7	56.8
S2.000	81.11	5.32	32.182	0.105	0.0	0.0	0.0	1.01	40.0	23.1
S2.001	79.69	5.55	32.067	0.165	0.0	0.0	0.0	2.39	95.1	35.6
S2.002	79.17	5.64	30.964	0.189	0.0	0.0	0.0	2.97	118.1	40.5
S2.003	78.45	5.76	30.167	0.228	0.0	0.0	0.0	2.86	113.9	48.4
S2.004	77.05	6.01	29.152	0.271	0.0	0.0	0.0	2.43	96.7	56.5
S2.005	76.52	6.11	27.906	0.289	0.0	0.0	0.0	2.35	93.4	59.8
S2.006	76.27	6.15	27.470	0.298	0.0	0.0	0.0	5.24	208.3	61.5
S1.004	69.73	7.50	24.847	0.616	0.0	0.0	0.0	1.00	215.5	116.3
S1.005	66.58	8.26	24.818	0.754	0.0	0.0	0.0	1.00	217.1	136.0
S1.006	66.48	8.29	24.725	0.771	0.0	0.0	0.0	6.45	1396.5	138.8
S3.000	79.31	5.61	25.255	0.147	0.0	0.0	0.0	1.45	57.7	31.5
S3.001	76.28	6.15	24.446	0.229	0.0	0.0	0.0	1.29	142.2	47.3
S3.002	74.97	6.40	24.235	0.275	0.0	0.0	0.0	1.01	111.6	55.9
S3.003	71.97	7.01	24.188	0.345	0.0	0.0	0.0	1.00	110.9	67.3
S3.004	71.01	7.22	24.074	0.354	0.0	0.0	0.0	1.02	113.1	68.1

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Stratton Park House Wanborough Road Swindon SN3 4HG	M380: Boorley Gardens SW Drainage - Planning Catchments C + D	
Date 01/03/2020	Designed by PS	
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Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.007	59.337	0.144	412.8	0.163	0.00	0.0	0.600		o	675	Pipe/Conduit	
S4.000	16.938	0.101	167.7	0.117	5.00	0.0	0.600		o	225	Pipe/Conduit	
S4.001	48.638	0.199	244.4	0.101	0.00	0.0	0.600		o	300	Pipe/Conduit	
S4.002	9.863	0.040	246.6	0.022	0.00	0.0	0.600		o	300	Pipe/Conduit	
S4.003	31.323	0.096	326.3	0.072	0.00	0.0	0.600		o	375	Pipe/Conduit	
S4.004	38.232	0.118	324.0	0.065	0.00	0.0	0.600		o	375	Pipe/Conduit	
S1.008	12.810	0.026	492.7	0.016	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.009	9.391	0.019	494.3	0.018	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.010	64.152	1.036	61.9	0.130	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.011	10.287	0.170	60.5	0.074	0.00	0.0	0.600		o	750	Pipe/Conduit	
S5.000	24.808	0.378	65.6	0.061	5.00	0.0	0.600		o	150	Pipe/Conduit	
S5.001	73.068	1.114	65.6	0.189	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.012	26.687	0.053	503.5	0.040	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.013	15.378	0.031	496.1	0.030	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.014	16.427	0.014	1173.4	0.012	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.000	33.176	1.660	20.0	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	
S6.001	15.082	0.640	23.6	0.028	0.00	0.0	0.600		o	225	Pipe/Conduit	
S6.002	30.161	0.580	52.0	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S7.000	41.909	0.965	43.4	0.136	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.007	63.62	9.06	23.733	1.288	0.0	0.0	0.0	1.28	459.4	222.0
S4.000	81.36	5.28	24.593	0.117	0.0	0.0	0.0	1.01	40.0	25.7
S4.001	76.62	6.09	24.417	0.218	0.0	0.0	0.0	1.00	70.8	45.2
S4.002	75.73	6.25	24.218	0.240	0.0	0.0	0.0	1.00	70.5	49.2
S4.003	73.07	6.78	24.103	0.312	0.0	0.0	0.0	1.00	110.2	61.8
S4.004	70.12	7.41	24.007	0.377	0.0	0.0	0.0	1.00	110.6	71.6
S1.008	63.02	9.23	23.514	1.682	0.0	0.0	0.0	1.25	554.0	287.1
S1.009	62.60	9.36	23.488	1.700	0.0	0.0	0.0	1.25	553.1	288.2
S1.010	61.60	9.66	23.469	1.830	0.0	0.0	0.0	3.56	1572.8	305.3
S1.011	61.44	9.70	22.433	1.904	0.0	0.0	0.0	3.60	1591.1	316.9
S5.000	81.03	5.33	24.355	0.061	0.0	0.0	0.0	1.24	22.0	13.3
S5.001	77.34	5.96	23.827	0.250	0.0	0.0	0.0	1.94	137.4	52.4
S1.012	60.42	10.02	22.113	2.194	0.0	0.0	0.0	1.39	883.9	359.1
S1.013	59.86	10.21	22.060	2.224	0.0	0.0	0.0	1.40	890.6	360.6
S1.014	58.95	10.51	22.029	2.236	0.0	0.0	0.0	0.91	576.4	360.6
S6.000	81.95	5.19	29.800	0.136	0.0	0.0	0.0	2.94	116.9	30.3
S6.001	81.35	5.28	28.140	0.164	0.0	0.0	0.0	2.71	107.6	36.2
S6.002	79.65	5.56	27.500	0.203	0.0	0.0	0.0	1.82	72.3	43.7
S7.000	80.91	5.35	28.985	0.136	0.0	0.0	0.0	1.99	79.1	29.7

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Stratton Park House Wanborough Road Swindon SN3 4HG	M380: Boorley Gardens SW Drainage - Planning Catchments C + D	
Date 01/03/2020	Designed by PS	
File M380-Catch C&D-V5.10 (RM)	Checked by BF	
Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S7.001	32.312	0.325	99.4	0.105	0.00	0.0	0.600		o	300	Pipe/Conduit	
S7.002	15.058	0.150	100.4	0.032	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.003	23.125	0.230	100.5	0.074	0.00	0.0	0.600		o	375	Pipe/Conduit	
S7.004	35.652	0.395	90.3	0.044	0.00	0.0	0.600		o	375	Pipe/Conduit	
S6.003	24.959	0.490	50.9	0.036	0.00	0.0	0.600		o	375	Pipe/Conduit	
S6.004	43.011	3.072	14.0	0.085	0.00	0.0	0.600		o	375	Pipe/Conduit	
S8.000	27.733	0.275	100.8	0.048	5.00	0.0	0.600		o	150	Pipe/Conduit	
S8.001	26.245	0.177	148.3	0.082	0.00	0.0	0.600		o	225	Pipe/Conduit	
S8.002	22.377	0.093	240.6	0.028	0.00	0.0	0.600		o	300	Pipe/Conduit	
S6.005	31.872	0.064	498.0	0.054	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.006	8.022	0.533	15.1	0.009	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.007	12.185	0.024	507.7	0.012	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.008	9.943	0.046	216.2	0.012	0.00	0.0	0.600		o	750	Pipe/Conduit	
S6.009	7.177	0.007	1025.3	0.051	0.00	0.0	0.600		o	900	Pipe/Conduit	
S6.010	9.883	0.010	988.3	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.015	11.514	0.012	959.5	0.025	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.016	14.009	0.015	933.9	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.017	12.204	0.013	938.8	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S9.000	40.635	0.590	68.9	0.085	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.001	38.986	0.249	156.6	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S7.001	78.86	5.69	27.945	0.241	0.0	0.0	0.0	1.58	111.5	51.4
S7.002	78.06	5.83	27.545	0.272	0.0	0.0	0.0	1.81	199.7	57.6
S7.003	76.87	6.04	27.395	0.347	0.0	0.0	0.0	1.81	199.6	72.2
S7.004	75.20	6.36	27.165	0.391	0.0	0.0	0.0	1.91	210.7	79.6
S6.003	74.36	6.52	26.770	0.629	0.0	0.0	0.0	2.54	281.0	126.8
S6.004	73.62	6.67	26.280	0.715	0.0	0.0	0.0	4.86	537.2	142.5
S8.000	80.23	5.46	23.978	0.048	0.0	0.0	0.0	1.00	17.7	10.5
S8.001	77.84	5.87	23.628	0.131	0.0	0.0	0.0	1.07	42.6	27.6
S8.002	75.81	6.24	23.376	0.159	0.0	0.0	0.0	1.01	71.3	32.6
S6.005	71.28	7.16	22.983	0.927	0.0	0.0	0.0	1.08	306.6	179.0
S6.006	71.19	7.18	22.919	0.936	0.0	0.0	0.0	6.30	1780.7	180.4
S6.007	70.33	7.37	22.386	0.947	0.0	0.0	0.0	1.07	303.6	180.4
S6.008	69.94	7.45	22.212	0.960	0.0	0.0	0.0	1.90	839.2	181.8
S6.009	69.41	7.58	22.002	1.010	0.0	0.0	0.0	0.97	617.1	189.9
S6.010	68.69	7.74	21.995	1.010	0.0	0.0	0.0	0.99	628.7	189.9
S1.015	58.40	10.70	21.985	3.271	0.0	0.0	0.0	1.00	638.2	517.3
S1.016	57.75	10.93	21.973	3.271	0.0	0.0	0.0	1.02	647.0	517.3
S1.017	57.19	11.13	21.958	3.271	0.0	0.0	0.0	1.01	645.3	517.3
S9.000	80.43	5.43	24.927	0.085	0.0	0.0	0.0	1.58	62.7	18.4
S9.001	77.40	5.95	24.262	0.185	0.0	0.0	0.0	1.25	88.6	38.7

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Causeway	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S9.002	8.268	0.074	111.7	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.003	23.600	0.229	103.1	0.047	0.00	0.0	0.600		o	300	Pipe/Conduit	
S10.000	16.795	0.218	77.0	0.075	5.00	0.0	0.600		o	225	Pipe/Conduit	
S9.004	19.671	0.247	79.6	0.033	0.00	0.0	0.600		o	300	Pipe/Conduit	
S9.005	9.366	0.111	84.4	0.039	0.00	0.0	0.600		o	375	Pipe/Conduit	
S9.006	12.815	0.232	55.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.007	24.711	0.322	76.7	0.045	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.008	19.546	0.204	95.8	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
S9.009	12.446	0.044	282.9	0.034	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.018	5.521	0.014	394.4	0.038	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.019	12.487#	0.021	594.6	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.020	17.627	0.131	134.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.021	37.615	0.098	383.8	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.022	66.231	0.149	444.5	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.023	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.024	72.535	0.163	445.0	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.025	26.289	0.059	445.6	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.026	28.667	0.064	447.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.027	22.780	0.051	446.7	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.028	14.238#	0.032	444.9	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.000	41.451	0.622	66.6	0.097	5.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S9.002	76.89	6.04	24.013	0.212	0.0	0.0	0.0	1.49	105.1	44.2
S9.003	75.53	6.29	23.939	0.259	0.0	0.0	0.0	1.55	109.5	53.1
S10.000	81.95	5.19	24.003	0.075	0.0	0.0	0.0	1.49	59.3	16.6
S9.004	74.56	6.48	23.710	0.367	0.0	0.0	0.0	1.76	124.6	74.2
S9.005	74.16	6.56	23.388	0.406	0.0	0.0	0.0	1.97	218.0	81.6
S9.006	73.77	6.64	23.202	0.406	0.0	0.0	0.0	2.74	435.8	81.6
S9.007	72.90	6.81	22.970	0.451	0.0	0.0	0.0	2.32	369.4	89.1
S9.008	72.15	6.97	22.648	0.490	0.0	0.0	0.0	2.08	330.4	95.7
S9.009	71.34	7.14	22.444	0.524	0.0	0.0	0.0	1.20	191.5	101.2
S1.018	57.03	11.19	21.945	3.832	0.0	0.0	0.0	1.57	999.8	591.9
S1.019	56.59	11.35	21.931	3.832	0.0	0.0	0.0	1.28	812.8	591.9
S1.020	56.19	11.50	21.810	3.832	0.0	0.0	0.0	1.93	417.6«	591.9
S1.021	54.78	12.06	21.679	3.832	0.0	0.0	0.0	1.14	246.2«	591.9
S1.022	52.34	13.10	21.581	3.832	0.0	0.0	0.0	1.06	228.6«	591.9
S1.023	49.94	14.25	21.432	3.832	0.0	0.0	0.0	1.06	228.4«	591.9
S1.024	47.78	15.39	21.269	3.832	0.0	0.0	0.0	1.06	228.4«	591.9
S1.025	47.05	15.81	21.106	3.832	0.0	0.0	0.0	1.05	228.3«	591.9
S1.026	46.29	16.26	21.047	3.832	0.0	0.0	0.0	1.05	227.7«	591.9
S1.027	45.70	16.62	20.983	3.832	0.0	0.0	0.0	1.05	228.0«	591.9
S1.028	45.34	16.85	20.932	3.832	0.0	0.0	0.0	1.06	228.5«	591.9
S11.000	81.38	5.28	26.212	0.097	0.0	0.0	0.0	2.49	396.6	21.4

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S11.001	31.067	0.833	37.3	0.046	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.002	10.303	0.193	53.4	0.054	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.003	10.303	0.192	53.6	0.010	0.00	0.0	0.600		o	450	Pipe/Conduit	
S11.004	23.248	0.563	41.3	0.039	0.00	0.0	0.600		o	450	Pipe/Conduit	
S12.000	7.032	0.194	36.3	0.057	5.00	0.0	0.600		o	150	Pipe/Conduit	
S13.000	9.073	0.240	37.8	0.082	5.00	0.0	0.600		o	225	Pipe/Conduit	
S12.001	19.266	0.207	93.1	0.014	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.002	17.962	0.522	34.4	0.076	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.003	11.800	0.230	51.2	0.043	0.00	0.0	0.600		o	375	Pipe/Conduit	
S12.004	28.031	0.521	53.8	0.019	0.00	0.0	0.600		o	375	Pipe/Conduit	
S11.005	39.725	0.071	559.5	0.045	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.006	8.588	0.061	140.8	0.060	0.00	0.0	0.600		o	600	Pipe/Conduit	
S14.000	27.512	0.288	95.5	0.148	5.00	0.0	0.600		o	300	Pipe/Conduit	
S14.001	24.054	0.738	32.6	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	
S14.002	23.286	0.595	39.1	0.064	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.007	12.441	0.031	401.3	0.051	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.008	50.277	0.126	399.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.009	16.281	0.033	493.4	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S11.001	80.41	5.43	25.590	0.144	0.0	0.0	0.0	3.34	530.7	31.3
S11.002	80.03	5.49	24.757	0.198	0.0	0.0	0.0	2.79	443.4	42.9
S11.003	79.66	5.56	24.564	0.208	0.0	0.0	0.0	2.78	442.6	44.8
S11.004	78.94	5.68	24.372	0.246	0.0	0.0	0.0	3.17	504.2	52.7
S12.000	82.73	5.07	25.784	0.057	0.0	0.0	0.0	1.68	29.6	12.7
S13.000	82.72	5.07	25.755	0.082	0.0	0.0	0.0	2.13	84.8	18.3
S12.001	81.60	5.24	25.365	0.152	0.0	0.0	0.0	1.88	207.5	33.7
S12.002	80.99	5.34	25.158	0.228	0.0	0.0	0.0	3.10	342.2	50.0
S12.003	80.51	5.42	24.636	0.271	0.0	0.0	0.0	2.54	280.2	59.0
S12.004	79.37	5.60	24.405	0.290	0.0	0.0	0.0	2.48	273.4	62.3
S11.005	75.36	6.33	23.659	0.581	0.0	0.0	0.0	1.02	289.1	118.6
S11.006	75.00	6.40	23.588	0.641	0.0	0.0	0.0	2.05	579.8	130.2
S14.000	81.33	5.28	25.448	0.148	0.0	0.0	0.0	1.61	113.7	32.5
S14.001	80.42	5.43	25.160	0.247	0.0	0.0	0.0	2.76	195.3	53.9
S14.002	79.49	5.58	24.422	0.311	0.0	0.0	0.0	2.52	178.2	67.0
S11.007	74.12	6.57	23.527	1.003	0.0	0.0	0.0	1.21	341.9	201.4
S11.008	70.82	7.26	23.496	1.003	0.0	0.0	0.0	1.21	342.9	201.4
S11.009	69.71	7.51	23.370	1.003	0.0	0.0	0.0	1.09	308.1	201.4

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S15.000	6.404	0.572	11.2	0.049	5.00	0.0	0.600		o	150	Pipe/Conduit	
S16.000	9.571	0.413	23.2	0.044	5.00	0.0	0.600		o	150	Pipe/Conduit	
S15.001	34.118	0.394	86.6	0.024	0.00	0.0	0.600		o	225	Pipe/Conduit	
S15.002	10.486	0.062	169.1	0.077	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.010	31.952	0.080	399.4	0.037	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.011	12.436	0.093	133.7	0.041	0.00	0.0	0.600		o	600	Pipe/Conduit	
S17.000	49.705	0.291	170.8	0.112	5.00	0.0	0.600		o	225	Pipe/Conduit	
S11.012	43.134	0.074	582.9	0.028	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.013	10.732	0.019	564.8	0.074	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.014	9.000	0.143	62.9	0.000	0.00	0.0		0.045 3 \=/		1000	1:3 Swale	
S18.000	10.468	0.043	243.4	0.047	5.00	0.0	0.600		o	300	Pipe/Conduit	
S19.000	7.532	0.031	243.0	0.055	5.00	0.0	0.600		o	300	Pipe/Conduit	
S18.001	25.289	0.103	245.5	0.041	0.00	0.0	0.600		o	300	Pipe/Conduit	
S18.002	16.213	0.066	245.7	0.026	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.015	22.426	0.262	85.6	0.000	0.00	0.0		0.045 3 \=/		1000	1:3 Swale	
S11.016	12.703	0.115	110.5	0.000	0.00	0.0		0.045 3 \=/		1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S15.000	82.97	5.04	24.815	0.049	0.0	0.0	0.0	3.03	53.5	11.1
S16.000	82.69	5.08	24.656	0.044	0.0	0.0	0.0	2.10	37.1	9.9
S15.001	80.12	5.48	24.168	0.118	0.0	0.0	0.0	1.41	55.9	25.6
S15.002	79.08	5.65	23.774	0.195	0.0	0.0	0.0	1.00	39.9«	41.8
S11.010	67.86	7.95	23.337	1.235	0.0	0.0	0.0	1.21	342.8	227.0
S11.011	67.45	8.04	23.257	1.276	0.0	0.0	0.0	2.10	595.0	233.1
S17.000	78.06	5.83	23.830	0.112	0.0	0.0	0.0	1.00	39.7	23.8
S11.012	64.69	8.76	23.164	1.417	0.0	0.0	0.0	1.00	283.1	248.2
S11.013	64.05	8.94	23.090	1.490	0.0	0.0	0.0	1.02	287.7	258.5
S11.014	63.24	9.17	22.971	1.490	0.0	0.0	0.0	0.65	141.2«	258.5
S18.000	82.04	5.17	23.140	0.047	0.0	0.0	0.0	1.00	70.9	10.4
S19.000	82.36	5.13	23.128	0.055	0.0	0.0	0.0	1.00	71.0	12.3
S18.001	79.42	5.60	23.097	0.143	0.0	0.0	0.0	1.00	70.6	30.7
S18.002	77.86	5.87	22.994	0.169	0.0	0.0	0.0	1.00	70.6	35.5
S11.015	61.00	9.84	22.828	1.659	0.0	0.0	0.0	0.56	121.1«	274.1
S11.016	59.66	10.27	22.566	1.659	0.0	0.0	0.0	0.49	106.6«	274.1

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S20.000	15.822	0.093	170.1	0.027	5.00	0.0	0.600		o	225	Pipe/Conduit	
S20.001	11.323	0.067	169.0	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.017	22.290	0.226	98.6	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S21.000	22.392	0.093	240.8	0.048	5.00	0.0	0.600		o	300	Pipe/Conduit	
S21.001	22.392	0.093	240.8	0.043	0.00	0.0	0.600		o	300	Pipe/Conduit	
S21.002	11.234	0.047	239.0	0.044	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.018	1.710	0.021	81.4	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.019	20.296	0.226	89.8	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.020	28.551	0.288	99.1	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S22.000	36.485	0.215	169.7	0.052	5.00	0.0	0.600		o	225	Pipe/Conduit	
S22.001	9.144	0.054	169.3	0.065	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.021	30.393	0.224	135.7	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S11.022	4.573	0.027	169.4	0.000	0.00	0.0	0.600		o	525	Pipe/Conduit	
S11.023	5.237#	0.039	134.3	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.000	14.348	0.164	87.5	0.016	5.00	0.0	0.600		o	300	Pipe/Conduit	
S23.001	38.017	0.660	57.6	0.027	0.00	0.0	0.600		o	300	Pipe/Conduit	
S23.002	16.044	0.117	137.1	0.066	0.00	0.0	0.600		o	375	Pipe/Conduit	
S23.003	15.071	0.177	85.3	0.045	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S20.000	81.46	5.26	22.711	0.027	0.0	0.0	0.0	1.00	39.7	5.9
S20.001	80.29	5.45	22.618	0.066	0.0	0.0	0.0	1.00	39.9	14.3
S11.017	57.58	10.99	22.451	1.725	0.0	0.0	0.0	0.52	112.8«	274.1
S21.000	80.79	5.37	22.558	0.048	0.0	0.0	0.0	1.01	71.3	10.5
S21.001	78.58	5.74	22.465	0.091	0.0	0.0	0.0	1.01	71.3	19.4
S21.002	77.53	5.92	22.372	0.135	0.0	0.0	0.0	1.01	71.6	28.4
S11.018	57.44	11.04	22.225	1.860	0.0	0.0	0.0	0.57	124.2«	289.4
S11.019	55.78	11.66	22.204	1.860	0.0	0.0	0.0	0.54	118.2«	289.4
S11.020	53.52	12.58	21.978	1.860	0.0	0.0	0.0	0.52	112.5«	289.4
S22.000	79.35	5.61	22.059	0.052	0.0	0.0	0.0	1.00	39.8	11.2
S22.001	78.47	5.76	21.844	0.118	0.0	0.0	0.0	1.00	39.8	25.0
S11.021	51.00	13.73	21.690	1.978	0.0	0.0	0.0	0.44	96.2«	289.4
S11.022	50.90	13.77	21.466	1.978	0.0	0.0	0.0	1.72	372.0	289.4
S11.023	50.50	13.97	21.439	1.978	0.0	0.0	0.0	0.44	96.7«	289.4
S23.000	82.25	5.14	26.162	0.016	0.0	0.0	0.0	1.68	118.9	3.6
S23.001	80.32	5.45	25.998	0.043	0.0	0.0	0.0	2.08	146.7	9.4
S23.002	79.28	5.62	25.263	0.110	0.0	0.0	0.0	1.55	170.7	23.6
S23.003	78.53	5.75	25.146	0.154	0.0	0.0	0.0	1.96	216.8	32.8

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S23.004	34.848	0.366	95.3	0.043	0.00	0.0	0.600		o	375	Pipe/Conduit	
S23.005	34.848	0.108	321.4	0.099	0.00	0.0	0.600		o	375	Pipe/Conduit	
S23.006	16.578	0.082	202.2	0.075	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.007	14.379	0.036	402.6	0.026	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.008	10.673	0.027	402.6	0.028	0.00	0.0	0.600		o	450	Pipe/Conduit	
S24.000	9.164	1.068	8.6	0.072	5.00	0.0	0.600		o	150	Pipe/Conduit	
S23.009	41.724	0.104	401.2	0.069	0.00	0.0	0.600		o	450	Pipe/Conduit	
S23.010	81.518	0.691	118.0	0.053	0.00	0.0	0.600		o	450	Pipe/Conduit	
S25.000	13.781	0.512	26.9	0.048	5.00	0.0	0.600		o	300	Pipe/Conduit	
S23.011	36.953	0.074	499.4	0.262	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.012	56.999	0.114	500.0	0.163	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.013	38.681	0.078	495.9	0.119	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.014	15.856	0.032	495.5	0.039	0.00	0.0	0.600		o	525	Pipe/Conduit	
S23.015	15.562	0.232	67.1	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.016	26.215	0.328	79.9	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.017	7.830	0.082	95.5	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S23.018	7.038	0.101	69.7	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S26.000	8.972	0.041	218.8	0.007	5.00	0.0	0.600		o	300	Pipe/Conduit	
S26.001	47.357	0.215	220.3	0.062	0.00	0.0	0.600		o	300	Pipe/Conduit	
S26.002	13.843	0.063	219.7	0.064	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S23.004	76.77	6.06	24.969	0.197	0.0	0.0	0.0	1.86	205.0	41.1
S23.005	73.76	6.64	24.604	0.297	0.0	0.0	0.0	1.01	111.0	59.3
S23.006	72.81	6.83	24.420	0.371	0.0	0.0	0.0	1.43	226.8	73.3
S23.007	71.68	7.07	24.338	0.398	0.0	0.0	0.0	1.01	160.2	77.2
S23.008	70.87	7.25	24.303	0.426	0.0	0.0	0.0	1.01	160.2	81.8
S24.000	82.90	5.04	25.644	0.072	0.0	0.0	0.0	3.46	61.2	16.3
S23.009	67.89	7.94	24.276	0.568	0.0	0.0	0.0	1.01	160.4	104.5
S23.010	65.06	8.66	24.172	0.621	0.0	0.0	0.0	1.87	297.5	109.4
S25.000	82.69	5.08	24.143	0.048	0.0	0.0	0.0	3.04	215.1	10.8
S23.011	62.85	9.28	23.406	0.930	0.0	0.0	0.0	1.00	215.5	158.4
S23.012	59.77	10.24	23.332	1.093	0.0	0.0	0.0	0.99	215.4	177.0
S23.013	57.88	10.88	23.218	1.213	0.0	0.0	0.0	1.00	216.3	190.1
S23.014	57.15	11.15	23.140	1.252	0.0	0.0	0.0	1.00	216.4	193.7
S23.015	56.05	11.56	23.008	1.252	0.0	0.0	0.0	0.63	136.8«	193.7
S23.016	54.15	12.32	22.776	1.252	0.0	0.0	0.0	0.58	125.3«	193.7
S23.017	53.56	12.56	22.448	1.252	0.0	0.0	0.0	0.53	114.7«	193.7
S23.018	53.12	12.75	22.366	1.252	0.0	0.0	0.0	0.62	134.2«	193.7
S26.000	82.25	5.14	22.683	0.007	0.0	0.0	0.0	1.06	74.8	1.6
S26.001	77.73	5.89	22.642	0.069	0.0	0.0	0.0	1.06	74.6	14.5
S26.002	76.52	6.11	22.427	0.132	0.0	0.0	0.0	1.06	74.7	27.4

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S23.019	8.133	0.110	73.9	0.000	0.00	0.0					1:3 Swale	
S23.020	4.890	0.152	32.2	0.000	0.00	0.0					1:3 Swale	
S23.021	4.890	0.012	407.5	0.000	0.00	0.0	0.600			o 450	Pipe/Conduit	
S23.022	19.341#	0.193	100.2	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S1.029	7.696	0.263	29.3	0.000	0.00	0.0	0.600			o 450	Pipe/Conduit	
S1.030	14.529	0.503	28.9	0.000	0.00	0.0	0.600			o 450	Pipe/Conduit	
S1.031	24.965	0.079	316.0	0.000	0.00	0.0	0.600			o 450	Pipe/Conduit	
S27.000	87.610	0.618	141.8	0.498	5.00	0.0	0.600			o 525	Pipe/Conduit	
S27.001	90.939	0.373	243.8	0.523	0.00	0.0	0.600			o 525	Pipe/Conduit	
S27.002	17.829	0.373	47.8	0.000	0.00	0.0	0.600			o 525	Pipe/Conduit	
S27.003	21.428	0.120	178.6	0.000	0.00	0.0	0.600			o 900	Pipe/Conduit	
S27.004	11.970	0.028	427.5	0.000	0.00	0.0	0.600			o 900	Pipe/Conduit	
S28.000	19.137	0.064	299.0	0.117	5.00	0.0	0.600			o 300	Pipe/Conduit	
S28.001	17.051	0.070	243.6	0.050	0.00	0.0	0.600			o 300	Pipe/Conduit	
S28.002	12.702	0.052	244.3	0.034	0.00	0.0	0.600			o 300	Pipe/Conduit	
S28.003	7.714	0.032	241.1	0.009	0.00	0.0	0.600			o 300	Pipe/Conduit	
S28.004	8.191	0.034	240.9	0.046	0.00	0.0	0.600			o 300	Pipe/Conduit	
S29.000	13.965	0.138	101.2	0.000	5.00	0.0	0.600			o 150	Pipe/Conduit	
S27.005	21.863	0.050	437.3	0.060	0.00	0.0	0.600			o 1200	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S23.019	52.61	12.98	22.264	1.384	0.0	0.0	0.0	0.60	130.3«	197.2
S23.020	52.41	13.07	22.147	1.384	0.0	0.0	0.0	0.91	197.5	197.2
S23.021	52.23	13.15	21.995	1.384	0.0	0.0	0.0	1.00	159.2«	197.2
S23.022	50.89	13.78	21.983	1.384	0.0	0.0	0.0	0.51	111.9«	197.2
S1.029	45.29	16.88	20.550	7.194	0.0	0.0	0.0	3.77	599.5«	882.4
S1.030	45.19	16.95	20.287	7.194	0.0	0.0	0.0	3.79	603.4«	882.4
S1.031	44.63	17.31	19.784	7.194	0.0	0.0	0.0	1.14	181.0«	882.4
S27.000	78.37	5.78	22.086	0.498	0.0	0.0	0.0	1.88	406.8	105.8
S27.001	72.79	6.84	21.468	1.021	0.0	0.0	0.0	1.43	309.6	201.3
S27.002	72.35	6.93	21.095	1.021	0.0	0.0	0.0	3.25	702.6	201.3
S27.003	71.63	7.08	20.347	1.021	0.0	0.0	0.0	2.34	1489.8	201.3
S27.004	71.02	7.21	20.227	1.021	0.0	0.0	0.0	1.51	960.0	201.3
S28.000	80.90	5.35	21.135	0.117	0.0	0.0	0.0	0.90	63.9	25.6
S28.001	79.19	5.64	21.071	0.167	0.0	0.0	0.0	1.00	70.9	35.8
S28.002	77.96	5.85	21.001	0.201	0.0	0.0	0.0	1.00	70.8	42.4
S28.003	77.25	5.98	20.949	0.210	0.0	0.0	0.0	1.01	71.3	43.9
S28.004	76.51	6.11	20.917	0.256	0.0	0.0	0.0	1.01	71.3	53.0
S29.000	81.66	5.23	21.087	0.000	0.0	0.0	0.0	1.00	17.7	0.0
S27.005	70.11	7.42	19.899	1.337	0.0	0.0	0.0	1.78	2016.1	253.9

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Catch C+D

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S27.006	29.864	0.050	597.3	0.043	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S27.007	8.032	0.016	502.0	0.007	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S27.008	10.831	0.017	637.1	0.034	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S30.000	29.691	0.369	80.5	0.053	5.00	0.0	0.600		o	225	Pipe/Conduit	
S30.001	12.611	0.075	168.1	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
S30.002	22.843	0.136	168.0	0.023	0.00	0.0	0.600		o	225	Pipe/Conduit	
S30.003	7.180	0.043	167.0	0.012	0.00	0.0	0.600		o	225	Pipe/Conduit	
S30.004	8.808	0.052	169.4	0.017	0.00	0.0	0.600		o	225	Pipe/Conduit	
S27.009	8.968	0.020	448.4	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S27.010	19.865	0.042	473.0	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.032	26.753	0.041	652.5	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.033	40.649	0.123	330.5	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.034	20.060	0.048	417.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.035	36.421	0.090	404.7	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.036	70.745	0.175	404.3	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.037	65.150	0.162	402.2	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.038	17.227	0.043	400.6	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.039	8.038	0.020	401.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.040	15.185	0.043	353.1	0.000	0.00	0.0		0.045 3 \=/	1000		1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S27.006	68.69	7.74	19.850	1.380	0.0	0.0	0.0	1.52	1723.0	256.8
S27.007	68.36	7.82	19.800	1.387	0.0	0.0	0.0	1.66	1880.7	256.8
S27.008	67.85	7.95	19.784	1.421	0.0	0.0	0.0	1.47	1667.8	261.2
S30.000	80.99	5.34	21.638	0.053	0.0	0.0	0.0	1.46	58.0	11.6
S30.001	79.71	5.55	21.269	0.087	0.0	0.0	0.0	1.01	40.0	18.8
S30.002	77.52	5.93	21.194	0.110	0.0	0.0	0.0	1.01	40.0	23.1
S30.003	76.86	6.05	21.058	0.122	0.0	0.0	0.0	1.01	40.1	25.4
S30.004	76.07	6.19	21.015	0.139	0.0	0.0	0.0	1.00	39.8	28.6
S27.009	67.50	8.03	19.767	1.560	0.0	0.0	0.0	1.76	1990.7	285.3
S27.010	66.73	8.23	19.747	1.560	0.0	0.0	0.0	1.71	1938.0	285.3
S1.032	44.17	17.62	19.705	8.754	0.0	0.0	0.0	1.46	1647.8	1047.2
S1.033	43.29	18.23	19.664	8.754	0.0	0.0	0.0	1.11	177.0<	1047.2
S1.034	42.82	18.56	19.542	8.754	0.0	0.0	0.0	0.99	157.2<	1047.2
S1.035	42.01	19.17	19.494	8.754	0.0	0.0	0.0	1.00	159.7<	1047.2
S1.036	40.53	20.34	19.403	8.754	0.0	0.0	0.0	1.00	159.8<	1047.2
S1.037	39.28	21.42	19.228	8.754	0.0	0.0	0.0	1.01	160.2<	1047.2
S1.038	38.96	21.70	19.066	8.754	0.0	0.0	0.0	1.01	160.6<	1047.2
S1.039	38.82	21.84	19.023	8.754	0.0	0.0	0.0	1.01	160.3<	1047.2
S1.040	37.84	22.76	19.003	8.754	0.0	0.0	0.0	0.27	59.6<	1047.2

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Causeway		Network 2019.1



Manhole Schedules for Catch C+D

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S4001	27.478	1.425	Open Manhole	1200	S1.000	26.053	225				
S4002	26.966	1.500	Open Manhole	1200	S1.001	25.466	300	S1.000	25.541	225	
S4003	26.704	1.469	Open Manhole	1350	S1.002	25.235	375	S1.001	25.310	300	
S4004	28.014	2.969	Open Manhole	1350	S1.003	25.045	375	S1.002	25.045	375	
S4005	33.607	1.425	Open Manhole	1200	S2.000	32.182	225				
S4006	33.552	1.485	Open Manhole	1200	S2.001	32.067	225	S2.000	32.067	225	
S4007	32.390	1.426	Open Manhole	1200	S2.002	30.964	225	S2.001	30.964	225	
S4008	31.592	1.425	Open Manhole	1200	S2.003	30.167	225	S2.002	30.167	225	
S4009	30.545	1.393	Open Manhole	1200	S2.004	29.152	225	S2.003	29.152	225	
S4010	29.217	1.311	Open Manhole	1200	S2.005	27.906	225	S2.004	27.906	225	
S4011	28.782	1.312	Open Manhole	1200	S2.006	27.470	225	S2.005	27.470	225	
S4012	28.294	3.447	Open Manhole	1500	S1.004	24.847	525	S1.003	24.997	375	
								S2.006	25.147	225	
S4013	28.322	3.504	Open Manhole	1500	S1.005	24.818	525	S1.004	24.818	525	
S4014	27.532	2.806	Open Manhole	1500	S1.006	24.725	525	S1.005	24.725	525	
S4015	26.680	1.425	Open Manhole	1200	S3.000	25.255	225				
S4016	26.141	1.695	Open Manhole	1350	S3.001	24.446	375	S3.000	24.596	225	
S4017	26.114	1.879	Open Manhole	1350	S3.002	24.235	375	S3.001	24.235	375	
S4018	26.410	2.222	Open Manhole	1350	S3.003	24.188	375	S3.002	24.188	375	
S4019	27.500	3.426	Open Manhole	1350	S3.004	24.074	375	S3.003	24.074	375	
S4020	27.348	3.616	Open Manhole	1500	S1.007	23.733	675	S1.006	23.883	525	
								S3.004	24.033	375	
S4021	26.080	1.487	Open Manhole	1200	S4.000	24.593	225				
S4022	25.790	1.373	Open Manhole	1200	S4.001	24.417	300	S4.000	24.492	225	
S4023	25.325	1.107	Open Manhole	1200	S4.002	24.218	300	S4.001	24.218	300	
S4024	25.456	1.353	Open Manhole	1350	S4.003	24.103	375	S4.002	24.178	300	
S4025	25.586	1.579	Open Manhole	1350	S4.004	24.007	375	S4.003	24.007	375	
S4026	26.600	3.086	Open Manhole	1800	S1.008	23.514	750	S1.007	23.589	675	
								S4.004	23.889	375	
S4027	26.345	2.857	Open Manhole	1800	S1.009	23.488	750	S1.008	23.488	750	
S4028	26.150	2.681	Open Manhole	1800	S1.010	23.469	750	S1.009	23.469	750	
S4029	24.845	2.412	Open Manhole	1800	S1.011	22.433	750	S1.010	22.433	750	
S4030	25.677	1.322	Open Manhole	1200	S5.000	24.355	150				
S4031	25.276	1.449	Open Manhole	1200	S5.001	23.827	300	S5.000	23.977	150	
S4032	24.078	1.965	Open Manhole	1800	S1.012	22.113	900	S1.011	22.263	750	
								S5.001	22.713	300	
S4033	23.942	1.882	Open Manhole	1800	S1.013	22.060	900	S1.012	22.060	900	
S4034	23.833	1.804	Open Manhole	1800	S1.014	22.029	900	S1.013	22.029	900	
S4035	31.555	1.755	Open Manhole	1200	S6.000	29.800	225				
S4036	29.895	1.755	Open Manhole	1200	S6.001	28.140	225	S6.000	28.140	225	
S4037	29.250	1.750	Open Manhole	1200	S6.002	27.500	225	S6.001	27.500	225	
S4038	30.720	1.735	Open Manhole	1200	S7.000	28.985	225				
S4039	29.740	1.795	Open Manhole	1200	S7.001	27.945	300	S7.000	28.020	225	
S4040	29.410	1.865	Open Manhole	1350	S7.002	27.545	375	S7.001	27.620	300	

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Designed by PS

Checked by BF

Network 2019.1

MH	MH	MH	MH	MH	Pipe Out			Pipes In				
Name	CL (m)	Depth (m)	Connection	Diam., L*W (mm)	PN	Invert Level (m)	Diameter (mm)	PN	Invert Level (m)	Diameter (mm)	Backdrop (mm)	
S3011	27.329	1.739	Open Manhole	1350	S11.001	25.590	450	S11.000	25.590	450		
S3012	26.707	1.950	Open Manhole	1350	S11.002	24.757	450	S11.001	24.757	450		
S3013	26.514	1.950	Open Manhole	1350	S11.003	24.564	450	S11.002	24.564	450		
S3014	26.322	1.950	Open Manhole	1350	S11.004	24.372	450	S11.003	24.372	450		
S3015	27.434	1.650	Open Manhole	1200	S12.000	25.784	150					
S3016	27.405	1.650	Open Manhole	1200	S13.000	25.755	225					
S3017	27.355	1.990	Open Manhole	1350	S12.001	25.365	375	S12.000	25.590	150		
								S13.000	25.515	225		
S3018	26.944	1.786	Open Manhole	1350	S12.002	25.158	375	S12.001	25.158	375		
S3019	26.586	1.950	Open Manhole	1350	S12.003	24.636	375	S12.002	24.636	375		
S3020	26.355	1.950	Open Manhole	1350	S12.004	24.405	375	S12.003	24.405	375		
S3021	25.834	2.175	Open Manhole	1500	S11.005	23.659	600	S11.004	23.809	450		
								S12.004	23.884	375		
S3022	26.132	2.544	Open Manhole	1500	S11.006	23.588	600	S11.005	23.588	600		
S3023	27.248	1.800	Open Manhole	1200	S14.000	25.448	300					
S3024	26.960	1.800	Open Manhole	1200	S14.001	25.160	300	S14.000	25.160	300		
S3025	26.657	2.235	Open Manhole	1200	S14.002	24.422	300	S14.001	24.422	300		
S3026	26.356	2.829	Open Manhole	1500	S11.007	23.527	600	S11.006	23.527	600		
								S14.002	23.827	300		
S3027	25.760	2.264	Open Manhole	1500	S11.008	23.496	600	S11.007	23.496	600		
S3028	25.205	1.835	Open Manhole	1500	S11.009	23.370	600	S11.008	23.370	600		
S3029	26.390	1.575	Open Manhole	1200	S15.000	24.815	150					
S3030	26.231	1.575	Open Manhole	1200	S16.000	24.656	150					
S3031	26.202	2.034	Open Manhole	1200	S15.001	24.168	225	S15.000	24.243	150		
								S16.000	24.243	150		
S3032	25.813	2.039	Open Manhole	1200	S15.002	23.774	225	S15.001	23.774	225		
S3033	25.672	2.335	Open Manhole	1500	S11.010	23.337	600	S11.009	23.337	600		
								S15.002	23.712	225		
S3034-GR	25.057	1.800	Open Manhole	1500	S11.011	23.257	600	S11.010	23.257	600		
S3035	25.408	1.578	Open Manhole	1200	S17.000	23.830	225					
S3036-GR	24.964	1.800	Open Manhole	1500	S11.012	23.164	600	S11.011	23.164	600		
								S17.000	23.539	225		
S3037-GR	24.890	1.800	Open Manhole	1500	S11.013	23.090	600	S11.012	23.090	600		
S3038	24.022	1.051	Junction		S11.014	22.971	1000	S11.013	23.071	600	550	
S3039-GR	24.640	1.500	Open Manhole	1200	S18.000	23.140	300					
S3040-GR	24.628	1.500	Open Manhole	1200	S19.000	23.128	300					
S3041-GR	24.597	1.500	Open Manhole	1200								

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MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out			Pipes In			Backdrop (mm)
					PN	Invert Level (m)	Diameter (mm)	PN	Invert Level (m)	Diameter (mm)	
S3046	23.459	1.008	Junction		S11.017	22.451	1000	S11.016	22.451	1000	175
								S20.001	22.551	225	
S3047-GR	24.058	1.500	Open Manhole	1200	S21.000	22.558	300				250
S3048-GR	23.965	1.500	Open Manhole	1200	S21.001	22.465	300	S21.000	22.465	300	
S3049-GR	23.872	1.500	Open Manhole	1200	S21.002	22.372	300	S21.001	22.372	300	175
S3050	23.365	1.140	Junction		S11.018	22.225	1000	S11.017	22.225	1000	
								S21.002	22.325	300	
S3051	23.316	1.112	Junction		S11.019	22.204	1000	S11.018	22.204	1000	175
S3053	22.996	1.018	Junction		S11.020	21.978	1000	S11.019	21.978	1000	
S3053-1-GR	23.484	1.425	Open Manhole	1200	S22.000	22.059	225				175
S3054-GR	23.269	1.425	Open Manhole	1200	S22.001	21.844	225	S22.000	21.844	225	
S3055	22.739	1.049	Junction		S11.021	21.690	1000	S11.020	21.690	1000	
								S22.001	21.790	225	
S3056	22.621	1.155	Junction		S11.022	21.466	525	S11.021	21.466	1000	175
S3057	22.633	1.194	Junction		S11.023	21.439	1000	S11.022	21.439	525	
S3058	27.878	1.716	Open Manhole	1200	S23.000	26.162	300				175
S3059	27.725	1.727	Open Manhole	1200	S23.001	25.998	300	S23.000	25.998	300	
S3060	27.292	2.029	Open Manhole	1350	S23.002	25.263	375	S23.001	25.338	300	175
S3061	27.136	1.990	Open Manhole	1350	S23.003	25.146	375	S23.002	25.146	375	
S3062	26.998	2.029	Open Manhole	1350	S23.004	24.969	375	S23.003	24.969	375	175
S3063	26.633	2.029	Open Manhole	1350	S23.005	24.604	375	S23.004	24.604	375	
S3064	26.623	2.203	Open Manhole	1350	S23.006	24.420	450	S23.005	24.495	375	175
S3065	26.942	2.603	Open Manhole	1350	S23.007	24.338	450	S23.006	24.338	450	
S3066	27.141	2.838	Open Manhole	1350	S23.008	24.303	450	S23.007	24.303	450	175
S3067	27.294	1.650	Open Manhole	1200	S24.000	25.644	150				
S3068	27.239	2.963	Open Manhole	1350	S23.009	24.276	450	S23.008	24.276	450	175
								S24.000	24.576	150	
S3069	26.728	2.556	Open Manhole	1350	S23.010	24.172	450	S23.009	24.172	450	175
S3070	25.706	1.563	Open Manhole	1200	S25.000	24.143	300				
S3071	25.786	2.380	Open Manhole	1500	S23.011	23.406	525	S23.010	23.481	450	175
								S25.000	23.631	300	
S3072	25.341	2.009	Open Manhole	1500	S23.012	23.332	525	S23.011	23.332	525	175
S3073-GR	24.943	1.725	Open Manhole	1500	S23.013	23.218	525	S23.012	23.218	525	
S3074-GR	24.865	1.725	Open Manhole	1500	S23.014	23.140	525	S23.013	23.140	525	175
S3075	24.643	1.635	Open Manhole	1200	S23.015	23.008	1000	S23.014	23.108	525	
S3076	24.775	1.999	Junction		S23.016	22.776	1000	S23.015	22.776	1000	175
S3077	24.194	1.746	Junction		S23.017	22.448	1000	S2			

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4001	450464.415	114723.865	450464.415	114723.865	Required	
S4002	450483.060	114693.129	450483.060	114693.129	Required	
S4003	450503.055	114661.268	450503.055	114661.268	Required	
S4004	450543.122	114615.489	450543.122	114615.489	Required	
S4005	450552.938	114469.226	450552.938	114469.226	Required	
S4006	450567.477	114481.899	450567.477	114481.899	Required	
S4007	450546.100	114507.322	450546.100	114507.322	Required	
S4008	450541.244	114522.167	450541.244	114522.167	Required	
S4009	450544.704	114543.254	450544.704	114543.254	Required	
S4010	450559.329	114576.514	450559.329	114576.514	Required	
S4011	450558.572	114590.113	450558.572	114590.113	Required	
S4012	450549.982	114602.011	450549.982	114602.011	Required	
S4013	450538.266	114593.504	450538.266	114593.504	Required	
S4014	450498.628	114570.646	450498.628	114570.646	Required	
S4015	450396.124	114686.429	450396.124	114686.429	Required	
S4016	450443.433	114661.324	450443.433	114661.324	Required	
S4017	450465.007	114625.784	450465.007	114625.784	Required	
S4018	450468.186	114611.178	450468.186	114611.178	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4019	450484.257	114578.178	450484.257	114578.178	Required	
S4020	450489.264	114566.509	450489.264	114566.509	Required	
S4021	450350.603	114651.039	450350.603	114651.039	Required	
S4022	450364.069	114640.765	450364.069	114640.765	Required	
S4023	450406.698	114617.347	450406.698	114617.347	Required	
S4024	450411.569	114608.771	450411.569	114608.771	Required	
S4025	450419.406	114578.444	450419.406	114578.444	Required	
S4026	450434.625	114543.371	450434.625	114543.371	Required	
S4027	450422.896	114538.220	450422.896	114538.220	Required	
S4028	450413.509	114537.953	450413.509	114537.953	Required	
S4029	450361.765	114575.875	450361.765	114575.875	Required	
S4030	450278.110	114640.734	450278.110	114640.734	Required	
S4031	450293.806	114621.522	450293.806	114621.522	Required	
S4032	450351.511	114576.700	450351.511	114576.700	Required	
S4033	450336.487	114554.644	450336.487	114554.644	Required	
S4034	450324.719	114544.744	450324.719	114544.744	Required	
S4035	450481.673	114426.929	450481.673	114426.929	Required	
S4036	450448.793	114422.501	450448.793	114422.501	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4037	450433.740	114423.433	450433.740	114423.433	Required	
S4038	450521.909	114517.389	450521.909	114517.389	Required	
S4039	450484.910	114497.705	450484.910	114497.705	Required	
S4040	450454.224	114487.583	450454.224	114487.583	Required	
S4041	450440.594	114481.183	450440.594	114481.183	Required	
S4042	450423.505	114465.603	450423.505	114465.603	Required	
S4043	450405.755	114434.683	450405.755	114434.683	Required	
S4044	450384.176	114447.224	450384.176	114447.224	Required	
S4045	450404.857	114527.219	450404.857	114527.219	Required	
S4046	450387.067	114505.943	450387.067	114505.943	Required	
S4047	450365.085	114491.606	450365.085	114491.606	Required	
S4048	450350.813	114474.371	450350.813	114474.371	Required	
S4049	450325.834	114494.166	450325.834	114494.166	Required	
S4050	450323.243	114501.758	450323.243	114501.758	Required	
S4051	450322.882	114513.938	450322.882	114513.938	Required	
S4052	450322.616	114523.877	450322.616	114523.877	Required	
S4053	450319.210	114530.194	450319.210	114530.194	Required	
S4054	450311.005	114535.702	450311.005	114535.702	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S4055	450302.074	114542.970	450302.074	114542.970	Required	
S4056	450293.458	114554.016	450293.458	114554.016	Required	
S4057	450263.410	114688.266	450263.410	114688.266	Required	
S4058	450265.529	114647.686	450265.529	114647.686	Required	
S4059	450227.126	114640.972	450227.126	114640.972	Required	
S4060	450219.886	114636.980	450219.886	114636.980	Required	
S4061	450192.060	114629.807	450192.060	114629.807	Required	
S4062	450204.784	114618.844	450204.784	114618.844	Required	
S4063	450219.930	114606.292	450219.930	114606.292	Required	
S4064	450228.153	114601.810	450228.153	114601.810	Required	
S4065	450238.944	114594.898	450238.944	114594.898	Required	
S4066	450255.670	114576.708	450255.670	114576.708	Required	
S4067	450271.589	114565.367	450271.589	114565.367	Required	
S4068	450282.799	114559.959	450282.799	114559.959	Required	
S4069	450280.338	114555.017	450280.338	114555.017	Required	
S4069-BASIN D	450238.905	114566.190	450238.905	114566.190	Required	
S3001-CON	450221.312	114565.085	450221.312	114565.085	Required	
S3002	450192.017	114588.678	450192.017	114588.678	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3003	450142.724	114632.914	450142.724	114632.914	Required	
S3004	450086.491	114678.731	450086.491	114678.731	Required	
S3005	450030.259	114724.547	450030.259	114724.547	Required	
S3006	450008.995	114740.007	450008.995	114740.007	Required	
S3007	449995.435	114765.263	449995.435	114765.263	Required	
S3008	449974.426	114774.069	449974.426	114774.069	Required	
S3010	450434.780	114774.367	450434.780	114774.367	Required	
S3011	450412.907	114809.578	450412.907	114809.578	Required	
S3012	450396.598	114836.020	450396.598	114836.020	Required	
S3013	450388.625	114842.546	450388.625	114842.546	Required	
S3014	450378.324	114842.770	450378.324	114842.770	Required	
S3015	450385.119	114763.350	450385.119	114763.350	Required	
S3016	450374.123	114754.850	450374.123	114754.850	Required	
S3017	450378.095	114763.007	450378.095	114763.007	Required	
S3018	450368.066	114779.457	450368.066	114779.457	Required	
S3019	450366.937	114797.384	450366.937	114797.384	Required	
S3020	450364.748	114808.979	450364.748	114808.979	Required	
S3021	450356.187	114835.670	450356.187	114835.670	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3022	450318.360	114823.538	450318.360	114823.538	Required	
S3023	450313.094	114749.701	450313.094	114749.701	Required	
S3024	450309.000	114776.907	450309.000	114776.907	Required	
S3025	450308.086	114800.944	450308.086	114800.944	Required	
S3026	450309.795	114824.168	450309.795	114824.168	Required	
S3027	450297.388	114825.081	450297.388	114825.081	Required	
S3028	450248.701	114812.537	450248.701	114812.537	Required	
S3029	450255.464	114760.571	450255.464	114760.571	Required	
S3030	450239.541	114760.115	450239.541	114760.115	Required	
S3031	450249.073	114760.979	450249.073	114760.979	Required	
S3032	450245.993	114794.957	450245.993	114794.957	Required	
S3033	450237.338	114800.877	450237.338	114800.877	Required	
S3034-GR	450206.625	114792.063	450206.625	114792.063	Required	
S3035	450195.664	114741.250	450195.664	114741.250	Required	
S3036-GR	450194.240	114790.935	450194.240	114790.935	Required	
S3037-GR	450151.111	114790.272	450151.111	114790.272	Required	
S3038	450150.901	114801.002			No Entry	
S3039-GR	450126.761	114762.256	450126.761	114762.256	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3040-GR	450144.631	114760.093	450144.631	114760.093	Required	
S3041-GR	450137.154	114760.998	450137.154	114760.998	Required	
S3042-GR	450140.192	114786.103	450140.192	114786.103	Required	
S3043	450141.983	114802.217			No Entry	
S3045	450119.757	114805.204			No Entry	
S3045-1-GR	450121.775	114794.060	450121.775	114794.060	Required	
S3045-2-GR	450106.032	114795.637	450106.032	114795.637	Required	
S3046	450107.168	114806.903			No Entry	
S3047-GR	450076.659	114753.448	450076.659	114753.448	Required	
S3048-GR	450080.327	114775.538	450080.327	114775.538	Required	
S3049-GR	450083.995	114797.628	450083.995	114797.628	Required	
S3050	450084.961	114808.820			No Entry	
S3051	450083.258	114808.967			No Entry	
S3053	450063.521	114813.698			No Entry	
S3053-1-GR	450067.920	114803.242	450067.920	114803.242	Required	
S3054-GR	450033.604	114815.632	450033.604	114815.632	Required	
S3055	450036.949	114824.143			No Entry	
S3056	450008.662	114835.261			No Entry	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3057	450004.259	114836.496			No Entry	
S3058	450450.143	114749.046	450450.143	114749.046	Required	
S3059	450457.110	114736.504	450457.110	114736.504	Required	
S3060	450424.644	114716.724	450424.644	114716.724	Required	
S3061	450409.787	114710.668	450409.787	114710.668	Required	
S3062	450395.102	114707.278	450395.102	114707.278	Required	
S3063	450365.892	114688.273	450365.892	114688.273	Required	
S3064	450336.681	114669.268	450336.681	114669.268	Required	
S3065	450326.761	114682.550	450326.761	114682.550	Required	
S3066	450321.204	114695.812	450321.204	114695.812	Required	
S3067	450318.055	114715.396	450318.055	114715.396	Required	
S3068	450319.400	114706.331	450319.400	114706.331	Required	
S3069	450278.277	114699.278	450278.277	114699.278	Required	
S3070	450196.475	114711.261	450196.475	114711.261	Required	
S3071	450196.779	114697.484	450196.779	114697.484	Required	
S3072	450159.835	114696.670	450159.835	114696.670	Required	
S3073-GR	450103.644	114706.231	450103.644	114706.231	Required	
S3074-GR	450069.048	114723.532	450069.048	114723.532	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3075	450053.191	114723.597	450053.191	114723.597	Required	
S3076	450039.443	114730.888			No Entry	
S3077	450017.261	114744.860			No Entry	
S3078	450012.584	114751.139			No Entry	
S3079-GR	450065.109	114737.892	450065.109	114737.892	Required	
S3080-GR	450059.314	114731.042	450059.314	114731.042	Required	
S3081-GR	450023.573	114762.111	450023.573	114762.111	Required	
S3082	450010.408	114757.831			No Entry	
S3083	450007.893	114765.566			No Entry	
S3084	450004.236	114768.812			No Entry	
S3085	450000.578	114772.058			No Entry	
S3086-Basin C	449985.955	114851.661	449985.955	114851.661	Required	
S3087-1	449992.174	114847.128	449992.174	114847.128	Required	
S3087	450006.696	114846.679	450006.696	114846.679	Required	
S3088	450238.755	114869.587	450238.755	114869.587	Required	
S3089	450219.779	114955.118	450219.779	114955.118	Required	
S3090	450131.317	114934.040	450131.317	114934.040	Required	
S3091	450114.121	114929.332	450114.121	114929.332	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3092	450095.075	114919.513	450095.075	114919.513	Required	
S3093	450118.094	114858.186	450118.094	114858.186	Required	
S3094	450114.437	114876.970	450114.437	114876.970	Required	
S3095	450108.509	114892.957	450108.509	114892.957	Required	
S3096	450102.221	114903.994	450102.221	114903.994	Required	
S3097	450096.367	114909.017	450096.367	114909.017	Required	
S3098	450084.775	114923.248	450084.775	114923.248	Required	
S3099	450088.206	114909.711	450088.206	114909.711	Required	
S3100	450067.448	114902.846	450067.448	114902.846	Required	
S3101	450040.771	114889.424	450040.771	114889.424	Required	
S3102	450036.309	114882.745	450036.309	114882.745	Required	
S3103	450103.081	114841.560	450103.081	114841.560	Required	
S3104	450073.980	114847.454	450073.980	114847.454	Required	
S3105	450061.756	114850.550	450061.756	114850.550	Required	
S3106	450039.908	114857.218	450039.908	114857.218	Required	
S3107	450035.850	114863.142	450035.850	114863.142	Required	
S3108	450035.515	114871.943	450035.515	114871.943	Required	
S3109	450026.571	114872.601	450026.571	114872.601	Required	

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Manhole Schedules for Catch C+D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S3110	450006.729	114871.644	450006.729	114871.644	Required	
S3111-CON	450005.401	114898.364	450005.401	114898.364	Required	
S3112	450008.605	114938.887	450008.605	114938.887	Required	
S3113	450010.758	114958.831	450010.758	114958.831	Required	
S3114	450012.088	114995.227	450012.088	114995.227	Required	
S3115	450010.383	115065.952	450010.383	115065.952	Required	
S3116	450004.283	115130.816	450004.283	115130.816	Required	
S3117	450004.218	115148.043	450004.218	115148.043	Required	
S3118-HW	449997.630	115152.649			No Entry	
SStream	449999.830	115167.673			No Entry	

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Time Area Diagram for Catch C+D

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	0.197	8-12	1.826	12-16	3.445	16-20	3.070	20-24	0.217

Total Area Contributing (ha) = 8.754

Total Pipe Volume (m³) = 2526.341

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.007	0.007	0.007
	User	-	100	0.084	0.084	0.091
	User	-	100	0.005	0.005	0.096
1.001	User	-	100	0.061	0.061	0.061
	User	-	100	0.005	0.005	0.066
1.002	User	-	100	0.118	0.118	0.118
	User	-	100	0.003	0.003	0.120
	User	-	100	0.001	0.001	0.122
	User	-	100	0.002	0.002	0.123
	User	-	100	0.001	0.001	0.125
	User	-	100	0.001	0.001	0.126
1.003	User	-	100	0.009	0.009	0.009
2.000	User	-	100	0.037	0.037	0.037
	User	-	100	0.040	0.040	0.078
	User	-	100	0.017	0.017	0.095
	User	-	100	0.004	0.004	0.099
	User	-	100	0.002	0.002	0.101
	User	-	100	0.002	0.002	0.103
	User	-	100	0.002	0.002	0.105
2.001	User	-	100	0.049	0.049	0.049
	User	-	100	0.006	0.006	0.055
	User	-	100	0.005	0.005	0.060
2.002	User	-	100	0.018	0.018	0.018
	User	-	100	0.006	0.006	0.024
2.003	User	-	100	0.023	0.023	0.023
	User	-	100	0.008	0.008	0.031
	User	-	100	0.008	0.008	0.039
2.004	User	-	100	0.043	0.043	0.043
2.005	User	-	100	0.018	0.018	0.018
2.006	User	-	100	0.009	0.009	0.009
1.004	User	-	100	0.022	0.022	0.022
1.005	User	-	100	0.138	0.138	0.138
1.006	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
3.000	User	-	100	0.132	0.132	0.132
	User	-	100	0.002	0.002	0.133
	User	-	100	0.003	0.003	0.136
	User	-	100	0.002	0.002	0.138
	User	-	100	0.002	0.002	0.141
	User	-	100	0.001	0.001	0.141
	User	-	100	0.001	0.001	0.142
	User	-	100	0.001	0.001	0.143
	User	-	100	0.000	0.000	0.144
	User	-	100	0.003	0.003	0.147
3.001	User	-	100	0.056	0.056	0.056
	User	-	100	0.006	0.006	0.062
	User	-	100	0.007	0.007	0.070
	User	-	100	0.007	0.007	0.077
	User	-	100	0.005	0.005	0.082
3.002	User	-	100	0.043	0.043	0.043
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.045
	User	-	100	0.001	0.001	0.047
3.003	User	-	100	0.059	0.059	0.059
	User	-	100	0.006	0.006	0.065
	User	-	100	0.005	0.005	0.070
3.004	User	-	100	0.009	0.009	0.009
1.007	User	-	100	0.163	0.163	0.163
4.000	User	-	100	0.021	0.021	0.021
	User	-	100	0.033	0.033	0.054

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
	User	-	100	0.006	0.006	0.060
	User	-	100	0.027	0.027	0.087
	User	-	100	0.024	0.024	0.111
	User	-	100	0.006	0.006	0.117
4.001	User	-	100	0.029	0.029	0.029
	User	-	100	0.005	0.005	0.034
	User	-	100	0.012	0.012	0.047
	User	-	100	0.011	0.011	0.058
	User	-	100	0.012	0.012	0.070
	User	-	100	0.011	0.011	0.080
	User	-	100	0.014	0.014	0.094
	User	-	100	0.006	0.006	0.100
	User	-	100	0.000	0.000	0.101
	User	-	100	0.000	0.000	0.101
4.002	User	-	100	0.022	0.022	0.022
4.003	User	-	100	0.043	0.043	0.043
	User	-	100	0.029	0.029	0.072
4.004	User	-	100	0.052	0.052	0.052
	User	-	100	0.010	0.010	0.062
	User	-	100	0.003	0.003	0.065
1.008	User	-	100	0.016	0.016	0.016
1.009	User	-	100	0.009	0.009	0.009
	User	-	100	0.009	0.009	0.018
1.010	User	-	100	0.017	0.017	0.017
	User	-	100	0.113	0.113	0.130
1.011	User	-	100	0.074	0.074	0.074
5.000	User	-	100	0.059	0.059	0.059
	User	-	100	0.002	0.002	0.061
5.001	User	-	100	0.189	0.189	0.189
1.012	User	-	100	0.040	0.040	0.040
1.013	User	-	100	0.030	0.030	0.030
1.014	User	-	100	0.012	0.012	0.012
6.000	User	-	100	0.072	0.072	0.072
	User	-	100	0.052	0.052	0.123
	User	-	100	0.003	0.003	0.127
	User	-	100	0.004	0.004	0.131
	User	-	100	0.006	0.006	0.136
6.001	User	-	100	0.022	0.022	0.022
	User	-	100	0.002	0.002	0.024
	User	-	100	0.003	0.003	0.028
6.002	User	-	100	0.033	0.033	0.033
	User	-	100	0.006	0.006	0.039
7.000	User	-	100	0.136	0.136	0.136
7.001	User	-	100	0.105	0.105	0.105
7.002	User	-	100	0.032	0.032	0.032
7.003	User	-	100	0.068	0.068	0.068
	User	-	100	0.006	0.006	0.074
7.004	User	-	100	0.044	0.044	0.044
6.003	User	-	100	0.029	0.029	0.029
	User	-	100	0.007	0.007	0.036
6.004	User	-	100	0.085	0.085	0.085
8.000	User	-	100	0.000	0.000	0.000
	User	-	100	0.035	0.035	0.035
	User	-	100	0.013	0.013	0.048
8.001	User	-	100	0.082	0.082	0.082
8.002	User	-	100	0.028	0.028	0.028
6.005	User	-	100	0.054	0.054	0.054
6.006	User	-	100	0.009	0.009	0.009
6.007	User	-	100	0.012	0.012	0.012
6.008	User	-	100	0.012	0.012	0.012

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
6.009	User	-	100	0.051	0.051	0.051
6.010	-	-	100	0.000	0.000	0.000
1.015	User	-	100	0.009	0.009	0.009
	User	-	100	0.008	0.008	0.017
	User	-	100	0.008	0.008	0.025
1.016	-	-	100	0.000	0.000	0.000
1.017	-	-	100	0.000	0.000	0.000
9.000	User	-	100	0.080	0.080	0.080
	User	-	100	0.005	0.005	0.085
9.001	User	-	100	0.033	0.033	0.033
	User	-	100	0.003	0.003	0.036
	User	-	100	0.057	0.057	0.093
	User	-	100	0.007	0.007	0.100
9.002	User	-	100	0.021	0.021	0.021
	User	-	100	0.006	0.006	0.027
9.003	User	-	100	0.047	0.047	0.047
10.000	User	-	100	0.058	0.058	0.058
	User	-	100	0.017	0.017	0.075
9.004	User	-	100	0.033	0.033	0.033
9.005	User	-	100	0.039	0.039	0.039
9.006	-	-	100	0.000	0.000	0.000
9.007	User	-	100	0.045	0.045	0.045
9.008	User	-	100	0.039	0.039	0.039
9.009	User	-	100	0.034	0.034	0.034
1.018	User	-	100	0.038	0.038	0.038
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000
1.023	-	-	100	0.000	0.000	0.000
1.024	-	-	100	0.000	0.000	0.000
1.025	-	-	100	0.000	0.000	0.000
1.026	-	-	100	0.000	0.000	0.000
1.027	-	-	100	0.000	0.000	0.000
1.028	-	-	100	0.000	0.000	0.000
11.000	User	-	100	0.097	0.097	0.097
11.001	User	-	100	0.046	0.046	0.046
11.002	User	-	100	0.054	0.054	0.054
11.003	User	-	100	0.010	0.010	0.010
11.004	User	-	100	0.039	0.039	0.039
12.000	User	-	100	0.057	0.057	0.057
13.000	User	-	100	0.082	0.082	0.082
12.001	User	-	100	0.014	0.014	0.014
12.002	User	-	100	0.076	0.076	0.076
12.003	User	-	100	0.043	0.043	0.043
12.004	User	-	100	0.019	0.019	0.019
11.005	User	-	100	0.045	0.045	0.045
11.006	User	-	100	0.060	0.060	0.060
14.000	User	-	100	0.148	0.148	0.148
14.001	User	-	100	0.100	0.100	0.100
14.002	User	-	100	0.064	0.064	0.064
11.007	User	-	100	0.051	0.051	0.051
11.008	-	-	100	0.000	0.000	0.000
11.009	-	-	100	0.000	0.000	0.000
15.000	User	-	100	0.049	0.049	0.049
16.000	User	-	100	0.044	0.044	0.044
15.001	User	-	100	0.024	0.024	0.024
15.002	User	-	100	0.077	0.077	0.077
11.010	User	-	100	0.037	0.037	0.037
11.011	User	-	100	0.041	0.041	0.041

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Causeway	Network 2019.1	

Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
17.000	User	-	100	0.112	0.112	0.112
11.012	User	-	100	0.028	0.028	0.028
11.013	User	-	100	0.074	0.074	0.074
11.014	-	-	100	0.000	0.000	0.000
18.000	User	-	100	0.047	0.047	0.047
19.000	User	-	100	0.055	0.055	0.055
18.001	User	-	100	0.041	0.041	0.041
18.002	User	-	100	0.026	0.026	0.026
11.015	-	-	100	0.000	0.000	0.000
11.016	-	-	100	0.000	0.000	0.000
20.000	User	-	100	0.027	0.027	0.027
20.001	User	-	100	0.039	0.039	0.039
11.017	-	-	100	0.000	0.000	0.000
21.000	User	-	100	0.048	0.048	0.048
21.001	User	-	100	0.043	0.043	0.043
21.002	User	-	100	0.044	0.044	0.044
11.018	-	-	100	0.000	0.000	0.000
11.019	-	-	100	0.000	0.000	0.000
11.020	-	-	100	0.000	0.000	0.000
22.000	User	-	100	0.023	0.023	0.023
	User	-	100	0.007	0.007	0.030
	User	-	100	0.007	0.007	0.036
	User	-	100	0.008	0.008	0.044
	User	-	100	0.008	0.008	0.052
22.001	User	-	100	0.065	0.065	0.065
11.021	-	-	100	0.000	0.000	0.000
11.022	-	-	100	0.000	0.000	0.000
11.023	-	-	100	0.000	0.000	0.000
23.000	User	-	100	0.016	0.016	0.016
23.001	User	-	100	0.027	0.027	0.027
23.002	User	-	100	0.049	0.049	0.049
	User	-	100	0.006	0.006	0.054
	User	-	100	0.012	0.012	0.066
23.003	User	-	100	0.038	0.038	0.038
	User	-	100	0.006	0.006	0.045
23.004	User	-	100	0.043	0.043	0.043
23.005	User	-	100	0.071	0.071	0.071
	User	-	100	0.025	0.025	0.096
	User	-	100	0.003	0.003	0.099
23.006	User	-	100	0.047	0.047	0.047
	User	-	100	0.011	0.011	0.059
	User	-	100	0.014	0.014	0.073
	User	-	100	0.002	0.002	0.075
23.007	User	-	100	0.007	0.007	0.007
	User	-	100	0.017	0.017	0.024
	User	-	100	0.002	0.002	0.026
23.008	User	-	100	0.028	0.028	0.028
24.000	User	-	100	0.072	0.072	0.072
23.009	User	-	100	0.054	0.054	0.054
	User	-	100	0.016	0.016	0.069
23.010	User	-	100	0.053	0.053	0.053
25.000	User	-	100	0.048	0.048	0.048
23.011	User	-	100	0.209	0.209	0.209
	User	-	100	0.022	0.022	0.231
	User	-	100	0.008	0.008	0.239
	User	-	100	0.023	0.023	0.262
23.012	User	-	100	0.116	0.116	0.116
	User	-	100	0.041	0.041	0.157
	User	-	100	0.005	0.005	0.163
23.013	User	-	100	0.119	0.119	0.119

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Area Summary for Catch C+D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
23.014	User	-	100	0.039	0.039	0.039
23.015	-	-	100	0.000	0.000	0.000
23.016	-	-	100	0.000	0.000	0.000
23.017	-	-	100	0.000	0.000	0.000
23.018	-	-	100	0.000	0.000	0.000
26.000	User	-	100	0.007	0.007	0.007
26.001	User	-	100	0.062	0.062	0.062
26.002	User	-	100	0.064	0.064	0.064
23.019	-	-	100	0.000	0.000	0.000
23.020	-	-	100	0.000	0.000	0.000
23.021	-	-	100	0.000	0.000	0.000
23.022	-	-	100	0.000	0.000	0.000
1.029	-	-	100	0.000	0.000	0.000
1.030	-	-	100	0.000	0.000	0.000
1.031	-	-	100	0.000	0.000	0.000
27.000	User	-	50	0.997	0.498	0.498
27.001	User	-	50	1.046	0.523	0.523
27.002	-	-	100	0.000	0.000	0.000
27.003	-	-	100	0.000	0.000	0.000
27.004	-	-	100	0.000	0.000	0.000
28.000	-	-	100	0.117	0.117	0.117
28.001	-	-	100	0.050	0.050	0.050
28.002	-	-	100	0.034	0.034	0.034
28.003	-	-	100	0.009	0.009	0.009
28.004	-	-	100	0.046	0.046	0.046
29.000	-	-	100	0.000	0.000	0.000
27.005	-	-	100	0.060	0.060	0.060
27.006	-	-	100	0.043	0.043	0.043
27.007	-	-	100	0.007	0.007	0.007
27.008	-	-	100	0.034	0.034	0.034
30.000	-	-	100	0.053	0.053	0.053
30.001	-	-	100	0.034	0.034	0.034
30.002	-	-	100	0.023	0.023	0.023
30.003	-	-	100	0.012	0.012	0.012
30.004	-	-	100	0.017	0.017	0.017
27.009	-	-	100	0.000	0.000	0.000
27.010	-	-	100	0.000	0.000	0.000
1.032	-	-	100	0.000	0.000	0.000
1.033	-	-	100	0.000	0.000	0.000
1.034	-	-	100	0.000	0.000	0.000
1.035	-	-	100	0.000	0.000	0.000
1.036	-	-	100	0.000	0.000	0.000
1.037	-	-	100	0.000	0.000	0.000
1.038	-	-	100	0.000	0.000	0.000
1.039	-	-	100	0.000	0.000	0.000
1.040	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				9.776	8.754	8.754

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Free Flowing Outfall Details for Catch C+D

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.040	SStream	19.460	18.960	18.620	0	0

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Online Controls for Catch C+D

Complex Manhole: S3001-CON, DS/PN: S1.021, Volume (m³): 7.5

Orifice

Diameter (m) 0.100 Discharge Coefficient 0.600 Invert Level (m) 21.679

Weir

Discharge Coef 0.544 Width (m) 1.500 Invert Level (m) 22.300

Hydro-Brake® Optimum Manhole: S3111-CON, DS/PN: S1.033, Volume (m³): 42.2

Unit Reference	MD-SFF-0239-7040-2551-2790
Design Head (m)	2.551
Design Flow (l/s)	70.4
Flush-Flo™	User Defined
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	239
Invert Level (m)	19.664
Minimum Outlet Pipe Diameter (mm)	300
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.551	70.4	Kick-Flo®	0.362	27.5
Flush-Flo™	0.300	27.9	Mean Flow over Head Range	-	47.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.9	0.800	40.2	2.000	62.5	4.000	87.6	7.000	115.2
0.200	24.1	1.000	44.7	2.200	65.5	4.500	92.8	7.500	119.2
0.300	27.9	1.200	48.8	2.400	68.3	5.000	97.7	8.000	123.0
0.400	28.8	1.400	52.6	2.600	71.0	5.500	102.4	8.500	126.7
0.500	32.0	1.600	56.1	3.000	76.2	6.000	106.8	9.000	130.3
0.600	35.0	1.800	59.4	3.500	82.1	6.500	111.1	9.500	133.8

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Storage Structures for Catch C+D

Tank or Pond Manhole: S4069-BASIN D, DS/PN: S1.020

Invert Level (m) 21.810

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	73.7	0.390	472.8	0.890	1116.3	1.290	1645.1
0.090	160.7	0.490	581.7	0.990	1249.9	1.490	1920.5
0.190	256.2	0.590	693.1	1.090	1380.3	1.590	2101.9
0.290	356.4	0.690	841.9	1.190	1513.6	1.690	2292.5

Tank or Pond Manhole: S3086-Basin C, DS/PN: S1.029

Invert Level (m) 20.600

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	173.9	0.400	3815.8	0.800	4467.3	1.200	5149.0	1.600	5914.0
0.100	1267.8	0.500	3988.0	0.900	4628.0	1.300	5341.0	1.700	6110.0
0.200	2672.8	0.600	4148.5	1.000	4790.0	1.400	5537.0		
0.300	3228.6	0.700	4307.7	1.100	4954.0	1.500	5725.0		

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.800 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 299.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status ON
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1
 Climate Change (%) 0

PN	US/MH		Event				US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m ³)	Pipe Flow (l/s)
	Name													
S1.000	S4001	60 minute	1 year	Summer	I+0%	27.478	26.110	-0.168	0.000	0.15			0.059	8.6
S1.001	S4002	60 minute	1 year	Summer	I+0%	26.966	25.559	-0.207	0.000	0.21			0.102	13.9
S1.002	S4003	60 minute	1 year	Summer	I+0%	26.704	25.357	-0.253	0.000	0.23			0.231	23.7
S1.003	S4004	60 minute	1 year	Summer	I+0%	28.014	25.179	-0.241	0.000	0.28			0.863	24.1
S2.000	S4005	60 minute	1 year	Summer	I+0%	33.607	32.260	-0.147	0.000	0.26			0.082	9.4
S2.001	S4006	60 minute	1 year	Summer	I+0%	33.552	32.127	-0.165	0.000	0.16			0.125	14.3
S2.002	S4007	60 minute	1 year	Summer	I+0%	32.390	31.023	-0.166	0.000	0.16			0.073	16.3
S2.003	S4008	60 minute	1 year	Summer	I+0%	31.592	30.233	-0.159	0.000	0.19			0.077	19.5
S2.004	S4009	60 minute	1 year	Summer	I+0%	30.545	29.229	-0.148	0.000	0.25			0.091	23.1
S2.005	S4010	60 minute	1 year	Summer	I+0%	29.217	27.991	-0.140	0.000	0.30			0.106	24.6
S2.006	S4011	60 minute	1 year	Summer	I+0%	28.782	27.525	-0.170	0.000	0.14			0.067	25.3
S1.004	S4012	60 minute	1 year	Summer	I+0%	28.294	25.082	-0.291	0.000	0.41			0.542	50.3
S1.005	S4013	60 minute	1 year	Summer	I+0%	28.322	25.021	-0.323	0.000	0.31			0.989	60.2
S1.006	S4014	60 minute	1 year	Summer	I+0%	27.532	24.829	-0.421	0.000	0.09			0.663	61.2
S3.000	S4015	60 minute	1 year	Summer	I+0%	26.680	25.329	-0.151	0.000	0.24			0.078	13.1
S3.001	S4016	60 minute	1 year	Summer	I+0%	26.141	24.544	-0.277	0.000	0.15			0.133	19.8
S3.002	S4017	60 minute	1 year	Summer	I+0%	26.114	24.371	-0.239	0.000	0.27			0.613	23.3
S3.003	S4018	60 minute	1 year	Summer	I+0%	26.410	24.325	-0.238	0.000	0.29			0.506	28.7
S3.004	S4019	60 minute	1 year	Summer	I+0%	27.500	24.224	-0.225	0.000	0.34			0.991	29.1
S1.007	S4020	60 minute	1 year	Summer	I+0%	27.348	23.992	-0.415	0.000	0.25			0.469	100.6
S4.000	S4021	60 minute	1 year	Summer	I+0%	26.080	24.676	-0.142	0.000	0.29			0.088	10.4
S4.001	S4022	60 minute	1 year	Summer	I+0%	25.790	24.525	-0.192	0.000	0.28			0.127	18.6
S4.002	S4023	60 minute	1 year	Summer	I+0%	25.325	24.344	-0.174	0.000	0.37			0.516	20.2
S4.003	S4024	60 minute	1 year	Summer	I+0%	25.456	24.234	-0.244	0.000	0.26			0.227	25.8
S4.004	S4025	60 minute	1 year	Summer	I+0%	25.586	24.149	-0.233	0.000	0.31			0.853	30.7
S1.008	S4026	60 minute	1 year	Summer	I+0%	26.600	23.901	-0.363	0.000	0.48			7.453	128.8
S1.009	S4027	60 minute	1 year	Summer	I+0%	26.345	23.866	-0.372	0.000	0.51			2.760	129.7
S1.010	S4028	60 minute	1 year	Summer	I+0%	26.150	23.627	-0.592	0.000	0.10			0.624	136.6
S1.011	S4029	60 minute	1 year	Summer	I+0%	24.845	22.670	-0.513	0.000	0.22			1.303	140.4
S5.000	S4030	60 minute	1 year	Summer	I+0%	25.677	24.407	-0.098	0.000	0.26			0.053	5.4
S5.001	S4031	60 minute	1 year	Summer	I+0%	25.276	23.907	-0.220	0.000	0.16			0.085	21.1

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

US/MH		
PN	Name	Status
S1.000	S4001	OK
S1.001	S4002	OK
S1.002	S4003	OK
S1.003	S4004	OK
S2.000	S4005	OK
S2.001	S4006	OK
S2.002	S4007	OK
S2.003	S4008	OK
S2.004	S4009	OK
S2.005	S4010	OK
S2.006	S4011	OK
S1.004	S4012	OK
S1.005	S4013	OK
S1.006	S4014	OK
S3.000	S4015	OK
S3.001	S4016	OK
S3.002	S4017	OK
S3.003	S4018	OK
S3.004	S4019	OK
S1.007	S4020	OK
S4.000	S4021	OK
S4.001	S4022	OK
S4.002	S4023	OK
S4.003	S4024	OK
S4.004	S4025	OK
S1.008	S4026	OK
S1.009	S4027	OK
S1.010	S4028	OK
S1.011	S4029	OK
S5.000	S4030	OK
S5.001	S4031	OK

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Causeway		Network 2019.1

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Water Surcharged			Flooded		Flow / Cap.	Overflow (l/s)
			US/CL (m)	Level (m)	Depth (m)	Volume (m³)			
S1.012	S4032	60 minute 1 year Summer I+0%	24.078	22.623	-0.390	0.000		0.25	
S1.013	S4033	60 minute 1 year Summer I+0%	23.942	22.603	-0.357	0.000		0.36	
S1.014	S4034	60 minute 1 year Summer I+0%	23.833	22.588	-0.341	0.000		0.57	
S6.000	S4035	60 minute 1 year Summer I+0%	31.555	29.850	-0.175	0.000		0.11	
S6.001	S4036	60 minute 1 year Summer I+0%	29.895	28.198	-0.167	0.000		0.15	
S6.002	S4037	60 minute 1 year Summer I+0%	29.250	27.578	-0.147	0.000		0.26	
S7.000	S4038	60 minute 1 year Summer I+0%	30.720	29.045	-0.165	0.000		0.16	
S7.001	S4039	60 minute 1 year Summer I+0%	29.740	28.037	-0.208	0.000		0.20	
S7.002	S4040	60 minute 1 year Summer I+0%	29.410	27.643	-0.277	0.000		0.15	
S7.003	S4041	60 minute 1 year Summer I+0%	29.250	27.500	-0.270	0.000		0.17	
S7.004	S4042	60 minute 1 year Summer I+0%	29.025	27.270	-0.270	0.000		0.18	
S6.003	S4043	60 minute 1 year Summer I+0%	28.650	26.889	-0.256	0.000		0.22	
S6.004	S4044	60 minute 1 year Summer I+0%	28.150	26.367	-0.288	0.000		0.12	
S8.000	S4045	60 minute 1 year Summer I+0%	26.200	24.029	-0.099	0.000		0.26	
S8.001	S4046	60 minute 1 year Summer I+0%	26.500	23.709	-0.144	0.000		0.28	
S8.002	S4047	60 minute 1 year Summer I+0%	26.440	23.470	-0.206	0.000		0.21	
S6.005	S4048	60 minute 1 year Summer I+0%	26.160	23.211	-0.372	0.000		0.31	
S6.006	S4049	60 minute 1 year Summer I+0%	24.555	23.050	-0.469	0.000		0.11	
S6.007	S4050	60 minute 1 year Summer I+0%	24.220	22.689	-0.297	0.000		0.51	
S6.008	S4051	60 minute 1 year Summer I+0%	23.845	22.579	-0.383	0.000		0.16	
S6.009	S4052	60 minute 1 year Summer I+0%	23.675	22.570	-0.332	0.000		0.17	
S6.010	S4053	60 minute 1 year Summer I+0%	23.600	22.566	-0.329	0.000		0.20	
S1.015	S4054	60 minute 1 year Summer I+0%	23.565	22.563	-0.322	0.000		0.65	
S1.016	S4055	60 minute 1 year Summer I+0%	23.660	22.542	-0.331	0.000		0.75	
S1.017	S4056	60 minute 1 year Summer I+0%	23.840	22.506	-0.352	0.000		0.68	
S9.000	S4057	60 minute 1 year Summer I+0%	26.352	24.980	-0.172	0.000		0.13	
S9.001	S4058	60 minute 1 year Summer I+0%	25.763	24.351	-0.211	0.000		0.19	
S9.002	S4059	60 minute 1 year Summer I+0%	25.576	24.118	-0.195	0.000		0.27	
S9.003	S4060	60 minute 1 year Summer I+0%	25.493	24.035	-0.204	0.000		0.23	
S10.000	S4061	60 minute 1 year Summer I+0%	25.428	24.056	-0.172	0.000		0.13	
S9.004	S4062	60 minute 1 year Summer I+0%	25.210	23.819	-0.191	0.000		0.29	
S9.005	S4063	60 minute 1 year Summer I+0%	24.964	23.518	-0.245	0.000		0.26	
S9.006	S4064	60 minute 1 year Summer I+0%	24.852	23.308	-0.344	0.000		0.13	
S9.007	S4065	60 minute 1 year Summer I+0%	24.696	23.074	-0.346	0.000		0.12	
S9.008	S4066	60 minute 1 year Summer I+0%	24.374	22.768	-0.330	0.000		0.16	
S9.009	S4067	60 minute 1 year Summer I+0%	24.123	22.615	-0.279	0.000		0.31	
S1.018	S4068	240 minute 1 year Winter I+0%	23.970	22.495	-0.350	0.000		0.21	
S1.019	S4069	240 minute 1 year Winter I+0%	23.988	22.491	-0.340	0.000		0.31	
S1.020	S4069-BASIN D	240 minute 1 year Winter I+0%	23.500	22.486	0.151	0.000		0.22	
S1.021	S3001-CON	120 minute 1 year Winter I+0%	23.971	22.465	0.261	0.000		0.29	
S1.022	S3002	120 minute 1 year Winter I+0%	24.693	21.776	-0.330	0.000		0.30	
S1.023	S3003	120 minute 1 year Winter I+0%	25.302	21.626	-0.331	0.000		0.29	
S1.024	S3004	120 minute 1 year Winter I+0%	25.496	21.463	-0.331	0.000		0.29	
S1.025	S3005	120 minute 1 year Winter I+0%	25.233	21.336	-0.295	0.000		0.32	
S1.026	S3006	120 minute 1 year Winter I+0%	24.970	21.279	-0.293	0.000		0.32	
S1.027	S3007	120 minute 1 year Winter I+0%	24.235	21.221	-0.287	0.000		0.33	
S1.028	S3008	120 minute 1 year Winter I+0%	24.282	21.176	-0.281	0.000		0.44	
S11.000	S3010	60 minute 1 year Summer I+0%	27.983	26.259	-0.403	0.000		0.02	
S11.001	S3011	60 minute 1 year Summer I+0%	27.329	25.639	-0.401	0.000		0.03	
S11.002	S3012	60 minute 1 year Summer I+0%	26.707	24.834	-0.373	0.000		0.07	
S11.003	S3013	60 minute 1 year Summer I+0%	26.514	24.644	-0.371	0.000		0.07	
S11.004	S3014	60 minute 1 year Summer I+0%	26.322	24.437	-0.385	0.000		0.05	
S12.000	S3015	60 minute 1 year Summer I+0%	27.434	25.829	-0.105	0.000		0.20	
S13.000	S3016	60 minute 1 year Summer I+0%	27.405	25.803	-0.176	0.000		0.11	
S12.001	S3017	60 minute 1 year Summer I+0%	27.355	25.434	-0.305	0.000		0.08	
S12.002	S3018	60 minute 1 year Summer I+0%	26.944	25.223	-0.310	0.000		0.07	
S12.003	S3019	60 minute 1 year Summer I+0%	26.586	24.723	-0.287	0.000		0.12	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m ³)	Pipe Flow (l/s)	Status
S1.012	S4032	2.510	155.8	OK
S1.013	S4033	9.231	155.2	OK
S1.014	S4034	5.899	155.7	OK
S6.000	S4035	0.051	12.2	OK
S6.001	S4036	0.068	14.5	OK
S6.002	S4037	0.094	17.7	OK
S7.000	S4038	0.062	12.2	OK
S7.001	S4039	0.099	20.8	OK
S7.002	S4040	0.136	23.4	OK
S7.003	S4041	0.231	29.6	OK
S7.004	S4042	0.236	33.2	OK
S6.003	S4043	0.299	53.7	OK
S6.004	S4044	0.156	60.6	OK
S8.000	S4045	0.052	4.3	OK
S8.001	S4046	0.088	11.1	OK
S8.002	S4047	0.104	13.5	OK
S6.005	S4048	0.396	77.7	OK
S6.006	S4049	0.855	78.6	OK
S6.007	S4050	0.745	79.4	OK
S6.008	S4051	1.536	77.6	OK
S6.009	S4052	2.928	77.4	OK
S6.010	S4053	3.278	74.9	OK
S1.015	S4054	8.950	218.5	OK
S1.016	S4055	4.728	218.4	OK
S1.017	S4056	5.303	218.4	OK
S9.000	S4057	0.054	7.6	OK
S9.001	S4058	0.097	15.8	OK
S9.002	S4059	0.242	18.1	OK
S9.003	S4060	0.175	21.9	OK
S10.000	S4061	0.054	6.7	OK
S9.004	S4062	0.223	31.1	OK
S9.005	S4063	0.208	34.3	OK
S9.006	S4064	0.147	34.2	OK
S9.007	S4065	0.195	37.7	OK
S9.008	S4066	0.295	40.9	OK
S9.009	S4067	0.610	43.6	OK
S1.018	S4068	4.881	105.0	OK
S1.019	S4069	2.645	104.4	OK
S1.020	S4069-BASIN D	289.789	61.2	SURCHARGED
S1.021	S3001-CON	4.839	62.3	SURCHARGED
S1.022	S3002	2.009	62.0	OK
S1.023	S3003	2.738	61.7	OK
S1.024	S3004	2.796	61.1	OK
S1.025	S3005	3.952	60.5	OK
S1.026	S3006	1.988	60.3	OK
S1.027	S3007	2.231	60.1	OK
S1.028	S3008	1.903	60.0	OK
S11.000	S3010	0.061	8.7	OK
S11.001	S3011	0.094	12.6	OK
S11.002	S3012	0.131	17.1	OK
S11.003	S3013	0.144	17.8	OK
S11.004	S3014	0.115	21.0	OK
S12.000	S3015	0.046	5.1	OK
S13.000	S3016	0.049	7.3	OK
S12.001	S3017	0.092	13.6	OK
S12.002	S3018	0.136	19.8	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S12.003	S3019	0.144	23.3	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)
S12.004	S3020	60 minute 1 year Summer I+0%	26.355	24.486	-0.294	0.000	0.10		0.141
S11.005	S3021	60 minute 1 year Summer I+0%	25.834	23.872	-0.387	0.000	0.20		0.386
S11.006	S3022	60 minute 1 year Summer I+0%	26.132	23.805	-0.383	0.000	0.15		2.574
S14.000	S3023	60 minute 1 year Summer I+0%	27.248	25.519	-0.229	0.000	0.13		0.075
S14.001	S3024	60 minute 1 year Summer I+0%	26.960	25.230	-0.230	0.000	0.12		0.124
S14.002	S3025	60 minute 1 year Summer I+0%	26.657	24.505	-0.217	0.000	0.17		0.108
S11.007	S3026	60 minute 1 year Summer I+0%	26.356	23.797	-0.330	0.000	0.42		1.080
S11.008	S3027	60 minute 1 year Summer I+0%	25.760	23.734	-0.362	0.000	0.27		1.169
S11.009	S3028	60 minute 1 year Summer I+0%	25.205	23.652	-0.318	0.000	0.44		4.964
S15.000	S3029	60 minute 1 year Summer I+0%	26.390	24.846	-0.119	0.000	0.10		0.030
S16.000	S3030	60 minute 1 year Summer I+0%	26.231	24.690	-0.116	0.000	0.12		0.033
S15.001	S3031	60 minute 1 year Summer I+0%	26.202	24.236	-0.157	0.000	0.20		0.071
S15.002	S3032	60 minute 1 year Summer I+0%	25.813	23.887	-0.112	0.000	0.50		0.201
S11.010	S3033	60 minute 1 year Summer I+0%	26.672	23.602	-0.335	0.000	0.33		1.699
S11.011	S3034-GR	60 minute 1 year Summer I+0%	25.057	23.535	-0.322	0.000	0.27		3.258
S17.000	S3035	60 minute 1 year Summer I+0%	25.408	23.908	-0.147	0.000	0.26		0.083
S11.012	S3036-GR	60 minute 1 year Summer I+0%	24.964	23.520	-0.244	0.000	0.41		2.109
S11.013	S3037-GR	60 minute 1 year Summer I+0%	24.890	23.471	-0.219	0.000	0.73		6.946
S11.014	S3038	60 minute 1 year Summer I+0%	24.022	23.094	-0.928	0.000	0.01		0.138
S18.000	S3039-GR	60 minute 1 year Summer I+0%	24.640	23.205	-0.235	0.000	0.07		0.068
S19.000	S3040-GR	60 minute 1 year Summer I+0%	24.628	23.200	-0.228	0.000	0.09		0.076
S18.001	S3041-GR	60 minute 1 year Summer I+0%	24.597	23.187	-0.210	0.000	0.20		0.266
S18.002	S3042-GR	60 minute 1 year Summer I+0%	24.494	23.094	-0.200	0.000	0.24		0.297
S11.015	S3043	60 minute 1 year Summer I+0%	23.922	22.967	-0.955	0.000	0.01		0.608
S11.016	S3045	60 minute 1 year Summer I+0%	23.652	22.715	-0.937	0.000	0.02		1.483
S20.000	S3045-1-GR	60 minute 1 year Summer I+0%	24.136	22.749	-0.187	0.000	0.07		0.038
S20.001	S3045-2-GR	60 minute 1 year Summer I+0%	24.043	22.679	-0.164	0.000	0.17		0.127
S11.017	S3046	60 minute 1 year Summer I+0%	23.459	22.598	-0.861	0.000	0.02		1.142
S21.000	S3047-GR	60 minute 1 year Summer I+0%	24.058	22.609	-0.249	0.000	0.07		0.052
S21.001	S3048-GR	60 minute 1 year Summer I+0%	23.965	22.535	-0.230	0.000	0.12		0.201
S21.002	S3049-GR	60 minute 1 year Summer I+0%	23.872	22.463	-0.209	0.000	0.20		0.264
S11.018	S3050	60 minute 1 year Summer I+0%	23.365	22.368	-0.997	0.000	0.01		1.605
S11.019	S3051	60 minute 1 year Summer I+0%	23.316	22.351	-0.965	0.000	0.02		0.178
S11.020	S3053	60 minute 1 year Summer I+0%	22.996	22.129	-0.867	0.000	0.02		1.601
S22.000	S3053-1-GR	60 minute 1 year Summer I+0%	23.484	22.111	-0.173	0.000	0.12		0.054
S22.001	S3054-GR	60 minute 1 year Summer I+0%	23.269	21.929	-0.140	0.000	0.31		0.186
S11.021	S3055	60 minute 1 year Summer I+0%	22.739	21.859	-0.880	0.000	0.02		2.207
S11.022	S3056	60 minute 1 year Summer I+0%	22.621	21.729	-0.262	0.000	0.50		7.085
S11.023	S3057	60 minute 1 year Summer I+0%	22.633	21.605	-1.028	0.000	0.02		0.321
S23.000	S3058	60 minute 1 year Summer I+0%	27.878	26.183	-0.279	0.000	0.01		0.018
S23.001	S3059	60 minute 1 year Summer I+0%	27.725	26.031	-0.267	0.000	0.03		0.051
S23.002	S3060	60 minute 1 year Summer I+0%	27.292	25.327	-0.311	0.000	0.07		0.086
S23.003	S3061	60 minute 1 year Summer I+0%	27.136	25.216	-0.305	0.000	0.08		0.171
S23.004	S3062	60 minute 1 year Summer I+0%	26.998	25.045	-0.300	0.000	0.09		0.154
S23.005	S3063	60 minute 1 year Summer I+0%	26.633	24.729	-0.249	0.000	0.24		0.340
S23.006	S3064	60 minute 1 year Summer I+0%	26.623	24.560	-0.310	0.000	0.18		0.377
S23.007	S3065	60 minute 1 year Summer I+0%	26.942	24.522	-0.267	0.000	0.30		0.877
S23.008	S3066	60 minute 1 year Summer I+0%	27.141	24.486	-0.267	0.000	0.35		0.785
S24.000	S3067	60 minute 1 year Summer I+0%	27.294	25.679	-0.116	0.000	0.12		0.033
S23.009	S3068	60 minute 1 year Summer I+0%	27.239	24.448	-0.278	0.000	0.31		0.580
S23.010	S3069	60 minute 1 year Summer I+0%	26.728	24.296	-0.326	0.000	0.17		0.868
S25.000	S3070	60 minute 1 year Summer I+0%	25.706	24.174	-0.269	0.000	0.02		0.030
S23.011	S3071	60 minute 1 year Summer I+0%	25.786	23.657	-0.274	0.000	0.37		0.960
S23.012	S3072	60 minute 1 year Summer I+0%	25.341	23.588	-0.269	0.000	0.40		3.132
S23.013	S3073-GR	60 minute 1 year Summer I+0%	24.943	23.508	-0.235	0.000	0.44		5.532
S23.014	S3074-GR	60 minute 1 year Summer I+0%	24.865	23.448	-0.217	0.000	0.65		4.316
S23.015	S3075	60 minute 1 year Summer I+0%	24.643	23.123	-1.520	0.000	0.00		0.140

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.004	S3020	24.9	OK
S11.005	S3021	48.9	OK
S11.006	S3022	53.5	OK
S14.000	S3023	13.2	OK
S14.001	S3024	21.5	OK
S14.002	S3025	26.7	OK
S11.007	S3026	82.8	OK
S11.008	S3027	81.3	OK
S11.009	S3028	78.9	OK
S15.000	S3029	4.4	OK
S16.000	S3030	4.0	OK
S15.001	S3031	10.4	OK
S15.002	S3032	16.7	OK
S11.010	S3033	93.5	OK
S11.011	S3034-GR	93.9	OK
S17.000	S3035	10.1	OK
S11.012	S3036-GR	100.3	OK
S11.013	S3037-GR	102.9	OK
S11.014	S3038	103.0	OK
S18.000	S3039-GR	4.2	OK
S19.000	S3040-GR	4.9	OK
S18.001	S3041-GR	12.4	OK
S18.002	S3042-GR	14.5	OK
S11.015	S3043	111.5	OK
S11.016	S3045	111.7	OK
S20.000	S3045-1-GR	2.4	OK
S20.001	S3045-2-GR	5.6	OK
S11.017	S3046	114.6	OK
S21.000	S3047-GR	4.3	OK
S21.001	S3048-GR	7.8	OK
S21.002	S3049-GR	11.4	OK
S11.018	S3050	121.2	OK
S11.019	S3051	121.2	OK
S11.020	S3053	120.9	OK
S22.000	S3053-1-GR	4.6	OK
S22.001	S3054-GR	10.0	OK
S11.021	S3055	125.8	OK
S11.022	S3056	124.6	OK*
S11.023	S3057	124.5	OK
S23.000	S3058	1.5	OK
S23.001	S3059	3.7	OK
S23.002	S3060	9.2	OK
S23.003	S3061	12.8	OK
S23.004	S3062	16.4	OK
S23.005	S3063	24.3	OK
S23.006	S3064	30.1	OK
S23.007	S3065	31.9	OK
S23.008	S3066	34.0	OK
S24.000	S3067	6.5	OK
S23.009	S3068	44.4	OK
S23.010	S3069	47.7	OK
S25.000	S3070	4.3	OK
S23.011	S3071	68.2	OK
S23.012	S3072	77.0	OK
S23.013	S3073-GR	81.6	OK
S23.014	S3074-GR	83.0	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.015	S3075	83.0	OK

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Causeway		Network 2019.1

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow
S23.016	S3076	60 minute 1 year Summer I+0%	24.775	22.895	-1.880	0.000	0.00	
S23.017	S3077	60 minute 1 year Summer I+0%	24.194	22.574	-1.620	0.000	0.00	
S23.018	S3078	60 minute 1 year Summer I+0%	24.085	22.481	-1.604	0.000	0.00	
S26.000	S3079-GR	60 minute 1 year Summer I+0%	24.183	22.710	-0.273	0.000	0.01	
S26.001	S3080-GR	60 minute 1 year Summer I+0%	24.142	22.699	-0.243	0.000	0.08	
S26.002	S3081-GR	60 minute 1 year Summer I+0%	23.927	22.511	-0.216	0.000	0.18	
S23.019	S3082	60 minute 1 year Summer I+0%	23.831	22.386	-1.445	0.000	0.00	
S23.020	S3083	60 minute 1 year Summer I+0%	23.455	22.244	-1.211	0.000	0.01	
S23.021	S3084	60 minute 1 year Summer I+0%	23.461	22.227	-0.218	0.000	0.53	
S23.022	S3085	60 minute 1 year Summer I+0%	23.546	22.115	-1.431	0.000	0.01	
S1.029	S3086-Basin C	360 minute 1 year Winter I+0%	22.300	20.893	-0.107	0.000	0.19	
S1.030	S3087-1	360 minute 1 year Winter I+0%	22.439	20.870	0.133	0.000	0.14	
S1.031	S3087	360 minute 1 year Winter I+0%	22.646	20.861	0.627	0.000	0.35	
S27.000	S3088	60 minute 1 year Summer I+0%	24.098	22.205	-0.406	0.000	0.12	
S27.001	S3089	60 minute 1 year Summer I+0%	23.359	21.663	-0.330	0.000	0.29	
S27.002	S3090	60 minute 1 year Summer I+0%	22.742	21.244	-0.376	0.000	0.18	
S27.003	S3091	240 minute 1 year Winter I+0%	22.519	20.932	-0.315	0.000	0.03	
S27.004	S3092	240 minute 1 year Winter I+0%	22.616	20.924	-0.203	0.000	0.06	
S28.000	S3093	60 minute 1 year Summer I+0%	23.318	21.226	-0.209	0.000	0.19	
S28.001	S3094	60 minute 1 year Summer I+0%	23.170	21.170	-0.201	0.000	0.24	
S28.002	S3095	60 minute 1 year Summer I+0%	22.964	21.114	-0.187	0.000	0.30	
S28.003	S3096	60 minute 1 year Summer I+0%	22.764	21.073	-0.176	0.000	0.34	
S28.004	S3097	60 minute 1 year Summer I+0%	22.667	21.050	-0.167	0.000	0.40	
S29.000	S3098	240 minute 1 year Winter I+0%	22.437	21.087	-0.150	0.000	0.00	
S27.005	S3099	240 minute 1 year Winter I+0%	22.561	20.916	-0.183	0.000	0.03	
S27.006	S3100	240 minute 1 year Winter I+0%	22.401	20.892	-0.158	0.000	0.03	
S27.007	S3101	240 minute 1 year Winter I+0%	22.379	20.865	-0.135	0.000	0.04	
S27.008	S3102	240 minute 1 year Winter I+0%	22.415	20.859	-0.125	0.000	0.05	
S30.000	S3103	60 minute 1 year Summer I+0%	23.337	21.683	-0.180	0.000	0.09	
S30.001	S3104	60 minute 1 year Summer I+0%	23.137	21.340	-0.154	0.000	0.22	
S30.002	S3105	60 minute 1 year Summer I+0%	22.984	21.271	-0.148	0.000	0.26	
S30.003	S3106	60 minute 1 year Summer I+0%	22.666	21.150	-0.133	0.000	0.35	
S30.004	S3107	60 minute 1 year Summer I+0%	22.568	21.109	-0.131	0.000	0.37	
S27.009	S3108	240 minute 1 year Winter I+0%	22.484	20.855	-0.112	0.000	0.05	
S27.010	S3109	240 minute 1 year Winter I+0%	22.471	20.848	-0.099	0.000	0.04	
S1.032	S3110	240 minute 1 year Winter I+0%	22.286	20.826	-0.079	0.000	0.05	
S1.033	S3111-CON	240 minute 1 year Winter I+0%	22.317	20.782	0.668	0.000	0.29	
S1.034	S3112	240 minute 1 year Winter I+0%	22.361	19.733	-0.259	0.000	0.37	
S1.035	S3113	240 minute 1 year Winter I+0%	22.443	19.670	-0.274	0.000	0.32	
S1.036	S3114	240 minute 1 year Winter I+0%	21.748	19.573	-0.280	0.000	0.31	
S1.037	S3115	240 minute 1 year Winter I+0%	21.314	19.398	-0.280	0.000	0.31	
S1.038	S3116	240 minute 1 year Winter I+0%	20.779	19.286	-0.230	0.000	0.39	
S1.039	S3117	240 minute 1 year Winter I+0%	20.378	19.248	-0.225	0.000	0.50	
S1.040	S3118-HW	240 minute 1 year Winter I+0%	20.192	19.131	-1.061	0.000	0.01	

PN	US/MH Name	Pipe		Status
		Maximum Vol (m³)	Flow (l/s)	
S23.016	S3076	0.279	83.0	OK
S23.017	S3077	0.911	82.9	OK
S23.018	S3078	0.194	83.0	OK
S26.000	S3079-GR	0.025	0.6	OK
S26.001	S3080-GR	0.111	5.7	OK
S26.002	S3081-GR	0.235	10.9	OK
S23.019	S3082	0.268	88.7	OK

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S23.020	S3083	0.115	88.8	OK
S23.021	S3084	0.890	88.8	OK*
S23.022	S3085	0.233	88.8	OK
S1.029	S3086-Basin C	529.680	55.9	OK
S1.030	S3087-1	1.672	54.3	SURCHARGED
S1.031	S3087	3.630	53.3	SURCHARGED
S27.000	S3088	0.202	43.8	OK
S27.001	S3089	1.140	84.3	OK
S27.002	S3090	1.083	83.9	OK
S27.003	S3091	1.782	30.0	OK
S27.004	S3092	10.606	27.9	OK
S28.000	S3093	0.097	10.4	OK
S28.001	S3094	0.315	14.5	OK
S28.002	S3095	0.339	17.3	OK
S28.003	S3096	0.342	17.9	OK
S28.004	S3097	0.279	21.5	OK
S29.000	S3098	0.000	0.0	OK
S27.005	S3099	8.210	36.3	OK
S27.006	S3100	21.794	36.0	OK
S27.007	S3101	29.770	34.2	OK
S27.008	S3102	9.338	34.9	OK
S30.000	S3103	0.045	4.7	OK
S30.001	S3104	0.112	7.5	OK
S30.002	S3105	0.158	9.4	OK
S30.003	S3106	0.197	10.4	OK
S30.004	S3107	0.166	11.8	OK
S27.009	S3108	12.133	38.4	OK
S27.010	S3109	10.474	38.1	OK
S1.032	S3110	28.658	53.6	OK
S1.033	S3111-CON	29.976	45.6	SURCHARGED
S1.034	S3112	1.722	45.6	OK
S1.035	S3113	0.954	45.6	OK
S1.036	S3114	1.477	45.6	OK
S1.037	S3115	1.857	45.6	OK
S1.038	S3116	2.929	45.6	OK
S1.039	S3117	1.232	45.6	OK
S1.040	S3118-HW	0.272	45.6	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
 FEH Rainfall Version 2013 Cv (Summer) 0.750
 Site Location GB 450306 114752 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 299.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status ON
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 30
 Climate Change (%) 0

PN	US/MH Name	Event	Water			Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)	Pipe Flow (l/s)
			US/CL (m)	Level (m)	Depth (m)					
S1.000	S4001	60 minute 30 year Summer I+0%	27.478	26.148	-0.130	0.000	0.38		0.102	22.0
S1.001	S4002	60 minute 30 year Summer I+0%	26.966	25.628	-0.138	0.000	0.56		0.226	36.8
S1.002	S4003	60 minute 30 year Summer I+0%	26.704	25.452	-0.158	0.000	0.61		0.756	64.1
S1.003	S4004	60 minute 30 year Summer I+0%	28.014	25.388	-0.032	0.000	0.79		4.867	69.1
S2.000	S4005	60 minute 30 year Summer I+0%	33.607	32.317	-0.090	0.000	0.67		0.147	24.1
S2.001	S4006	60 minute 30 year Summer I+0%	33.552	32.170	-0.122	0.000	0.43		0.221	38.1
S2.002	S4007	60 minute 30 year Summer I+0%	32.390	31.066	-0.123	0.000	0.42		0.130	43.7
S2.003	S4008	60 minute 30 year Summer I+0%	31.592	30.281	-0.111	0.000	0.51		0.141	52.8
S2.004	S4009	60 minute 30 year Summer I+0%	30.545	29.290	-0.087	0.000	0.69		0.183	62.9
S2.005	S4010	60 minute 30 year Summer I+0%	29.217	28.062	-0.069	0.000	0.83		0.232	67.0
S2.006	S4011	60 minute 30 year Summer I+0%	28.782	27.566	-0.129	0.000	0.38		0.121	68.9
S1.004	S4012	60 minute 30 year Summer I+0%	28.294	25.341	-0.032	0.000	1.00		2.169	121.6
S1.005	S4013	60 minute 30 year Summer I+0%	28.322	25.175	-0.169	0.000	0.78		2.265	149.3
S1.006	S4014	60 minute 30 year Summer I+0%	27.532	24.891	-0.360	0.000	0.22		1.823	152.9
S3.000	S4015	60 minute 30 year Summer I+0%	26.680	25.382	-0.098	0.000	0.61		0.138	33.8
S3.001	S4016	60 minute 30 year Summer I+0%	26.141	24.613	-0.208	0.000	0.40		0.238	52.1
S3.002	S4017	60 minute 30 year Summer I+0%	26.114	24.480	-0.130	0.000	0.71		1.856	61.9
S3.003	S4018	60 minute 30 year Summer I+0%	26.410	24.436	-0.127	0.000	0.76		1.183	75.6
S3.004	S4019	60 minute 30 year Summer I+0%	27.500	24.349	-0.100	0.000	0.89		2.665	76.8
S1.007	S4020	60 minute 30 year Summer I+0%	27.348	24.311	-0.097	0.000	0.63		2.206	252.4
S4.000	S4021	60 minute 30 year Summer I+0%	26.080	24.739	-0.079	0.000	0.75		0.160	26.8
S4.001	S4022	60 minute 30 year Summer I+0%	25.790	24.614	-0.103	0.000	0.74		0.388	49.3
S4.002	S4023	60 minute 30 year Summer I+0%	25.325	24.454	-0.064	0.000	0.98		1.704	53.8
S4.003	S4024	60 minute 30 year Summer I+0%	25.456	24.341	-0.137	0.000	0.70		0.582	68.3
S4.004	S4025	60 minute 30 year Summer I+0%	25.586	24.275	-0.107	0.000	0.80		2.325	80.6
S1.008	S4026	60 minute 30 year Summer I+0%	26.600	24.221	-0.043	0.000	1.17		22.928	314.1
S1.009	S4027	60 minute 30 year Summer I+0%	26.345	24.100	-0.138	0.000	1.24		5.223	316.2
S1.010	S4028	60 minute 30 year Summer I+0%	26.150	23.718	-0.501	0.000	0.24		1.212	331.7
S1.011	S4029	60 minute 30 year Summer I+0%	24.845	23.187	0.004	0.000	0.53		11.860	342.7
S5.000	S4030	60 minute 30 year Summer I+0%	25.677	24.445	-0.060	0.000	0.67		0.096	14.0

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

		US/MH	
PN	Name	Status	
S1.000	S4001	OK	
S1.001	S4002	OK	
S1.002	S4003	OK	
S1.003	S4004	OK	
S2.000	S4005	OK	
S2.001	S4006	OK	
S2.002	S4007	OK	
S2.003	S4008	OK	
S2.004	S4009	OK	
S2.005	S4010	OK	
S2.006	S4011	OK	
S1.004	S4012	OK	
S1.005	S4013	OK	
S1.006	S4014	OK	
S3.000	S4015	OK	
S3.001	S4016	OK	
S3.002	S4017	OK	
S3.003	S4018	OK	
S3.004	S4019	OK	
S1.007	S4020	OK	
S4.000	S4021	OK	
S4.001	S4022	OK	
S4.002	S4023	OK	
S4.003	S4024	OK	
S4.004	S4025	OK	
S1.008	S4026	OK	
S1.009	S4027	OK	
S1.010	S4028	OK	
S1.011	S4029	SURCHARGED	
S5.000	S4030	OK	

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Stratton Park House	M380: Boorley Gardens	
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Causeway	Network 2019.1	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)
S5.001	S4031	60 minute 30 year Summer I+0%	25.276	23.968	-0.159	0.000	0.44	
S1.012	S4032	60 minute 30 year Summer I+0%	24.078	23.061	0.048	0.000	0.60	
S1.013	S4033	60 minute 30 year Summer I+0%	23.942	23.032	0.072	0.000	0.89	
S1.014	S4034	60 minute 30 year Summer I+0%	23.833	23.006	0.077	0.000	1.40	
S6.000	S4035	60 minute 30 year Summer I+0%	31.555	29.882	-0.143	0.000	0.29	
S6.001	S4036	60 minute 30 year Summer I+0%	29.895	28.239	-0.126	0.000	0.40	
S6.002	S4037	60 minute 30 year Summer I+0%	29.250	27.639	-0.086	0.000	0.69	
S7.000	S4038	60 minute 30 year Summer I+0%	30.720	29.086	-0.124	0.000	0.41	
S7.001	S4039	60 minute 30 year Summer I+0%	29.740	28.104	-0.141	0.000	0.55	
S7.002	S4040	60 minute 30 year Summer I+0%	29.410	27.713	-0.207	0.000	0.42	
S7.003	S4041	60 minute 30 year Summer I+0%	29.250	27.576	-0.194	0.000	0.47	
S7.004	S4042	60 minute 30 year Summer I+0%	29.025	27.347	-0.193	0.000	0.47	
S6.003	S4043	60 minute 30 year Summer I+0%	28.650	26.979	-0.166	0.000	0.59	
S6.004	S4044	60 minute 30 year Summer I+0%	28.150	26.430	-0.225	0.000	0.33	
S8.000	S4045	60 minute 30 year Summer I+0%	26.200	24.067	-0.061	0.000	0.65	
S8.001	S4046	60 minute 30 year Summer I+0%	26.500	23.778	-0.075	0.000	0.77	
S8.002	S4047	60 minute 30 year Summer I+0%	26.440	23.541	-0.135	0.000	0.58	
S6.005	S4048	60 minute 30 year Summer I+0%	26.160	23.408	-0.175	0.000	0.84	
S6.006	S4049	60 minute 30 year Summer I+0%	24.555	23.139	-0.380	0.000	0.29	
S6.007	S4050	60 minute 30 year Summer I+0%	24.220	23.046	0.060	0.000	1.37	
S6.008	S4051	60 minute 30 year Summer I+0%	23.845	23.015	0.053	0.000	0.44	
S6.009	S4052	60 minute 30 year Summer I+0%	23.675	23.000	0.098	0.000	0.48	
S6.010	S4053	60 minute 30 year Summer I+0%	23.600	22.991	0.096	0.000	0.58	
S1.015	S4054	60 minute 30 year Summer I+0%	23.565	22.980	0.095	0.000	1.72	
S1.016	S4055	60 minute 30 year Summer I+0%	23.660	22.945	0.072	0.000	1.97	
S1.017	S4056	60 minute 30 year Summer I+0%	23.840	22.905	0.047	0.000	1.80	
S9.000	S4057	60 minute 30 year Summer I+0%	26.352	25.015	-0.137	0.000	0.33	
S9.001	S4058	60 minute 30 year Summer I+0%	25.763	24.417	-0.145	0.000	0.52	
S9.002	S4059	60 minute 30 year Summer I+0%	25.576	24.202	-0.111	0.000	0.71	
S9.003	S4060	60 minute 30 year Summer I+0%	25.493	24.110	-0.129	0.000	0.61	
S10.000	S4061	60 minute 30 year Summer I+0%	25.428	24.091	-0.137	0.000	0.33	
S9.004	S4062	60 minute 30 year Summer I+0%	25.210	23.911	-0.099	0.000	0.77	
S9.005	S4063	60 minute 30 year Summer I+0%	24.964	23.624	-0.139	0.000	0.71	
S9.006	S4064	60 minute 30 year Summer I+0%	24.852	23.384	-0.268	0.000	0.34	
S9.007	S4065	60 minute 30 year Summer I+0%	24.696	23.149	-0.271	0.000	0.33	
S9.008	S4066	60 minute 30 year Winter I+0%	24.374	23.004	-0.094	0.000	0.35	
S9.009	S4067	60 minute 30 year Winter I+0%	24.123	22.939	0.045	0.000	0.66	
S1.018	S4068	60 minute 30 year Summer I+0%	23.970	22.869	0.024	0.000	1.35	
S1.019	S4069	60 minute 30 year Winter I+0%	23.988	22.831	0.000	0.000	1.94	
S1.020	S4069-BASIN D	60 minute 30 year Winter I+0%	23.500	22.806	0.471	0.000	0.68	
S1.021	S3001-CON	60 minute 30 year Winter I+0%	23.971	22.755	0.551	0.000	0.89	
S1.022	S3002	60 minute 30 year Winter I+0%	24.693	21.970	-0.136	0.000	0.90	
S1.023	S3003	60 minute 30 year Winter I+0%	25.302	21.850	-0.107	0.000	0.87	
S1.024	S3004	60 minute 30 year Winter I+0%	25.496	21.742	-0.052	0.000	0.81	
S1.025	S3005	120 minute 30 year Winter I+0%	25.233	21.632	0.001	0.000	0.90	
S1.026	S3006	60 minute 30 year Winter I+0%	24.970	21.572	0.000	0.000	0.90	
S1.027	S3007	60 minute 30 year Winter I+0%	24.235	21.508	0.000	0.000	0.93	
S1.028	S3008	120 minute 30 year Winter I+0%	24.282	21.457	0.000	0.000	1.24	
S11.000	S3010	60 minute 30 year Summer I+0%	27.983	26.285	-0.377	0.000	0.06	
S11.001	S3011	60 minute 30 year Summer I+0%	27.329	25.670	-0.370	0.000	0.07	
S11.002	S3012	60 minute 30 year Summer I+0%	26.707	24.889	-0.319	0.000	0.19	
S11.003	S3013	60 minute 30 year Summer I+0%	26.514	24.699	-0.315	0.000	0.20	
S11.004	S3014	60 minute 30 year Summer I+0%	26.322	24.482	-0.340	0.000	0.14	
S12.000	S3015	60 minute 30 year Summer I+0%	27.434	25.860	-0.074	0.000	0.52	
S13.000	S3016	60 minute 30 year Summer I+0%	27.405	25.834	-0.145	0.000	0.27	
S12.001	S3017	60 minute 30 year Summer I+0%	27.355	25.479	-0.261	0.000	0.20	
S12.002	S3018	60 minute 30 year Summer I+0%	26.944	25.268	-0.265	0.000	0.19	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m ³)	Pipe Flow (l/s)	Status
S5.001	S4031	0.156	58.2	OK
S1.012	S4032	6.866	382.7	SURCHARGED
S1.013	S4033	17.910	384.4	SURCHARGED
S1.014	S4034	10.925	385.1	SURCHARGED
S6.000	S4035	0.087	31.4	OK
S6.001	S4036	0.119	37.8	OK
S6.002	S4037	0.188	46.9	OK
S7.000	S4038	0.108	31.2	OK
S7.001	S4039	0.202	55.6	OK
S7.002	S4040	0.324	63.0	OK
S7.003	S4041	0.615	80.2	OK
S7.004	S4042	0.649	89.8	OK
S6.003	S4043	0.777	144.4	OK
S6.004	S4044	0.343	163.4	OK
S8.000	S4045	0.095	11.1	OK
S8.001	S4046	0.204	30.3	OK
S8.002	S4047	0.285	36.6	OK
S6.005	S4048	1.116	211.2	OK
S6.006	S4049	2.177	212.3	OK
S6.007	S4050	2.351	213.0	SURCHARGED
S6.008	S4051	4.954	210.6	SURCHARGED
S6.009	S4052	6.080	214.1	SURCHARGED
S6.010	S4053	5.899	214.1	SURCHARGED
S1.015	S4054	16.675	574.1	SURCHARGED
S1.016	S4055	8.490	576.0	SURCHARGED
S1.017	S4056	9.880	576.8	SURCHARGED
S9.000	S4057	0.094	19.4	OK
S9.001	S4058	0.210	42.6	OK
S9.002	S4059	0.788	48.7	OK
S9.003	S4060	0.397	59.4	OK
S10.000	S4061	0.094	17.2	OK
S9.004	S4062	0.718	83.7	OK
S9.005	S4063	0.536	92.5	OK
S9.006	S4064	0.345	92.8	OK
S9.007	S4065	0.473	102.5	OK
S9.008	S4066	2.039	88.6	OK
S9.009	S4067	3.257	92.6	SURCHARGED
S1.018	S4068	10.271	684.7	SURCHARGED
S1.019	S4069	4.496	644.7	OK
S1.020	S4069-BASIN D	625.936	188.6	SURCHARGED
S1.021	S3001-CON	5.350	188.6	SURCHARGED
S1.022	S3002	5.857	187.7	OK
S1.023	S3003	10.200	184.2	OK
S1.024	S3004	12.783	171.1	OK
S1.025	S3005	14.353	169.1	SURCHARGED
S1.026	S3006	5.869	170.5	OK
S1.027	S3007	6.344	170.1	OK
S1.028	S3008	5.169	168.8	OK
S11.000	S3010	0.098	22.3	OK
S11.001	S3011	0.159	33.2	OK
S11.002	S3012	0.263	46.0	OK
S11.003	S3013	0.300	48.4	OK
S11.004	S3014	0.212	57.3	OK
S12.000	S3015	0.081	13.0	OK
S13.000	S3016	0.084	18.8	OK
S12.001	S3017	0.157	35.1	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S12.002	S3018	0.253	52.9	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Maximum Vol (m³)
S12.003	S3019	60 minute 30 year Summer I+0%	26.586	24.786	-0.225	0.000	0.33		0.298
S12.004	S3020	60 minute 30 year Summer I+0%	26.355	24.540	-0.240	0.000	0.28		0.286
S11.005	S3021	60 minute 30 year Summer I+0%	25.834	24.280	0.021	0.000	0.51		3.723
S11.006	S3022	60 minute 30 year Winter I+0%	26.132	24.255	0.067	0.000	0.33		11.734
S14.000	S3023	60 minute 30 year Summer I+0%	27.248	25.567	-0.181	0.000	0.33		0.129
S14.001	S3024	60 minute 30 year Summer I+0%	26.960	25.279	-0.181	0.000	0.33		0.252
S14.002	S3025	60 minute 30 year Summer I+0%	26.657	24.565	-0.157	0.000	0.46		0.224
S11.007	S3026	60 minute 30 year Winter I+0%	26.356	24.127	0.000	0.000	0.88		3.303
S11.008	S3027	60 minute 30 year Summer I+0%	25.760	24.096	0.000	0.000	0.62		3.939
S11.009	S3028	60 minute 30 year Summer I+0%	25.205	23.988	0.018	0.000	1.03		14.128
S15.000	S3029	60 minute 30 year Summer I+0%	26.390	24.866	-0.099	0.000	0.25		0.052
S16.000	S3030	60 minute 30 year Summer I+0%	26.231	24.713	-0.093	0.000	0.31		0.059
S15.001	S3031	60 minute 30 year Summer I+0%	26.202	24.283	-0.110	0.000	0.52		0.128
S15.002	S3032	60 minute 30 year Summer I+0%	25.813	24.041	0.042	0.000	1.35		0.793
S11.010	S3033	60 minute 30 year Summer I+0%	25.672	23.956	0.019	0.000	0.78		5.389
S11.011	S3034-GR	60 minute 30 year Summer I+0%	25.057	23.910	0.053	0.000	0.66		9.490
S17.000	S3035	60 minute 30 year Summer I+0%	25.408	23.966	-0.089	0.000	0.67		0.149
S11.012	S3036-GR	60 minute 30 year Summer I+0%	24.964	23.769	0.005	0.000	1.01		4.713
S11.013	S3037-GR	60 minute 30 year Summer I+0%	24.890	23.690	0.000	0.000	1.80		12.046
S11.014	S3038	60 minute 30 year Summer I+0%	24.022	23.177	-0.845	0.000	0.03		0.308
S18.000	S3039-GR	60 minute 30 year Summer I+0%	24.640	23.261	-0.179	0.000	0.19		0.132
S19.000	S3040-GR	60 minute 30 year Summer I+0%	24.628	23.260	-0.168	0.000	0.24		0.144
S18.001	S3041-GR	60 minute 30 year Summer I+0%	24.597	23.251	-0.146	0.000	0.52		0.584
S18.002	S3042-GR	60 minute 30 year Summer I+0%	24.494	23.170	-0.124	0.000	0.64		0.846
S11.015	S3043	60 minute 30 year Summer I+0%	23.922	23.061	-0.861	0.000	0.04		2.155
S11.016	S3045	60 minute 30 year Summer I+0%	23.652	22.813	-0.839	0.000	0.04		4.202
S20.000	S3045-1-GR	60 minute 30 year Summer I+0%	24.136	22.774	-0.162	0.000	0.18		0.066
S20.001	S3045-2-GR	60 minute 30 year Summer I+0%	24.043	22.725	-0.118	0.000	0.45		0.233
S11.017	S3046	60 minute 30 year Summer I+0%	23.459	22.694	-0.765	0.000	0.05		3.122
S21.000	S3047-GR	60 minute 30 year Summer I+0%	24.058	22.644	-0.214	0.000	0.17		0.092
S21.001	S3048-GR	60 minute 30 year Summer I+0%	23.965	22.587	-0.178	0.000	0.33		0.424
S21.002	S3049-GR	60 minute 30 year Summer I+0%	23.872	22.530	-0.142	0.000	0.54		0.670
S11.018	S3050	60 minute 30 year Summer I+0%	23.365	22.466	-0.899	0.000	0.03		4.642
S11.019	S3051	60 minute 30 year Summer I+0%	23.316	22.450	-0.866	0.000	0.04		0.485
S11.020	S3053	60 minute 30 year Summer I+0%	22.996	22.229	-0.767	0.000	0.05		4.457
S22.000	S3053-1-GR	60 minute 30 year Summer I+0%	23.484	22.146	-0.138	0.000	0.32		0.093
S22.001	S3054-GR	60 minute 30 year Summer I+0%	23.269	22.069	0.000	0.000	0.83		0.937
S11.021	S3055	60 minute 30 year Summer I+0%	22.739	22.063	-0.676	0.000	0.05		12.149
S11.022	S3056	60 minute 30 year Summer I+0%	22.621	22.045	0.054	0.000	1.00		34.222
S11.023	S3057	60 minute 30 year Winter I+0%	22.633	21.684	-0.949	0.000	0.03		0.561
S23.000	S3058	60 minute 30 year Summer I+0%	27.878	26.199	-0.263	0.000	0.04		0.037
S23.001	S3059	60 minute 30 year Summer I+0%	27.725	26.052	-0.246	0.000	0.07		0.089
S23.002	S3060	60 minute 30 year Summer I+0%	27.292	25.375	-0.263	0.000	0.19		0.160
S23.003	S3061	60 minute 30 year Summer I+0%	27.136	25.265	-0.256	0.000	0.22		0.350
S23.004	S3062	60 minute 30 year Summer I+0%	26.998	25.097	-0.247	0.000	0.25		0.324
S23.005	S3063	60 minute 30 year Summer I+0%	26.633	24.835	-0.144	0.000	0.69		0.979
S23.006	S3064	60 minute 30 year Summer I+0%	26.623	24.716	-0.154	0.000	0.49		1.960
S23.007	S3065	60 minute 30 year Summer I+0%	26.942	24.686	-0.102	0.000	0.83		2.175
S23.008	S3066	60 minute 30 year Summer I+0%	27.141	24.650	-0.103	0.000	0.95		1.926
S24.000	S3067	60 minute 30 year Summer I+0%	27.294	25.701	-0.093	0.000	0.31		0.059
S23.009	S3068	60 minute 30 year Summer I+0%	27.239	24.597	-0.129	0.000	0.84		1.380
S23.010	S3069	60 minute 30 year Summer I+0%	26.728	24.387	-0.235	0.000	0.46		2.334
S25.000	S3070	60 minute 30 year Summer I+0%	25.706	24.191	-0.252	0.000	0.06		0.049
S23.011	S3071	60 minute 30 year Summer I+0%	25.786	23.968	0.037	0.000	0.97		6.041
S23.012	S3072	60 minute 30 year Summer I+0%	25.341	23.899	0.042	0.000	1.04		8.378
S23.013	S3073-GR	60 minute 30 year Summer I+0%	24.943	23.775	0.032	0.000	1.16		12.360
S23.014	S3074-GR	60 minute 30 year Summer I+0%	24.865	23.668	0.003	0.000	1.72		8.373

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.003	S3019	62.9	OK
S12.004	S3020	67.3	OK
S11.005	S3021	124.8	SURCHARGED
S11.006	S3022	113.0	SURCHARGED
S14.000	S3023	33.9	OK
S14.001	S3024	57.2	OK
S14.002	S3025	72.2	OK
S11.007	S3026	174.3	OK
S11.008	S3027	184.9	OK
S11.009	S3028	184.8	SURCHARGED
S15.000	S3029	11.4	OK
S16.000	S3030	10.2	OK
S15.001	S3031	27.2	OK
S15.002	S3032	45.3	SURCHARGED
S11.010	S3033	220.9	SURCHARGED
S11.011	S3034-GR	227.8	SURCHARGED
S17.000	S3035	25.3	OK
S11.012	S3036-GR	247.1	SURCHARGED
S11.013	S3037-GR	256.1	OK
S11.014	S3038	256.8	OK
S18.000	S3039-GR	10.8	OK
S19.000	S3040-GR	12.7	OK
S18.001	S3041-GR	32.6	OK
S18.002	S3042-GR	38.3	OK
S11.015	S3043	283.9	OK
S11.016	S3045	284.6	OK
S20.000	S3045-1-GR	6.2	OK
S20.001	S3045-2-GR	15.3	OK
S11.017	S3046	292.7	OK
S21.000	S3047-GR	11.0	OK
S21.001	S3048-GR	20.8	OK
S21.002	S3049-GR	30.7	OK
S11.018	S3050	310.6	OK
S11.019	S3051	309.7	OK
S11.020	S3053	310.3	OK
S22.000	S3053-1-GR	11.9	OK
S22.001	S3054-GR	27.1	OK
S11.021	S3055	300.7	OK
S11.022	S3056	248.6	SURCHARGED*
S11.023	S3057	248.6	OK
S23.000	S3058	3.7	OK
S23.001	S3059	10.1	OK
S23.002	S3060	25.7	OK
S23.003	S3061	36.3	OK
S23.004	S3062	46.5	OK
S23.005	S3063	68.4	OK
S23.006	S3064	82.6	OK
S23.007	S3065	86.8	OK
S23.008	S3066	92.7	OK
S24.000	S3067	16.7	OK
S23.009	S3068	120.7	OK
S23.010	S3069	128.8	OK
S25.000	S3070	11.1	OK
S23.011	S3071	179.2	SURCHARGED
S23.012	S3072	201.7	SURCHARGED
S23.013	S3073-GR	217.5	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.014	S3074-GR	221.9	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)
S23.015	S3075	60 minute 30 year Summer I+0%	24.643	23.199	-1.444	0.000	0.01	
S23.016	S3076	60 minute 30 year Summer I+0%	24.775	22.978	-1.797	0.000	0.01	
S23.017	S3077	60 minute 30 year Summer I+0%	24.194	22.654	-1.540	0.000	0.01	
S23.018	S3078	60 minute 30 year Summer I+0%	24.085	22.595	-1.490	0.000	0.01	
S26.000	S3079-GR	60 minute 30 year Summer I+0%	24.183	22.743	-0.240	0.000	0.03	
S26.001	S3080-GR	60 minute 30 year Summer I+0%	24.142	22.740	-0.202	0.000	0.23	
S26.002	S3081-GR	60 minute 30 year Summer I+0%	23.927	22.595	-0.132	0.000	0.50	
S23.019	S3082	60 minute 30 year Summer I+0%	23.831	22.585	-1.246	0.000	0.01	
S23.020	S3083	60 minute 30 year Summer I+0%	23.455	22.580	-0.875	0.000	0.01	
S23.021	S3084	60 minute 30 year Summer I+0%	23.461	22.576	0.131	0.000	1.35	
S23.022	S3085	60 minute 30 year Summer I+0%	23.546	22.193	-1.353	0.000	0.01	
S1.029	S3086-Basin C	480 minute 30 year Winter I+0%	22.300	21.240	0.240	0.000	0.17	
S1.030	S3087-1	360 minute 30 year Winter I+0%	22.439	21.225	0.488	0.000	0.12	
S1.031	S3087	360 minute 30 year Winter I+0%	22.646	21.206	0.972	0.000	0.32	
S27.000	S3088	60 minute 30 year Summer I+0%	24.098	22.283	-0.328	0.000	0.30	
S27.001	S3089	60 minute 30 year Summer I+0%	23.359	21.815	-0.178	0.000	0.75	
S27.002	S3090	60 minute 30 year Winter I+0%	22.742	21.449	-0.171	0.000	0.39	
S27.003	S3091	60 minute 30 year Winter I+0%	22.519	21.389	0.142	0.000	0.19	
S27.004	S3092	60 minute 30 year Winter I+0%	22.616	21.380	0.253	0.000	0.40	
S28.000	S3093	60 minute 30 year Winter I+0%	23.318	21.559	0.124	0.000	0.39	
S28.001	S3094	60 minute 30 year Winter I+0%	23.170	21.544	0.173	0.000	0.51	
S28.002	S3095	60 minute 30 year Winter I+0%	22.964	21.526	0.225	0.000	0.64	
S28.003	S3096	60 minute 30 year Winter I+0%	22.764	21.462	0.213	0.000	0.73	
S28.004	S3097	60 minute 30 year Winter I+0%	22.667	21.445	0.228	0.000	0.88	
S29.000	S3098	60 minute 30 year Winter I+0%	22.437	21.369	0.132	0.000	0.08	
S27.005	S3099	60 minute 30 year Winter I+0%	22.561	21.372	0.273	0.000	0.19	
S27.006	S3100	60 minute 30 year Winter I+0%	22.401	21.366	0.316	0.000	0.18	
S27.007	S3101	60 minute 30 year Winter I+0%	22.379	21.359	0.359	0.000	0.26	
S27.008	S3102	60 minute 30 year Winter I+0%	22.415	21.355	0.371	0.000	0.31	
S30.000	S3103	60 minute 30 year Summer I+0%	23.337	21.710	-0.153	0.000	0.22	
S30.001	S3104	60 minute 30 year Winter I+0%	23.137	21.418	-0.076	0.000	0.47	
S30.002	S3105	60 minute 30 year Winter I+0%	22.984	21.399	-0.020	0.000	0.56	
S30.003	S3106	60 minute 30 year Winter I+0%	22.666	21.378	0.095	0.000	0.76	
S30.004	S3107	60 minute 30 year Winter I+0%	22.568	21.366	0.126	0.000	0.80	
S27.009	S3108	60 minute 30 year Winter I+0%	22.484	21.350	0.383	0.000	0.29	
S27.010	S3109	60 minute 30 year Winter I+0%	22.471	21.345	0.398	0.000	0.20	
S1.032	S3110	60 minute 30 year Winter I+0%	22.286	21.337	0.432	0.000	0.10	
S1.033	S3111-CON	60 minute 30 year Winter I+0%	22.317	21.335	1.221	0.000	0.35	
S1.034	S3112	60 minute 30 year Winter I+0%	22.361	19.753	-0.239	0.000	0.44	
S1.035	S3113	60 minute 30 year Winter I+0%	22.443	19.688	-0.256	0.000	0.39	
S1.036	S3114	60 minute 30 year Winter I+0%	21.748	19.591	-0.262	0.000	0.37	
S1.037	S3115	60 minute 30 year Winter I+0%	21.314	19.417	-0.261	0.000	0.37	
S1.038	S3116	60 minute 30 year Winter I+0%	20.779	19.311	-0.205	0.000	0.46	
S1.039	S3117	60 minute 30 year Winter I+0%	20.378	19.273	-0.200	0.000	0.60	
S1.040	S3118-HW	60 minute 30 year Winter I+0%	20.192	19.142	-1.050	0.000	0.01	

PN	US/MH Name	Pipe		Status
		Maximum Vol (m³)	Flow (l/s)	
S23.015	S3075	0.350	222.1	OK
S23.016	S3076	1.219	222.4	OK
S23.017	S3077	2.321	222.3	OK
S23.018	S3078	1.103	220.2	OK
S26.000	S3079-GR	0.062	1.7	OK
S26.001	S3080-GR	0.197	16.0	OK

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Maximum Vol (m³)	Pipe Flow (l/s)	Status
S26.002	S3081-GR	0.849	30.7	OK
S23.019	S3082	2.750	231.3	OK
S23.020	S3083	5.051	228.9	OK
S23.021	S3084	5.505	228.9	SURCHARGED*
S23.022	S3085	0.455	228.6	OK
S1.029	S3086-Basin C	1873.161	47.8	SURCHARGED
S1.030	S3087-1	2.238	49.4	SURCHARGED
S1.031	S3087	4.125	49.1	SURCHARGED
S27.000	S3088	0.339	112.6	OK
S27.001	S3089	3.805	217.9	OK
S27.002	S3090	6.352	184.8	OK
S27.003	S3091	5.670	185.6	SURCHARGED
S27.004	S3092	15.382	184.1	SURCHARGED
S28.000	S3093	0.474	21.7	SURCHARGED
S28.001	S3094	1.798	30.8	SURCHARGED
S28.002	S3095	1.708	37.0	SURCHARGED
S28.003	S3096	1.388	38.7	SURCHARGED
S28.004	S3097	1.052	47.0	SURCHARGED
S29.000	S3098	0.313	1.3	SURCHARGED
S27.005	S3099	12.140	230.3	SURCHARGED
S27.006	S3100	27.583	210.7	SURCHARGED
S27.007	S3101	36.779	198.6	SURCHARGED
S27.008	S3102	12.133	201.0	SURCHARGED
S30.000	S3103	0.076	12.2	OK
S30.001	S3104	0.313	16.2	OK
S30.002	S3105	0.573	20.5	OK
S30.003	S3106	1.187	22.7	SURCHARGED
S30.004	S3107	0.629	25.8	SURCHARGED
S27.009	S3108	15.619	214.0	SURCHARGED
S27.010	S3109	13.285	209.6	SURCHARGED
S1.032	S3110	34.707	93.4	SURCHARGED
S1.033	S3111-CON	36.572	55.2	SURCHARGED
S1.034	S3112	2.037	54.9	OK
S1.035	S3113	1.111	54.8	OK
S1.036	S3114	1.741	54.7	OK
S1.037	S3115	2.242	54.4	OK
S1.038	S3116	3.628	54.2	OK
S1.039	S3117	1.443	54.2	OK
S1.040	S3118-HW	0.313	54.2	OK

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
 Return Period (years) 100 Cv (Summer) 0.750
 FEH Rainfall Version 2013 Cv (Winter) 0.840
 Site Location GB 450306 114752

Margin for Flood Risk Warning (mm) 299.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status ON
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
 Sensitivity flows(s) (%) 0, +20, +40

								Water	Surcharged	Flooded				Pipe
	US/MH							US/CL	Level	Depth	Volume	Flow /	Maximum	Flow
PN	Name	Event						(m)	(m)	(m)	(m³)	Cap.	Vol (m³)	(l/s)
S1.000	S4001	60 minute	100 year	Summer	Q+0%	27.478	26.162	-0.116	0.000	0.48	0.118	28.0		
S1.001	S4002	60 minute	100 year	Summer	Q+0%	26.966	25.656	-0.110	0.000	0.71	0.279	46.9		
S1.002	S4003	60 minute	100 year	Summer	Q+0%	26.704	25.556	-0.054	0.000	0.74	1.851	77.5		
S1.003	S4004	60 minute	100 year	Summer	Q+0%	28.014	25.450	0.030	0.000	0.90	6.119	78.9		
S2.000	S4005	60 minute	100 year	Summer	Q+0%	33.607	32.342	-0.065	0.000	0.85	0.175	30.7		
S2.001	S4006	60 minute	100 year	Summer	Q+0%	33.552	32.186	-0.106	0.000	0.54	0.291	48.5		
S2.002	S4007	60 minute	100 year	Summer	Q+0%	32.390	31.082	-0.107	0.000	0.53	0.158	55.7		
S2.003	S4008	60 minute	100 year	Summer	Q+0%	31.592	30.299	-0.093	0.000	0.65	0.171	67.1		
S2.004	S4009	60 minute	100 year	Summer	Q+0%	30.545	29.316	-0.061	0.000	0.88	0.226	79.9		
S2.005	S4010	60 minute	100 year	Summer	Q+0%	29.217	28.166	0.035	0.000	1.04	0.449	84.4		
S2.006	S4011	60 minute	100 year	Summer	Q+0%	28.782	27.580	-0.115	0.000	0.48	0.143	87.1		
S1.004	S4012	60 minute	100 year	Summer	Q+0%	28.294	25.386	0.013	0.000	1.38	2.369	167.8		
S1.005	S4013	60 minute	100 year	Summer	Q+0%	28.322	25.344	0.001	0.000	1.01	3.514	194.6		
S1.006	S4014	60 minute	100 year	Summer	Q+0%	27.532	24.915	-0.335	0.000	0.28	2.294	198.8		
S3.000	S4015	60 minute	100 year	Summer	Q+0%	26.680	25.404	-0.076	0.000	0.77	0.163	42.6		
S3.001	S4016	60 minute	100 year	Summer	Q+0%	26.141	24.644	-0.177	0.000	0.51	0.286	66.0		
S3.002	S4017	60 minute	100 year	Summer	Q+0%	26.114	24.592	-0.018	0.000	0.87	3.496	75.1		
S3.003	S4018	60 minute	100 year	Summer	Q+0%	26.410	24.539	-0.024	0.000	0.91	1.778	90.7		
S3.004	S4019	60 minute	100 year	Winter	Q+0%	27.500	24.461	0.012	0.000	0.90	4.045	77.9		
S1.007	S4020	60 minute	100 year	Summer	Q+0%	27.348	24.406	-0.002	0.000	0.78	2.882	313.5		
S4.000	S4021	60 minute	100 year	Summer	Q+0%	26.080	24.794	-0.024	0.000	0.93	0.222	33.2		
S4.001	S4022	60 minute	100 year	Summer	Q+0%	25.790	24.709	-0.008	0.000	0.90	0.795	59.8		
S4.002	S4023	60 minute	100 year	Summer	Q+0%	25.325	24.547	0.029	0.000	1.21	2.884	66.7		
S4.003	S4024	60 minute	100 year	Summer	Q+0%	25.456	24.459	-0.019	0.000	0.83	1.013	81.2		
S4.004	S4025	60 minute	100 year	Summer	Q+0%	25.586	24.386	0.004	0.000	0.94	3.496	93.9		
S1.008	S4026	60 minute	100 year	Summer	Q+0%	26.600	24.279	0.015	0.000	1.52	24.832	410.2		
S1.009	S4027	60 minute	100 year	Summer	Q+0%	26.345	24.238	0.000	0.000	1.61	6.410	412.7		
S1.010	S4028	60 minute	100 year	Summer	Q+0%	26.150	23.760	-0.459	0.000	0.32	1.515	436.5		

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

		US/MH	
PN	Name	Status	
S1.000	S4001	OK	
S1.001	S4002	OK	
S1.002	S4003	OK	
S1.003	S4004	SURCHARGED	
S2.000	S4005	OK	
S2.001	S4006	OK	
S2.002	S4007	OK	
S2.003	S4008	OK	
S2.004	S4009	OK	
S2.005	S4010	SURCHARGED	
S2.006	S4011	OK	
S1.004	S4012	SURCHARGED	
S1.005	S4013	SURCHARGED	
S1.006	S4014	OK	
S3.000	S4015	OK	
S3.001	S4016	OK	
S3.002	S4017	OK	
S3.003	S4018	OK	
S3.004	S4019	SURCHARGED	
S1.007	S4020	OK	
S4.000	S4021	OK	
S4.001	S4022	OK	
S4.002	S4023	SURCHARGED	
S4.003	S4024	OK	
S4.004	S4025	SURCHARGED	
S1.008	S4026	SURCHARGED	
S1.009	S4027	OK	
S1.010	S4028	OK	

PFA Consulting		Page 3
Stratton Park House	M380: Boorley Gardens	
Wanborough Road	SW Drainage - Planning	
Swindon SN3 4HG	Catchments C + D	
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File M380-Catch C&D-V5.10 (RM	Checked by BF	
Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S1.011	S4029	60 minute 100 year Summer Q+0%	24.845	23.247	0.064	0.000	0.70	13.596
S5.000	S4030	60 minute 100 year Summer Q+0%	25.677	24.462	-0.043	0.000	0.85	0.115
S5.001	S4031	60 minute 100 year Summer Q+0%	25.276	23.990	-0.137	0.000	0.56	0.182
S1.012	S4032	60 minute 100 year Summer Q+0%	24.078	23.193	0.180	0.000	0.81	7.946
S1.013	S4033	60 minute 100 year Summer Q+0%	23.942	23.153	0.193	0.000	1.20	18.531
S1.014	S4034	60 minute 100 year Summer Q+0%	23.833	23.117	0.188	0.000	1.88	11.353
S6.000	S4035	60 minute 100 year Summer Q+0%	31.555	29.894	-0.131	0.000	0.36	0.100
S6.001	S4036	60 minute 100 year Summer Q+0%	29.895	28.254	-0.111	0.000	0.51	0.142
S6.002	S4037	60 minute 100 year Summer Q+0%	29.250	27.665	-0.060	0.000	0.88	0.233
S7.000	S4038	60 minute 100 year Summer Q+0%	30.720	29.101	-0.109	0.000	0.53	0.126
S7.001	S4039	60 minute 100 year Summer Q+0%	29.740	28.131	-0.114	0.000	0.69	0.246
S7.002	S4040	60 minute 100 year Summer Q+0%	29.410	27.739	-0.181	0.000	0.53	0.396
S7.003	S4041	60 minute 100 year Summer Q+0%	29.250	27.604	-0.166	0.000	0.60	0.765
S7.004	S4042	60 minute 100 year Summer Q+0%	29.025	27.376	-0.164	0.000	0.60	0.823
S6.003	S4043	60 minute 100 year Summer Q+0%	28.650	27.016	-0.129	0.000	0.76	1.110
S6.004	S4044	60 minute 100 year Summer Q+0%	28.150	26.451	-0.204	0.000	0.42	0.416
S8.000	S4045	60 minute 100 year Summer Q+0%	26.200	24.083	-0.045	0.000	0.83	0.113
S8.001	S4046	60 minute 100 year Summer Q+0%	26.500	23.807	-0.046	0.000	0.98	0.261
S8.002	S4047	60 minute 100 year Summer Q+0%	26.440	23.640	-0.036	0.000	0.70	0.728
S6.005	S4048	60 minute 100 year Summer Q+0%	26.160	23.583	0.000	0.000	1.03	2.621
S6.006	S4049	60 minute 100 year Summer Q+0%	24.555	23.183	-0.336	0.000	0.36	2.994
S6.007	S4050	60 minute 100 year Summer Q+0%	24.220	23.154	0.168	0.000	1.70	2.824
S6.008	S4051	60 minute 100 year Summer Q+0%	23.845	23.119	0.157	0.000	0.55	5.275
S6.009	S4052	60 minute 100 year Summer Q+0%	23.675	23.102	0.200	0.000	0.61	6.371
S6.010	S4053	60 minute 100 year Summer Q+0%	23.600	23.092	0.197	0.000	0.75	6.185
S1.015	S4054	60 minute 100 year Summer Q+0%	23.565	23.079	0.194	0.000	2.30	17.107
S1.016	S4055	60 minute 100 year Summer Q+0%	23.660	23.023	0.150	0.000	2.63	8.801
S1.017	S4056	60 minute 100 year Winter Q+0%	23.840	22.983	0.125	0.000	2.13	10.307
S9.000	S4057	60 minute 100 year Summer Q+0%	26.352	25.028	-0.124	0.000	0.41	0.108
S9.001	S4058	60 minute 100 year Summer Q+0%	25.763	24.442	-0.120	0.000	0.66	0.259
S9.002	S4059	60 minute 100 year Summer Q+0%	25.576	24.238	-0.075	0.000	0.90	1.094
S9.003	S4060	60 minute 100 year Summer Q+0%	25.493	24.140	-0.099	0.000	0.77	0.491
S10.000	S4061	60 minute 100 year Summer Q+0%	25.428	24.104	-0.124	0.000	0.42	0.108
S9.004	S4062	60 minute 100 year Summer Q+0%	25.210	23.948	-0.062	0.000	0.98	1.049
S9.005	S4063	60 minute 100 year Summer Q+0%	24.964	23.667	-0.096	0.000	0.90	0.736
S9.006	S4064	60 minute 100 year Summer Q+0%	24.852	23.409	-0.243	0.000	0.43	0.413
S9.007	S4065	60 minute 100 year Summer Q+0%	24.696	23.181	-0.239	0.000	0.42	0.607
S9.008	S4066	60 minute 100 year Summer Q+0%	24.374	23.113	0.015	0.000	0.53	3.170
S9.009	S4067	60 minute 100 year Winter Q+0%	24.123	22.975	0.081	0.000	0.90	3.437
S1.018	S4068	60 minute 100 year Winter Q+0%	23.970	22.967	0.122	0.000	1.61	10.889
S1.019	S4069	60 minute 100 year Winter Q+0%	23.988	22.959	0.128	0.000	2.44	4.954
S1.020	S4069-BASIN D	60 minute 100 year Winter Q+0%	23.500	22.948	0.613	0.000	0.78	817.794
S1.021	S3001-CON	60 minute 100 year Winter Q+0%	23.971	22.892	0.688	0.000	1.01	5.593
S1.022	S3002	60 minute 100 year Winter Q+0%	24.693	22.098	-0.008	0.000	1.00	8.061
S1.023	S3003	60 minute 100 year Winter Q+0%	25.302	21.960	0.003	0.000	0.97	13.385
S1.024	S3004	60 minute 100 year Winter Q+0%	25.496	21.811	0.017	0.000	0.96	14.699
S1.025	S3005	60 minute 100 year Winter Q+0%	25.233	21.661	0.030	0.000	1.08	14.987
S1.026	S3006	60 minute 100 year Winter Q+0%	24.970	21.592	0.020	0.000	1.07	6.007
S1.027	S3007	60 minute 100 year Winter Q+0%	24.235	21.519	0.011	0.000	1.11	6.428
S1.028	S3008	120 minute 100 year Winter Q+0%	24.282	21.457	0.000	0.000	1.44	5.169
S11.000	S3010	60 minute 100 year Summer Q+0%	27.983	26.297	-0.365	0.000	0.08	0.114
S11.001	S3011	60 minute 100 year Summer Q+0%	27.329	25.682	-0.358	0.000	0.09	0.185
S11.002	S3012	60 minute 100 year Summer Q+0%	26.707	24.906	-0.302	0.000	0.24	0.316
S11.003	S3013	60 minute 100 year Summer Q+0%	26.514	24.716	-0.298	0.000	0.25	0.363
S11.004	S3014	60 minute 100 year Summer Q+0%	26.322	24.498	-0.324	0.000	0.17	0.269
S12.000	S3015	60 minute 100 year Summer Q+0%	27.434	25.872	-0.061	0.000	0.66	0.095

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S1.011	S4029	453.5	SURCHARGED
S5.000	S4030	17.8	OK
S5.001	S4031	74.0	OK
S1.012	S4032	513.0	SURCHARGED
S1.013	S4033	516.3	SURCHARGED
S1.014	S4034	514.6	SURCHARGED
S6.000	S4035	39.9	OK
S6.001	S4036	48.2	OK
S6.002	S4037	59.7	OK
S7.000	S4038	39.7	OK
S7.001	S4039	70.8	OK
S7.002	S4040	80.2	OK
S7.003	S4041	102.1	OK
S7.004	S4042	114.1	OK
S6.003	S4043	183.4	OK
S6.004	S4044	207.6	OK
S8.000	S4045	14.1	OK
S8.001	S4046	38.6	OK
S8.002	S4047	44.4	OK
S6.005	S4048	259.6	OK
S6.006	S4049	262.4	OK
S6.007	S4050	264.2	SURCHARGED
S6.008	S4051	266.2	SURCHARGED
S6.009	S4052	276.7	SURCHARGED
S6.010	S4053	275.6	SURCHARGED
S1.015	S4054	768.4	SURCHARGED
S1.016	S4055	768.6	SURCHARGED
S1.017	S4056	685.4	SURCHARGED
S9.000	S4057	24.7	OK
S9.001	S4058	54.3	OK
S9.002	S4059	61.6	OK
S9.003	S4060	75.1	OK
S10.000	S4061	21.9	OK
S9.004	S4062	106.2	OK
S9.005	S4063	117.3	OK
S9.006	S4064	117.5	OK
S9.007	S4065	129.1	OK
S9.008	S4066	135.3	SURCHARGED
S9.009	S4067	126.5	SURCHARGED
S1.018	S4068	811.5	SURCHARGED
S1.019	S4069	811.5	SURCHARGED
S1.020	S4069-BASIN D	217.5	SURCHARGED
S1.021	S3001-CON	215.1	SURCHARGED
S1.022	S3002	209.2	OK
S1.023	S3003	204.7	SURCHARGED
S1.024	S3004	202.5	SURCHARGED
S1.025	S3005	201.9	SURCHARGED
S1.026	S3006	201.9	SURCHARGED
S1.027	S3007	201.8	SURCHARGED
S1.028	S3008	196.0	OK
S11.000	S3010	28.4	OK
S11.001	S3011	42.2	OK
S11.002	S3012	58.5	OK
S11.003	S3013	61.5	OK
S11.004	S3014	73.0	OK

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+0%% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.000	S3015	16.6	OK

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S13.000	S3016	60 minute 100 year Summer Q+0%	27.405	25.846	-0.134	0.000	0.35	0.098	23.9
S12.001	S3017	60 minute 100 year Summer Q+0%	27.355	25.494	-0.246	0.000	0.26	0.179	44.7
S12.002	S3018	60 minute 100 year Summer Q+0%	26.944	25.282	-0.251	0.000	0.24	0.325	67.3
S12.003	S3019	60 minute 100 year Summer Q+0%	26.586	24.807	-0.204	0.000	0.43	0.357	80.0
S12.004	S3020	60 minute 100 year Summer Q+0%	26.355	24.560	-0.220	0.000	0.36	0.352	85.7
S11.005	S3021	60 minute 100 year Summer Q+0%	25.834	24.347	0.088	0.000	0.66	4.629	161.9
S11.006	S3022	60 minute 100 year Summer Q+0%	26.132	24.308	0.120	0.000	0.51	12.065	177.5
S14.000	S3023	60 minute 100 year Summer Q+0%	27.248	25.583	-0.165	0.000	0.42	0.148	43.2
S14.001	S3024	60 minute 100 year Summer Q+0%	26.960	25.296	-0.164	0.000	0.42	0.326	72.8
S14.002	S3025	60 minute 100 year Summer Q+0%	26.657	24.588	-0.134	0.000	0.58	0.274	91.8
S11.007	S3026	60 minute 100 year Summer Q+0%	26.356	24.273	0.146	0.000	1.38	4.071	272.6
S11.008	S3027	60 minute 100 year Summer Q+0%	25.760	24.234	0.138	0.000	0.88	4.387	265.7
S11.009	S3028	60 minute 100 year Summer Q+0%	25.205	24.140	0.170	0.000	1.47	15.137	263.7
S15.000	S3029	60 minute 100 year Summer Q+0%	26.390	24.873	-0.092	0.000	0.32	0.060	14.4
S16.000	S3030	60 minute 100 year Summer Q+0%	26.231	24.721	-0.085	0.000	0.39	0.068	13.0
S15.001	S3031	60 minute 100 year Summer Q+0%	26.202	24.328	-0.065	0.000	0.65	0.190	34.4
S15.002	S3032	60 minute 100 year Summer Q+0%	25.813	24.204	0.205	0.000	1.62	1.502	54.3
S11.010	S3033	60 minute 100 year Summer Q+0%	25.672	24.091	0.154	0.000	1.12	5.865	315.8
S11.011	S3034-GR	60 minute 100 year Summer Q+0%	25.057	23.989	0.132	0.000	0.93	9.891	323.7
S17.000	S3035	60 minute 100 year Summer Q+0%	25.408	24.012	-0.043	0.000	0.85	0.200	32.2
S11.012	S3036-GR	60 minute 100 year Summer Q+0%	24.964	23.918	0.154	0.000	1.42	6.023	346.3
S11.013	S3037-GR	60 minute 100 year Summer Q+0%	24.890	23.769	0.079	0.000	2.51	12.781	356.5
S11.014	S3038	60 minute 100 year Summer Q+0%	24.022	23.212	-0.810	0.000	0.04	0.488	356.8
S18.000	S3039-GR	60 minute 100 year Summer Q+0%	24.640	23.285	-0.155	0.000	0.24	0.159	13.7
S19.000	S3040-GR	60 minute 100 year Summer Q+0%	24.628	23.284	-0.144	0.000	0.31	0.171	16.2
S18.001	S3041-GR	60 minute 100 year Summer Q+0%	24.597	23.276	-0.121	0.000	0.66	0.723	41.5
S18.002	S3042-GR	60 minute 100 year Summer Q+0%	24.494	23.202	-0.092	0.000	0.82	1.087	48.8
S11.015	S3043	60 minute 100 year Summer Q+0%	23.922	23.102	-0.820	0.000	0.05	3.046	392.4
S11.016	S3045	60 minute 100 year Summer Q+0%	23.652	22.857	-0.795	0.000	0.06	5.866	393.3
S20.000	S3045-1-GR	60 minute 100 year Summer Q+0%	24.136	22.784	-0.152	0.000	0.22	0.077	7.9
S20.001	S3045-2-GR	60 minute 100 year Summer Q+0%	24.043	22.755	-0.088	0.000	0.58	0.358	19.5
S11.017	S3046	60 minute 100 year Summer Q+0%	23.459	22.740	-0.719	0.000	0.07	4.356	402.3
S21.000	S3047-GR	60 minute 100 year Summer Q+0%	24.058	22.659	-0.199	0.000	0.22	0.108	14.0
S21.001	S3048-GR	60 minute 100 year Summer Q+0%	23.965	22.608	-0.157	0.000	0.42	0.571	26.5
S21.002	S3049-GR	60 minute 100 year Summer Q+0%	23.872	22.556	-0.116	0.000	0.68	0.850	39.1
S11.018	S3050	60 minute 100 year Summer Q+0%	23.365	22.505	-0.860	0.000	0.05	6.386	424.9
S11.019	S3051	60 minute 100 year Summer Q+0%	23.316	22.491	-0.825	0.000	0.05	0.725	424.7
S11.020	S3053	60 minute 100 year Summer Q+0%	22.996	22.275	-0.721	0.000	0.07	6.188	425.1
S22.000	S3053-1-GR	60 minute 100 year Winter Q+0%	23.484	22.229	-0.055	0.000	0.33	0.187	12.3
S22.001	S3054-GR	60 minute 100 year Winter Q+0%	23.269	22.212	0.143	0.000	0.84	1.709	27.5
S11.021	S3055	60 minute 100 year Summer Q+0%	22.739	22.198	-0.541	0.000	0.07	22.740	398.4
S11.022	S3056	60 minute 100 year Summer Q+0%	22.621	22.176	0.185	0.000	1.50	50.688	373.0
S11.023	S3057	60 minute 100 year Summer Q+0%	22.633	21.736	-0.897	0.000	0.05	0.733	373.3
S23.000	S3058	60 minute 100 year Summer Q+0%	27.878	26.204	-0.258	0.000	0.05	0.042	4.8
S23.001	S3059	60 minute 100 year Summer Q+0%	27.725	26.060	-0.238	0.000	0.09	0.104	12.9
S23.002	S3060	60 minute 100 year Summer Q+0%	27.292	25.389	-0.249	0.000	0.24	0.192	32.7
S23.003	S3061	60 minute 100 year Summer Q+0%	27.136	25.282	-0.239	0.000	0.28	0.445	46.2
S23.004	S3062	60 minute 100 year Summer Q+0%	26.998	25.115	-0.229	0.000	0.32	0.409	59.1
S23.005	S3063	60 minute 100 year Summer Q+0%	26.633	24.969	-0.009	0.000	0.85	2.284	85.2
S23.006	S3064	60 minute 100 year Summer Q+0%	26.623	24.891	0.021	0.000	0.55	4.022	92.2
S23.007	S3065	60 minute 100 year Summer Q+0%	26.942	24.788	0.000	0.000	0.94	2.841	98.1
S23.008	S3066	60 minute 100 year Summer Q+0%	27.141	24.753	0.000	0.000	1.07	2.523	104.5
S24.000	S3067	60 minute 100 year Summer Q+0%	27.294	25.709	-0.085	0.000	0.39	0.068	21.2
S23.009	S3068	60 minute 100 year Summer Q+0%	27.239	24.631	-0.095	0.000	0.97	1.563	139.1
S23.010	S3069	60 minute 100 year Summer Q+0%	26.728	24.409	-0.213	0.000	0.54	2.751	151.1
S25.000	S3070	60 minute 100 year Summer Q+0%	25.706	24.202	-0.241	0.000	0.08	0.061	14.1

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+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S13.000	S3016	OK
S12.001	S3017	OK
S12.002	S3018	OK
S12.003	S3019	OK
S12.004	S3020	OK
S11.005	S3021	SURCHARGED
S11.006	S3022	SURCHARGED
S14.000	S3023	OK
S14.001	S3024	OK
S14.002	S3025	OK
S11.007	S3026	SURCHARGED
S11.008	S3027	SURCHARGED
S11.009	S3028	SURCHARGED
S15.000	S3029	OK
S16.000	S3030	OK
S15.001	S3031	OK
S15.002	S3032	SURCHARGED
S11.010	S3033	SURCHARGED
S11.011	S3034-GR	SURCHARGED
S17.000	S3035	OK
S11.012	S3036-GR	SURCHARGED
S11.013	S3037-GR	SURCHARGED
S11.014	S3038	OK
S18.000	S3039-GR	OK
S19.000	S3040-GR	OK
S18.001	S3041-GR	OK
S18.002	S3042-GR	OK
S11.015	S3043	OK
S11.016	S3045	OK
S20.000	S3045-1-GR	OK
S20.001	S3045-2-GR	OK
S11.017	S3046	OK
S21.000	S3047-GR	OK
S21.001	S3048-GR	OK
S21.002	S3049-GR	OK
S11.018	S3050	OK
S11.019	S3051	OK
S11.020	S3053	OK
S22.000	S3053-1-GR	OK
S22.001	S3054-GR	SURCHARGED
S11.021	S3055	OK
S11.022	S3056	SURCHARGED*
S11.023	S3057	OK
S23.000	S3058	OK
S23.001	S3059	OK
S23.002	S3060	OK
S23.003	S3061	OK
S23.004	S3062	OK
S23.005	S3063	OK
S23.006	S3064	SURCHARGED
S23.007	S3065	OK
S23.008	S3066	OK
S24.000	S3067	OK
S23.009	S3068	OK
S23.010	S3069	OK

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH	Status
	Name	
S25.000	S3070	OK

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Causeway	Network 2019.1	

+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)
S23.011	S3071	60 minute 100 year Summer Q+0%	25.786	24.175	0.244	0.000	1.15	10.567
S23.012	S3072	60 minute 100 year Summer Q+0%	25.341	24.076	0.219	0.000	1.25	8.982
S23.013	S3073-GR	60 minute 100 year Summer Q+0%	24.943	23.893	0.150	0.000	1.42	13.182
S23.014	S3074-GR	60 minute 100 year Summer Q+0%	24.865	23.734	0.069	0.000	2.12	8.986
S23.015	S3075	60 minute 100 year Summer Q+0%	24.643	23.219	-1.424	0.000	0.01	0.428
S23.016	S3076	60 minute 100 year Summer Q+0%	24.775	22.996	-1.779	0.000	0.01	1.511
S23.017	S3077	60 minute 100 year Summer Q+0%	24.194	22.687	-1.507	0.000	0.01	3.472
S23.018	S3078	60 minute 100 year Summer Q+0%	24.085	22.668	-1.417	0.000	0.01	1.908
S26.000	S3079-GR	60 minute 100 year Summer Q+0%	24.183	22.756	-0.227	0.000	0.04	0.076
S26.001	S3080-GR	60 minute 100 year Summer Q+0%	24.142	22.753	-0.189	0.000	0.29	0.233
S26.002	S3081-GR	60 minute 100 year Summer Q+0%	23.927	22.691	-0.036	0.000	0.63	1.946
S23.019	S3082	60 minute 100 year Summer Q+0%	23.831	22.663	-1.168	0.000	0.01	4.274
S23.020	S3083	60 minute 100 year Summer Q+0%	23.455	22.658	-0.797	0.000	0.02	6.977
S23.021	S3084	60 minute 100 year Summer Q+0%	23.461	22.653	0.208	0.000	1.64	7.029
S23.022	S3085	60 minute 100 year Summer Q+0%	23.546	22.215	-1.331	0.000	0.02	0.524
S1.029	S3086-Basin C	480 minute 100 year Winter Q+0%	22.300	21.385	0.385	0.000	0.17	2503.580
S1.030	S3087-1	360 minute 100 year Winter Q+0%	22.439	21.373	0.636	0.000	0.12	2.449
S1.031	S3087	360 minute 100 year Winter Q+0%	22.646	21.347	1.113	0.000	0.32	4.327
S27.000	S3088	60 minute 100 year Summer Q+0%	24.098	22.311	-0.300	0.000	0.38	0.389
S27.001	S3089	60 minute 100 year Summer Q+0%	23.359	21.968	-0.025	0.000	0.96	7.898
S27.002	S3090	60 minute 100 year Summer Q+0%	22.742	21.797	0.177	0.000	0.57	19.046
S27.003	S3091	60 minute 100 year Summer Q+0%	22.519	21.593	0.346	0.000	0.28	6.641
S27.004	S3092	60 minute 100 year Summer Q+0%	22.616	21.571	0.444	0.000	0.57	15.894
S28.000	S3093	60 minute 100 year Winter Q+0%	23.318	21.878	0.443	0.000	0.48	0.835
S28.001	S3094	60 minute 100 year Winter Q+0%	23.170	21.855	0.484	0.000	0.60	2.150
S28.002	S3095	60 minute 100 year Winter Q+0%	22.964	21.770	0.469	0.000	0.74	1.984
S28.003	S3096	60 minute 100 year Winter Q+0%	22.764	21.682	0.433	0.000	0.83	1.637
S28.004	S3097	60 minute 100 year Winter Q+0%	22.667	21.609	0.392	0.000	1.00	1.238
S29.000	S3098	60 minute 100 year Summer Q+0%	22.437	21.558	0.321	0.000	0.13	0.527
S27.005	S3099	60 minute 100 year Summer Q+0%	22.561	21.560	0.461	0.000	0.26	12.792
S27.006	S3100	60 minute 100 year Summer Q+0%	22.401	21.552	0.502	0.000	0.24	28.231
S27.007	S3101	60 minute 100 year Summer Q+0%	22.379	21.542	0.542	0.000	0.34	37.415
S27.008	S3102	60 minute 100 year Summer Q+0%	22.415	21.535	0.551	0.000	0.40	12.758
S30.000	S3103	60 minute 100 year Summer Q+0%	23.337	21.720	-0.143	0.000	0.29	0.087
S30.001	S3104	60 minute 100 year Winter Q+0%	23.137	21.671	0.177	0.000	0.60	1.322
S30.002	S3105	60 minute 100 year Winter Q+0%	22.984	21.650	0.231	0.000	0.70	0.964
S30.003	S3106	60 minute 100 year Winter Q+0%	22.666	21.604	0.321	0.000	0.94	1.473
S30.004	S3107	60 minute 100 year Winter Q+0%	22.568	21.565	0.325	0.000	0.99	0.855
S27.009	S3108	60 minute 100 year Summer Q+0%	22.484	21.528	0.561	0.000	0.38	16.241
S27.010	S3109	60 minute 100 year Summer Q+0%	22.471	21.520	0.573	0.000	0.26	13.893
S1.032	S3110	60 minute 100 year Summer Q+0%	22.286	21.510	0.605	0.000	0.11	35.929
S1.033	S3111-CON	60 minute 100 year Summer Q+0%	22.317	21.507	1.393	0.000	0.37	37.560
S1.034	S3112	60 minute 100 year Summer Q+0%	22.361	19.759	-0.233	0.000	0.46	2.142
S1.035	S3113	60 minute 100 year Summer Q+0%	22.443	19.694	-0.250	0.000	0.41	1.157
S1.036	S3114	60 minute 100 year Summer Q+0%	21.748	19.596	-0.257	0.000	0.38	1.812
S1.037	S3115	60 minute 100 year Winter Q+0%	21.314	19.423	-0.255	0.000	0.38	2.353
S1.038	S3116	60 minute 100 year Winter Q+0%	20.779	19.318	-0.198	0.000	0.48	3.831
S1.039	S3117	60 minute 100 year Winter Q+0%	20.378	19.281	-0.192	0.000	0.62	1.505
S1.040	S3118-HW	60 minute 100 year Winter Q+0%	20.192	19.145	-1.047	0.000	0.01	0.324

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.011	S3071	213.5	SURCHARGED

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+0% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.012	S3072	243.6	SURCHARGED
S23.013	S3073-GR	265.5	SURCHARGED
S23.014	S3074-GR	272.8	SURCHARGED
S23.015	S3075	272.8	OK
S23.016	S3076	272.7	OK
S23.017	S3077	271.0	OK
S23.018	S3078	267.0	OK
S26.000	S3079-GR	2.1	OK
S26.001	S3080-GR	20.3	OK
S26.002	S3081-GR	39.1	OK
S23.019	S3082	279.8	OK
S23.020	S3083	277.5	OK
S23.021	S3084	277.4	SURCHARGED*
S23.022	S3085	277.3	OK
S1.029	S3086-Basin C	48.5	SURCHARGED
S1.030	S3087-1	49.1	SURCHARGED
S1.031	S3087	48.8	SURCHARGED
S27.000	S3088	143.4	OK
S27.001	S3089	277.1	OK
S27.002	S3090	267.8	SURCHARGED
S27.003	S3091	267.3	SURCHARGED
S27.004	S3092	259.5	SURCHARGED
S28.000	S3093	26.9	SURCHARGED
S28.001	S3094	36.6	SURCHARGED
S28.002	S3095	42.8	SURCHARGED
S28.003	S3096	43.6	SURCHARGED
S28.004	S3097	53.5	SURCHARGED
S29.000	S3098	2.1	SURCHARGED
S27.005	S3099	319.4	SURCHARGED
S27.006	S3100	275.7	SURCHARGED
S27.007	S3101	261.7	SURCHARGED
S27.008	S3102	260.8	SURCHARGED
S30.000	S3103	15.5	OK
S30.001	S3104	20.6	SURCHARGED
S30.002	S3105	25.8	SURCHARGED
S30.003	S3106	28.0	SURCHARGED
S30.004	S3107	31.7	SURCHARGED
S27.009	S3108	275.7	SURCHARGED
S27.010	S3109	270.5	SURCHARGED
S1.032	S3110	104.8	SURCHARGED
S1.033	S3111-CON	57.9	SURCHARGED
S1.034	S3112	57.6	OK
S1.035	S3113	57.5	OK
S1.036	S3114	57.1	OK
S1.037	S3115	56.9	OK
S1.038	S3116	56.7	OK
S1.039	S3117	56.7	OK
S1.040	S3118-HW	56.7	OK

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+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
 Return Period (years) 100 Cv (Summer) 0.750
 FEH Rainfall Version 2013 Cv (Winter) 0.840
 Site Location GB 450306 114752

Margin for Flood Risk Warning (mm) 299.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status ON
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
 Sensitivity flows(s) (%) 0, +20, +40

PN	US/MH Name	Event	Water				Surcharged		Flooded				Pipe Flow (l/s)
			US/CL (m)	Level (m)	Depth (m)	Volume (m ³)	Flow / Cap.	Maximum Vol	Flow / Cap.	Maximum Vol	Flow / Cap.	Maximum Vol	
S1.000	S4001	60 minute 100 year Summer Q+20%	27.478	26.175	-0.103	0.000	0.57	0.133	0.57	0.133	0.57	0.133	33.6
S1.001	S4002	60 minute 100 year Summer Q+20%	26.966	25.736	-0.030	0.000	0.83	0.527	0.83	0.527	0.83	0.527	54.7
S1.002	S4003	60 minute 100 year Summer Q+20%	26.704	25.631	0.021	0.000	0.88	2.660	0.88	2.660	0.88	2.660	92.2
S1.003	S4004	60 minute 100 year Summer Q+20%	28.014	25.484	0.064	0.000	1.07	6.486	1.07	6.486	1.07	6.486	93.8
S2.000	S4005	60 minute 100 year Summer Q+20%	33.607	32.391	-0.016	0.000	1.00	0.231	1.00	0.231	1.00	0.231	36.1
S2.001	S4006	60 minute 100 year Summer Q+20%	33.552	32.199	-0.093	0.000	0.64	0.356	0.64	0.356	0.64	0.356	57.6
S2.002	S4007	60 minute 100 year Summer Q+20%	32.390	31.095	-0.094	0.000	0.64	0.185	0.64	0.185	0.64	0.185	66.3
S2.003	S4008	60 minute 100 year Summer Q+20%	31.592	30.317	-0.075	0.000	0.77	0.200	0.77	0.200	0.77	0.200	80.2
S2.004	S4009	60 minute 100 year Summer Q+20%	30.545	29.598	0.221	0.000	1.01	0.759	1.01	0.759	1.01	0.759	92.4
S2.005	S4010	60 minute 100 year Summer Q+20%	29.217	28.321	0.190	0.000	1.20	0.797	1.20	0.797	1.20	0.797	97.6
S2.006	S4011	60 minute 100 year Summer Q+20%	28.782	27.590	-0.105	0.000	0.55	0.162	0.55	0.162	0.55	0.162	100.2
S1.004	S4012	60 minute 100 year Summer Q+20%	28.294	25.422	0.049	0.000	1.65	2.503	1.65	2.503	1.65	2.503	200.5
S1.005	S4013	60 minute 100 year Summer Q+20%	28.322	25.374	0.030	0.000	1.24	3.645	1.24	3.645	1.24	3.645	237.2
S1.006	S4014	60 minute 100 year Summer Q+20%	27.532	24.937	-0.313	0.000	0.34	2.750	0.34	2.750	0.34	2.750	241.3
S3.000	S4015	60 minute 100 year Summer Q+20%	26.680	25.426	-0.054	0.000	0.92	0.187	0.92	0.187	0.92	0.187	51.2
S3.001	S4016	60 minute 100 year Summer Q+20%	26.141	24.744	-0.077	0.000	0.59	0.558	0.59	0.558	0.59	0.558	76.8
S3.002	S4017	60 minute 100 year Summer Q+20%	26.114	24.678	0.068	0.000	1.00	4.513	1.00	4.513	1.00	4.513	87.0
S3.003	S4018	60 minute 100 year Summer Q+20%	26.410	24.630	0.067	0.000	1.06	2.108	1.06	2.108	1.06	2.108	106.2
S3.004	S4019	60 minute 100 year Summer Q+20%	27.500	24.508	0.059	0.000	1.24	4.358	1.24	4.358	1.24	4.358	107.1
S1.007	S4020	60 minute 100 year Summer Q+20%	27.348	24.432	0.025	0.000	0.96	3.063	0.96	3.063	0.96	3.063	387.8
S4.000	S4021	60 minute 100 year Summer Q+20%	26.080	24.966	0.148	0.000	1.09	0.416	1.09	0.416	1.09	0.416	38.8
S4.001	S4022	60 minute 100 year Summer Q+20%	25.790	24.852	0.135	0.000	1.06	1.112	1.06	1.112	1.06	1.112	70.5
S4.002	S4023	60 minute 100 year Summer Q+20%	25.325	24.637	0.119	0.000	1.38	3.650	1.38	3.650	1.38	3.650	76.1
S4.003	S4024	60 minute 100 year Summer Q+20%	25.456	24.543	0.065	0.000	0.98	1.224	0.98	1.224	0.98	1.224	96.0
S4.004	S4025	60 minute 100 year Summer Q+20%	25.586	24.447	0.065	0.000	1.12	3.848	1.12	3.848	1.12	3.848	112.5
S1.008	S4026	60 minute 100 year Summer Q+20%	26.600	24.295	0.031	0.000	1.87	25.345	1.87	25.345	1.87	25.345	504.9
S1.009	S4027	60 minute 100 year Summer Q+20%	26.345	24.238	0.000	0.000	1.99	6.409	1.99	6.409	1.99	6.409	508.5
S1.010	S4028	60 minute 100 year Summer Q+20%	26.150	23.795	-0.424	0.000	0.39	1.782	0.39	1.782	0.39	1.782	537.2

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+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

		US/MH	
PN	Name	Status	
S1.000	S4001	OK	
S1.001	S4002	OK	
S1.002	S4003	SURCHARGED	
S1.003	S4004	SURCHARGED	
S2.000	S4005	OK	
S2.001	S4006	OK	
S2.002	S4007	OK	
S2.003	S4008	OK	
S2.004	S4009	SURCHARGED	
S2.005	S4010	SURCHARGED	
S2.006	S4011	OK	
S1.004	S4012	SURCHARGED	
S1.005	S4013	SURCHARGED	
S1.006	S4014	OK	
S3.000	S4015	OK	
S3.001	S4016	OK	
S3.002	S4017	SURCHARGED	
S3.003	S4018	SURCHARGED	
S3.004	S4019	SURCHARGED	
S1.007	S4020	SURCHARGED	
S4.000	S4021	SURCHARGED	
S4.001	S4022	SURCHARGED	
S4.002	S4023	SURCHARGED	
S4.003	S4024	SURCHARGED	
S4.004	S4025	SURCHARGED	
S1.008	S4026	SURCHARGED	
S1.009	S4027	OK	
S1.010	S4028	OK	

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Stratton Park House	M380: Boorley Gardens	
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+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Water Surcharged Flooded								
			US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Maximum Vol (m³)			
S1.011	S4029	60 minute 100 year Summer Q+20%	24.845	23.563	0.380	0.000	0.86	22.614			
S5.000	S4030	60 minute 100 year Summer Q+20%	25.677	24.498	-0.007	0.000	1.00	0.157			
S5.001	S4031	60 minute 100 year Summer Q+20%	25.276	24.010	-0.117	0.000	0.67	0.206			
S1.012	S4032	60 minute 100 year Summer Q+20%	24.078	23.503	0.490	0.000	0.97	10.157			
S1.013	S4033	60 minute 100 year Summer Q+20%	23.942	23.459	0.499	0.000	1.41	19.380			
S1.014	S4034	60 minute 100 year Summer Q+20%	23.833	23.416	0.487	0.000	2.20	12.155			
S6.000	S4035	60 minute 100 year Summer Q+20%	31.555	29.904	-0.121	0.000	0.44	0.112			
S6.001	S4036	60 minute 100 year Summer Q+20%	29.895	28.268	-0.097	0.000	0.61	0.165			
S6.002	S4037	60 minute 100 year Summer Q+20%	29.250	27.780	0.055	0.000	1.05	0.451			
S7.000	S4038	60 minute 100 year Summer Q+20%	30.720	29.115	-0.095	0.000	0.63	0.142			
S7.001	S4039	60 minute 100 year Summer Q+20%	29.740	28.157	-0.088	0.000	0.83	0.294			
S7.002	S4040	60 minute 100 year Summer Q+20%	29.410	27.763	-0.157	0.000	0.64	0.496			
S7.003	S4041	60 minute 100 year Summer Q+20%	29.250	27.631	-0.139	0.000	0.72	0.934			
S7.004	S4042	60 minute 100 year Summer Q+20%	29.025	27.404	-0.136	0.000	0.72	1.056			
S6.003	S4043	60 minute 100 year Summer Q+20%	28.650	27.051	-0.094	0.000	0.91	1.422			
S6.004	S4044	60 minute 100 year Summer Q+20%	28.150	26.470	-0.185	0.000	0.51	0.482			
S8.000	S4045	60 minute 100 year Summer Q+20%	26.200	24.169	0.041	0.000	0.98	0.211			
S8.001	S4046	60 minute 100 year Summer Q+20%	26.500	23.951	0.098	0.000	1.14	0.645			
S8.002	S4047	60 minute 100 year Summer Q+20%	26.440	23.839	0.163	0.000	0.85	1.490			
S6.005	S4048	60 minute 100 year Summer Q+20%	26.160	23.723	0.140	0.000	1.26	3.268			
S6.006	S4049	60 minute 100 year Summer Q+20%	24.555	23.676	0.157	0.000	0.41	9.913			
S6.007	S4050	60 minute 100 year Summer Q+20%	24.220	23.446	0.460	0.000	1.93	3.685			
S6.008	S4051	60 minute 100 year Summer Q+20%	23.845	23.412	0.450	0.000	0.62	6.021			
S6.009	S4052	60 minute 100 year Summer Q+20%	23.675	23.394	0.492	0.000	0.70	7.128			
S6.010	S4053	60 minute 100 year Summer Q+20%	23.600	23.384	0.489	0.000	0.84	6.942			
S1.015	S4054	60 minute 100 year Summer Q+20%	23.565	23.371	0.486	0.000	2.57	17.962			
S1.016	S4055	60 minute 100 year Summer Q+20%	23.660	23.302	0.429	0.000	2.94	9.549			
S1.017	S4056	60 minute 100 year Summer Q+20%	23.840	23.229	0.371	0.000	2.68	10.988			
S9.000	S4057	60 minute 100 year Summer Q+20%	26.352	25.039	-0.113	0.000	0.50	0.122			
S9.001	S4058	60 minute 100 year Summer Q+20%	25.763	24.468	-0.094	0.000	0.79	0.310			
S9.002	S4059	60 minute 100 year Summer Q+20%	25.576	24.330	0.017	0.000	1.03	2.026			
S9.003	S4060	60 minute 100 year Summer Q+20%	25.493	24.237	-0.002	0.000	0.87	0.778			
S10.000	S4061	60 minute 100 year Summer Q+20%	25.428	24.115	-0.113	0.000	0.50	0.122			
S9.004	S4062	60 minute 100 year Summer Q+20%	25.210	24.058	0.048	0.000	1.12	1.991			
S9.005	S4063	60 minute 100 year Summer Q+20%	24.964	23.766	0.003	0.000	1.00	1.299			
S9.006	S4064	60 minute 100 year Summer Q+20%	24.852	23.669	0.017	0.000	0.48	1.453			
S9.007	S4065	60 minute 100 year Summer Q+20%	24.696	23.520	0.100	0.000	0.47	2.465			
S9.008	S4066	60 minute 100 year Summer Q+20%	24.374	23.346	0.248	0.000	0.61	4.653			
S9.009	S4067	60 minute 100 year Summer Q+20%	24.123	23.196	0.302	0.000	1.16	3.963			
S1.018	S4068	60 minute 100 year Summer Q+20%	23.970	23.161	0.316	0.000	1.96	11.430			
S1.019	S4069	60 minute 100 year Winter Q+20%	23.988	23.090	0.259	0.000	2.88	5.300			
S1.020	S4069-BASIN D	60 minute 100 year Winter Q+20%	23.500	23.077	0.742	0.000	0.86	1016.428			
S1.021	S3001-CON	60 minute 100 year Winter Q+20%	23.971	23.013	0.809	0.000	1.12	5.807			
S1.022	S3002	60 minute 100 year Winter Q+20%	24.693	22.209	0.103	0.000	1.11	8.903			
S1.023	S3003	60 minute 100 year Winter Q+20%	25.302	22.046	0.089	0.000	1.05	14.870			
S1.024	S3004	60 minute 100 year Winter Q+20%	25.496	21.871	0.077	0.000	1.04	16.000			
S1.025	S3005	60 minute 100 year Winter Q+20%	25.233	21.696	0.065	0.000	1.17	15.734			
S1.026	S3006	60 minute 100 year Winter Q+20%	24.970	21.615	0.043	0.000	1.15	6.163			
S1.027	S3007	480 minute 100 year Winter Q+20%	24.235	21.571	0.063	0.000	0.88	6.805			
S1.028	S3008	480 minute 100 year Winter Q+20%	24.282	21.560	0.103	0.000	1.17	5.698			
S11.000	S3010	60 minute 100 year Summer Q+20%	27.983	26.305	-0.357	0.000	0.10	0.127			
S11.001	S3011	60 minute 100 year Summer Q+20%	27.329	25.690	-0.350	0.000	0.11	0.201			
S11.002	S3012	60 minute 100 year Summer Q+20%	26.707	24.921	-0.286	0.000	0.28	0.364			
S11.003	S3013	60 minute 100 year Summer Q+20%	26.514	24.744	-0.270	0.000	0.30	0.462			
S11.004	S3014	60 minute 100 year Summer Q+20%	26.322	24.728	-0.094	0.000	0.20	1.326			
S12.000	S3015	60 minute 100 year Summer Q+20%	27.434	25.885	-0.049	0.000	0.79	0.108			

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+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S1.011	S4029	552.8	SURCHARGED
S5.000	S4030	20.9	OK
S5.001	S4031	88.6	OK
S1.012	S4032	614.2	SURCHARGED
S1.013	S4033	608.3	SURCHARGED
S1.014	S4034	604.9	SURCHARGED
S6.000	S4035	48.0	OK
S6.001	S4036	57.9	OK
S6.002	S4037	70.6	SURCHARGED
S7.000	S4038	47.7	OK
S7.001	S4039	85.1	OK
S7.002	S4040	96.3	OK
S7.003	S4041	122.5	OK
S7.004	S4042	136.7	OK
S6.003	S4043	220.3	OK
S6.004	S4044	248.4	OK
S8.000	S4045	16.6	SURCHARGED
S8.001	S4046	45.0	SURCHARGED
S8.002	S4047	53.3	SURCHARGED
S6.005	S4048	318.4	SURCHARGED
S6.006	S4049	300.1	SURCHARGED
S6.007	S4050	299.6	SURCHARGED
S6.008	S4051	300.4	SURCHARGED
S6.009	S4052	313.0	FLOOD RISK
S6.010	S4053	310.3	FLOOD RISK
S1.015	S4054	858.0	FLOOD RISK
S1.016	S4055	861.0	SURCHARGED
S1.017	S4056	860.5	SURCHARGED
S9.000	S4057	29.7	OK
S9.001	S4058	65.2	OK
S9.002	S4059	69.9	SURCHARGED
S9.003	S4060	84.9	OK
S10.000	S4061	26.4	OK
S9.004	S4062	120.8	SURCHARGED
S9.005	S4063	130.4	SURCHARGED
S9.006	S4064	130.4	SURCHARGED
S9.007	S4065	143.9	SURCHARGED
S9.008	S4066	154.2	SURCHARGED
S9.009	S4067	163.3	SURCHARGED
S1.018	S4068	988.1	SURCHARGED
S1.019	S4069	955.1	SURCHARGED
S1.020	S4069-BASIN D	239.7	SURCHARGED
S1.021	S3001-CON	237.8	SURCHARGED
S1.022	S3002	232.0	SURCHARGED
S1.023	S3003	221.5	SURCHARGED
S1.024	S3004	218.5	SURCHARGED
S1.025	S3005	218.4	SURCHARGED
S1.026	S3006	218.4	SURCHARGED
S1.027	S3007	159.6	SURCHARGED
S1.028	S3008	159.6	SURCHARGED
S11.000	S3010	34.2	OK
S11.001	S3011	50.7	OK
S11.002	S3012	70.3	OK
S11.003	S3013	74.0	OK
S11.004	S3014	85.4	OK

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+20%% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.000	S3015	19.9	OK

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Causeway	Network 2019.1	

+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S13.000	S3016	60 minute 100 year Summer Q+20%	27.405	25.856	-0.124	0.000	0.42	0.109	28.8
S12.001	S3017	60 minute 100 year Summer Q+20%	27.355	25.508	-0.232	0.000	0.31	0.199	53.7
S12.002	S3018	60 minute 100 year Summer Q+20%	26.944	25.295	-0.238	0.000	0.29	0.390	80.8
S12.003	S3019	60 minute 100 year Summer Q+20%	26.586	24.827	-0.184	0.000	0.51	0.412	96.2
S12.004	S3020	60 minute 100 year Summer Q+20%	26.355	24.770	-0.011	0.000	0.42	1.283	101.8
S11.005	S3021	60 minute 100 year Summer Q+20%	25.834	24.600	0.341	0.000	0.74	7.499	183.3
S11.006	S3022	60 minute 100 year Summer Q+20%	26.132	24.561	0.373	0.000	0.58	12.519	200.5
S14.000	S3023	60 minute 100 year Summer Q+20%	27.248	25.599	-0.149	0.000	0.51	0.165	51.9
S14.001	S3024	60 minute 100 year Summer Q+20%	26.960	25.312	-0.148	0.000	0.50	0.394	87.5
S14.002	S3025	60 minute 100 year Summer Q+20%	26.657	24.742	0.020	0.000	0.69	0.719	108.7
S11.007	S3026	60 minute 100 year Summer Q+20%	26.356	24.540	0.413	0.000	1.58	5.190	312.3
S11.008	S3027	60 minute 100 year Summer Q+20%	25.760	24.492	0.396	0.000	1.01	4.845	303.5
S11.009	S3028	60 minute 100 year Summer Q+20%	25.205	24.375	0.405	0.000	1.67	15.559	301.3
S15.000	S3029	60 minute 100 year Summer Q+20%	26.390	24.879	-0.086	0.000	0.39	0.067	17.4
S16.000	S3030	60 minute 100 year Summer Q+20%	26.231	24.729	-0.077	0.000	0.47	0.077	15.6
S15.001	S3031	60 minute 100 year Summer Q+20%	26.202	24.655	0.262	0.000	0.73	0.717	38.7
S15.002	S3032	60 minute 100 year Summer Q+20%	25.813	24.488	0.489	0.000	1.79	2.110	59.7
S11.010	S3033	60 minute 100 year Summer Q+20%	25.672	24.316	0.379	0.000	1.29	6.263	364.0
S11.011	S3034-GR	60 minute 100 year Summer Q+20%	25.057	24.181	0.324	0.000	1.08	10.235	374.9
S17.000	S3035	60 minute 100 year Summer Q+20%	25.408	24.254	0.199	0.000	0.95	0.473	36.3
S11.012	S3036-GR	60 minute 100 year Summer Q+20%	24.964	24.039	0.275	0.000	1.68	6.525	408.5
S11.013	S3037-GR	60 minute 100 year Summer Q+20%	24.890	23.824	0.134	0.000	2.99	13.055	424.8
S11.014	S3038	60 minute 100 year Summer Q+20%	24.022	23.234	-0.788	0.000	0.05	0.599	425.8
S18.000	S3039-GR	60 minute 100 year Summer Q+20%	24.640	23.312	-0.128	0.000	0.29	0.188	16.5
S19.000	S3040-GR	60 minute 100 year Summer Q+20%	24.628	23.310	-0.118	0.000	0.37	0.201	19.4
S18.001	S3041-GR	60 minute 100 year Summer Q+20%	24.597	23.300	-0.097	0.000	0.79	0.860	49.9
S18.002	S3042-GR	60 minute 100 year Summer Q+20%	24.494	23.232	-0.062	0.000	0.98	1.314	58.6
S11.015	S3043	60 minute 100 year Summer Q+20%	23.922	23.129	-0.793	0.000	0.06	3.653	473.9
S11.016	S3045	60 minute 100 year Summer Q+20%	23.652	22.889	-0.763	0.000	0.07	7.352	474.7
S20.000	S3045-1-GR	60 minute 100 year Summer Q+20%	24.136	22.804	-0.132	0.000	0.27	0.100	9.5
S20.001	S3045-2-GR	60 minute 100 year Summer Q+20%	24.043	22.791	-0.052	0.000	0.69	0.511	23.4
S11.017	S3046	60 minute 100 year Summer Q+20%	23.459	22.768	-0.691	0.000	0.08	5.225	488.2
S21.000	S3047-GR	60 minute 100 year Summer Q+20%	24.058	22.674	-0.184	0.000	0.27	0.125	16.8
S21.001	S3048-GR	60 minute 100 year Summer Q+20%	23.965	22.629	-0.136	0.000	0.50	0.716	31.8
S21.002	S3049-GR	60 minute 100 year Summer Q+20%	23.872	22.581	-0.091	0.000	0.82	1.025	46.9
S11.018	S3050	60 minute 100 year Summer Q+20%	23.365	22.536	-0.829	0.000	0.06	7.822	518.0
S11.019	S3051	60 minute 100 year Summer Q+20%	23.316	22.524	-0.792	0.000	0.06	0.905	519.2
S11.020	S3053	60 minute 100 year Winter Q+20%	22.996	22.333	-0.663	0.000	0.08	9.014	472.5
S22.000	S3053-1-GR	60 minute 100 year Winter Q+20%	23.484	22.351	0.067	0.000	0.39	0.325	14.8
S22.001	S3054-GR	60 minute 100 year Winter Q+20%	23.269	22.328	0.259	0.000	0.97	1.943	31.8
S11.021	S3055	60 minute 100 year Winter Q+20%	22.739	22.290	-0.449	0.000	0.08	31.877	458.0
S11.022	S3056	60 minute 100 year Winter Q+20%	22.621	22.263	0.272	0.000	1.76	63.575	437.3
S11.023	S3057	60 minute 100 year Winter Q+20%	22.633	21.761	-0.872	0.000	0.06	0.817	437.3
S23.000	S3058	60 minute 100 year Summer Q+20%	27.878	26.208	-0.254	0.000	0.06	0.047	5.7
S23.001	S3059	60 minute 100 year Summer Q+20%	27.725	26.065	-0.233	0.000	0.11	0.113	15.5
S23.002	S3060	60 minute 100 year Summer Q+20%	27.292	25.402	-0.236	0.000	0.29	0.222	39.3
S23.003	S3061	60 minute 100 year Summer Q+20%	27.136	25.297	-0.224	0.000	0.34	0.534	55.5
S23.004	S3062	60 minute 100 year Summer Q+20%	26.998	25.131	-0.213	0.000	0.39	0.482	71.1
S23.005	S3063	60 minute 100 year Summer Q+20%	26.633	25.055	0.077	0.000	0.98	3.174	98.0
S23.006	S3064	60 minute 100 year Summer Q+20%	26.623	24.974	0.104	0.000	0.71	4.444	120.4
S23.007	S3065	60 minute 100 year Summer Q+20%	26.942	24.875	0.087	0.000	1.20	3.170	126.1
S23.008	S3066	60 minute 100 year Summer Q+20%	27.141	24.835	0.082	0.000	1.36	2.815	133.5
S24.000	S3067	60 minute 100 year Summer Q+20%	27.294	25.717	-0.078	0.000	0.47	0.076	25.5
S23.009	S3068	60 minute 100 year Summer Q+20%	27.239	24.801	0.075	0.000	1.22	2.237	175.5
S23.010	S3069	60 minute 100 year Summer Q+20%	26.728	24.656	0.034	0.000	0.64	6.801	179.2
S25.000	S3070	60 minute 100 year Summer Q+20%	25.706	24.382	-0.061	0.000	0.09	0.264	16.6

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Causeway	Network 2019.1	

+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S13.000	S3016	OK
S12.001	S3017	OK
S12.002	S3018	OK
S12.003	S3019	OK
S12.004	S3020	OK
S11.005	S3021	SURCHARGED
S11.006	S3022	SURCHARGED
S14.000	S3023	OK
S14.001	S3024	OK
S14.002	S3025	SURCHARGED
S11.007	S3026	SURCHARGED
S11.008	S3027	SURCHARGED
S11.009	S3028	SURCHARGED
S15.000	S3029	OK
S16.000	S3030	OK
S15.001	S3031	SURCHARGED
S15.002	S3032	SURCHARGED
S11.010	S3033	SURCHARGED
S11.011	S3034-GR	SURCHARGED
S17.000	S3035	SURCHARGED
S11.012	S3036-GR	SURCHARGED
S11.013	S3037-GR	SURCHARGED
S11.014	S3038	OK
S18.000	S3039-GR	OK
S19.000	S3040-GR	OK
S18.001	S3041-GR	OK
S18.002	S3042-GR	OK
S11.015	S3043	OK
S11.016	S3045	OK
S20.000	S3045-1-GR	OK
S20.001	S3045-2-GR	OK
S11.017	S3046	OK
S21.000	S3047-GR	OK
S21.001	S3048-GR	OK
S21.002	S3049-GR	OK
S11.018	S3050	OK
S11.019	S3051	OK
S11.020	S3053	OK
S22.000	S3053-1-GR	SURCHARGED
S22.001	S3054-GR	SURCHARGED
S11.021	S3055	OK
S11.022	S3056	SURCHARGED*
S11.023	S3057	OK
S23.000	S3058	OK
S23.001	S3059	OK
S23.002	S3060	OK
S23.003	S3061	OK
S23.004	S3062	OK
S23.005	S3063	SURCHARGED
S23.006	S3064	SURCHARGED
S23.007	S3065	SURCHARGED
S23.008	S3066	SURCHARGED
S24.000	S3067	OK
S23.009	S3068	SURCHARGED
S23.010	S3069	SURCHARGED

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Causeway	Network 2019.1	

+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH	Status
	Name	
S25.000	S3070	OK

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Causeway	Network 2019.1	

+20% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Water Surcharged Flooded								
			US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Maximum Vol (m³)			
S23.011	S3071	60 minute 100 year Summer Q+20%	25.786	24.372	0.441	0.000	1.34	14.053			
S23.012	S3072	60 minute 100 year Summer Q+20%	25.341	24.238	0.381	0.000	1.45	9.266			
S23.013	S3073-GR	60 minute 100 year Summer Q+20%	24.943	23.991	0.248	0.000	1.64	13.372			
S23.014	S3074-GR	60 minute 100 year Summer Q+20%	24.865	23.778	0.113	0.000	2.46	9.153			
S23.015	S3075	60 minute 100 year Summer Q+20%	24.643	23.235	-1.408	0.000	0.02	0.541			
S23.016	S3076	60 minute 100 year Summer Q+20%	24.775	23.011	-1.764	0.000	0.01	1.767			
S23.017	S3077	60 minute 100 year Summer Q+20%	24.194	22.754	-1.440	0.000	0.01	5.747			
S23.018	S3078	60 minute 100 year Summer Q+20%	24.085	22.744	-1.341	0.000	0.01	3.176			
S26.000	S3079-GR	60 minute 100 year Winter Q+20%	24.183	22.816	-0.167	0.000	0.04	0.145			
S26.001	S3080-GR	60 minute 100 year Winter Q+20%	24.142	22.815	-0.127	0.000	0.28	0.441			
S26.002	S3081-GR	60 minute 100 year Winter Q+20%	23.927	22.797	0.070	0.000	0.58	3.122			
S23.019	S3082	60 minute 100 year Summer Q+20%	23.831	22.740	-1.091	0.000	0.02	5.884			
S23.020	S3083	60 minute 100 year Summer Q+20%	23.455	22.735	-0.720	0.000	0.02	9.223			
S23.021	S3084	60 minute 100 year Summer Q+20%	23.461	22.729	0.284	0.000	1.88	8.687			
S23.022	S3085	60 minute 100 year Summer Q+20%	23.546	22.233	-1.313	0.000	0.02	0.581			
S1.029	S3086-Basin C	480 minute 100 year Winter Q+20%	22.300	21.550	0.550	0.000	0.18	3260.124			
S1.030	S3087-1	480 minute 100 year Winter Q+20%	22.439	21.537	0.800	0.000	0.13	2.684			
S1.031	S3087	360 minute 100 year Winter Q+20%	22.646	21.476	1.242	0.000	0.34	4.511			
S27.000	S3088	60 minute 100 year Summer Q+20%	24.098	22.430	-0.181	0.000	0.45	0.600			
S27.001	S3089	60 minute 100 year Summer Q+20%	23.359	22.346	0.353	0.000	1.04	18.323			
S27.002	S3090	60 minute 100 year Summer Q+20%	22.742	22.036	0.416	0.000	0.60	21.015			
S27.003	S3091	60 minute 100 year Summer Q+20%	22.519	21.844	0.597	0.000	0.29	7.300			
S27.004	S3092	60 minute 100 year Summer Q+20%	22.616	21.829	0.702	0.000	0.61	16.551			
S28.000	S3093	60 minute 100 year Winter Q+20%	23.318	22.079	0.644	0.000	0.58	1.062			
S28.001	S3094	60 minute 100 year Summer Q+20%	23.170	22.049	0.678	0.000	0.95	2.368			
S28.002	S3095	60 minute 100 year Summer Q+20%	22.964	21.999	0.698	0.000	1.18	2.244			
S28.003	S3096	60 minute 100 year Summer Q+20%	22.764	21.913	0.664	0.000	1.32	1.897			
S28.004	S3097	60 minute 100 year Summer Q+20%	22.667	21.885	0.668	0.000	1.52	1.550			
S29.000	S3098	60 minute 100 year Summer Q+20%	22.437	21.825	0.588	0.000	0.10	0.829			
S27.005	S3099	60 minute 100 year Summer Q+20%	22.561	21.816	0.717	0.000	0.28	13.676			
S27.006	S3100	60 minute 100 year Summer Q+20%	22.401	21.804	0.754	0.000	0.30	29.104			
S27.007	S3101	60 minute 100 year Summer Q+20%	22.379	21.790	0.790	0.000	0.43	38.275			
S27.008	S3102	60 minute 100 year Summer Q+20%	22.415	21.781	0.797	0.000	0.50	13.610			
S30.000	S3103	60 minute 100 year Winter Q+20%	23.337	21.944	0.081	0.000	0.28	0.341			
S30.001	S3104	60 minute 100 year Winter Q+20%	23.137	21.915	0.421	0.000	0.66	1.858			
S30.002	S3105	60 minute 100 year Winter Q+20%	22.984	21.889	0.470	0.000	0.77	1.234			
S30.003	S3106	60 minute 100 year Winter Q+20%	22.666	21.826	0.543	0.000	0.94	1.723			
S30.004	S3107	60 minute 100 year Summer Q+20%	22.568	21.808	0.568	0.000	1.24	1.129			
S27.009	S3108	60 minute 100 year Summer Q+20%	22.484	21.772	0.805	0.000	0.48	17.085			
S27.010	S3109	60 minute 100 year Summer Q+20%	22.471	21.763	0.816	0.000	0.32	14.732			
S1.032	S3110	60 minute 100 year Summer Q+20%	22.286	21.750	0.845	0.000	0.11	37.625			
S1.033	S3111-CON	60 minute 100 year Summer Q+20%	22.317	21.748	1.634	0.000	0.39	38.935			
S1.034	S3112	60 minute 100 year Summer Q+20%	22.361	19.766	-0.226	0.000	0.49	2.277			
S1.035	S3113	60 minute 100 year Summer Q+20%	22.443	19.701	-0.243	0.000	0.43	1.216			
S1.036	S3114	60 minute 100 year Summer Q+20%	21.748	19.603	-0.250	0.000	0.41	1.906			
S1.037	S3115	60 minute 100 year Winter Q+20%	21.314	19.430	-0.248	0.000	0.40	2.494			
S1.038	S3116	60 minute 100 year Winter Q+20%	20.779	19.327	-0.189	0.000	0.51	4.087			
S1.039	S3117	60 minute 100 year Winter Q+20%	20.378	19.290	-0.183	0.000	0.66	1.582			
S1.040	S3118-HW	60 minute 100 year Winter Q+20%	20.192	19.149	-1.043	0.000	0.01	0.339			

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.011	S3071	249.3	SURCHARGED

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Causeway	Network 2019.1	

+20%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.012	S3072	282.9	SURCHARGED
S23.013	S3073-GR	307.8	SURCHARGED
S23.014	S3074-GR	316.0	SURCHARGED
S23.015	S3075	316.1	OK
S23.016	S3076	316.0	OK
S23.017	S3077	308.4	OK
S23.018	S3078	304.3	OK
S26.000	S3079-GR	2.0	OK
S26.001	S3080-GR	19.6	OK
S26.002	S3081-GR	35.7	SURCHARGED
S23.019	S3082	321.6	OK
S23.020	S3083	318.4	OK
S23.021	S3084	317.9	SURCHARGED*
S23.022	S3085	317.9	OK
S1.029	S3086-Basin C	51.1	SURCHARGED
S1.030	S3087-1	51.1	SURCHARGED
S1.031	S3087	51.0	SURCHARGED
S27.000	S3088	172.3	OK
S27.001	S3089	301.1	SURCHARGED
S27.002	S3090	279.2	SURCHARGED
S27.003	S3091	280.2	SURCHARGED
S27.004	S3092	278.1	SURCHARGED
S28.000	S3093	32.0	SURCHARGED
S28.001	S3094	57.6	SURCHARGED
S28.002	S3095	68.1	SURCHARGED
S28.003	S3096	69.5	SURCHARGED
S28.004	S3097	81.6	SURCHARGED
S29.000	S3098	1.7	SURCHARGED
S27.005	S3099	349.1	SURCHARGED
S27.006	S3100	342.9	SURCHARGED
S27.007	S3101	332.9	SURCHARGED
S27.008	S3102	326.2	SURCHARGED
S30.000	S3103	15.0	SURCHARGED
S30.001	S3104	22.8	SURCHARGED
S30.002	S3105	28.1	SURCHARGED
S30.003	S3106	28.2	SURCHARGED
S30.004	S3107	39.8	SURCHARGED
S27.009	S3108	345.0	SURCHARGED
S27.010	S3109	334.4	SURCHARGED
S1.032	S3110	110.8	SURCHARGED
S1.033	S3111-CON	61.6	SURCHARGED
S1.034	S3112	61.1	OK
S1.035	S3113	61.0	OK
S1.036	S3114	60.6	OK
S1.037	S3115	60.1	OK
S1.038	S3116	59.8	OK
S1.039	S3117	59.8	OK
S1.040	S3118-HW	59.8	OK

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Causeway	Network 2019.1	

+40% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 2 Number of Storage Structures 2 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
Return Period (years) 100 Cv (Summer) 0.750
FEH Rainfall Version 2013 Cv (Winter) 0.840
Site Location GB 450306 114752

Margin for Flood Risk Warning (mm) 299.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 240, 360, 480, 960, 1440
Sensitivity flows(s) (%) 0, +20, +40

PN	US/MH Name	Event					US/CL (m)	Water	Surcharged	Flooded	Flow / Cap.	Maximum Vol (m³)	Pipe
								Level (m)	Depth (m)	Volume (m³)			Flow (l/s)
S1.000	S4001	60 minute	100 year	Summer	Q+40%	27.478	26.188		-0.090	0.000	0.67	0.147	39.3
S1.001	S4002	60 minute	100 year	Summer	Q+40%	26.966	25.883		0.117	0.000	0.95	1.074	62.5
S1.002	S4003	60 minute	100 year	Summer	Q+40%	26.704	25.749		0.139	0.000	1.02	3.287	106.3
S1.003	S4004	60 minute	100 year	Summer	Q+40%	28.014	25.545		0.125	0.000	1.24	7.131	108.6
S2.000	S4005	60 minute	100 year	Summer	Q+40%	33.607	32.445		0.038	0.000	1.19	0.291	43.0
S2.001	S4006	60 minute	100 year	Summer	Q+40%	33.552	32.215		-0.077	0.000	0.76	0.430	67.9
S2.002	S4007	60 minute	100 year	Summer	Q+40%	32.390	31.110		-0.079	0.000	0.75	0.214	77.8
S2.003	S4008	60 minute	100 year	Summer	Q+40%	31.592	30.721		0.329	0.000	0.85	0.935	88.0
S2.004	S4009	60 minute	100 year	Summer	Q+40%	30.545	30.005		0.628	0.000	1.11	1.540	101.7
S2.005	S4010	60 minute	100 year	Summer	Q+40%	29.217	28.449		0.318	0.000	1.32	1.085	107.4
S2.006	S4011	60 minute	100 year	Summer	Q+40%	28.782	27.596		-0.099	0.000	0.60	0.175	110.2
S1.004	S4012	60 minute	100 year	Summer	Q+40%	28.294	25.473		0.101	0.000	1.86	2.658	225.7
S1.005	S4013	60 minute	100 year	Summer	Q+40%	28.322	25.413		0.070	0.000	1.39	3.819	267.5
S1.006	S4014	60 minute	100 year	Summer	Q+40%	27.532	24.952		-0.299	0.000	0.39	3.094	273.0
S3.000	S4015	60 minute	100 year	Summer	Q+40%	26.680	25.596		0.116	0.000	1.02	0.380	56.8
S3.001	S4016	60 minute	100 year	Summer	Q+40%	26.141	24.941		0.120	0.000	0.64	1.420	82.7
S3.002	S4017	60 minute	100 year	Summer	Q+40%	26.114	24.830		0.220	0.000	1.12	5.275	97.5
S3.003	S4018	60 minute	100 year	Summer	Q+40%	26.410	24.771		0.208	0.000	1.21	2.330	121.1
S3.004	S4019	60 minute	100 year	Summer	Q+40%	27.500	24.600		0.151	0.000	1.43	4.651	123.7
S1.007	S4020	60 minute	100 year	Summer	Q+40%	27.348	24.502		0.094	0.000	1.10	3.374	443.0
S4.000	S4021	60 minute	100 year	Summer	Q+40%	26.080	25.232		0.414	0.000	1.23	0.717	43.9
S4.001	S4022	60 minute	100 year	Summer	Q+40%	25.790	25.078		0.361	0.000	1.20	1.368	79.6
S4.002	S4023	60 minute	100 year	Summer	Q+40%	25.325	24.787		0.269	0.000	1.59	3.992	87.4
S4.003	S4024	60 minute	100 year	Summer	Q+40%	25.456	24.665		0.187	0.000	1.14	1.404	112.0
S4.004	S4025	60 minute	100 year	Summer	Q+40%	25.586	24.537		0.155	0.000	1.33	4.062	133.0
S1.008	S4026	60 minute	100 year	Summer	Q+40%	26.600	24.324		0.060	0.000	2.15	26.189	580.0
S1.009	S4027	60 minute	100 year	Summer	Q+40%	26.345	24.249		0.011	0.000	2.29	6.488	585.5
S1.010	S4028	60 minute	100 year	Summer	Q+40%	26.150	24.098		-0.121	0.000	0.44	4.203	606.4

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Causeway	Network 2019.1	

+40%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

		US/MH	
PN	Name	Status	
S1.000	S4001	OK	
S1.001	S4002	SURCHARGED	
S1.002	S4003	SURCHARGED	
S1.003	S4004	SURCHARGED	
S2.000	S4005	SURCHARGED	
S2.001	S4006	OK	
S2.002	S4007	OK	
S2.003	S4008	SURCHARGED	
S2.004	S4009	SURCHARGED	
S2.005	S4010	SURCHARGED	
S2.006	S4011	OK	
S1.004	S4012	SURCHARGED	
S1.005	S4013	SURCHARGED	
S1.006	S4014	OK	
S3.000	S4015	SURCHARGED	
S3.001	S4016	SURCHARGED	
S3.002	S4017	SURCHARGED	
S3.003	S4018	SURCHARGED	
S3.004	S4019	SURCHARGED	
S1.007	S4020	SURCHARGED	
S4.000	S4021	SURCHARGED	
S4.001	S4022	SURCHARGED	
S4.002	S4023	SURCHARGED	
S4.003	S4024	SURCHARGED	
S4.004	S4025	SURCHARGED	
S1.008	S4026	SURCHARGED	
S1.009	S4027	SURCHARGED	
S1.010	S4028	OK	

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Stratton Park House	M380: Boorley Gardens	
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Causeway	Network 2019.1	

+40% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Water Surcharged Flooded								
			US/CL (m)	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Maximum Vol (m³)			
S1.011	S4029	60 minute 100 year Summer Q+40%	24.845	23.900	0.717	0.000	0.96	29.577			
S5.000	S4030	60 minute 100 year Summer Q+40%	25.677	24.626	0.121	0.000	1.15	0.301			
S5.001	S4031	60 minute 100 year Summer Q+40%	25.276	24.072	-0.055	0.000	0.77	0.309			
S1.012	S4032	60 minute 100 year Summer Q+40%	24.078	23.741	0.728	0.000	1.10	11.851			
S1.013	S4033	60 minute 100 year Summer Q+40%	23.942	23.677	0.717	0.000	1.63	19.936			
S1.014	S4034	60 minute 100 year Summer Q+40%	23.833	23.628	0.699	0.000	2.55	12.695			
S6.000	S4035	60 minute 100 year Summer Q+40%	31.555	29.914	-0.111	0.000	0.51	0.123			
S6.001	S4036	60 minute 100 year Summer Q+40%	29.895	28.316	-0.049	0.000	0.70	0.246			
S6.002	S4037	60 minute 100 year Summer Q+40%	29.250	27.995	0.270	0.000	1.20	0.880			
S7.000	S4038	60 minute 100 year Summer Q+40%	30.720	29.130	-0.080	0.000	0.74	0.158			
S7.001	S4039	60 minute 100 year Summer Q+40%	29.740	28.182	-0.063	0.000	0.98	0.358			
S7.002	S4040	60 minute 100 year Summer Q+40%	29.410	27.787	-0.133	0.000	0.74	0.629			
S7.003	S4041	60 minute 100 year Summer Q+40%	29.250	27.659	-0.111	0.000	0.84	1.110			
S7.004	S4042	60 minute 100 year Summer Q+40%	29.025	27.432	-0.108	0.000	0.84	1.292			
S6.003	S4043	60 minute 100 year Summer Q+40%	28.650	27.166	0.021	0.000	1.03	2.768			
S6.004	S4044	60 minute 100 year Summer Q+40%	28.150	26.485	-0.170	0.000	0.57	0.531			
S8.000	S4045	60 minute 100 year Summer Q+40%	26.200	24.510	0.382	0.000	1.08	0.596			
S8.001	S4046	60 minute 100 year Summer Q+40%	26.500	24.335	0.482	0.000	1.28	1.263			
S8.002	S4047	60 minute 100 year Summer Q+40%	26.440	24.135	0.459	0.000	0.96	1.849			
S6.005	S4048	60 minute 100 year Summer Q+40%	26.160	24.045	0.462	0.000	1.40	4.319			
S6.006	S4049	60 minute 100 year Summer Q+40%	24.555	23.943	0.424	0.000	0.46	10.388			
S6.007	S4050	60 minute 100 year Summer Q+40%	24.220	23.695	0.709	0.000	2.16	4.148			
S6.008	S4051	60 minute 100 year Summer Q+40%	23.845	23.630	0.668	0.000	0.70	6.575			
S6.009	S4052	60 minute 100 year Summer Q+40%	23.675	23.604	0.702	0.000	0.77	7.660			
S6.010	S4053	60 minute 100 year Summer Q+40%	23.600	23.590	0.695	0.000	0.95	7.468			
S1.015	S4054	60 minute 100 year Summer Q+40%	23.565	23.577	0.692	12.186	2.87	30.631			
S1.016	S4055	60 minute 100 year Winter Q+40%	23.660	23.501	0.628	0.000	3.17	10.054			
S1.017	S4056	60 minute 100 year Winter Q+40%	23.840	23.428	0.570	0.000	2.89	11.494			
S9.000	S4057	60 minute 100 year Summer Q+40%	26.352	25.051	-0.101	0.000	0.58	0.134			
S9.001	S4058	60 minute 100 year Summer Q+40%	25.763	24.663	0.101	0.000	0.86	1.001			
S9.002	S4059	60 minute 100 year Summer Q+40%	25.576	24.486	0.173	0.000	1.14	3.076			
S9.003	S4060	60 minute 100 year Summer Q+40%	25.493	24.399	0.160	0.000	0.97	1.015			
S10.000	S4061	60 minute 100 year Summer Q+40%	25.428	24.263	0.035	0.000	0.55	0.288			
S9.004	S4062	60 minute 100 year Summer Q+40%	25.210	24.219	0.209	0.000	1.23	2.769			
S9.005	S4063	60 minute 100 year Winter Q+40%	24.964	23.981	0.218	0.000	1.00	2.128			
S9.006	S4064	60 minute 100 year Winter Q+40%	24.852	23.873	0.221	0.000	0.47	1.838			
S9.007	S4065	60 minute 100 year Winter Q+40%	24.696	23.714	0.294	0.000	0.45	2.881			
S9.008	S4066	60 minute 100 year Winter Q+40%	24.374	23.536	0.438	0.000	0.60	4.979			
S9.009	S4067	60 minute 100 year Winter Q+40%	24.123	23.389	0.495	0.000	1.16	4.240			
S1.018	S4068	60 minute 100 year Winter Q+40%	23.970	23.358	0.513	0.000	2.11	11.931			
S1.019	S4069	60 minute 100 year Winter Q+40%	23.988	23.212	0.381	0.000	3.20	5.614			
S1.020	S4069-BASIN D	60 minute 100 year Winter Q+40%	23.500	23.198	0.863	0.000	0.90	1220.363			
S1.021	S3001-CON	60 minute 100 year Winter Q+40%	23.971	23.125	0.921	0.000	1.16	6.006			
S1.022	S3002	60 minute 100 year Winter Q+40%	24.693	22.313	0.207	0.000	1.16	9.102			
S1.023	S3003	60 minute 100 year Winter Q+40%	25.302	22.129	0.172	0.000	1.12	15.216			
S1.024	S3004	60 minute 100 year Winter Q+40%	25.496	21.930	0.136	0.000	1.10	16.374			
S1.025	S3005	480 minute 100 year Winter Q+40%	25.233	21.733	0.102	0.000	0.98	16.188			
S1.026	S3006	480 minute 100 year Winter Q+40%	24.970	21.722	0.150	0.000	0.97	6.546			
S1.027	S3007	480 minute 100 year Winter Q+40%	24.235	21.710	0.202	0.000	1.01	7.157			
S1.028	S3008	480 minute 100 year Winter Q+40%	24.282	21.699	0.242	0.000	1.35	5.954			
S11.000	S3010	60 minute 100 year Summer Q+40%	27.983	26.312	-0.350	0.000	0.11	0.136			
S11.001	S3011	60 minute 100 year Summer Q+40%	27.329	25.697	-0.343	0.000	0.13	0.224			
S11.002	S3012	60 minute 100 year Summer Q+40%	26.707	25.369	0.162	0.000	0.33	3.037			
S11.003	S3013	60 minute 100 year Summer Q+40%	26.514	25.222	0.208	0.000	0.34	2.355			
S11.004	S3014	60 minute 100 year Summer Q+40%	26.322	25.067	0.246	0.000	0.23	2.412			
S12.000	S3015	60 minute 100 year Summer Q+40%	27.434	25.897	-0.037	0.000	0.92	0.122			

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S1.011	S4029	618.1	SURCHARGED
S5.000	S4030	24.1	SURCHARGED
S5.001	S4031	102.1	OK
S1.012	S4032	695.4	SURCHARGED
S1.013	S4033	702.2	FLOOD RISK
S1.014	S4034	700.7	FLOOD RISK
S6.000	S4035	56.1	OK
S6.001	S4036	66.6	OK
S6.002	S4037	81.3	SURCHARGED
S7.000	S4038	55.7	OK
S7.001	S4039	99.3	OK
S7.002	S4040	112.5	OK
S7.003	S4041	143.1	OK
S7.004	S4042	159.5	OK
S6.003	S4043	250.0	SURCHARGED
S6.004	S4044	279.0	OK
S8.000	S4045	18.3	SURCHARGED
S8.001	S4046	50.4	SURCHARGED
S8.002	S4047	60.3	SURCHARGED
S6.005	S4048	352.5	SURCHARGED
S6.006	S4049	336.0	SURCHARGED
S6.007	S4050	335.9	SURCHARGED
S6.008	S4051	337.6	FLOOD RISK
S6.009	S4052	348.8	FLOOD RISK
S6.010	S4053	349.9	FLOOD RISK
S1.015	S4054	956.5	FLOOD
S1.016	S4055	928.2	FLOOD RISK
S1.017	S4056	926.5	SURCHARGED
S9.000	S4057	34.7	OK
S9.001	S4058	70.3	SURCHARGED
S9.002	S4059	78.0	SURCHARGED
S9.003	S4060	94.2	SURCHARGED
S10.000	S4061	28.8	SURCHARGED
S9.004	S4062	133.2	SURCHARGED
S9.005	S4063	130.3	SURCHARGED
S9.006	S4064	127.8	SURCHARGED
S9.007	S4065	137.5	SURCHARGED
S9.008	S4066	151.6	SURCHARGED
S9.009	S4067	162.6	SURCHARGED
S1.018	S4068	1065.6	SURCHARGED
S1.019	S4069	1063.4	SURCHARGED
S1.020	S4069-BASIN D	248.5	SURCHARGED
S1.021	S3001-CON	247.3	SURCHARGED
S1.022	S3002	243.2	SURCHARGED
S1.023	S3003	235.3	SURCHARGED
S1.024	S3004	232.5	SURCHARGED
S1.025	S3005	183.4	SURCHARGED
S1.026	S3006	183.4	SURCHARGED
S1.027	S3007	183.3	SURCHARGED
S1.028	S3008	183.3	SURCHARGED
S11.000	S3010	39.9	OK
S11.001	S3011	59.3	OK
S11.002	S3012	81.7	SURCHARGED
S11.003	S3013	84.3	SURCHARGED
S11.004	S3014	94.0	SURCHARGED

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S12.000	S3015	23.3	OK

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Causeway	Network 2019.1	

+40% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Maximum Vol (m³)	Pipe Flow (l/s)
S13.000	S3016	60 minute 100 year Summer Q+40%	27.405	25.865	-0.114	0.000	0.49	0.120	33.6
S12.001	S3017	60 minute 100 year Summer Q+40%	27.355	25.521	-0.219	0.000	0.36	0.218	62.7
S12.002	S3018	60 minute 100 year Summer Q+40%	26.944	25.308	-0.225	0.000	0.33	0.455	94.4
S12.003	S3019	60 minute 100 year Summer Q+40%	26.586	25.198	0.187	0.000	0.59	2.085	110.1
S12.004	S3020	60 minute 100 year Summer Q+40%	26.355	25.041	0.261	0.000	0.45	2.057	107.3
S11.005	S3021	60 minute 100 year Summer Q+40%	25.834	24.837	0.578	0.000	0.77	8.452	190.5
S11.006	S3022	60 minute 100 year Summer Q+40%	26.132	24.794	0.606	0.000	0.61	12.930	210.4
S14.000	S3023	60 minute 100 year Summer Q+40%	27.248	25.614	-0.134	0.000	0.59	0.182	60.6
S14.001	S3024	60 minute 100 year Summer Q+40%	26.960	25.327	-0.133	0.000	0.59	0.460	102.2
S14.002	S3025	60 minute 100 year Summer Q+40%	26.657	25.070	0.348	0.000	0.75	1.807	118.7
S11.007	S3026	60 minute 100 year Summer Q+40%	26.356	24.746	0.619	0.000	1.70	5.699	336.5
S11.008	S3027	60 minute 100 year Summer Q+40%	25.760	24.687	0.591	0.000	1.10	5.189	329.7
S11.009	S3028	60 minute 100 year Summer Q+40%	25.205	24.545	0.575	0.000	1.82	15.859	327.0
S15.000	S3029	60 minute 100 year Summer Q+40%	26.390	25.013	0.048	0.000	0.45	0.218	20.1
S16.000	S3030	60 minute 100 year Summer Q+40%	26.231	25.020	0.214	0.000	0.51	0.406	16.9
S15.001	S3031	60 minute 100 year Summer Q+40%	26.202	24.932	0.539	0.000	0.79	1.097	41.6
S15.002	S3032	60 minute 100 year Summer Q+40%	25.813	24.705	0.706	0.000	2.01	2.356	67.2
S11.010	S3033	60 minute 100 year Summer Q+40%	25.672	24.475	0.538	0.000	1.43	6.545	402.5
S11.011	S3034-GR	60 minute 100 year Summer Q+40%	25.057	24.314	0.457	0.000	1.19	10.469	414.7
S17.000	S3035	60 minute 100 year Summer Q+40%	25.408	24.470	0.415	0.000	1.07	0.718	40.5
S11.012	S3036-GR	60 minute 100 year Summer Q+40%	24.964	24.142	0.378	0.000	1.88	6.735	459.1
S11.013	S3037-GR	60 minute 100 year Summer Q+40%	24.890	23.873	0.183	0.000	3.38	13.145	479.4
S11.014	S3038	60 minute 100 year Summer Q+40%	24.022	23.251	-0.771	0.000	0.06	0.680	478.9
S18.000	S3039-GR	60 minute 100 year Summer Q+40%	24.640	23.403	-0.037	0.000	0.33	0.292	18.4
S19.000	S3040-GR	60 minute 100 year Summer Q+40%	24.628	23.405	-0.023	0.000	0.41	0.308	21.5
S18.001	S3041-GR	60 minute 100 year Summer Q+40%	24.597	23.377	-0.020	0.000	0.87	1.253	54.8
S18.002	S3042-GR	60 minute 100 year Summer Q+40%	24.494	23.297	0.003	0.000	1.07	1.816	64.2
S11.015	S3043	60 minute 100 year Summer Q+40%	23.922	23.151	-0.771	0.000	0.07	4.216	538.2
S11.016	S3045	60 minute 100 year Summer Q+40%	23.652	22.908	-0.744	0.000	0.08	8.379	539.3
S20.000	S3045-1-GR	60 minute 100 year Summer Q+40%	24.136	22.838	-0.098	0.000	0.31	0.138	10.9
S20.001	S3045-2-GR	60 minute 100 year Summer Q+40%	24.043	22.823	-0.020	0.000	0.79	0.643	26.9
S11.017	S3046	60 minute 100 year Summer Q+40%	23.459	22.788	-0.671	0.000	0.09	5.898	557.0
S21.000	S3047-GR	60 minute 100 year Summer Q+40%	24.058	22.689	-0.169	0.000	0.31	0.143	19.6
S21.001	S3048-GR	60 minute 100 year Summer Q+40%	23.965	22.651	-0.114	0.000	0.59	0.866	37.1
S21.002	S3049-GR	60 minute 100 year Summer Q+40%	23.872	22.606	-0.066	0.000	0.96	1.194	54.7
S11.018	S3050	60 minute 100 year Summer Q+40%	23.365	22.559	-0.806	0.000	0.07	9.173	595.2
S11.019	S3051	60 minute 100 year Summer Q+40%	23.316	22.546	-0.770	0.000	0.07	1.018	594.7
S11.020	S3053	60 minute 100 year Winter Q+40%	22.996	22.404	-0.592	0.000	0.09	12.827	536.7
S22.000	S3053-1-GR	60 minute 100 year Winter Q+40%	23.484	22.452	0.168	0.000	0.45	0.439	16.9
S22.001	S3054-GR	60 minute 100 year Winter Q+40%	23.269	22.426	0.357	0.000	1.05	2.056	34.3
S11.021	S3055	60 minute 100 year Winter Q+40%	22.739	22.379	-0.360	0.000	0.09	42.094	517.2
S11.022	S3056	60 minute 100 year Winter Q+40%	22.621	22.346	0.355	0.000	1.97	77.192	490.2
S11.023	S3057	60 minute 100 year Winter Q+40%	22.633	21.782	-0.851	0.000	0.06	0.885	490.2
S23.000	S3058	60 minute 100 year Summer Q+40%	27.878	26.213	-0.249	0.000	0.07	0.052	6.7
S23.001	S3059	60 minute 100 year Summer Q+40%	27.725	26.071	-0.227	0.000	0.13	0.123	18.1
S23.002	S3060	60 minute 100 year Summer Q+40%	27.292	25.768	0.130	0.000	0.34	1.800	45.9
S23.003	S3061	60 minute 100 year Summer Q+40%	27.136	25.681	0.160	0.000	0.39	2.382	64.3
S23.004	S3062	60 minute 100 year Summer Q+40%	26.998	25.544	0.200	0.000	0.44	2.327	81.3
S23.005	S3063	60 minute 100 year Summer Q+40%	26.633	25.386	0.407	0.000	1.04	4.811	103.4
S23.006	S3064	60 minute 100 year Summer Q+40%	26.623	25.304	0.434	0.000	0.76	4.958	128.1
S23.007	S3065	60 minute 100 year Summer Q+40%	26.942	25.209	0.420	0.000	1.27	3.661	133.3
S23.008	S3066	60 minute 100 year Summer Q+40%	27.141	25.171	0.419	0.000	1.42	3.309	138.7
S24.000	S3067	60 minute 100 year Summer Q+40%	27.294	25.724	-0.070	0.000	0.55	0.084	29.8
S23.009	S3068	60 minute 100 year Summer Q+40%	27.239	25.140	0.414	0.000	1.30	2.775	186.1
S23.010	S3069	60 minute 100 year Summer Q+40%	26.728	24.979	0.357	0.000	0.70	7.569	197.0
S25.000	S3070	60 minute 100 year Summer Q+40%	25.706	24.674	0.231	0.000	0.10	0.595	17.6

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Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Status
S13.000	S3016	OK
S12.001	S3017	OK
S12.002	S3018	OK
S12.003	S3019	SURCHARGED
S12.004	S3020	SURCHARGED
S11.005	S3021	SURCHARGED
S11.006	S3022	SURCHARGED
S14.000	S3023	OK
S14.001	S3024	OK
S14.002	S3025	SURCHARGED
S11.007	S3026	SURCHARGED
S11.008	S3027	SURCHARGED
S11.009	S3028	SURCHARGED
S15.000	S3029	SURCHARGED
S16.000	S3030	SURCHARGED
S15.001	S3031	SURCHARGED
S15.002	S3032	SURCHARGED
S11.010	S3033	SURCHARGED
S11.011	S3034-GR	SURCHARGED
S17.000	S3035	SURCHARGED
S11.012	S3036-GR	SURCHARGED
S11.013	S3037-GR	SURCHARGED
S11.014	S3038	OK
S18.000	S3039-GR	OK
S19.000	S3040-GR	OK
S18.001	S3041-GR	OK
S18.002	S3042-GR	SURCHARGED
S11.015	S3043	OK
S11.016	S3045	OK
S20.000	S3045-1-GR	OK
S20.001	S3045-2-GR	OK
S11.017	S3046	OK
S21.000	S3047-GR	OK
S21.001	S3048-GR	OK
S21.002	S3049-GR	OK
S11.018	S3050	OK
S11.019	S3051	OK
S11.020	S3053	OK
S22.000	S3053-1-GR	SURCHARGED
S22.001	S3054-GR	SURCHARGED
S11.021	S3055	OK
S11.022	S3056	FLOOD RISK*
S11.023	S3057	OK
S23.000	S3058	OK
S23.001	S3059	OK
S23.002	S3060	SURCHARGED
S23.003	S3061	SURCHARGED
S23.004	S3062	SURCHARGED
S23.005	S3063	SURCHARGED
S23.006	S3064	SURCHARGED
S23.007	S3065	SURCHARGED
S23.008	S3066	SURCHARGED
S24.000	S3067	OK
S23.009	S3068	SURCHARGED
S23.010	S3069	SURCHARGED

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+40%% Sensitivity 100 year Return Period

Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH	
	Name	Status
S25.000	S3070	SURCHARGED

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Causeway		Network 2019.1

+40% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Event	Water Surcharged Flooded				Flow / Cap.	Maximum Vol (m³)
			US/CL (m)	Level (m)	Depth (m)	Volume (m³)		
S23.011	S3071	60 minute 100 year Summer Q+40%	25.786	24.660	0.729	0.000	1.55	15.821
S23.012	S3072	60 minute 100 year Summer Q+40%	25.341	24.478	0.621	0.000	1.70	9.690
S23.013	S3073-GR	60 minute 100 year Summer Q+40%	24.943	24.136	0.393	0.000	1.92	13.628
S23.014	S3074-GR	60 minute 100 year Summer Q+40%	24.865	23.842	0.177	0.000	2.88	9.280
S23.015	S3075	60 minute 100 year Summer Q+40%	24.643	23.256	-1.387	0.000	0.02	0.678
S23.016	S3076	60 minute 100 year Summer Q+40%	24.775	23.029	-1.746	0.000	0.01	2.078
S23.017	S3077	60 minute 100 year Summer Q+40%	24.194	22.829	-1.365	0.000	0.02	9.796
S23.018	S3078	60 minute 100 year Summer Q+40%	24.085	22.824	-1.261	0.000	0.01	4.791
S26.000	S3079-GR	60 minute 100 year Winter Q+40%	24.183	22.919	-0.064	0.000	0.04	0.262
S26.001	S3080-GR	60 minute 100 year Winter Q+40%	24.142	22.919	-0.023	0.000	0.32	0.769
S26.002	S3081-GR	60 minute 100 year Winter Q+40%	23.927	22.888	0.161	0.000	0.62	3.663
S23.019	S3082	60 minute 100 year Summer Q+40%	23.831	22.819	-1.012	0.000	0.02	7.733
S23.020	S3083	60 minute 100 year Summer Q+40%	23.455	22.814	-0.641	0.000	0.02	11.835
S23.021	S3084	60 minute 100 year Summer Q+40%	23.461	22.807	0.362	0.000	2.10	10.555
S23.022	S3085	60 minute 100 year Summer Q+40%	23.546	22.249	-1.297	0.000	0.02	0.632
S1.029	S3086-Basin C	480 minute 100 year Winter Q+40%	22.300	21.690	0.690	0.000	0.18	3936.348
S1.030	S3087-1	480 minute 100 year Winter Q+40%	22.439	21.678	0.941	0.000	0.13	2.887
S1.031	S3087	60 minute 100 year Summer Q+40%	22.646	21.655	1.421	0.000	0.46	4.767
S27.000	S3088	60 minute 100 year Summer Q+40%	24.098	22.829	0.218	0.000	0.53	1.304
S27.001	S3089	60 minute 100 year Summer Q+40%	23.359	22.659	0.666	0.000	1.17	20.708
S27.002	S3090	60 minute 100 year Summer Q+40%	22.742	22.332	0.712	0.000	0.70	21.538
S27.003	S3091	60 minute 100 year Summer Q+40%	22.519	22.134	0.887	0.000	0.34	8.037
S27.004	S3092	60 minute 100 year Summer Q+40%	22.616	22.115	0.988	0.000	0.69	17.280
S28.000	S3093	60 minute 100 year Summer Q+40%	23.318	22.432	0.997	0.000	0.79	1.461
S28.001	S3094	60 minute 100 year Summer Q+40%	23.170	22.410	1.039	0.000	1.02	2.777
S28.002	S3095	60 minute 100 year Summer Q+40%	22.964	22.329	1.028	0.000	1.27	2.617
S28.003	S3096	60 minute 100 year Summer Q+40%	22.764	22.251	1.002	0.000	1.45	2.280
S28.004	S3097	60 minute 100 year Summer Q+40%	22.667	22.178	0.961	0.000	1.70	1.880
S29.000	S3098	60 minute 100 year Summer Q+40%	22.437	22.106	0.869	0.000	0.11	1.147
S27.005	S3099	60 minute 100 year Summer Q+40%	22.561	22.100	1.001	0.000	0.34	14.661
S27.006	S3100	60 minute 100 year Summer Q+40%	22.401	22.087	1.037	0.000	0.33	30.087
S27.007	S3101	60 minute 100 year Summer Q+40%	22.379	22.073	1.073	0.000	0.48	39.256
S27.008	S3102	60 minute 100 year Summer Q+40%	22.415	22.064	1.080	0.000	0.59	14.590
S30.000	S3103	60 minute 100 year Summer Q+40%	23.337	22.276	0.413	0.000	0.39	0.716
S30.001	S3104	60 minute 100 year Summer Q+40%	23.137	22.252	0.758	0.000	0.91	2.239
S30.002	S3105	60 minute 100 year Summer Q+40%	22.984	22.228	0.809	0.000	1.03	1.617
S30.003	S3106	60 minute 100 year Summer Q+40%	22.666	22.176	0.893	0.000	1.38	2.119
S30.004	S3107	60 minute 100 year Summer Q+40%	22.568	22.123	0.883	0.000	1.43	1.486
S27.009	S3108	60 minute 100 year Summer Q+40%	22.484	22.054	1.087	0.000	0.56	18.062
S27.010	S3109	60 minute 100 year Summer Q+40%	22.471	22.043	1.096	0.000	0.38	15.703
S1.032	S3110	60 minute 100 year Summer Q+40%	22.286	22.028	1.123	0.000	0.11	39.593
S1.033	S3111-CON	60 minute 100 year Summer Q+40%	22.317	22.026	1.912	0.000	0.42	40.527
S1.034	S3112	60 minute 100 year Summer Q+40%	22.361	19.775	-0.217	0.000	0.53	2.443
S1.035	S3113	60 minute 100 year Summer Q+40%	22.443	19.709	-0.235	0.000	0.46	1.299
S1.036	S3114	60 minute 100 year Summer Q+40%	21.748	19.611	-0.242	0.000	0.44	2.029
S1.037	S3115	60 minute 100 year Winter Q+40%	21.314	19.439	-0.239	0.000	0.43	2.733
S1.038	S3116	60 minute 100 year Winter Q+40%	20.779	19.338	-0.178	0.000	0.54	4.407
S1.039	S3117	60 minute 100 year Winter Q+40%	20.378	19.301	-0.172	0.000	0.70	1.679
S1.040	S3118-HW	60 minute 100 year Winter Q+40%	20.192	19.153	-1.039	0.000	0.01	0.356

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.011	S3071	287.9	SURCHARGED

PFA Consulting		Page 10
Stratton Park House Wanborough Road Swindon SN3 4HG	M380: Boorley Gardens SW Drainage - Planning Catchments C + D	
Date 01/03/2020	Designed by PS	
File M380-Catch C&D-V5.10 (RM)	Checked by BF	
Causeway	Network 2019.1	

+40%% Sensitivity 100 year Return Period
Summary of Critical Results by Maximum Level (Rank 1) for Catch C+D

PN	US/MH Name	Pipe Flow (l/s)	Status
S23.012	S3072	330.6	SURCHARGED
S23.013	S3073-GR	360.3	SURCHARGED
S23.014	S3074-GR	370.1	SURCHARGED
S23.015	S3075	370.0	OK
S23.016	S3076	369.4	OK
S23.017	S3077	352.3	OK
S23.018	S3078	344.9	OK
S26.000	S3079-GR	2.4	OK
S26.001	S3080-GR	22.6	OK
S26.002	S3081-GR	38.4	SURCHARGED
S23.019	S3082	362.1	OK
S23.020	S3083	355.8	OK
S23.021	S3084	354.7	SURCHARGED*
S23.022	S3085	354.8	OK
S1.029	S3086-Basin C	53.0	SURCHARGED
S1.030	S3087-1	53.0	SURCHARGED
S1.031	S3087	70.5	SURCHARGED
S27.000	S3088	200.9	SURCHARGED
S27.001	S3089	338.1	SURCHARGED
S27.002	S3090	327.7	SURCHARGED
S27.003	S3091	322.0	SURCHARGED
S27.004	S3092	316.9	SURCHARGED
S28.000	S3093	43.9	SURCHARGED
S28.001	S3094	61.7	SURCHARGED
S28.002	S3095	73.3	SURCHARGED
S28.003	S3096	76.4	SURCHARGED
S28.004	S3097	91.0	SURCHARGED
S29.000	S3098	1.8	SURCHARGED
S27.005	S3099	416.2	SURCHARGED
S27.006	S3100	388.0	SURCHARGED
S27.007	S3101	375.5	SURCHARGED
S27.008	S3102	381.2	SURCHARGED
S30.000	S3103	21.3	SURCHARGED
S30.001	S3104	31.5	SURCHARGED
S30.002	S3105	37.9	SURCHARGED
S30.003	S3106	41.2	SURCHARGED
S30.004	S3107	46.0	SURCHARGED
S27.009	S3108	403.0	SURCHARGED
S27.010	S3109	397.7	SURCHARGED
S1.032	S3110	104.0	FLOOD RISK
S1.033	S3111-CON	65.8	FLOOD RISK
S1.034	S3112	65.5	OK
S1.035	S3113	65.4	OK
S1.036	S3114	64.9	OK
S1.037	S3115	64.0	OK
S1.038	S3116	63.7	OK
S1.039	S3117	63.7	OK
S1.040	S3118-HW	63.6	OK

