STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.000	12.720	0.150	84.8	0.030	4.00	0.0	0.600	o	150	
2.000	20.000	1.050	19.0	0.019	4.00	0.0	0.600	o	150	
3.000	19.850	0.200	99.3	0.038	4.00	0.0	0.600	o	150	
1.001	10.250	0.250	41.0	0.000	0.00	0.0	0.600	o	150	
1.002	17.300	0.170	101.8	0.022	0.00	0.0	0.600	o	225	
4.000	19.260	0.130	148.2	0.035	4.00	0.0	0.600	o	150	
4.001	15.340	0.110	139.5	0.030	0.00	0.0	0.600	o	150	
1.003	9.130	0.075	121.7	0.062	0.00	0.0	0.600	o	225	
1.004	9.140	0.070	130.6	0.000	0.00	0.0	0.600	o	225	
1.005	2.000	0.035	57.1	0.014	0.00	0.0	0.600	o	300	
5.000	11.000	0.870	12.6	0.022	4.00	0.0	0.600	o	150	
5.001	2.600	0.030	86.7	0.000	0.00	0.0	0.600	o	150	
1.006	2.300	0.050	46.0	0.000	0.00	0.0	0.600	o	225	
1.007	10.500	0.340	30.9	0.000	0.00	0.0	0.600	o	225	

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	50.00	4.19	26.700	0.030	0.0	0.0	0.0	1.09	19.3	4.1
2.000	50.00	4.14	27.600	0.019	0.0	0.0	0.0	2.32	41.0	2.6
3.000	50.00	4.33	26.750	0.038	0.0	0.0	0.0	1.01	17.8	5.1
1.001	50.00	4.44	26.550	0.087	0.0	0.0	0.0	1.58	27.9	11.8
1.002	50.00	4.66	26.225	0.109	0.0	0.0	0.0	1.30	51.5	14.8
4.000	50.00	4.39	26.370	0.035	0.0	0.0	0.0	0.82	14.5	4.7
4.001	50.00	4.69	26.240	0.065	0.0	0.0	0.0	0.85	15.0	8.8
1.003	50.00	4.82	26.055	0.236	0.0	0.0	0.0	1.18	47.1	32.0
1.004	50.00	4.95	25.980	0.236	0.0	0.0	0.0	1.14	45.4	32.0
1.005	50.00	4.97	25.835	0.250	0.0	0.0	0.0	2.08	147.3	33.9
5.000	50.00	4.06	26.750	0.022	0.0	0.0	0.0	2.85	50.3	3.0
5.001	50.00	4.10	25.880	0.022	0.0	0.0	0.0	1.08	19.1	3.0
1.006	50.00	4.99	25.600	0.272	0.0	0.0	0.0	1.93	76.9	36.8
1.007	50.00	5.06	25.550	0.272	0.0	0.0	0.0	2.36	93.9	36.8

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	28.080	1.380	Open Manhole	450	1.000	26.700	150				
2	28.100	0.500	Open Manhole	150	2.000	27.600	150				
3	28.150	1.400	Open Manhole	450	3.000	26.750	150				
4	28.120	1.570	Open Manhole	450	1.001	26.550	150	1.000	26.550	150	
								2.000	26.550	150	
								3.000	26.550	150	
5	27.850	1.625	Open Manhole	1200	1.002	26.225	225	1.001	26.300	150	
7	27.450	1.080	Open Manhole	450	4.000	26.370	150				
9	27.700	1.460	Open Manhole	450	4.001	26.240	150	4.000	26.240	150	
11	27.800	1.745	Open Manhole	1200	1.003	26.055	225	1.002	26.055	225	
								4.001	26.130	150	
12	28.200	2.220	Open Manhole	1200	1.004	25.980	225	1.003	25.980	225	
13	27.200	1.365	Open Manhole	1200	1.005	25.835	300	1.004	25.910	225	
14	27.550	0.800	Open Manhole	450	5.000	26.750	150				
15	27.000	1.120	Open Manhole	450	5.001	25.880	150	5.000	25.880	150	
16-Attenuation	27.200	1.600	Open Manhole	450	1.006	25.600	225	1.005	25.800	300	275
								5.001	25.850	150	175
17-Hydrobrake	27.350	1.800	Open Manhole	1200	1.007	25.550	225	1.006	25.550	225	
	26.880	1.670	Open Manhole	1200		OUTFALL		1.007	25.210	225	

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PIPELINE SCHEDULES for Storm

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)
1.000	o	150	1	28.080	26.700	1.230	Open Manhole	450
2.000	o	150	2	28.100	27.600	0.350	Open Manhole	150
3.000	o	150	3	28.150	26.750	1.250	Open Manhole	450
1.001	o	150	4	28.120	26.550	1.420	Open Manhole	450
1.002	o	225	5	27.850	26.225	1.400	Open Manhole	1200
4.000	o	150	7	27.450	26.370	0.930	Open Manhole	450
4.001	o	150	9	27.700	26.240	1.310	Open Manhole	450
1.003	o	225	11	27.800	26.055	1.520	Open Manhole	1200
1.004	o	225	12	28.200	25.980	1.995	Open Manhole	1200
1.005	o	300	13	27.200	25.835	1.065	Open Manhole	1200
5.000	o	150	14	27.550	26.750	0.650	Open Manhole	450
5.001	o	150	15	27.000	25.880	0.970	Open Manhole	450
1.006	o	225	16-Attenuation	27.200	25.600	1.375	Open Manhole	450
1.007	o	225	17-Hydrobrake	27.350	25.550	1.575	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	12.720	84.8	4	28.120	26.550	1.420	Open Manhole	450
2.000	20.000	19.0	4	28.120	26.550	1.420	Open Manhole	450
3.000	19.850	99.3	4	28.120	26.550	1.420	Open Manhole	450
1.001	10.250	41.0	5	27.850	26.300	1.400	Open Manhole	1200
1.002	17.300	101.8	11	27.800	26.055	1.520	Open Manhole	1200
4.000	19.260	148.2	9	27.700	26.240	1.310	Open Manhole	450
4.001	15.340	139.5	11	27.800	26.130	1.520	Open Manhole	1200
1.003	9.130	121.7	12	28.200	25.980	1.995	Open Manhole	1200
1.004	9.140	130.6	13	27.200	25.910	1.065	Open Manhole	1200
1.005	2.000	57.1	16-Attenuation	27.200	25.800	1.100	Open Manhole	450
5.000	11.000	12.6	15	27.000	25.880	0.970	Open Manhole	450
5.001	2.600	86.7	16-Attenuation	27.200	25.850	1.200	Open Manhole	450
1.006	2.300	46.0	17-Hydrobrake	27.350	25.550	1.575	Open Manhole	1200
1.007	10.500	30.9		26.880	25.210	1.445	Open Manhole	1200

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.030	0.030	0.030
2.000	-	-	100	0.019	0.019	0.019
3.000	-	-	100	0.038	0.038	0.038
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.022	0.022	0.022
4.000	-	-	100	0.035	0.035	0.035
4.001	-	-	100	0.030	0.030	0.030
1.003	-	-	100	0.062	0.062	0.062
1.004	-	-	100	0.000	0.000	0.000
1.005	-	-	100	0.014	0.014	0.014
5.000	-	-	100	0.022	0.022	0.022
5.001	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.272	0.272	0.272

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007		26.880	25.210	0.000	1200	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.800	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for Storm

Hydro-Brake Optimum® Manhole: 17-Hydrobrake, DS/PN: 1.007, Volume (m³): 2.1

Unit Reference	MD-SHE-0150-1140-1270-1140
Design Head (m)	1.270
Design Flow (l/s)	11.4
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Diameter (mm)	150
Invert Level (m)	25.550
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.270	11.3	Kick-Flo®	0.820	9.2
Flush-Flo™	0.375	11.3	Mean Flow over Head Range	-	9.8

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	5.4	0.800	9.5	2.000	14.1	4.000	19.6	7.000	25.6
0.200	10.6	1.000	10.1	2.200	14.7	4.500	20.7	7.500	26.5
0.300	11.2	1.200	11.0	2.400	15.3	5.000	21.8	8.000	27.3
0.400	11.3	1.400	11.9	2.600	15.9	5.500	22.8	8.500	28.1
0.500	11.2	1.600	12.7	3.000	17.1	6.000	23.8	9.000	28.9
0.600	10.9	1.800	13.4	3.500	18.4	6.500	24.7	9.500	29.7

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Storage Structures for Storm

Complex Manhole: 16-Attenuation, DS/PN: 1.006

Cellular Storage

Invert Level (m)	25.600	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	65.0	65.0	0.800	65.0	110.6	0.801	0.0	110.6

Swale

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	26.0
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	26.400	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.6	Include Swale Volume	Yes

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 Coeffiecient	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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm) 18.800	Cv (Summer) 0.750
Region	England and Wales	Ratio R 0.400	Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)	100.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360
Return Period(s) (years)	1, 30, 100
Climate Change (%)	30, 30, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	1	+30%	30/15 Summer	100/15 Winter			26.757
2.000	2	15 Winter	1	+30%	100/15 Summer				27.630
3.000	3	15 Winter	1	+30%	30/15 Summer	100/15 Winter			26.817
1.001	4	15 Summer	1	+30%	30/15 Summer				26.637
1.002	5	15 Winter	1	+30%	30/15 Summer				26.326
4.000	7	15 Winter	1	+30%	30/15 Summer	100/15 Summer			26.442
4.001	9	15 Winter	1	+30%	30/15 Summer				26.339
1.003	11	15 Winter	1	+30%	30/15 Summer				26.240
1.004	12	15 Winter	1	+30%	30/15 Summer				26.172
1.005	13	15 Winter	1	+30%	30/15 Summer				26.010
5.000	14	15 Winter	1	+30%					26.780
5.001	15	15 Winter	1	+30%	30/15 Summer				25.943
1.006	16-Attenuation	30 Winter	1	+30%	1/15 Winter				25.855
1.007	17-Hydrobrake	30 Winter	1	+30%	1/15 Summer				25.867

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	-0.093	0.000	0.31		5.5	OK	1
2.000	2	-0.120	0.000	0.09		3.5	OK	
3.000	3	-0.083	0.000	0.41		6.9	OK	1
1.001	4	-0.063	0.000	0.64		15.8	OK	
1.002	5	-0.124	0.000	0.41		19.0	OK	
4.000	7	-0.078	0.000	0.46		6.3	OK	4
4.001	9	-0.051	0.000	0.75		10.5	OK	
1.003	11	-0.040	0.000	0.97		37.5	OK	
1.004	12	-0.033	0.000	1.00		37.2	OK	
1.005	13	-0.125	0.000	0.64		39.2	OK	
5.000	14	-0.120	0.000	0.09		4.0	OK	
5.001	15	-0.087	0.000	0.37		4.0	OK	
1.006	16-Attenuation	0.030	0.000	0.38		11.9	SURCHARGED	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.007	17-Hydrobrake	0.092	0.000	0.14		11.2	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 Coeffiecient	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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	18.800
Region	England and Wales	Ratio R	0.400
Cv (Summer)	0.750		
Cv (Winter)	0.840		

Margin for Flood Risk Warning (mm)	100.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360
Return Period(s) (years)	1, 30, 100
Climate Change (%)	30, 30, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	30	+30%	30/15 Summer	100/15 Winter			27.485
2.000	2	15 Winter	30	+30%	100/15 Summer				27.647
3.000	3	15 Winter	30	+30%	30/15 Summer	100/15 Winter			27.562
1.001	4	15 Winter	30	+30%	30/15 Summer				27.429
1.002	5	15 Winter	30	+30%	30/15 Summer				27.034
4.000	7	15 Winter	30	+30%	30/15 Summer	100/15 Summer			27.335
4.001	9	15 Winter	30	+30%	30/15 Summer				27.227
1.003	11	15 Winter	30	+30%	30/15 Summer				26.915
1.004	12	15 Winter	30	+30%	30/15 Summer				26.559
1.005	13	60 Winter	30	+30%	30/15 Summer				26.469
5.000	14	15 Winter	30	+30%					26.797
5.001	15	60 Winter	30	+30%	30/15 Summer				26.468
1.006	16-Attenuation	60 Winter	30	+30%	1/15 Winter				26.467
1.007	17-Hydrobrake	60 Winter	30	+30%	1/15 Summer				26.472

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.635	0.000	0.61		10.7	SURCHARGED	1
2.000	2	-0.103	0.000	0.22		8.5	OK	
3.000	3	0.662	0.000	0.81		13.5	SURCHARGED	1
1.001	4	0.729	0.000	1.25		31.1	SURCHARGED	
1.002	5	0.584	0.000	0.84		38.8	SURCHARGED	
4.000	7	0.815	0.000	0.91		12.4	SURCHARGED	4
4.001	9	0.837	0.000	1.67		23.2	SURCHARGED	
1.003	11	0.635	0.000	2.13		82.3	SURCHARGED	
1.004	12	0.354	0.000	2.22		82.7	SURCHARGED	
1.005	13	0.334	0.000	0.82		50.5	SURCHARGED	
5.000	14	-0.103	0.000	0.22		9.8	OK	
5.001	15	0.438	0.000	0.42		4.6	SURCHARGED	
1.006	16-Attenuation	0.642	0.000	0.39		12.4	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.007	17-Hydrobrake	0.697	0.000	0.14		11.2	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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 Coeffiecient 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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.800 Cv (Summer) 0.750
Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 100.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status ON
DVD Status OFF
Inertia Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360
Return Period(s) (years) 1, 30, 100
Climate Change (%) 30, 30, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	100	+30%	30/15 Summer	100/15 Winter			28.080
2.000	2	15 Winter	100	+30%	100/15 Summer				28.049
3.000	3	15 Winter	100	+30%	30/15 Summer	100/15 Winter			28.150
1.001	4	15 Winter	100	+30%	30/15 Summer				27.988
1.002	5	15 Winter	100	+30%	30/15 Summer				27.405
4.000	7	15 Winter	100	+30%	30/15 Summer	100/15 Summer			27.452
4.001	9	15 Winter	100	+30%	30/15 Summer				27.447
1.003	11	15 Winter	100	+30%	30/15 Summer				27.217
1.004	12	60 Winter	100	+30%	30/15 Summer				26.839
1.005	13	60 Winter	100	+30%	30/15 Summer				26.825
5.000	14	60 Winter	100	+30%					26.828
5.001	15	60 Winter	100	+30%	30/15 Summer				26.824
1.006	16-Attenuation	60 Winter	100	+30%	1/15 Winter				26.823
1.007	17-Hydrobrake	60 Winter	100	+30%	1/15 Summer				26.834

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	1.230	0.018	0.78		13.8	FLOOD	1
2.000	2	0.299	0.000	0.28		10.6	FLOOD RISK	
3.000	3	1.250	0.164	0.99		16.5	FLOOD	1
1.001	4	1.288	0.000	1.54		38.2	SURCHARGED	
1.002	5	0.955	0.000	1.06		48.8	SURCHARGED	
4.000	7	0.932	2.009	1.41		19.3	FLOOD	4
4.001	9	1.057	0.000	1.76		24.5	SURCHARGED	
1.003	11	0.937	0.000	2.52		97.2	SURCHARGED	
1.004	12	0.634	0.000	1.58		58.8	SURCHARGED	
1.005	13	0.690	0.000	1.00		61.2	SURCHARGED	
5.000	14	-0.072	0.000	0.14		6.3	OK	
5.001	15	0.794	0.000	0.55		5.9	SURCHARGED	
1.006	16-Attenuation	0.998	0.000	0.40		12.5	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.007	17-Hydrobrake	1.059	0.000	0.14		11.3	SURCHARGED	

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