

Project: Land Off Upperthong Lane Proposed Residential Dwelling	Date: 28/02/2024			
	Designed by: SZ	Checked by:	Approved By:	
Report Details: Type: Inflows Storm Phase: STORM PRIVATE.SWS	Scheme: Oversized Pipe Design			



1 - TOC

Type : Catchment Area

Area (ha)	0.015
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff Coefficient	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100



2 - TOC

Type : Catchment Area

Area (ha)	0.029
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff Coefficient	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

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Scheme: Oversized Pipe Design				

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Sump Depth (m)	Chamber Shape	Diameter (m)	Access Required	Intersection Easting (m)	Intersection Northing (m)
1	Manhole	413147.673	408168.032	244.490	0.840	243.650	0.000	Circular	0.450	☒	413147.673	408168.032
2	Manhole	413173.374	408164.529	245.220	1.995	243.225	0.000	Circular	1.200	☒	413173.374	408164.529
3	Manhole	413219.951	408164.527	244.825	1.725	243.100	0.300	Circular	1.200	☒	413219.951	408164.527
4	Simple Junction	413226.442	408165.175									

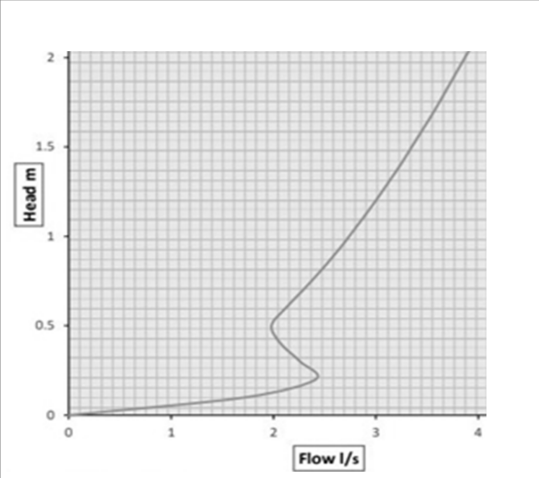
Name	Part Family	Lock
1		All
2		All
3		All
4		

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
1	Inlet	1 - TOC	(None)	No Restriction
2	Inlet	1.001 2 - TOC	(None)	No Restriction
3	Inlet	1.002	(None)	No Restriction
4	Inlet	1.003	(None)	No Restriction

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Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
1	Outlet	1.001	Free Discharge
2	Outlet	1.002	Free Discharge
3	Outlet	1.003	Depth / Flow
	Invert Level (m)	243.100	
	Depth (m)	Outflow (L/s)	Vortex Flow Control Device Design Parameters Orifice 78mm Design Head 1.2m Design Flow 3.0l/s Flush-Flow 2.42 l/s @ 0.208m Kick-Flo 1.98 l/s @ 0.507m 
	0.100	1.73	
	0.200	2.41	
	0.300	2.26	
	0.400	2.07	
	0.500	1.98	
	0.600	2.12	
	0.700	2.29	
	0.800	2.45	
	0.900	2.60	
	1.000	2.74	
	1.100	2.87	
	1.200	3.00	
	1.300	3.12	
	1.400	3.24	
	1.500	3.35	
	1.600	3.46	
	1.700	3.57	
	1.800	3.67	
	1.900	3.77	
	2.000	3.87	
	2.100	3.97	
	2.200	4.06	

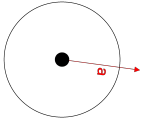
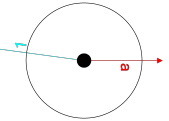
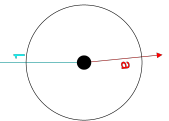
Project: Land Off Upperthong Lane Proposed Residential Dwelling	Date: 28/02/2024			
	Designed by: SZ	Checked by:	Approved By:	
	Report Details: Type: Connections Storm Phase: STORM PRIVATE.SWS			
Scheme: Oversized Pipe Design				

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock
1.002	46.577	Pipe	372.616		0.6	450	245.220	243.225	244.825	243.100		All
1.003	6.523	Pipe	26.626		0.6	150	244.825	243.100	243.980	242.855		None
1.001	25.939	Pipe	61.032		0.6	150	244.490	243.650	245.220	243.225		None

Name	Flow Restriction (L/s)
1.002	
1.003	3.0
1.001	

Project: Land Off Upperthong Lane Proposed Residential Dwelling	Date: 28/02/2024			
	Designed by: SZ	Checked by:	Approved By:	
	Report Details: Type: Manhole Schedule Storm Phase: STORM PRIVATE.SWS			
Scheme: Oversized Pipe Design				

Setting Out Information	
Easting Origin (m)	0.000
Northing Origin (m)	0.000
Orientation (Degrees anticlockwise from North)	0

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type		
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type	Flow Control Type	Flow Control IL (m)
Intersection (m)				Outgoing Connections				Cover		
1	244.490 243.650		Diameter / Length: 0.450					Manhole - Access Required	{a} Free Discharge	
E:413147.670 N:408168.035	0.840			{a} 1.001	Pipe	243.650	Diam/Width:150	Not Applicable		
IP E:413147.670 IP N:408168.035										
2	245.220 243.225		Diameter / Length: 1.200	{1} 1.001	Pipe	243.225	Diam/Width:150	Manhole - Access Required	{a} Free Discharge	
E:413173.371 N:408164.532	1.995			{a} 1.002	Pipe	243.225	Diam/Width:450	Not Applicable		
IP E:413173.371 IP N:408164.532										
3	244.825 243.100		Diameter / Length: 1.200	{1} 1.002	Pipe	243.100	Diam/Width:450	Manhole - Access Required	{a} Depth / Flow	243.100
E:413219.948 N:408164.530	1.725			{a} 1.003	Pipe	243.100	Diam/Width:150	Not Applicable		
IP E:413219.948 IP N:408164.530										

Project: Land Off Upperthong Lane Propsed Residential Dwelling	Date: 28/02/2024			
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	Report Details: Type: Manhole Schedule Storm Phase: STORM PRIVATE.SWS			
Scheme: Oversized Pipe Design				

Setting Out Information	
Easting Origin (m)	0.000
Northing Origin (m)	0.000
Orientation (Degrees anticlockwise from North)	0

Name	Cover Level (m) Invert Level (m)	Manhole Schematic	Manhole Size (m)	Connection Details				Type		
Coordinates (m)	Depth (m)			Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type	Flow Control Type	Flow Control IL (m)
Intersection (m)				Outgoing Connections				Cover		
4			Diameter / Length: 0.225	{1} 1.003	Pipe	242.855	Diam/Width:150	Simple Junction		
E:413226.439 N:408165.178								Not Applicable		

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	Report Details: Type: Inflow Summary Storm Phase: STORM PRIVATE.SWS			
Scheme: Oversized Pipe Design				

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
1 - TOC	1		Time of Concentration	0.015	100	0	100	0.015
2 - TOC	2		Time of Concentration	0.029	100	0	100	0.029
TOTAL		0.0		0.044				0.044

Project: Land Off Upperthong Lane Proposed Residential Dwelling	Date: 28/02/2024			
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	Report Details: Type: Network Design Criteria Storm Phase: STORM PRIVATE.SWS			
Scheme: Oversized Pipe Design				

Flow Options

Peak Flow Calculation	Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Inverts
Min. Slope (1:X)	1000.00
Max. Slope (1:X)	40.00
Use Flow Restriction	☒
Reduce Channel Depths	☒

Manhole Options

Apply Offset	☐
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Project: Land Off Upperthong Lane Proposed Residential Dwelling	Date: 28/02/2024			
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	Report Details: Type: Outfall Details Storm Phase: STORM PRIVATE.SWS			
Scheme: Oversized Pipe Design				

Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
4	Free Discharge		

Project: Land Off Upperthong Lane Proposed Residential Dwelling	Date: 28/02/2024			
	Designed by: SZ	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Scheme: Oversized Pipe Design			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	0
Prefill Manhole Sumps	☐
Perform No Discharge Analysis	☐

Rainfall

Sim Criteria FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	19.3
Ratio R	0.297
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
2.0	0.000
30.0	0.000
100.0	30.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

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Report Details: Type: Junctions Summary Storm Phase: STORM PRIVATE.SWS	Scheme: Oversized Pipe Design			



Sim Criteria FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	Sim Criteria FSR: 1 years: +0 %: 15 mins: Winter	244.490	243.650	243.678	0.028	1.8	0.005	0.000	1.8	0.851	OK
2	Sim Criteria FSR: 1 years: +0 %: 15 mins: Winter	245.220	243.225	243.275	0.050	5.3	0.057	0.000	4.6	2.549	OK
3	Sim Criteria FSR: 1 years: +0 %: 30 mins: Winter	244.825	243.100	243.266	0.166	3.7	0.187	0.000	2.0	3.361	Surcharged
4	Sim Criteria FSR: 1 years: +0 %: 30 mins: Winter		242.855	242.879	0.024	2.0			2.0	3.354	OK

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Sim Criteria FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	Sim Criteria FSR: 2 years: +0 %: 15 mins: Winter	244.490	243.650	243.682	0.032	2.4	0.005	0.000	2.3	1.099	OK
2	Sim Criteria FSR: 2 years: +0 %: 30 mins: Winter	245.220	243.225	243.296	0.071	4.8	0.080	0.000	4.1	4.455	OK
3	Sim Criteria FSR: 2 years: +0 %: 30 mins: Winter	244.825	243.100	243.296	0.196	4.1	0.222	0.000	2.2	4.311	Surcharged
4	Sim Criteria FSR: 2 years: +0 %: 30 mins: Winter		242.855	242.881	0.026	2.2			2.2	4.302	OK

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Sim Criteria FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	Sim Criteria FSR: 30 years: +0 %: 15 mins: Winter	244.490	243.650	243.695	0.045	4.5	0.007	0.000	4.4	2.088	OK
2	Sim Criteria FSR: 30 years: +0 %: 60 mins: Winter	245.220	243.225	243.437	0.212	7.1	0.239	0.000	4.6	11.033	OK
3	Sim Criteria FSR: 30 years: +0 %: 60 mins: Winter	244.825	243.100	243.437	0.337	4.6	0.381	0.000	2.4	10.941	Surcharged
4	Sim Criteria FSR: 30 years: +0 %: 120 mins: Summer		242.855	242.882	0.027	2.4			2.4	12.465	OK

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Sim Criteria FSR: 100 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	Sim Criteria FSR: 100 years: +30 %: 60 mins: Winter	244.490	243.650	244.338	0.688	4.1	0.109	0.000	4.1	6.382	Surcharged
2	Sim Criteria FSR: 100 years: +30 %: 60 mins: Winter	245.220	243.225	244.337	1.112	12.1	1.258	0.000	6.8	17.537	Surcharged
3	Sim Criteria FSR: 100 years: +30 %: 60 mins: Winter	244.825	243.100	244.337	1.237	6.8	1.399	0.000	3.0	15.218	Surcharged
4	Sim Criteria FSR: 100 years: +30 %: 60 mins: Winter		242.855	242.885	0.030	3.0			3.0	15.185	OK

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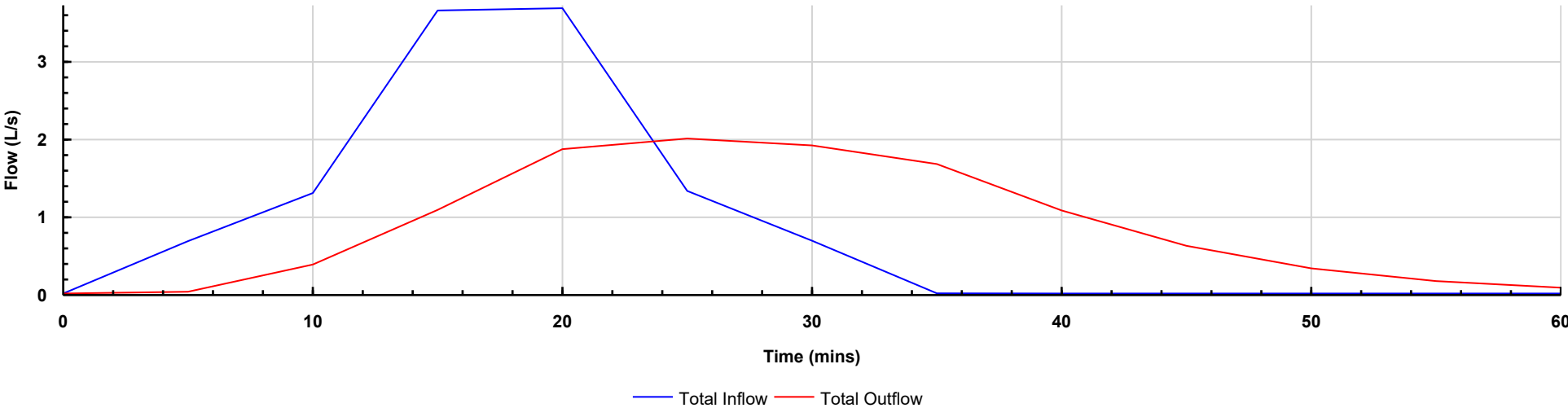
STORM PRIVATE.SWS
Sim Criteria FSR: 1 years: Increase Rainfall (%): +0: 30 mins: Winter

Tables

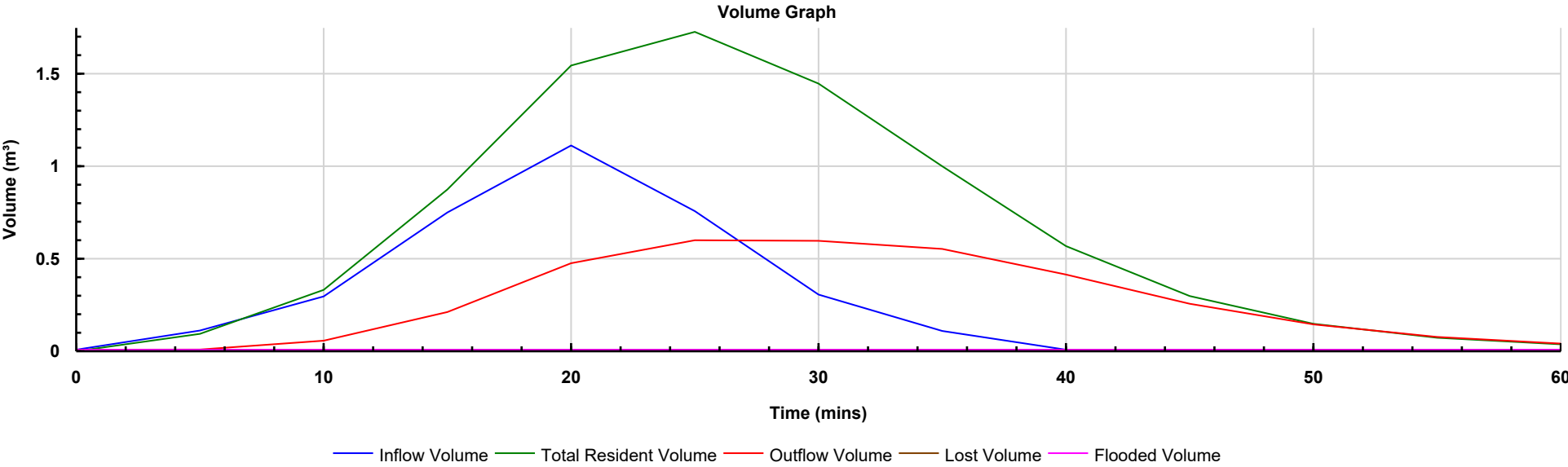
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
4			2.0	3.354
TOTAL	3.7	3.401	2.0	3.354

Graphs

Flow Graph



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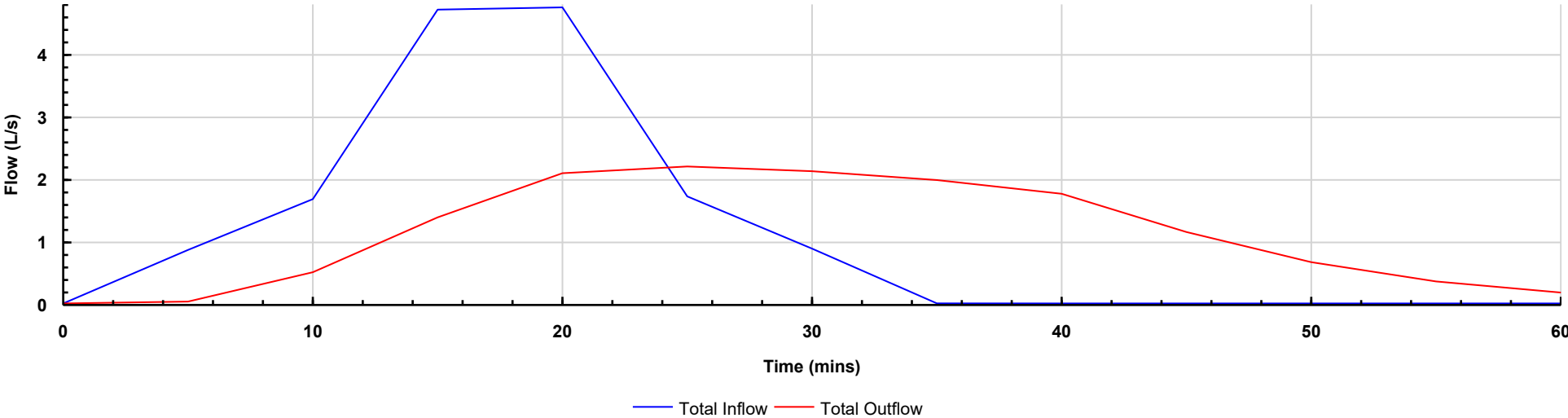
STORM PRIVATE.SWS
Sim Criteria FSR: 2 years: Increase Rainfall (%): +0: 30 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
4			2.2	4.302
TOTAL	4.8	4.390	2.2	4.302

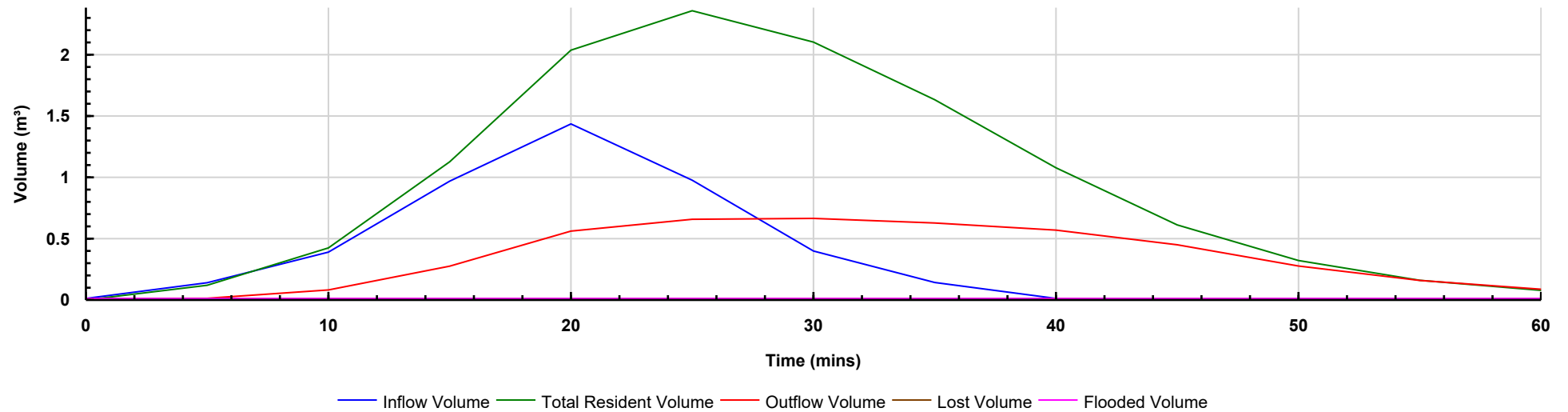
Graphs

Flow Graph



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Volume Graph



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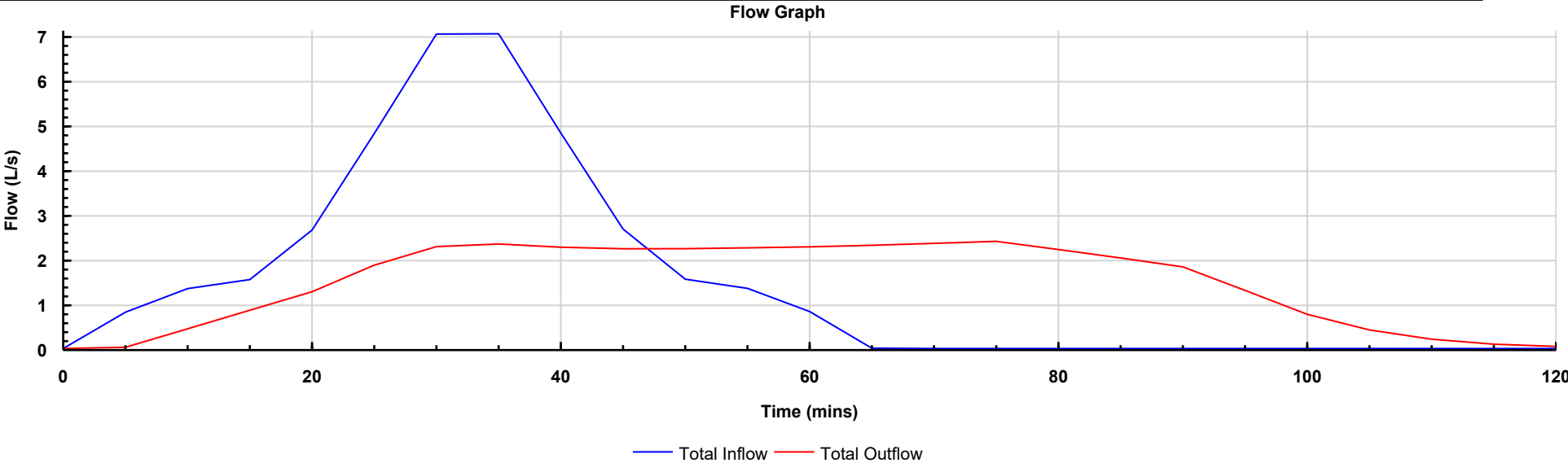


STORM PRIVATE.SWS
Sim Criteria FSR: 30 years: Increase Rainfall (%): +0: 60 mins: Winter

Tables

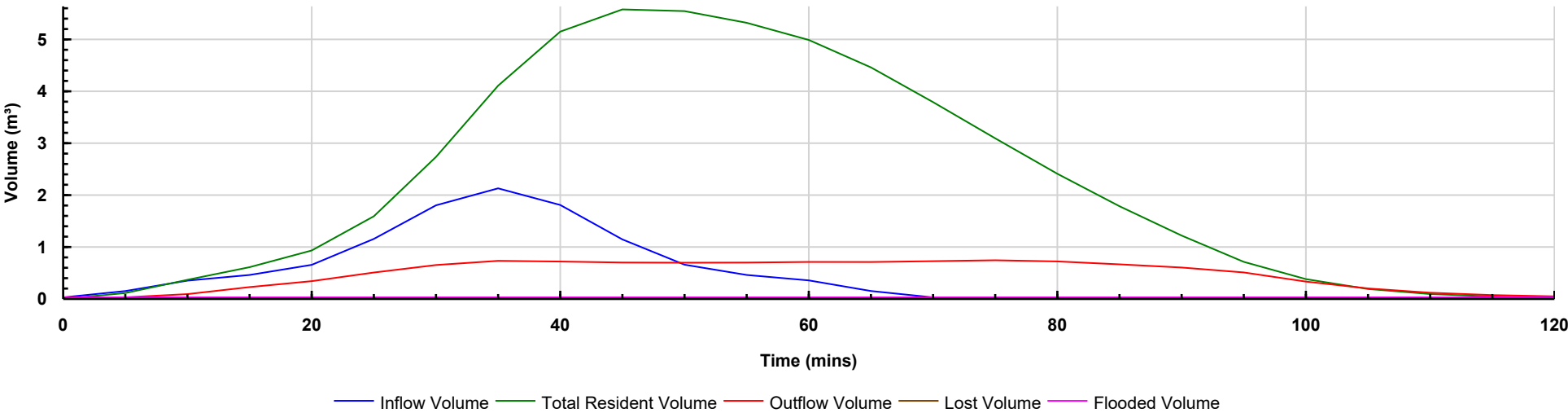
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
4			2.4	10.936
TOTAL	7.1	10.973	2.4	10.936

Graphs



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Volume Graph



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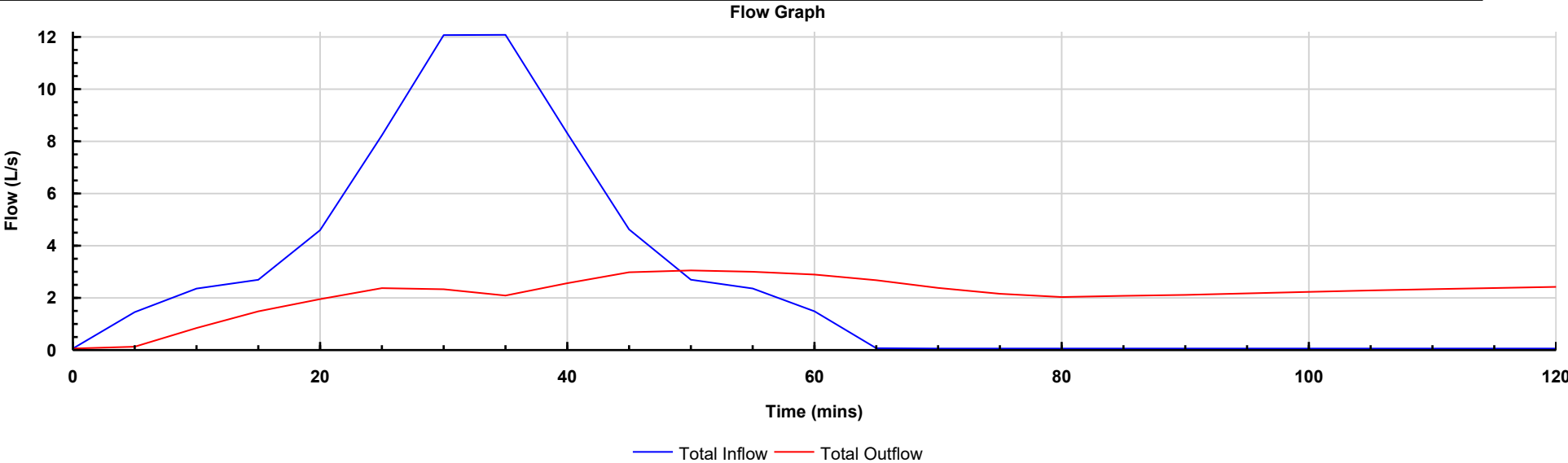


STORM PRIVATE.SWS
Sim Criteria FSR: 100 years: Increase Rainfall (%): +30: 60 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
4			3.0	15.185
TOTAL	12.1	18.764	3.0	15.185

Graphs



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