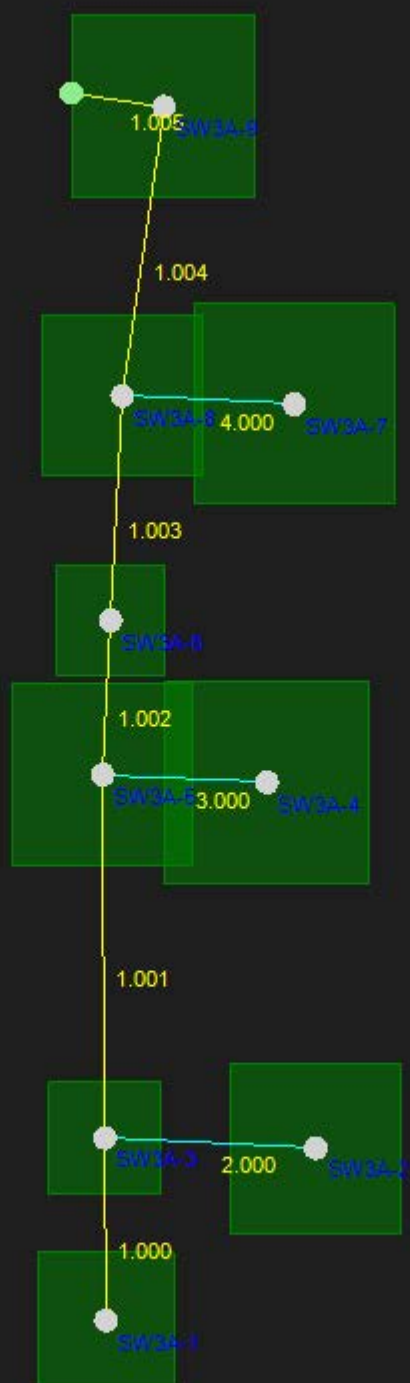




Mayer Brown Ltd		Page 1
Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment A Network Details	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3A (A) MICRODRAI...	Checked by IC	
XP Solutions		Network 2019.1

Existing Network Details 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)	Section Type
1.000	30.893	0.490	63.0	0.053	5.00	0.0	0.600	o	225	Pipe/Conduit
2.000	35.719	0.260	137.4	0.083	5.00	0.0	0.600	o	150	Pipe/Conduit
1.001	61.591	0.995	61.9	0.036	0.00	0.0	0.600	o	225	Pipe/Conduit
3.000	27.833	0.305	91.3	0.119	5.00	0.0	0.600	o	150	Pipe/Conduit
1.002	26.148	0.185	141.3	0.094	0.00	0.0	0.600	o	225	Pipe/Conduit
1.003	38.076	0.200	190.4	0.034	0.00	0.0	0.600	o	300	Pipe/Conduit
4.000	29.152	0.255	114.3	0.115	5.00	0.0	0.600	o	150	Pipe/Conduit
1.004	49.533	0.695	71.3	0.074	0.00	0.0	0.600	o	300	Pipe/Conduit
1.005	15.834	0.615	25.7	0.096	0.00	0.0	0.600	o	300	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	49.355	0.053	0.0	1.65	65.6
2.000	49.200	0.083	0.0	0.86	15.1
1.001	48.865	0.172	0.0	1.67	66.2
3.000	48.250	0.119	0.0	1.05	18.6
1.002	47.870	0.385	0.0	1.10	43.6
1.003	47.610	0.419	0.0	1.14	80.3
4.000	47.815	0.115	0.0	0.94	16.6
1.004	47.410	0.608	0.0	1.86	131.8
1.005	46.715	0.704	0.0	3.11	219.9

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Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment A Network Details	
Date 01/10/2021	Designed by TC	
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XP Solutions		Network 2019.1

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	225	SW3A-1	50.783	49.355	1.203	Open Manhole	1200
2.000	o	150	SW3A-2	50.553	49.200	1.203	Open Manhole	1200
1.001	o	225	SW3A-3	50.324	48.865	1.234	Open Manhole	1200
3.000	o	150	SW3A-4	49.600	48.250	1.200	Open Manhole	1200
1.002	o	225	SW3A-5	49.315	47.870	1.220	Open Manhole	1200
1.003	o	300	SW3A-6	49.041	47.610	1.131	Open Manhole	1200
4.000	o	150	SW3A-7	49.165	47.815	1.200	Open Manhole	1200
1.004	o	300	SW3A-8	49.356	47.410	1.646	Open Manhole	1200
1.005	o	300	SW3A-9	48.280	46.715	1.265	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	30.893	63.0	SW3A-3	50.324	48.865	1.234	Open Manhole	1200
2.000	35.719	137.4	SW3A-3	50.324	48.940	1.234	Open Manhole	1200
1.001	61.591	61.9	SW3A-5	49.315	47.870	1.220	Open Manhole	1200
3.000	27.833	91.3	SW3A-5	49.315	47.945	1.220	Open Manhole	1200
1.002	26.148	141.3	SW3A-6	49.041	47.685	1.131	Open Manhole	1200
1.003	38.076	190.4	SW3A-8	49.356	47.410	1.646	Open Manhole	1200
4.000	29.152	114.3	SW3A-8	49.356	47.560	1.646	Open Manhole	1200
1.004	49.533	71.3	SW3A-9	48.280	46.715	1.265	Open Manhole	1200
1.005	15.834	25.7		47.600	46.100	1.200	Open Manhole	1200

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)
1.005		47.600	46.100	0.000	1200	0

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Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment A Network Details	
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XP Solutions		Network 2019.1

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 Coefficient	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 Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700
C (1km)	-0.027
D1 (1km)	0.461
D2 (1km)	0.289
D3 (1km)	0.376
E (1km)	0.304
F (1km)	2.245
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

Mayer Brown Ltd		Page 1
Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment A 1in2yr Results	
Date 01/10/2021	Designed by TC	
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XP Solutions		Network 2019.1

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 Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FEH
 FEH Rainfall Version 1999
 Site Location GB 467450 109700 SU 67450 09700
 C (1km) -0.027
 D1 (1km) 0.461
 D2 (1km) 0.289
 D3 (1km) 0.376
 E (1km) 0.304
 F (1km) 2.245
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 2
 Climate Change (%) 0

US/MH		Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level
PN	Name								(m)
1.000	SW3A-1	15 Winter	2	+0%					49.402
2.000	SW3A-2	15 Winter	2	+0%					49.288
1.001	SW3A-3	15 Winter	2	+0%					48.948
3.000	SW3A-4	15 Winter	2	+0%					48.349
1.002	SW3A-5	15 Winter	2	+0%					48.051
1.003	SW3A-6	15 Winter	2	+0%					47.774
4.000	SW3A-7	15 Winter	2	+0%					47.920
1.004	SW3A-8	15 Winter	2	+0%					47.558
1.005	SW3A-9	15 Winter	2	+0%					46.841

Mayer Brown Ltd		Page 2
Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment A 1in2yr Results	
Date 01/10/2021	Designed by TC	
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XP Solutions		Network 2019.1

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

PN	US/MH Name	Surcharged		Flooded		Pipe		Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	
1.000	SW3A-1	-0.178	0.000	0.10		5.9	OK	
2.000	SW3A-2	-0.062	0.000	0.65		9.4	OK	
1.001	SW3A-3	-0.142	0.000	0.29		18.3	OK	
3.000	SW3A-4	-0.051	0.000	0.75		13.3	OK	
1.002	SW3A-5	-0.044	0.000	0.99		39.8	OK	
1.003	SW3A-6	-0.136	0.000	0.57		42.3	OK	
4.000	SW3A-7	-0.045	0.000	0.82		13.0	OK	
1.004	SW3A-8	-0.152	0.000	0.48		59.8	OK	
1.005	SW3A-9	-0.174	0.000	0.36		67.4	OK	

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Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment A 1in30yr Results	
Date 01/10/2021	Designed by TC	
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XP Solutions		Network 2019.1

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 Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FEH
 FEH Rainfall Version 1999
 Site Location GB 467450 109700 SU 67450 09700
 C (1km) -0.027
 D1 (1km) 0.461
 D2 (1km) 0.289
 D3 (1km) 0.376
 E (1km) 0.304
 F (1km) 2.245
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status ON

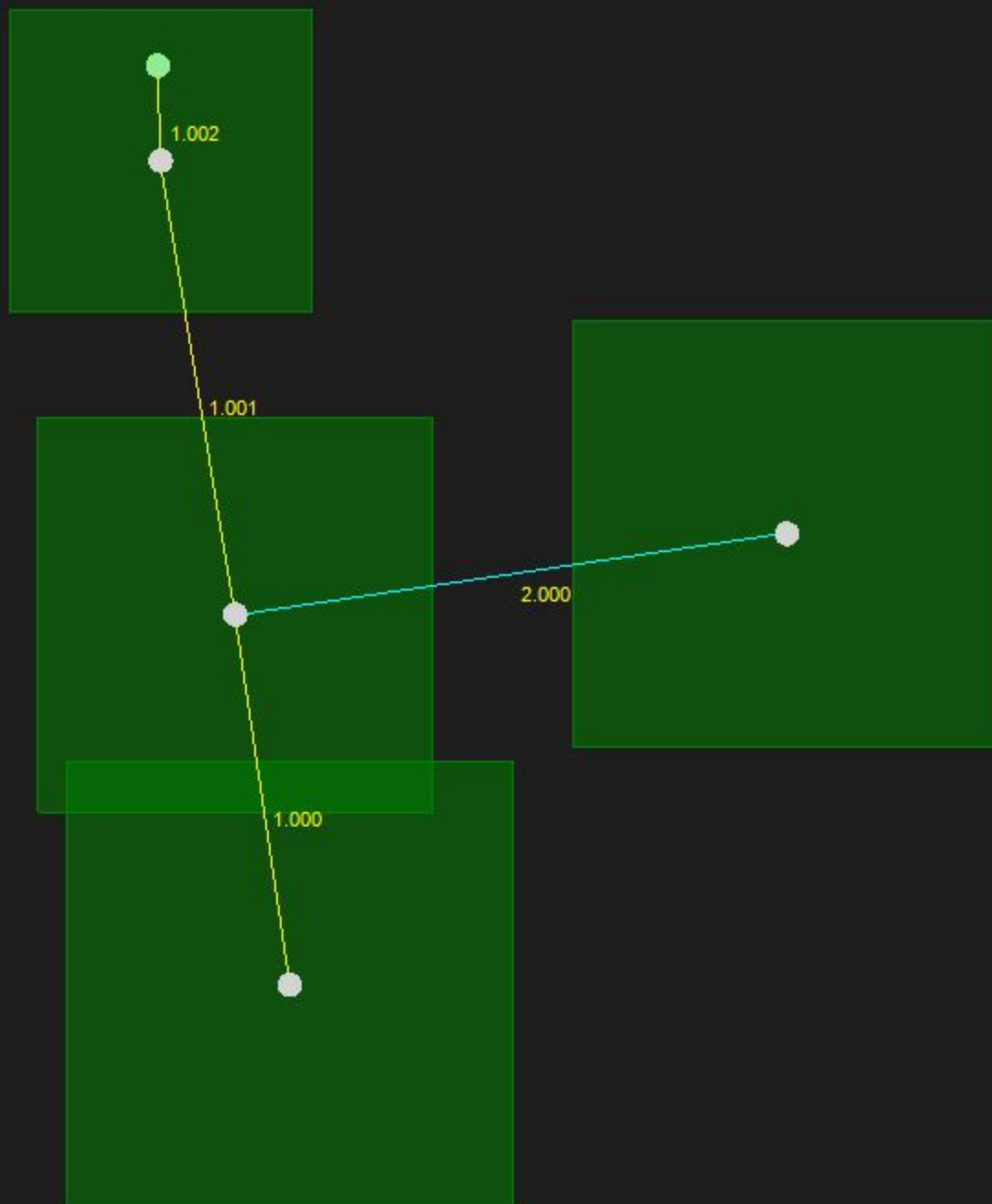
Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 30
 Climate Change (%) 0

US/MH		Return Climate		First (X)	First (Y)	First (Z)	Overflow	Water
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow Act.	Level (m)
1.000	SW3A-1	15 Winter	30	+0%				49.431
2.000	SW3A-2	15 Winter	30	+0%	30/15 Summer			49.637
1.001	SW3A-3	15 Winter	30	+0%				49.087
3.000	SW3A-4	15 Winter	30	+0%	30/15 Summer			49.294
1.002	SW3A-5	15 Winter	30	+0%	30/15 Summer			48.709
1.003	SW3A-6	15 Winter	30	+0%	30/15 Summer			47.968
4.000	SW3A-7	15 Winter	30	+0%	30/15 Summer			48.492
1.004	SW3A-8	15 Winter	30	+0%				47.660
1.005	SW3A-9	15 Winter	30	+0%				46.916

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Lion House Oriental Road Woking Surrey GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment A 1in30yr Results	
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XP Solutions		Network 2019.1

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

PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap.	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)				
1.000	SW3A-1	-0.149	0.000	0.24	14.9	OK	
2.000	SW3A-2	0.287	0.000	1.43	20.8	SURCHARGED	
1.001	SW3A-3	-0.003	0.000	0.64	40.7	OK	
3.000	SW3A-4	0.894	0.000	1.37	24.3	SURCHARGED	
1.002	SW3A-5	0.614	0.000	1.99	80.4	SURCHARGED	
1.003	SW3A-6	0.058	0.000	1.16	86.0	SURCHARGED	
4.000	SW3A-7	0.527	0.000	1.73	27.6	SURCHARGED	
1.004	SW3A-8	-0.050	0.000	1.00	124.0	OK	
1.005	SW3A-9	-0.099	0.000	0.76	141.9	OK	



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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B Network Details	
Date 01/10/2021 File 211027 - PHASE 3B (B) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

Existing Network Details 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)	Section Type
1.000	17.972	1.415	12.7	0.046	5.00	0.0	0.600	o	225	Pipe/Conduit
2.000	26.761	0.270	99.1	0.042	5.00	0.0	0.600	o	150	Pipe/Conduit
1.001	22.084	0.925	23.9	0.036	0.00	0.0	0.600	o	225	Pipe/Conduit
1.002	4.564	0.175	26.1	0.021	0.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	44.470	0.046	0.0	3.69	146.8
2.000	43.400	0.042	0.0	1.01	17.8
1.001	43.055	0.124	0.0	2.69	106.9
1.002	42.130	0.145	0.0	2.57	102.3

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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B Network Details	
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Innovyze	Network 2016.1.1	

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	225	SW3B-1	45.900	44.470	1.205	Open Manhole	1200
2.000	o	150	SW3B-2	44.781	43.400	1.231	Open Manhole	1200
1.001	o	225	SW3B-3	44.896	43.055	1.616	Open Manhole	1200
1.002	o	225	SW3B-4	43.560	42.130	1.205	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	17.972	12.7	SW3B-3	44.896	43.055	1.616	Open Manhole	1200
2.000	26.761	99.1	SW3B-3	44.896	43.130	1.616	Open Manhole	1200
1.001	22.084	23.9	SW3B-4	43.560	42.130	1.205	Open Manhole	1200
1.002	4.564	26.1	SWMN20.2	43.500	41.955	1.320	Open Manhole	1200

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)
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1.002	SWMN20.2	43.500	41.955	0.000	1200	0
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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 Coefficient	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 Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700

Mayer Brown Limited		Page 3																						
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B Network Details																							
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Innovyze Network 2016.1.1																								
<u>Synthetic Rainfall Details</u> <table> <tr><td>C (1km)</td><td>-0.027</td></tr> <tr><td>D1 (1km)</td><td>0.461</td></tr> <tr><td>D2 (1km)</td><td>0.289</td></tr> <tr><td>D3 (1km)</td><td>0.376</td></tr> <tr><td>E (1km)</td><td>0.304</td></tr> <tr><td>F (1km)</td><td>2.245</td></tr> <tr><td>Summer Storms</td><td>Yes</td></tr> <tr><td>Winter Storms</td><td>No</td></tr> <tr><td>Cv (Summer)</td><td>0.750</td></tr> <tr><td>Cv (Winter)</td><td>0.840</td></tr> <tr><td>Storm Duration (mins)</td><td>30</td></tr> </table>			C (1km)	-0.027	D1 (1km)	0.461	D2 (1km)	0.289	D3 (1km)	0.376	E (1km)	0.304	F (1km)	2.245	Summer Storms	Yes	Winter Storms	No	Cv (Summer)	0.750	Cv (Winter)	0.840	Storm Duration (mins)	30
C (1km)	-0.027																							
D1 (1km)	0.461																							
D2 (1km)	0.289																							
D3 (1km)	0.376																							
E (1km)	0.304																							
F (1km)	2.245																							
Summer Storms	Yes																							
Winter Storms	No																							
Cv (Summer)	0.750																							
Cv (Winter)	0.840																							
Storm Duration (mins)	30																							
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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B lin2yr Results	
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Innovyze	Network 2016.1.1	

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 Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FEH
 FEH Rainfall Version 1999
 Site Location GB 467450 109700 SU 67450 09700
 C (1km) -0.027
 D1 (1km) 0.461
 D2 (1km) 0.289
 D3 (1km) 0.376
 E (1km) 0.304
 F (1km) 2.245
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 2
 Climate Change (%) 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	SW3B-1	15 Winter	2	+0%					44.499
2.000	SW3B-2	15 Winter	2	+0%					43.454
1.001	SW3B-3	15 Winter	2	+0%					43.111
1.002	SW3B-4	15 Winter	2	+0%					42.208

PN	US/MH Name	Depth (m)	Surcharged Volume (m³)	Flooded Flow / Cap. (l/s)	Pipe Flow (l/s)	Level Exceeded
1.000	SW3B-1	-0.196	0.000	0.04	5.2	OK
2.000	SW3B-2	-0.096	0.000	0.28	4.7	OK

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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B 1in2yr Results	
Date 01/10/2021 File 211027 - PHASE 3B (B) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

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

PN	US/MH Name	Surcharged Flooded		Pipe		Level	
		Depth (m)	Volume (m ³)	Flow / Overflow Cap. (1/s)	Flow (1/s)	Status	Exceeded
1.001	SW3B-3	-0.169	0.000	0.14	13.3	OK	
1.002	SW3B-4	-0.147	0.000	0.26	15.5	OK	

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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B lin30yr Results	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3B (B) M...	Checked by IC	
Innovyze	Network 2016.1.1	

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 Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

Rainfall Model FEH
 FEH Rainfall Version 1999
 Site Location GB 467450 109700 SU 67450 09700
 C (1km) -0.027
 D1 (1km) 0.461
 D2 (1km) 0.289
 D3 (1km) 0.376
 E (1km) 0.304
 F (1km) 2.245
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status ON

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

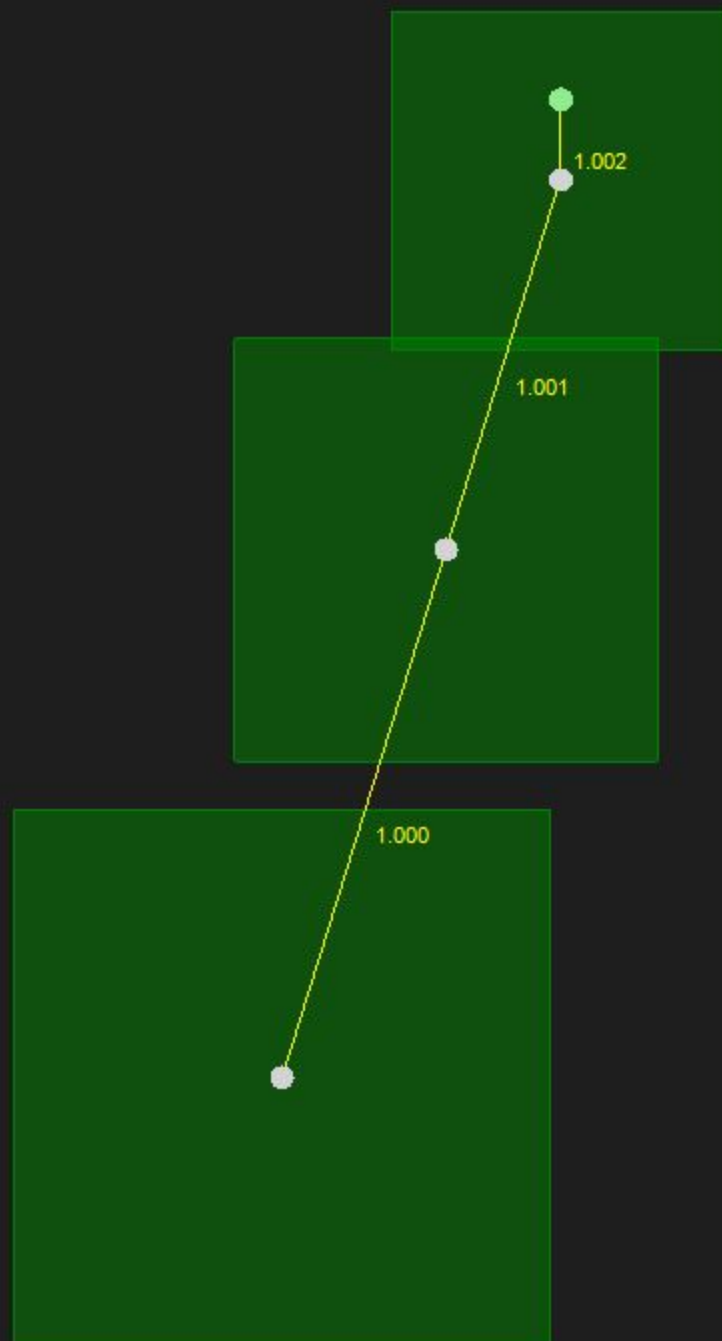
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	SW3B-1	15 Winter	30	+0%					44.518
2.000	SW3B-2	15 Winter	30	+0%					43.494
1.001	SW3B-3	15 Winter	30	+0%					43.150
1.002	SW3B-4	15 Winter	30	+0%					42.272

PN	US/MH Name	Depth (m)	Surcharged Volume (m³)	Flooded Flow / Cap. (l/s)	Pipe Flow (l/s)	Level Exceeded
1.000	SW3B-1	-0.177	0.000	0.10	13.1	OK
2.000	SW3B-2	-0.056	0.000	0.69	11.8	OK

Mayer Brown Limited		Page 2
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooovile Phase 3B - Catchment B lin30yr Results	
Date 01/10/2021 File 211027 - PHASE 3B (B) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

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

PN	US/MH Name	Surcharged		Flooded		Pipe		Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	
1.001	SW3B-3	-0.130	0.000	0.36		35.3	OK	
1.002	SW3B-4	-0.083	0.000	0.70		41.3	OK	



Mayer Brown Limited		Page 1
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment C Network Details	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3C (C) M...	Checked by IC	
Innovyze	Network 2016.1.1	

Existing Network Details 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)	Section Type
1.000	37.666	1.675	22.5	0.133	5.00	0.0	0.600	o	225	Pipe/Conduit
1.001	26.363	1.405	18.8	0.083	0.00	0.0	0.600	o	225	Pipe/Conduit
1.002	5.479	0.640	8.6	0.053	0.00	0.0	0.600	o	300	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	45.395	0.133	0.0	2.77	110.2
1.001	43.720	0.216	0.0	3.04	120.7
1.002	42.240	0.269	0.0	5.40	382.0

Mayer Brown Limited		Page 2
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment C Network Details	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3C (C) M...	Checked by IC	
Innovyze	Network 2016.1.1	

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	225	SW3C-1	46.820	45.395	1.200	Open Manhole	1200
1.001	o	225	SW3C-2	45.152	43.720	1.207	Open Manhole	1200
1.002	o	300	SW3C-3	43.870	42.240	1.330	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	37.666	22.5	SW3C-2	45.152	43.720	1.207	Open Manhole	1200
1.001	26.363	18.8	SW3C-3	43.870	42.315	1.330	Open Manhole	1200
1.002	5.479	8.6	SMH16.0	43.660	41.600	1.760	Open Manhole	1200

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)
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1.002	SMH16.0	43.660	41.600	0.000	1200	0
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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 Coefficient	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 Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700
C (1km)	-0.027
D1 (1km)	0.461
D2 (1km)	0.289
D3 (1km)	0.376
E (1km)	0.304
F (1km)	2.245

Mayer Brown Limited		Page 3
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment C Network Details	
Date 01/10/2021 File 211027 - PHASE 3C (C) M...	Designed by TC Checked by IC	
Innovyze Network 2016.1.1		
<u>Synthetic Rainfall Details</u> Summer Storms Yes Winter Storms No Cv (Summer) 0.750 Cv (Winter) 0.840 Storm Duration (mins) 30		
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Mayer Brown Limited		Page 1
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment C lin2yr Results	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3C (C) M...	Checked by IC	
Innovyze	Network 2016.1.1	

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 Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

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

Synthetic Rainfall Details

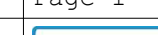
Rainfall Model FEH
 FEH Rainfall Version 1999
 Site Location GB 467450 109700 SU 67450 09700
 C (1km) -0.027
 D1 (1km) 0.461
 D2 (1km) 0.289
 D3 (1km) 0.376
 E (1km) 0.304
 F (1km) 2.245
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 2
 Climate Change (%) 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	SW3C-1	15 Winter	2	+0%					45.452
1.001	SW3C-2	15 Winter	2	+0%					43.790
1.002	SW3C-3	15 Winter	2	+0%					42.315

PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	SW3C-1	-0.168	0.000	0.14		15.0	OK	
1.001	SW3C-2	-0.155	0.000	0.20		22.8	OK	
1.002	SW3C-3	-0.225	0.000	0.14		28.2	OK	

Mayer Brown Limited		Page 1
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment C lin30yr Results	
Date 01/10/2021 File 211027 - PHASE 3C (C) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

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

Simulation Criteria

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

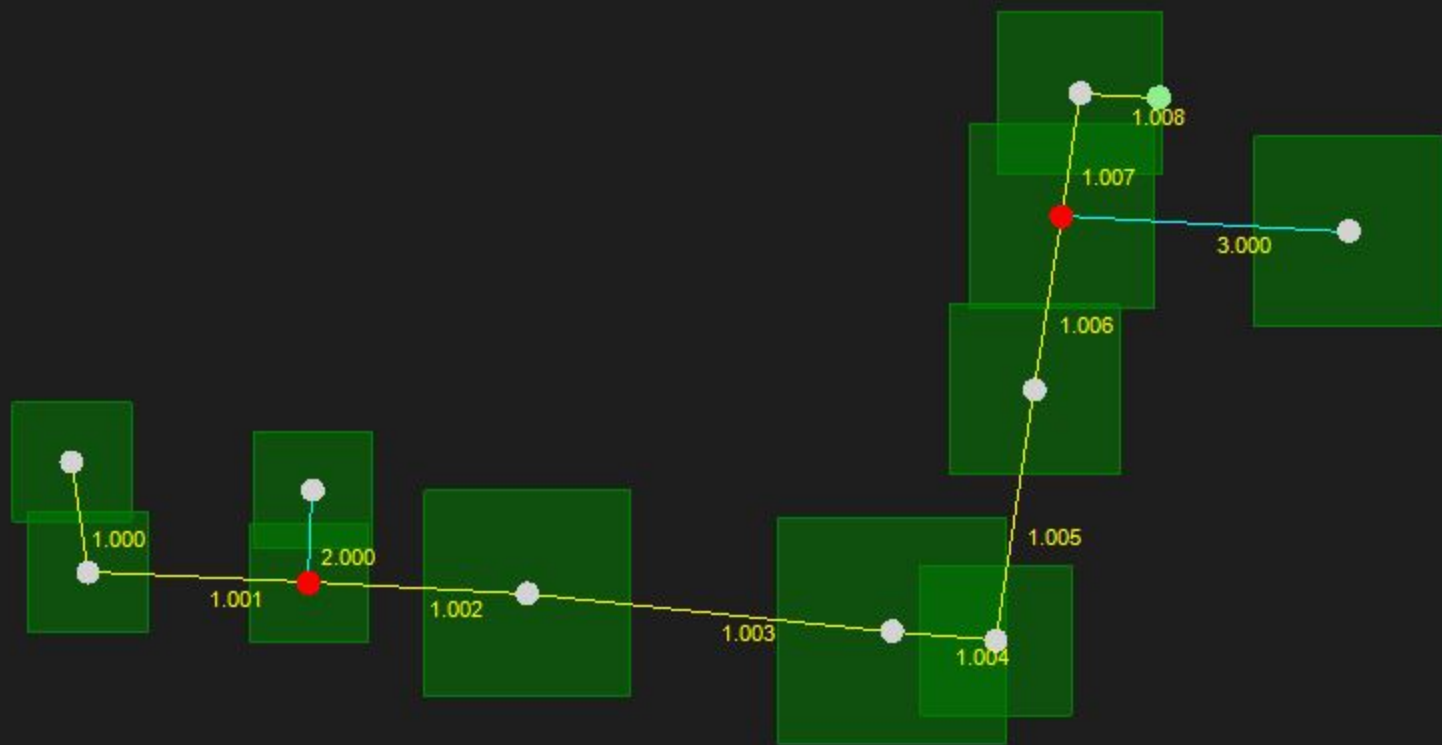
Synthetic Rainfall Details

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep 2.5 Second Increment (Extended)	
DTS Status	ON
DVD Status	OFF
Inertia Status	ON

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

									Water
	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)
1.000	SW3C-1	15 Winter	30	+0%					45.489
1.001	SW3C-2	15 Winter	30	+0%					43.842
1.002	SW3C-3	15 Winter	30	+0%					42.371

PN	US/MH Name	Surcharged	Flooded			Pipe	Level Exceeded
		Depth	Volume	Flow /	Overflow	Flow	
		(m)	(m³)	Cap.	(l/s)	(l/s)	
1.000	SW3C-1	-0.131	0.000	0.36		37.8	OK
1.001	SW3C-2	-0.103	0.000	0.56		62.6	OK
1.002	SW3C-3	-0.169	0.000	0.39		78.3	OK



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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment D Network Details	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3D (D) M...	Checked by IC	
Innovyze	Network 2016.1.1	

Existing Network Details 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)	Section Type
1.000	16.272	0.080	203.4	0.030	5.00	0.0	0.600	o	225	Pipe/Conduit
1.001	32.219	0.160	201.4	0.031	0.00	0.0	0.600	o	225	Pipe/Conduit
2.000	13.555	1.350	10.0	0.029	5.00	0.0	0.600	o	150	Pipe/Conduit
1.002	31.912	0.160	199.4	0.030	0.00	0.0	0.600	o	225	Pipe/Conduit
1.003	53.503	0.270	198.2	0.090	0.00	0.0	0.600	o	225	Pipe/Conduit
1.004	15.199	0.075	202.7	0.110	0.00	0.0	0.600	o	225	Pipe/Conduit
1.005	36.994	0.355	104.2	0.048	0.00	0.0	0.600	o	225	Pipe/Conduit
1.006	25.550	1.925	13.3	0.061	0.00	0.0	0.600	o	225	Pipe/Conduit
3.000	41.990	0.540	77.8	0.076	5.00	0.0	0.600	o	150	Pipe/Conduit
1.007	18.208	0.200	91.0	0.072	0.00	0.0	0.600	o	300	Pipe/Conduit
1.008	11.479	0.100	114.8	0.057	0.00	0.0	0.600	o	300	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	45.100	0.030	0.0	0.91	36.3
1.001	45.020	0.061	0.0	0.92	36.5
2.000	46.285	0.029	0.0	3.20	56.5
1.002	44.860	0.120	0.0	0.92	36.7
1.003	44.700	0.210	0.0	0.93	36.8
1.004	44.430	0.320	0.0	0.91	36.4
1.005	44.355	0.368	0.0	1.28	50.9
1.006	44.000	0.429	0.0	3.61	143.6
3.000	42.690	0.076	0.0	1.14	20.2
1.007	42.000	0.577	0.0	1.65	116.5
1.008	41.800	0.634	0.0	1.47	103.7

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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment D Network Details	
Date 01/10/2021 File 211027 - PHASE 3D (D) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

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	225	SW3D-1	46.529	45.100	1.204	Open Manhole	1200
1.001	o	225	SW3D-2	47.139	45.020	1.894	Open Manhole	1200
2.000	o	150	SW3D-3	47.635	46.285	1.200	Open Manhole	1200
1.002	o	225	SW3D-4	48.011	44.860	2.926	Open Manhole	1200
1.003	o	225	SW3D-5	47.958	44.700	3.033	Open Manhole	1200
1.004	o	225	SW3D-6	47.417	44.430	2.762	Open Manhole	1200
1.005	o	225	SW3D-7	47.227	44.355	2.647	Open Manhole	1200
1.006	o	225	SW3D-8	45.746	44.000	1.521	Open Manhole	1200
3.000	o	150	SW3D-9	44.040	42.690	1.200	Open Manhole	1200
1.007	o	300	SW3D-10	44.590	42.000	2.290	Open Manhole	1200
1.008	o	300	SW3D-11	44.590	41.800	2.490	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	16.272	203.4	SW3D-2	47.139	45.020	1.894	Open Manhole	1200
1.001	32.219	201.4	SW3D-4	48.011	44.860	2.926	Open Manhole	1200
2.000	13.555	10.0	SW3D-4	48.011	44.935	2.926	Open Manhole	1200
1.002	31.912	199.4	SW3D-5	47.958	44.700	3.033	Open Manhole	1200
1.003	53.503	198.2	SW3D-6	47.417	44.430	2.762	Open Manhole	1200
1.004	15.199	202.7	SW3D-7	47.227	44.355	2.647	Open Manhole	1200
1.005	36.994	104.2	SW3D-8	45.746	44.000	1.521	Open Manhole	1200
1.006	25.550	13.3	SW3D-10	44.590	42.075	2.290	Open Manhole	1200
3.000	41.990	77.8	SW3D-10	44.590	42.150	2.290	Open Manhole	1200
1.007	18.208	91.0	SW3D-11	44.590	41.800	2.490	Open Manhole	1200
1.008	11.479	114.8		43.200	41.700	1.200	Open Manhole	1200

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)
1.008		43.200	41.700	0.000	1200	0

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Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment D Network Details	
Date 01/10/2021	Designed by TC	
File 211027 - PHASE 3D (D) M...	Checked by IC	
Innovyze	Network 2016.1.1	

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	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 Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700
C (1km)	-0.027
D1 (1km)	0.461
D2 (1km)	0.289
D3 (1km)	0.376
E (1km)	0.304
F (1km)	2.245
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

Mayer Brown Limited		Page 1
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterlooville Phase 3B - Catchment D lin2yr Results	
Date 01/10/2021 File 211027 - PHASE 3D (D) M...	Designed by TC Checked by IC	
Innovyze Network 2016.1.1		

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 Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

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

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700
C (1km)	-0.027
D1 (1km)	0.461
D2 (1km)	0.289
D3 (1km)	0.376
E (1km)	0.304
F (1km)	2.245
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	SW3D-1	15 Winter	2	+0%					45.149
1.001	SW3D-2	15 Winter	2	+0%					45.085
2.000	SW3D-3	15 Winter	2	+0%					46.310
1.002	SW3D-4	15 Winter	2	+0%					44.953
1.003	SW3D-5	15 Winter	2	+0%					44.823
1.004	SW3D-6	15 Winter	2	+0%					44.596
1.005	SW3D-7	15 Winter	2	+0%					44.491
1.006	SW3D-8	15 Winter	2	+0%					44.081
3.000	SW3D-9	15 Winter	2	+0%					42.760
1.007	SW3D-10	15 Winter	2	+0%					42.151
1.008	SW3D-11	15 Winter	2	+0%					41.985

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Mayer Brown Limited		Page 2
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment D lin2yr Results	
Date 01/10/2021 File 211027 - PHASE 3D (D) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

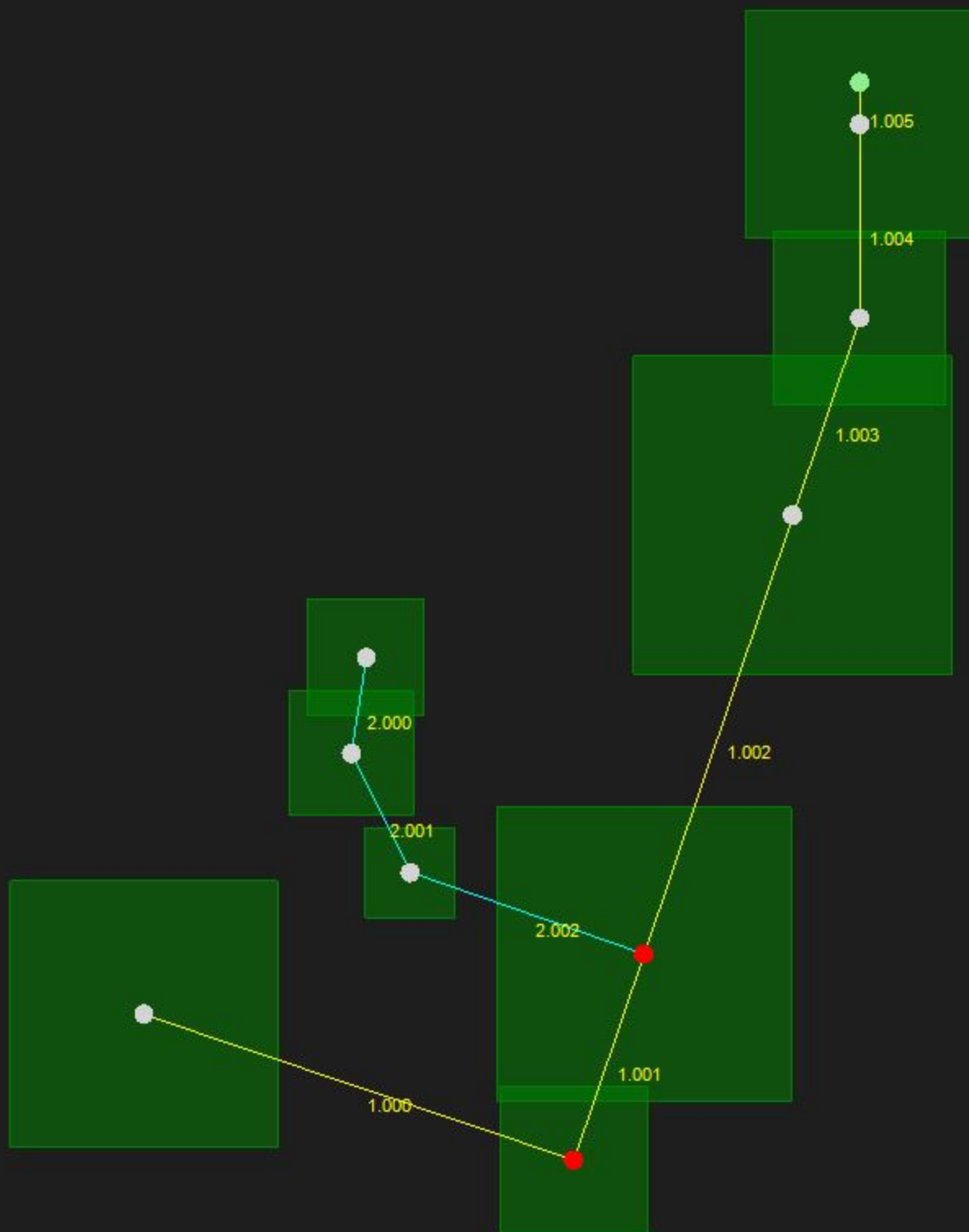
Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Flooded		Pipe		Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	
1.000	SW3D-1	-0.176	0.000	0.10		3.3	OK
1.001	SW3D-2	-0.160	0.000	0.18		6.2	OK
2.000	SW3D-3	-0.125	0.000	0.06		3.3	OK
1.002	SW3D-4	-0.132	0.000	0.35		12.0	OK
1.003	SW3D-5	-0.102	0.000	0.55		19.4	OK
1.004	SW3D-6	-0.059	0.000	0.89		28.4	OK
1.005	SW3D-7	-0.089	0.000	0.67		32.2	OK
1.006	SW3D-8	-0.144	0.000	0.28		36.9	OK
3.000	SW3D-9	-0.080	0.000	0.44		8.6	OK
1.007	SW3D-10	-0.149	0.000	0.50		50.2	OK
1.008	SW3D-11	-0.115	0.000	0.69		54.9	OK

Mayer Brown Limited		Page 2
Lion House Oriental Road Woking, GU22 8AR	Berewood, Waterloooville Phase 3B - Catchment D lin30yr Results	
Date 01/10/2021 File 211027 - PHASE 3D (D) M...	Designed by TC Checked by IC	
Innovyze	Network 2016.1.1	

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

PN	US/MH Name	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)			Flow (l/s)		
1.000	SW3D-1	0.301	0.000	0.25		8.2	SURCHARGED	
1.001	SW3D-2	0.372	0.000	0.45		15.4	SURCHARGED	
2.000	SW3D-3	-0.110	0.000	0.16		8.2	OK	
1.002	SW3D-4	0.509	0.000	0.74		25.5	SURCHARGED	
1.003	SW3D-5	0.618	0.000	1.08		38.2	SURCHARGED	
1.004	SW3D-6	0.598	0.000	1.85		59.1	SURCHARGED	
1.005	SW3D-7	0.406	0.000	1.45		69.7	SURCHARGED	
1.006	SW3D-8	-0.094	0.000	0.62		82.1	OK	
3.000	SW3D-9	0.187	0.000	0.95		18.6	SURCHARGED	
1.007	SW3D-10	0.250	0.000	1.17		117.7	SURCHARGED	
1.008	SW3D-11	0.166	0.000	1.64		130.2	SURCHARGED	



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Existing Network Details 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)	Section Type
1.000	47.776	0.475	100.6	0.079	5.00	0.0	0.600	o	225	Pipe/Conduit
1.001	22.917	1.020	22.5	0.024	0.00	0.0	0.600	o	225	Pipe/Conduit
2.000	10.221	0.285	35.9	0.015	5.00	0.0	0.600	o	150	Pipe/Conduit
2.001	13.987	0.140	99.9	0.017	0.00	0.0	0.600	o	150	Pipe/Conduit
2.002	26.032	0.185	140.7	0.009	0.00	0.0	0.600	o	150	Pipe/Conduit
1.002	48.792	1.940	25.2	0.096	0.00	0.0	0.600	o	225	Pipe/Conduit
1.003	21.946	0.860	25.5	0.112	0.00	0.0	0.600	o	225	Pipe/Conduit
1.004	20.378	0.605	33.7	0.033	0.00	0.0	0.600	o	225	Pipe/Conduit
1.005	4.434	0.670	6.6	0.058	0.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	45.670	0.079	0.0	1.30	51.8
1.001	45.195	0.103	0.0	2.77	110.2
2.000	44.860	0.015	0.0	1.69	29.8
2.001	44.575	0.032	0.0	1.01	17.8
2.002	44.435	0.041	0.0	0.85	14.9
1.002	44.175	0.240	0.0	2.62	104.2
1.003	42.235	0.352	0.0	2.60	103.4
1.004	41.375	0.385	0.0	2.26	89.9
1.005	40.770	0.443	0.0	5.12	203.6

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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	225	SW3E-1	47.096	45.670	1.201	Open Manhole	1200
1.001	o	225	SW3E-2	46.619	45.195	1.199	Open Manhole	1200
2.000	o	150	SW3E-3	45.741	44.860	0.731	Open Manhole	1200
2.001	o	150	SW3E-4	46.203	44.575	1.478	Open Manhole	1200
2.002	o	150	SW3E-5	46.654	44.435	2.069	Open Manhole	1200
1.002	o	225	SW3E-6	45.786	44.175	1.386	Open Manhole	1200
1.003	o	225	SW3E-7	43.664	42.235	1.204	Open Manhole	1200
1.004	o	225	SW3E-8	42.800	41.375	1.200	Open Manhole	1200
1.005	o	225	SW3E-9	42.198	40.770	1.203	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	47.776	100.6	SW3E-2	46.619	45.195	1.199	Open Manhole	1200
1.001	22.917	22.5	SW3E-6	45.786	44.175	1.386	Open Manhole	1200
2.000	10.221	35.9	SW3E-4	46.203	44.575	1.478	Open Manhole	1200
2.001	13.987	99.9	SW3E-5	46.654	44.435	2.069	Open Manhole	1200
2.002	26.032	140.7	SW3E-6	45.786	44.250	1.386	Open Manhole	1200
1.002	48.792	25.2	SW3E-7	43.664	42.235	1.204	Open Manhole	1200
1.003	21.946	25.5	SW3E-8	42.800	41.375	1.200	Open Manhole	1200
1.004	20.378	33.7	SW3E-9	42.198	40.770	1.203	Open Manhole	1200
1.005	4.434	6.6	SW3E-10	42.025	40.100	1.700	Open Manhole	1500

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)
1.005	SW3E-10	42.025	40.100	0.000	1500	0

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<u>Simulation Criteria for Storm</u> 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 Coefficient 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 Storage Structures 0 Number of Online Controls 0 Number of Time/Area Diagrams 0 Number of Offline Controls 0 Number of Real Time Controls 0 <u>Synthetic Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> </tr> <tr> <td>FEH Rainfall Version</td> <td>1999</td> </tr> <tr> <td>Site Location</td> <td>GB 467450 109700 SU 67450 09700</td> </tr> <tr> <td>C (1km)</td> <td>-0.027</td> </tr> <tr> <td>D1 (1km)</td> <td>0.461</td> </tr> <tr> <td>D2 (1km)</td> <td>0.289</td> </tr> <tr> <td>D3 (1km)</td> <td>0.376</td> </tr> <tr> <td>E (1km)</td> <td>0.304</td> </tr> <tr> <td>F (1km)</td> <td>2.245</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> </tr> <tr> <td>Winter Storms</td> <td>No</td> </tr> <tr> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>Storm Duration (mins)</td> <td>30</td> </tr> </table>			Rainfall Model	FEH	Return Period (years)	100	FEH Rainfall Version	1999	Site Location	GB 467450 109700 SU 67450 09700	C (1km)	-0.027	D1 (1km)	0.461	D2 (1km)	0.289	D3 (1km)	0.376	E (1km)	0.304	F (1km)	2.245	Summer Storms	Yes	Winter Storms	No	Cv (Summer)	0.750	Cv (Winter)	0.840	Storm Duration (mins)	30
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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 Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

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

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700
C (1km)	-0.027
D1 (1km)	0.461
D2 (1km)	0.289
D3 (1km)	0.376
E (1km)	0.304
F (1km)	2.245
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	2
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	SW3E-1	15 Winter	2	+0%					45.735
1.001	SW3E-2	15 Winter	2	+0%					45.245
2.000	SW3E-3	15 Winter	2	+0%					44.885
2.001	SW3E-4	15 Winter	2	+0%					44.621
2.002	SW3E-5	15 Winter	2	+0%					44.490
1.002	SW3E-6	15 Winter	2	+0%					44.250
1.003	SW3E-7	15 Winter	2	+0%					42.330
1.004	SW3E-8	15 Winter	2	+0%					41.483
1.005	SW3E-9	15 Winter	2	+0%					40.865

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

PN	US/MH Name	Surcharged		Flooded		Pipe		Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	
1.000	SW3E-1	-0.160	0.000	0.18		8.8	OK	
1.001	SW3E-2	-0.175	0.000	0.11		11.1	OK	
2.000	SW3E-3	-0.125	0.000	0.06		1.7	OK	
2.001	SW3E-4	-0.104	0.000	0.20		3.3	OK	
2.002	SW3E-5	-0.095	0.000	0.29		4.2	OK	
1.002	SW3E-6	-0.150	0.000	0.24		24.3	OK	
1.003	SW3E-7	-0.130	0.000	0.37		34.8	OK	
1.004	SW3E-8	-0.117	0.000	0.46		37.8	OK	
1.005	SW3E-9	-0.130	0.000	0.37		43.1	OK	

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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 Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

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

Synthetic Rainfall Details

Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 467450 109700 SU 67450 09700
C (1km)	-0.027
D1 (1km)	0.461
D2 (1km)	0.289
D3 (1km)	0.376
E (1km)	0.304
F (1km)	2.245
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	ON

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	SW3E-1	15 Winter	30	+0%					45.777
1.001	SW3E-2	15 Winter	30	+0%					45.278
2.000	SW3E-3	15 Winter	30	+0%					44.900
2.001	SW3E-4	15 Winter	30	+0%					44.657
2.002	SW3E-5	15 Winter	30	+0%					44.542
1.002	SW3E-6	15 Winter	30	+0%					44.315
1.003	SW3E-7	15 Winter	30	+0%	30/15 Summer				42.752
1.004	SW3E-8	15 Winter	30	+0%	30/15 Summer				41.913
1.005	SW3E-9	15 Winter	30	+0%					40.950

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

PN	US/MH Name	Surcharged Flooded		Pipe		Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	
1.000	SW3E-1	-0.118	0.000	0.44		22.0	OK
1.001	SW3E-2	-0.142	0.000	0.28		28.5	OK
2.000	SW3E-3	-0.110	0.000	0.16		4.3	OK
2.001	SW3E-4	-0.068	0.000	0.57		9.4	OK
2.002	SW3E-5	-0.043	0.000	0.83		11.8	OK
1.002	SW3E-6	-0.085	0.000	0.68		67.7	OK
1.003	SW3E-7	0.292	0.000	0.98		92.8	SURCHARGED
1.004	SW3E-8	0.313	0.000	1.23		100.3	SURCHARGED
1.005	SW3E-9	-0.045	0.000	0.99		113.6	OK