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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Summary Wizard of 15 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	17	26.757	-0.093	0.000	0.31		5.5	OK
2.000	2	15	27.630	-0.120	0.000	0.09		3.5	OK
3.000	3	16	26.817	-0.083	0.000	0.41		6.9	OK
1.001	4	18	26.637	-0.063	0.000	0.64		15.8	OK
1.002	5	22	26.325	-0.125	0.000	0.41		18.8	OK
4.000	7	20	26.442	-0.078	0.000	0.46		6.3	OK
4.001	9	22	26.338	-0.052	0.000	0.74		10.2	OK
1.003	11	26	26.233	-0.047	0.000	0.96		37.1	OK
1.004	12	27	26.162	-0.043	0.000	1.00		37.2	OK
1.005	13	29	26.009	-0.126	0.000	0.63		38.9	OK
5.000	14	16	26.780	-0.120	0.000	0.09		4.0	OK
5.001	15	29	25.943	-0.087	0.000	0.37		4.0	OK
1.006	16-Attenuation	34	25.804	-0.021	0.000	0.37		11.6	OK
1.007	17-Hydrobrake	34	25.812	0.037	0.000	0.14		11.0	SURCHARGED

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Summary Wizard of 30 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	20	26.753	-0.097	0.000	0.27		4.7	OK
2.000	2	19	27.628	-0.122	0.000	0.08		3.0	OK
3.000	3	19	26.812	-0.088	0.000	0.35		5.8	OK
1.001	4	21	26.630	-0.070	0.000	0.54		13.3	OK
1.002	5	24	26.318	-0.132	0.000	0.35		16.3	OK
4.000	7	22	26.436	-0.084	0.000	0.39		5.3	OK
4.001	9	23	26.330	-0.060	0.000	0.66		9.2	OK
1.003	11	27	26.216	-0.064	0.000	0.86		33.1	OK
1.004	12	29	26.146	-0.059	0.000	0.89		33.1	OK
1.005	13	30	25.998	-0.137	0.000	0.57		35.0	OK
5.000	14	19	26.777	-0.123	0.000	0.08		3.4	OK
5.001	15	30	25.938	-0.092	0.000	0.31		3.4	OK
1.006	16-Attenuation	32	25.828	0.003	0.000	0.38		11.8	SURCHARGED
1.007	17-Hydrobrake	32	25.838	0.063	0.000	0.14		11.1	SURCHARGED

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Summary Wizard of 60 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	25	26.745	-0.105	0.000	0.19		3.4	OK
2.000	2	25	27.623	-0.127	0.000	0.06		2.2	OK
3.000	3	25	26.802	-0.098	0.000	0.26		4.3	OK
1.001	4	26	26.616	-0.084	0.000	0.39		9.8	OK
1.002	5	28	26.303	-0.147	0.000	0.26		12.1	OK
4.000	7	26	26.425	-0.095	0.000	0.29		3.9	OK
4.001	9	29	26.315	-0.075	0.000	0.50		7.0	OK
1.003	11	30	26.188	-0.092	0.000	0.65		25.3	OK
1.004	12	31	26.117	-0.088	0.000	0.68		25.3	OK
1.005	13	32	25.973	-0.162	0.000	0.44		26.8	OK
5.000	14	25	26.773	-0.127	0.000	0.06		2.5	OK
5.001	15	33	25.929	-0.101	0.000	0.23		2.5	OK
1.006	16-Attenuation	33	25.824	-0.001	0.000	0.37		11.8	OK
1.007	17-Hydrobrake	33	25.835	0.060	0.000	0.14		11.1	SURCHARGED

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Summary Wizard of 120 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	33	26.736	-0.114	0.000	0.13		2.3	OK
2.000	2	33	27.619	-0.131	0.000	0.04		1.4	OK
3.000	3	33	26.792	-0.108	0.000	0.17		2.9	OK
1.001	4	33	26.602	-0.098	0.000	0.26		6.5	OK
1.002	5	34	26.288	-0.162	0.000	0.18		8.1	OK
4.000	7	33	26.415	-0.105	0.000	0.19		2.6	OK
4.001	9	34	26.301	-0.089	0.000	0.34		4.8	OK
1.003	11	34	26.161	-0.119	0.000	0.45		17.3	OK
1.004	12	34	26.088	-0.117	0.000	0.46		17.3	OK
1.005	13	34	25.947	-0.188	0.000	0.30		18.3	OK
5.000	14	33	26.769	-0.131	0.000	0.04		1.7	OK
5.001	15	35	25.919	-0.111	0.000	0.15		1.7	OK
1.006	16-Attenuation	35	25.782	-0.043	0.000	0.36		11.4	OK
1.007	17-Hydrobrake	35	25.791	0.016	0.000	0.14		10.9	SURCHARGED

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Summary Wizard of 180 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	35	26.732	-0.118	0.000	0.10		1.7	OK
2.000	2	35	27.617	-0.133	0.000	0.03		1.1	OK
3.000	3	35	26.786	-0.114	0.000	0.13		2.2	OK
1.001	4	35	26.596	-0.104	0.000	0.20		5.1	OK
1.002	5	36	26.280	-0.170	0.000	0.14		6.3	OK
4.000	7	35	26.409	-0.111	0.000	0.15		2.0	OK
4.001	9	36	26.293	-0.097	0.000	0.27		3.7	OK
1.003	11	36	26.147	-0.133	0.000	0.35		13.5	OK
1.004	12	36	26.073	-0.132	0.000	0.36		13.5	OK
1.005	13	36	25.933	-0.202	0.000	0.23		14.3	OK
5.000	14	35	26.767	-0.133	0.000	0.03		1.3	OK
5.001	15	36	25.914	-0.116	0.000	0.12		1.3	OK
1.006	16-Attenuation	37	25.745	-0.080	0.000	0.35		11.0	OK
1.007	17-Hydrobrake	37	25.746	-0.029	0.000	0.13		10.5	OK

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Summary Wizard of 240 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	38	26.729	-0.121	0.000	0.08		1.4	OK
2.000	2	38	27.616	-0.134	0.000	0.02		0.9	OK
3.000	3	38	26.783	-0.117	0.000	0.11		1.8	OK
1.001	4	38	26.591	-0.109	0.000	0.17		4.2	OK
1.002	5	38	26.275	-0.175	0.000	0.11		5.2	OK
4.000	7	38	26.405	-0.115	0.000	0.12		1.7	OK
4.001	9	38	26.288	-0.102	0.000	0.22		3.1	OK
1.003	11	38	26.137	-0.143	0.000	0.29		11.2	OK
1.004	12	38	26.064	-0.141	0.000	0.30		11.2	OK
1.005	13	38	25.924	-0.211	0.000	0.19		11.8	OK
5.000	14	38	26.766	-0.134	0.000	0.02		1.1	OK
5.001	15	38	25.911	-0.119	0.000	0.10		1.1	OK
1.006	16-Attenuation	38	25.722	-0.103	0.000	0.33		10.4	OK
1.007	17-Hydrobrake	38	25.728	-0.047	0.000	0.13		10.1	OK

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Summary Wizard of 360 minute 1 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	40	26.724	-0.126	0.000	0.06		1.1	OK
2.000	2	40	27.613	-0.137	0.000	0.02		0.7	OK
3.000	3	40	26.779	-0.121	0.000	0.08		1.4	OK
1.001	4	40	26.585	-0.115	0.000	0.13		3.1	OK
1.002	5	40	26.269	-0.181	0.000	0.09		3.9	OK
4.000	7	40	26.401	-0.119	0.000	0.09		1.3	OK
4.001	9	40	26.281	-0.109	0.000	0.17		2.3	OK
1.003	11	40	26.126	-0.154	0.000	0.22		8.5	OK
1.004	12	40	26.052	-0.153	0.000	0.23		8.5	OK
1.005	13	40	25.911	-0.224	0.000	0.15		9.0	OK
5.000	14	40	26.762	-0.138	0.000	0.02		0.8	OK
5.001	15	40	25.907	-0.123	0.000	0.07		0.8	OK
1.006	16-Attenuation	41	25.697	-0.128	0.000	0.29		9.1	OK
1.007	17-Hydrobrake	40	25.701	-0.074	0.000	0.11		8.7	OK

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Summary Wizard of 15 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	6	27.419	0.569	0.000	0.59		10.4	SURCHARGED
2.000	2	5	27.647	-0.103	0.000	0.22		8.5	OK
3.000	3	6	27.493	0.593	0.000	0.79		13.3	SURCHARGED
1.001	4	6	27.366	0.666	0.000	1.23		30.5	SURCHARGED
1.002	5	6	26.990	0.540	0.000	0.82		37.9	SURCHARGED
4.000	7	6	27.273	0.753	0.000	0.89		12.1	SURCHARGED
4.001	9	6	27.171	0.781	0.000	1.63		22.6	SURCHARGED
1.003	11	6	26.876	0.596	0.000	2.08		80.4	SURCHARGED
1.004	12	13	26.537	0.332	0.000	2.15		80.1	SURCHARGED
1.005	13	24	26.203	0.068	0.000	1.37		84.2	SURCHARGED
5.000	14	6	26.797	-0.103	0.000	0.22		9.8	OK
5.001	15	24	26.194	0.164	0.000	0.90		9.8	SURCHARGED
1.006	16-Attenuation	24	26.193	0.368	0.000	0.42		13.3	SURCHARGED
1.007	17-Hydrobrake	24	26.206	0.431	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 30 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	8	27.194	0.344	0.000	0.57		10.1	SURCHARGED
2.000	2	7	27.644	-0.106	0.000	0.19		7.3	OK
3.000	3	8	27.256	0.356	0.000	0.75		12.5	SURCHARGED
1.001	4	8	27.148	0.448	0.000	1.11		27.7	SURCHARGED
1.002	5	9	26.832	0.382	0.000	0.75		34.4	SURCHARGED
4.000	7	8	27.081	0.561	0.000	0.82		11.1	SURCHARGED
4.001	9	8	26.993	0.603	0.000	1.49		20.6	SURCHARGED
1.003	11	10	26.739	0.459	0.000	1.92		73.9	SURCHARGED
1.004	12	16	26.456	0.251	0.000	1.98		73.8	SURCHARGED
1.005	13	17	26.291	0.156	0.000	1.27		77.8	SURCHARGED
5.000	14	9	26.794	-0.106	0.000	0.19		8.4	OK
5.001	15	17	26.290	0.260	0.000	0.77		8.3	SURCHARGED
1.006	16-Attenuation	17	26.289	0.464	0.000	0.40		12.5	SURCHARGED
1.007	17-Hydrobrake	17	26.305	0.530	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 60 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	12	26.772	-0.078	0.000	0.47		8.3	OK
2.000	2	11	27.637	-0.113	0.000	0.14		5.2	OK
3.000	3	12	26.836	-0.064	0.000	0.62		10.4	OK
1.001	4	13	26.737	0.037	0.000	0.89		22.1	SURCHARGED
1.002	5	16	26.541	0.091	0.000	0.60		27.6	SURCHARGED
4.000	7	14	26.696	0.176	0.000	0.65		8.9	SURCHARGED
4.001	9	15	26.640	0.250	0.000	1.18		16.4	SURCHARGED
1.003	11	18	26.482	0.202	0.000	1.54		59.3	SURCHARGED
1.004	12	19	26.329	0.124	0.000	1.59		59.3	SURCHARGED
1.005	13	16	26.318	0.183	0.000	1.00		61.4	SURCHARGED
5.000	14	12	26.786	-0.114	0.000	0.13		6.1	OK
5.001	15	16	26.317	0.287	0.000	0.56		6.0	SURCHARGED
1.006	16-Attenuation	16	26.316	0.491	0.000	0.40		12.6	SURCHARGED
1.007	17-Hydrobrake	16	26.334	0.559	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 120 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	18	26.757	-0.093	0.000	0.31		5.4	OK
2.000	2	16	27.630	-0.120	0.000	0.09		3.4	OK
3.000	3	17	26.816	-0.084	0.000	0.40		6.8	OK
1.001	4	20	26.636	-0.064	0.000	0.62		15.5	OK
1.002	5	20	26.332	-0.118	0.000	0.42		19.4	OK
4.000	7	21	26.441	-0.079	0.000	0.46		6.2	OK
4.001	9	20	26.366	-0.024	0.000	0.81		11.2	OK
1.003	11	22	26.298	0.018	0.000	1.06		40.9	SURCHARGED
1.004	12	22	26.286	0.081	0.000	1.10		41.0	SURCHARGED
1.005	13	20	26.275	0.140	0.000	0.70		42.7	SURCHARGED
5.000	14	17	26.780	-0.120	0.000	0.09		3.9	OK
5.001	15	20	26.274	0.244	0.000	0.35		3.8	SURCHARGED
1.006	16-Attenuation	20	26.273	0.448	0.000	0.39		12.3	SURCHARGED
1.007	17-Hydrobrake	20	26.290	0.515	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 180 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	23	26.749	-0.101	0.000	0.23		4.1	OK
2.000	2	22	27.625	-0.125	0.000	0.07		2.6	OK
3.000	3	22	26.807	-0.093	0.000	0.31		5.1	OK
1.001	4	24	26.623	-0.077	0.000	0.47		11.7	OK
1.002	5	26	26.313	-0.137	0.000	0.32		14.7	OK
4.000	7	24	26.431	-0.089	0.000	0.35		4.7	OK
4.001	9	24	26.327	-0.063	0.000	0.63		8.8	OK
1.003	11	25	26.237	-0.043	0.000	0.83		31.9	OK
1.004	12	24	26.225	0.020	0.000	0.85		31.9	SURCHARGED
1.005	13	23	26.213	0.078	0.000	0.55		33.6	SURCHARGED
5.000	14	22	26.775	-0.125	0.000	0.07		3.0	OK
5.001	15	23	26.212	0.182	0.000	0.27		2.9	SURCHARGED
1.006	16-Attenuation	23	26.211	0.386	0.000	0.39		12.2	SURCHARGED
1.007	17-Hydrobrake	23	26.228	0.453	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 240 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	26	26.744	-0.106	0.000	0.19		3.3	OK
2.000	2	26	27.622	-0.128	0.000	0.05		2.1	OK
3.000	3	26	26.801	-0.099	0.000	0.25		4.2	OK
1.001	4	27	26.614	-0.086	0.000	0.38		9.5	OK
1.002	5	29	26.303	-0.147	0.000	0.26		12.0	OK
4.000	7	27	26.424	-0.096	0.000	0.28		3.8	OK
4.001	9	28	26.316	-0.074	0.000	0.51		7.1	OK
1.003	11	29	26.190	-0.090	0.000	0.67		25.9	OK
1.004	12	28	26.161	-0.044	0.000	0.69		25.9	OK
1.005	13	26	26.150	0.015	0.000	0.45		27.4	SURCHARGED
5.000	14	26	26.772	-0.128	0.000	0.05		2.4	OK
5.001	15	26	26.149	0.119	0.000	0.22		2.4	SURCHARGED
1.006	16-Attenuation	26	26.148	0.323	0.000	0.39		12.2	SURCHARGED
1.007	17-Hydrobrake	26	26.165	0.390	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 360 minute 30 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	31	26.737	-0.113	0.000	0.14		2.4	OK
2.000	2	31	27.619	-0.131	0.000	0.04		1.5	OK
3.000	3	31	26.793	-0.107	0.000	0.18		3.1	OK
1.001	4	31	26.604	-0.096	0.000	0.28		7.0	OK
1.002	5	32	26.291	-0.159	0.000	0.19		8.8	OK
4.000	7	31	26.416	-0.104	0.000	0.21		2.8	OK
4.001	9	32	26.304	-0.086	0.000	0.38		5.2	OK
1.003	11	33	26.167	-0.113	0.000	0.49		19.0	OK
1.004	12	33	26.094	-0.111	0.000	0.51		19.0	OK
1.005	13	27	26.011	-0.124	0.000	0.33		20.1	OK
5.000	14	31	26.769	-0.131	0.000	0.04		1.8	OK
5.001	15	27	26.010	-0.020	0.000	0.16		1.8	OK
1.006	16-Attenuation	27	26.009	0.184	0.000	0.38		12.1	SURCHARGED
1.007	17-Hydrobrake	27	26.026	0.251	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 15 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	2	28.027	1.177	0.000	0.75		13.2	FLOOD RISK
2.000	2	2	27.983	0.233	0.000	0.28		10.6	SURCHARGED
3.000	3	2	28.144	1.244	0.000	1.01		16.9	FLOOD RISK
1.001	4	2	27.938	1.238	0.000	1.50		37.3	SURCHARGED
1.002	5	2	27.361	0.911	0.000	1.04		47.9	SURCHARGED
4.000	7	2	27.451	0.931	1.434	1.39		19.0	FLOOD
4.001	9	2	27.428	1.038	0.000	1.81		25.1	SURCHARGED
1.003	11	2	27.183	0.903	0.000	2.48		95.6	SURCHARGED
1.004	12	6	26.715	0.510	0.000	2.54		94.7	SURCHARGED
1.005	13	14	26.376	0.241	0.000	1.64		100.5	SURCHARGED
5.000	14	3	26.804	-0.096	0.000	0.28		12.7	OK
5.001	15	14	26.374	0.344	0.000	1.17		12.7	SURCHARGED
1.006	16-Attenuation	14	26.374	0.549	0.000	0.42		13.1	SURCHARGED
1.007	17-Hydrobrake	14	26.383	0.608	0.000	0.14		11.1	SURCHARGED

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Summary Wizard of 30 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	3	27.785	0.935	0.000	0.68		12.0	SURCHARGED
2.000	2	3	27.745	-0.005	0.000	0.25		9.5	OK
3.000	3	3	27.889	0.989	0.000	0.92		15.4	SURCHARGED
1.001	4	3	27.706	1.006	0.000	1.38		34.4	SURCHARGED
1.002	5	3	27.233	0.783	0.000	0.94		43.1	SURCHARGED
4.000	7	3	27.451	0.931	0.563	1.12		15.3	FLOOD
4.001	9	3	27.403	1.013	0.000	1.79		24.9	SURCHARGED
1.003	11	3	27.090	0.810	0.000	2.36		91.0	SURCHARGED
1.004	12	9	26.676	0.471	0.000	2.44		90.8	SURCHARGED
1.005	13	7	26.622	0.487	0.000	1.55		95.4	SURCHARGED
5.000	14	4	26.800	-0.100	0.000	0.24		11.0	OK
5.001	15	7	26.620	0.590	0.000	0.99		10.7	SURCHARGED
1.006	16-Attenuation	7	26.620	0.795	0.000	0.40		12.7	SURCHARGED
1.007	17-Hydrobrake	7	26.635	0.860	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 60 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	7	27.211	0.361	0.000	0.53		9.4	SURCHARGED
2.000	2	8	27.643	-0.107	0.000	0.18		6.9	OK
3.000	3	7	27.268	0.368	0.000	0.71		11.9	SURCHARGED
1.001	4	7	27.170	0.470	0.000	1.10		27.3	SURCHARGED
1.002	5	7	26.880	0.430	0.000	0.73		33.4	SURCHARGED
4.000	7	7	27.097	0.577	0.000	0.80		11.0	SURCHARGED
4.001	9	7	27.019	0.629	0.000	1.47		20.4	SURCHARGED
1.003	11	9	26.795	0.515	0.000	1.87		72.2	SURCHARGED
1.004	12	7	26.704	0.499	0.000	1.91		71.3	SURCHARGED
1.005	13	5	26.692	0.557	0.000	1.21		74.2	SURCHARGED
5.000	14	10	26.792	-0.108	0.000	0.18		8.0	OK
5.001	15	5	26.691	0.661	0.000	0.70		7.5	SURCHARGED
1.006	16-Attenuation	5	26.690	0.865	0.000	0.40		12.5	SURCHARGED
1.007	17-Hydrobrake	5	26.706	0.931	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 120 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	14	26.766	-0.084	0.000	0.40		7.1	OK
2.000	2	12	27.634	-0.116	0.000	0.12		4.5	OK
3.000	3	13	26.828	-0.072	0.000	0.53		8.9	OK
1.001	4	14	26.711	0.011	0.000	0.82		20.4	SURCHARGED
1.002	5	13	26.697	0.247	0.000	0.54		24.7	SURCHARGED
4.000	7	13	26.708	0.188	0.000	0.56		7.7	SURCHARGED
4.001	9	13	26.700	0.310	0.000	1.02		14.1	SURCHARGED
1.003	11	12	26.688	0.408	0.000	1.35		52.0	SURCHARGED
1.004	12	8	26.676	0.471	0.000	1.37		51.1	SURCHARGED
1.005	13	6	26.664	0.529	0.000	0.86		52.8	SURCHARGED
5.000	14	13	26.784	-0.116	0.000	0.11		5.2	OK
5.001	15	6	26.663	0.633	0.000	0.45		4.9	SURCHARGED
1.006	16-Attenuation	6	26.662	0.837	0.000	0.39		12.4	SURCHARGED
1.007	17-Hydrobrake	6	26.678	0.903	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 180 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	19	26.756	-0.094	0.000	0.30		5.3	OK
2.000	2	17	27.630	-0.120	0.000	0.09		3.4	OK
3.000	3	18	26.816	-0.084	0.000	0.40		6.7	OK
1.001	4	17	26.640	-0.060	0.000	0.62		15.4	OK
1.002	5	15	26.627	0.177	0.000	0.42		19.3	SURCHARGED
4.000	7	16	26.637	0.117	0.000	0.45		6.2	SURCHARGED
4.001	9	16	26.630	0.240	0.000	0.80		11.1	SURCHARGED
1.003	11	15	26.619	0.339	0.000	1.05		40.6	SURCHARGED
1.004	12	11	26.607	0.402	0.000	1.08		40.3	SURCHARGED
1.005	13	9	26.596	0.461	0.000	0.67		41.1	SURCHARGED
5.000	14	18	26.780	-0.120	0.000	0.09		3.9	OK
5.001	15	9	26.595	0.565	0.000	0.34		3.7	SURCHARGED
1.006	16-Attenuation	9	26.594	0.769	0.000	0.39		12.3	SURCHARGED
1.007	17-Hydrobrake	9	26.607	0.832	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 240 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	21	26.750	-0.100	0.000	0.25		4.3	OK
2.000	2	20	27.626	-0.124	0.000	0.07		2.7	OK
3.000	3	20	26.809	-0.091	0.000	0.33		5.5	OK
1.001	4	22	26.625	-0.075	0.000	0.50		12.5	OK
1.002	5	17	26.526	0.076	0.000	0.34		15.7	SURCHARGED
4.000	7	17	26.535	0.015	0.000	0.37		5.0	SURCHARGED
4.001	9	17	26.529	0.139	0.000	0.67		9.3	SURCHARGED
1.003	11	16	26.519	0.239	0.000	0.88		33.9	SURCHARGED
1.004	12	14	26.508	0.303	0.000	0.91		33.8	SURCHARGED
1.005	13	11	26.498	0.363	0.000	0.56		34.5	SURCHARGED
5.000	14	20	26.776	-0.124	0.000	0.07		3.2	OK
5.001	15	11	26.497	0.467	0.000	0.28		3.0	SURCHARGED
1.006	16-Attenuation	11	26.496	0.671	0.000	0.38		12.1	SURCHARGED
1.007	17-Hydrobrake	11	26.507	0.732	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 360 minute 100 year Summer I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	27	26.743	-0.107	0.000	0.18		3.1	OK
2.000	2	27	27.622	-0.128	0.000	0.05		2.0	OK
3.000	3	27	26.799	-0.101	0.000	0.24		4.0	OK
1.001	4	28	26.613	-0.087	0.000	0.37		9.1	OK
1.002	5	23	26.320	-0.130	0.000	0.25		11.4	OK
4.000	7	28	26.423	-0.097	0.000	0.27		3.7	OK
4.001	9	26	26.323	-0.067	0.000	0.49		6.8	OK
1.003	11	20	26.311	0.031	0.000	0.64		24.7	SURCHARGED
1.004	12	20	26.300	0.095	0.000	0.66		24.7	SURCHARGED
1.005	13	18	26.289	0.154	0.000	0.42		25.5	SURCHARGED
5.000	14	27	26.772	-0.128	0.000	0.05		2.3	OK
5.001	15	18	26.288	0.258	0.000	0.21		2.2	SURCHARGED
1.006	16-Attenuation	18	26.287	0.462	0.000	0.39		12.2	SURCHARGED
1.007	17-Hydrobrake	18	26.301	0.526	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 15 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	16	26.757	-0.093	0.000	0.31		5.5	OK
2.000	2	14	27.630	-0.120	0.000	0.09		3.5	OK
3.000	3	15	26.817	-0.083	0.000	0.41		6.9	OK
1.001	4	19	26.637	-0.063	0.000	0.64		15.8	OK
1.002	5	21	26.326	-0.124	0.000	0.41		19.0	OK
4.000	7	19	26.442	-0.078	0.000	0.46		6.3	OK
4.001	9	21	26.339	-0.051	0.000	0.75		10.5	OK
1.003	11	24	26.240	-0.040	0.000	0.97		37.5	OK
1.004	12	25	26.172	-0.033	0.000	1.00		37.2	OK
1.005	13	28	26.010	-0.125	0.000	0.64		39.2	OK
5.000	14	15	26.780	-0.120	0.000	0.09		4.0	OK
5.001	15	28	25.943	-0.087	0.000	0.37		4.0	OK
1.006	16-Attenuation	31	25.832	0.007	0.000	0.38		12.0	SURCHARGED
1.007	17-Hydrobrake	31	25.839	0.064	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 30 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	22	26.749	-0.101	0.000	0.23		4.1	OK
2.000	2	21	27.625	-0.125	0.000	0.07		2.6	OK
3.000	3	21	26.807	-0.093	0.000	0.31		5.1	OK
1.001	4	23	26.623	-0.077	0.000	0.47		11.7	OK
1.002	5	27	26.311	-0.139	0.000	0.31		14.4	OK
4.000	7	23	26.431	-0.089	0.000	0.34		4.7	OK
4.001	9	25	26.324	-0.066	0.000	0.60		8.3	OK
1.003	11	28	26.206	-0.074	0.000	0.78		30.1	OK
1.004	12	30	26.135	-0.070	0.000	0.81		30.3	OK
1.005	13	31	25.989	-0.146	0.000	0.52		32.0	OK
5.000	14	21	26.775	-0.125	0.000	0.07		3.0	OK
5.001	15	31	25.933	-0.097	0.000	0.27		3.0	OK
1.006	16-Attenuation	29	25.855	0.030	0.000	0.38		11.9	SURCHARGED
1.007	17-Hydrobrake	29	25.867	0.092	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 60 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	30	26.739	-0.111	0.000	0.15		2.7	OK
2.000	2	30	27.620	-0.130	0.000	0.04		1.7	OK
3.000	3	30	26.796	-0.104	0.000	0.20		3.4	OK
1.001	4	30	26.608	-0.092	0.000	0.31		7.8	OK
1.002	5	31	26.295	-0.155	0.000	0.21		9.7	OK
4.000	7	30	26.419	-0.101	0.000	0.23		3.1	OK
4.001	9	31	26.307	-0.083	0.000	0.41		5.7	OK
1.003	11	32	26.173	-0.107	0.000	0.54		20.7	OK
1.004	12	32	26.100	-0.105	0.000	0.56		20.8	OK
1.005	13	33	25.959	-0.176	0.000	0.36		22.0	OK
5.000	14	30	26.770	-0.130	0.000	0.04		2.0	OK
5.001	15	34	25.923	-0.107	0.000	0.18		2.0	OK
1.006	16-Attenuation	30	25.836	0.011	0.000	0.38		11.9	SURCHARGED
1.007	17-Hydrobrake	30	25.846	0.071	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 120 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	37	26.731	-0.119	0.000	0.10		1.7	OK
2.000	2	37	27.616	-0.134	0.000	0.03		1.1	OK
3.000	3	37	26.785	-0.115	0.000	0.13		2.1	OK
1.001	4	37	26.595	-0.105	0.000	0.20		4.9	OK
1.002	5	37	26.279	-0.171	0.000	0.13		6.1	OK
4.000	7	37	26.408	-0.112	0.000	0.14		2.0	OK
4.001	9	37	26.292	-0.098	0.000	0.26		3.6	OK
1.003	11	37	26.146	-0.134	0.000	0.34		13.2	OK
1.004	12	37	26.072	-0.133	0.000	0.35		13.2	OK
1.005	13	37	25.932	-0.203	0.000	0.23		14.0	OK
5.000	14	37	26.766	-0.134	0.000	0.03		1.2	OK
5.001	15	37	25.914	-0.116	0.000	0.11		1.2	OK
1.006	16-Attenuation	36	25.767	-0.058	0.000	0.36		11.4	OK
1.007	17-Hydrobrake	36	25.774	-0.001	0.000	0.14		10.7	OK

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Summary Wizard of 180 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	39	26.726	-0.124	0.000	0.07		1.3	OK
2.000	2	39	27.615	-0.135	0.000	0.02		0.8	OK
3.000	3	39	26.781	-0.119	0.000	0.10		1.6	OK
1.001	4	39	26.588	-0.112	0.000	0.15		3.7	OK
1.002	5	39	26.273	-0.177	0.000	0.10		4.6	OK
4.000	7	39	26.403	-0.117	0.000	0.11		1.5	OK
4.001	9	39	26.285	-0.105	0.000	0.20		2.8	OK
1.003	11	39	26.133	-0.147	0.000	0.26		10.0	OK
1.004	12	39	26.059	-0.146	0.000	0.27		10.0	OK
1.005	13	39	25.918	-0.217	0.000	0.17		10.6	OK
5.000	14	39	26.765	-0.135	0.000	0.02		0.9	OK
5.001	15	39	25.910	-0.120	0.000	0.09		0.9	OK
1.006	16-Attenuation	39	25.722	-0.103	0.000	0.33		10.4	OK
1.007	17-Hydrobrake	39	25.722	-0.053	0.000	0.13		10.1	OK

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Summary Wizard of 240 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	41	26.724	-0.126	0.000	0.06		1.0	OK
2.000	2	41	27.612	-0.138	0.000	0.02		0.7	OK
3.000	3	41	26.778	-0.122	0.000	0.08		1.3	OK
1.001	4	41	26.585	-0.115	0.000	0.12		3.0	OK
1.002	5	41	26.268	-0.182	0.000	0.08		3.8	OK
4.000	7	41	26.400	-0.120	0.000	0.09		1.2	OK
4.001	9	41	26.280	-0.110	0.000	0.16		2.3	OK
1.003	11	41	26.125	-0.155	0.000	0.21		8.2	OK
1.004	12	41	26.051	-0.154	0.000	0.22		8.2	OK
1.005	13	41	25.910	-0.225	0.000	0.14		8.7	OK
5.000	14	41	26.762	-0.138	0.000	0.02		0.8	OK
5.001	15	41	25.906	-0.124	0.000	0.07		0.8	OK
1.006	16-Attenuation	40	25.698	-0.127	0.000	0.28		8.9	OK
1.007	17-Hydrobrake	41	25.697	-0.078	0.000	0.11		8.8	OK

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Summary Wizard of 360 minute 1 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	42	26.720	-0.130	0.000	0.04		0.8	OK
2.000	2	42	27.609	-0.141	0.000	0.01		0.5	OK
3.000	3	42	26.773	-0.127	0.000	0.06		1.0	OK
1.001	4	42	26.580	-0.120	0.000	0.09		2.3	OK
1.002	5	42	26.261	-0.189	0.000	0.06		2.8	OK
4.000	7	42	26.395	-0.125	0.000	0.07		0.9	OK
4.001	9	42	26.275	-0.115	0.000	0.12		1.7	OK
1.003	11	42	26.115	-0.165	0.000	0.16		6.2	OK
1.004	12	42	26.041	-0.164	0.000	0.17		6.2	OK
1.005	13	42	25.900	-0.235	0.000	0.11		6.5	OK
5.000	14	42	26.759	-0.141	0.000	0.01		0.6	OK
5.001	15	42	25.902	-0.128	0.000	0.05		0.6	OK
1.006	16-Attenuation	42	25.675	-0.150	0.000	0.22		7.0	OK
1.007	17-Hydrobrake	42	25.671	-0.104	0.000	0.09		7.0	OK

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Summary Wizard of 15 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	5	27.485	0.635	0.000	0.61		10.7	SURCHARGED
2.000	2	4	27.647	-0.103	0.000	0.22		8.5	OK
3.000	3	5	27.562	0.662	0.000	0.81		13.5	SURCHARGED
1.001	4	5	27.429	0.729	0.000	1.25		31.1	SURCHARGED
1.002	5	5	27.034	0.584	0.000	0.84		38.8	SURCHARGED
4.000	7	5	27.335	0.815	0.000	0.91		12.4	SURCHARGED
4.001	9	5	27.227	0.837	0.000	1.67		23.2	SURCHARGED
1.003	11	5	26.915	0.635	0.000	2.13		82.3	SURCHARGED
1.004	12	12	26.559	0.354	0.000	2.22		82.7	SURCHARGED
1.005	13	21	26.268	0.133	0.000	1.42		87.1	SURCHARGED
5.000	14	5	26.797	-0.103	0.000	0.22		9.8	OK
5.001	15	21	26.266	0.236	0.000	0.90		9.8	SURCHARGED
1.006	16-Attenuation	21	26.266	0.441	0.000	0.42		13.2	SURCHARGED
1.007	17-Hydrobrake	21	26.277	0.502	0.000	0.14		11.1	SURCHARGED

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Summary Wizard of 30 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	9	27.042	0.192	0.000	0.52		9.1	SURCHARGED
2.000	2	9	27.641	-0.109	0.000	0.16		6.3	OK
3.000	3	9	27.093	0.193	0.000	0.70		11.7	SURCHARGED
1.001	4	9	27.004	0.304	0.000	1.03		25.7	SURCHARGED
1.002	5	12	26.739	0.289	0.000	0.69		31.9	SURCHARGED
4.000	7	9	26.942	0.422	0.000	0.76		10.4	SURCHARGED
4.001	9	10	26.867	0.477	0.000	1.39		19.3	SURCHARGED
1.003	11	13	26.657	0.377	0.000	1.79		69.2	SURCHARGED
1.004	12	17	26.426	0.221	0.000	1.85		68.8	SURCHARGED
1.005	13	13	26.391	0.256	0.000	1.18		72.7	SURCHARGED
5.000	14	11	26.790	-0.110	0.000	0.16		7.3	OK
5.001	15	13	26.390	0.360	0.000	0.67		7.3	SURCHARGED
1.006	16-Attenuation	13	26.389	0.564	0.000	0.40		12.5	SURCHARGED
1.007	17-Hydrobrake	13	26.404	0.629	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 60 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	15	26.763	-0.087	0.000	0.37		6.5	OK
2.000	2	13	27.633	-0.117	0.000	0.11		4.1	OK
3.000	3	14	26.824	-0.076	0.000	0.49		8.2	OK
1.001	4	16	26.648	-0.052	0.000	0.76		18.8	OK
1.002	5	18	26.497	0.047	0.000	0.51		23.3	SURCHARGED
4.000	7	18	26.517	-0.003	0.000	0.54		7.3	OK
4.001	9	18	26.500	0.110	0.000	0.98		13.6	SURCHARGED
1.003	11	17	26.490	0.210	0.000	1.29		49.8	SURCHARGED
1.004	12	15	26.479	0.274	0.000	1.33		49.7	SURCHARGED
1.005	13	12	26.469	0.334	0.000	0.82		50.5	SURCHARGED
5.000	14	14	26.782	-0.118	0.000	0.11		4.8	OK
5.001	15	12	26.468	0.438	0.000	0.42		4.6	SURCHARGED
1.006	16-Attenuation	12	26.467	0.642	0.000	0.39		12.4	SURCHARGED
1.007	17-Hydrobrake	12	26.472	0.697	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 120 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	24	26.748	-0.102	0.000	0.23		4.0	OK
2.000	2	23	27.625	-0.125	0.000	0.07		2.5	OK
3.000	3	23	26.806	-0.094	0.000	0.30		5.1	OK
1.001	4	25	26.622	-0.078	0.000	0.47		11.6	OK
1.002	5	19	26.395	-0.055	0.000	0.32		14.6	OK
4.000	7	25	26.430	-0.090	0.000	0.34		4.7	OK
4.001	9	19	26.397	0.007	0.000	0.63		8.7	SURCHARGED
1.003	11	19	26.386	0.106	0.000	0.82		31.5	SURCHARGED
1.004	12	18	26.375	0.170	0.000	0.84		31.5	SURCHARGED
1.005	13	15	26.365	0.230	0.000	0.53		32.2	SURCHARGED
5.000	14	23	26.775	-0.125	0.000	0.06		2.9	OK
5.001	15	15	26.364	0.334	0.000	0.26		2.8	SURCHARGED
1.006	16-Attenuation	15	26.363	0.538	0.000	0.39		12.4	SURCHARGED
1.007	17-Hydrobrake	15	26.381	0.606	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 180 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	29	26.741	-0.109	0.000	0.17		3.0	OK
2.000	2	29	27.621	-0.129	0.000	0.05		1.9	OK
3.000	3	29	26.798	-0.102	0.000	0.22		3.8	OK
1.001	4	29	26.611	-0.089	0.000	0.35		8.6	OK
1.002	5	30	26.299	-0.151	0.000	0.23		10.8	OK
4.000	7	29	26.421	-0.099	0.000	0.25		3.5	OK
4.001	9	30	26.312	-0.078	0.000	0.46		6.4	OK
1.003	11	23	26.281	0.001	0.000	0.61		23.4	SURCHARGED
1.004	12	23	26.270	0.065	0.000	0.63		23.4	SURCHARGED
1.005	13	22	26.258	0.123	0.000	0.40		24.5	SURCHARGED
5.000	14	29	26.771	-0.129	0.000	0.05		2.2	OK
5.001	15	22	26.257	0.227	0.000	0.20		2.1	SURCHARGED
1.006	16-Attenuation	22	26.256	0.431	0.000	0.41		12.9	SURCHARGED
1.007	17-Hydrobrake	22	26.270	0.495	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 240 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	32	26.737	-0.113	0.000	0.14		2.4	OK
2.000	2	32	27.619	-0.131	0.000	0.04		1.5	OK
3.000	3	32	26.793	-0.107	0.000	0.18		3.0	OK
1.001	4	32	26.604	-0.096	0.000	0.28		6.9	OK
1.002	5	33	26.291	-0.159	0.000	0.19		8.7	OK
4.000	7	32	26.416	-0.104	0.000	0.20		2.8	OK
4.001	9	33	26.303	-0.087	0.000	0.37		5.2	OK
1.003	11	31	26.181	-0.099	0.000	0.49		18.8	OK
1.004	12	26	26.170	-0.035	0.000	0.50		18.8	OK
1.005	13	25	26.159	0.024	0.000	0.32		19.9	SURCHARGED
5.000	14	32	26.769	-0.131	0.000	0.04		1.8	OK
5.001	15	25	26.158	0.128	0.000	0.16		1.7	SURCHARGED
1.006	16-Attenuation	25	26.157	0.332	0.000	0.38		12.0	SURCHARGED
1.007	17-Hydrobrake	25	26.175	0.400	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 360 minute 30 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	36	26.732	-0.118	0.000	0.10		1.7	OK
2.000	2	36	27.617	-0.133	0.000	0.03		1.1	OK
3.000	3	36	26.786	-0.114	0.000	0.13		2.2	OK
1.001	4	36	26.596	-0.104	0.000	0.20		5.1	OK
1.002	5	35	26.280	-0.170	0.000	0.14		6.3	OK
4.000	7	36	26.408	-0.112	0.000	0.15		2.0	OK
4.001	9	35	26.293	-0.097	0.000	0.27		3.8	OK
1.003	11	35	26.148	-0.132	0.000	0.36		13.7	OK
1.004	12	35	26.074	-0.131	0.000	0.37		13.7	OK
1.005	13	35	25.935	-0.200	0.000	0.24		14.6	OK
5.000	14	36	26.767	-0.133	0.000	0.03		1.3	OK
5.001	15	32	25.933	-0.097	0.000	0.12		1.3	OK
1.006	16-Attenuation	28	25.932	0.107	0.000	0.38		12.1	SURCHARGED
1.007	17-Hydrobrake	28	25.944	0.169	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 15 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	1	28.080	1.230	0.018	0.78		13.8	FLOOD
2.000	2	1	28.049	0.299	0.000	0.28		10.6	FLOOD RISK
3.000	3	1	28.150	1.250	0.164	0.99		16.5	FLOOD
1.001	4	1	27.988	1.288	0.000	1.54		38.2	SURCHARGED
1.002	5	1	27.405	0.955	0.000	1.06		48.8	SURCHARGED
4.000	7	1	27.452	0.932	2.009	1.41		19.3	FLOOD
4.001	9	1	27.447	1.057	0.000	1.76		24.5	SURCHARGED
1.003	11	1	27.217	0.937	0.000	2.52		97.2	SURCHARGED
1.004	12	4	26.735	0.530	0.000	2.59		96.6	SURCHARGED
1.005	13	10	26.539	0.404	0.000	1.68		102.9	SURCHARGED
5.000	14	2	26.804	-0.096	0.000	0.28		12.7	OK
5.001	15	10	26.537	0.507	0.000	1.17		12.7	SURCHARGED
1.006	16-Attenuation	10	26.537	0.712	0.000	0.42		13.2	SURCHARGED
1.007	17-Hydrobrake	10	26.551	0.776	0.000	0.14		11.1	SURCHARGED

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Summary Wizard of 30 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	4	27.658	0.808	0.000	0.63		11.1	SURCHARGED
2.000	2	6	27.647	-0.103	0.000	0.21		8.3	OK
3.000	3	4	27.740	0.840	0.000	0.85		14.2	SURCHARGED
1.001	4	4	27.599	0.899	0.000	1.31		32.6	SURCHARGED
1.002	5	4	27.178	0.728	0.000	0.86		39.6	SURCHARGED
4.000	7	4	27.450	0.930	0.101	0.93		12.7	FLOOD
4.001	9	4	27.361	0.971	0.000	1.74		24.1	SURCHARGED
1.003	11	4	27.057	0.777	0.000	2.23		86.0	SURCHARGED
1.004	12	3	26.765	0.560	0.000	2.27		84.7	SURCHARGED
1.005	13	3	26.750	0.615	0.000	1.44		88.3	SURCHARGED
5.000	14	7	26.797	-0.103	0.000	0.21		9.6	OK
5.001	15	3	26.749	0.719	0.000	0.84		9.2	SURCHARGED
1.006	16-Attenuation	3	26.748	0.923	0.000	0.41		12.9	SURCHARGED
1.007	17-Hydrobrake	3	26.755	0.980	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 60 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	10	26.989	0.139	0.000	0.47		8.3	SURCHARGED
2.000	2	10	27.637	-0.113	0.000	0.14		5.4	OK
3.000	3	10	27.008	0.108	0.000	0.63		10.6	SURCHARGED
1.001	4	10	26.967	0.267	0.000	0.89		22.1	SURCHARGED
1.002	5	8	26.871	0.421	0.000	0.58		26.8	SURCHARGED
4.000	7	10	26.935	0.415	0.000	0.67		9.1	SURCHARGED
4.001	9	9	26.904	0.514	0.000	1.23		17.1	SURCHARGED
1.003	11	7	26.852	0.572	0.000	1.55		59.8	SURCHARGED
1.004	12	1	26.839	0.634	0.000	1.58		58.8	SURCHARGED
1.005	13	1	26.825	0.690	0.000	1.00		61.2	SURCHARGED
5.000	14	1	26.828	-0.072	0.000	0.14		6.3	OK
5.001	15	1	26.824	0.794	0.000	0.55		5.9	SURCHARGED
1.006	16-Attenuation	1	26.823	0.998	0.000	0.40		12.5	SURCHARGED
1.007	17-Hydrobrake	1	26.834	1.059	0.000	0.14		11.3	SURCHARGED

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Summary Wizard of 120 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	11	26.853	0.003	0.000	0.30		5.3	SURCHARGED
2.000	2	18	27.630	-0.120	0.000	0.09		3.3	OK
3.000	3	11	26.858	-0.042	0.000	0.40		6.7	OK
1.001	4	11	26.846	0.146	0.000	0.61		15.3	SURCHARGED
1.002	5	10	26.830	0.380	0.000	0.40		18.6	SURCHARGED
4.000	7	11	26.842	0.322	0.000	0.45		6.1	SURCHARGED
4.001	9	11	26.833	0.443	0.000	0.79		10.9	SURCHARGED
1.003	11	8	26.819	0.539	0.000	0.98		38.0	SURCHARGED
1.004	12	2	26.805	0.600	0.000	1.00		37.3	SURCHARGED
1.005	13	2	26.793	0.658	0.000	0.62		38.3	SURCHARGED
5.000	14	8	26.795	-0.105	0.000	0.09		3.9	OK
5.001	15	2	26.792	0.762	0.000	0.34		3.7	SURCHARGED
1.006	16-Attenuation	2	26.791	0.966	0.000	0.39		12.3	SURCHARGED
1.007	17-Hydrobrake	2	26.806	1.031	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 180 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	13	26.768	-0.082	0.000	0.22		3.9	OK
2.000	2	24	27.625	-0.125	0.000	0.06		2.5	OK
3.000	3	24	26.805	-0.095	0.000	0.29		4.9	OK
1.001	4	12	26.762	0.062	0.000	0.45		11.3	SURCHARGED
1.002	5	11	26.748	0.298	0.000	0.31		14.2	SURCHARGED
4.000	7	12	26.758	0.238	0.000	0.33		4.5	SURCHARGED
4.001	9	12	26.751	0.361	0.000	0.61		8.4	SURCHARGED
1.003	11	11	26.739	0.459	0.000	0.77		29.9	SURCHARGED
1.004	12	5	26.726	0.521	0.000	0.79		29.4	SURCHARGED
1.005	13	4	26.714	0.579	0.000	0.49		30.1	SURCHARGED
5.000	14	24	26.774	-0.126	0.000	0.06		2.9	OK
5.001	15	4	26.713	0.683	0.000	0.25		2.7	SURCHARGED
1.006	16-Attenuation	4	26.712	0.887	0.000	0.39		12.2	SURCHARGED
1.007	17-Hydrobrake	4	26.724	0.949	0.000	0.14		11.2	SURCHARGED

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Summary Wizard of 240 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000		1	28	26.742	-0.108	0.000	0.18	3.1	OK
2.000		2	28	27.622	-0.128	0.000	0.05	2.0	OK
3.000		3	28	26.799	-0.101	0.000	0.24	4.0	OK
1.001		4	15	26.653	-0.047	0.000	0.36	9.1	OK
1.002		5	14	26.640	0.190	0.000	0.25	11.4	SURCHARGED
4.000		7	15	26.650	0.130	0.000	0.27	3.6	SURCHARGED
4.001		9	14	26.643	0.253	0.000	0.49	6.8	SURCHARGED
1.003		11	14	26.632	0.352	0.000	0.64	24.6	SURCHARGED
1.004		12	10	26.621	0.416	0.000	0.65	24.2	SURCHARGED
1.005		13	8	26.609	0.474	0.000	0.41	24.9	SURCHARGED
5.000		14	28	26.772	-0.128	0.000	0.05	2.3	OK
5.001		15	8	26.608	0.578	0.000	0.20	2.2	SURCHARGED
1.006	16-Attenuation		8	26.607	0.782	0.000	0.39	12.2	SURCHARGED
1.007	17-Hydrobrake		8	26.624	0.849	0.000	0.14	11.2	SURCHARGED

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Summary Wizard of 360 minute 100 year Winter I+30% 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 Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	34	26.736	-0.114	0.000	0.13		2.3	OK
2.000	2	34	27.619	-0.131	0.000	0.04		1.4	OK
3.000	3	34	26.792	-0.108	0.000	0.17		2.9	OK
1.001	4	34	26.602	-0.098	0.000	0.27		6.6	OK
1.002	5	25	26.316	-0.134	0.000	0.18		8.3	OK
4.000	7	34	26.415	-0.105	0.000	0.19		2.7	OK
4.001	9	27	26.318	-0.072	0.000	0.36		4.9	OK
1.003	11	21	26.307	0.027	0.000	0.46		17.9	SURCHARGED
1.004	12	21	26.296	0.091	0.000	0.48		17.9	SURCHARGED
1.005	13	19	26.285	0.150	0.000	0.30		18.6	SURCHARGED
5.000	14	34	26.768	-0.132	0.000	0.04		1.7	OK
5.001	15	19	26.284	0.254	0.000	0.15		1.6	SURCHARGED
1.006	16-Attenuation	19	26.283	0.458	0.000	0.38		12.0	SURCHARGED
1.007	17-Hydrobrake	19	26.300	0.525	0.000	0.14		11.2	SURCHARGED

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