Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.345	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.014

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	0.005	4	8	0.005	8	12	0.005

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Model Details

Storage is Online Cover Level (m) 8.400

Cellular Storage Structure

Invert Level (m) 7.100 Safety Factor 4.0
Infiltration Coefficient Base (m/hr) 0.03600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.03600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	17.5	17.5	0.801	0.0	17.5
0.800	17.5	17.5			

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 2218 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	7.302	0.202	0.0	3.4	O K
30 min Summer	7.371	0.271	0.0	4.5	O K
60 min Summer	7.446	0.346	0.0	5.7	O K
120 min Summer	7.522	0.422	0.0	7.0	O K
180 min Summer	7.564	0.464	0.0	7.7	O K
240 min Summer	7.592	0.492	0.0	8.2	O K
360 min Summer	7.630	0.530	0.0	8.8	O K
480 min Summer	7.655	0.555	0.0	9.2	O K
600 min Summer	7.672	0.572	0.0	9.5	O K
720 min Summer	7.684	0.584	0.0	9.7	O K
960 min Summer	7.698	0.598	0.0	9.9	O K
1440 min Summer	7.701	0.601	0.0	10.0	O K
2160 min Summer	7.683	0.583	0.0	9.7	O K
2880 min Summer	7.663	0.563	0.0	9.4	O K
4320 min Summer	7.624	0.524	0.0	8.7	O K
5760 min Summer	7.587	0.487	0.0	8.1	O K
7200 min Summer	7.552	0.452	0.0	7.5	O K
8640 min Summer	7.519	0.419	0.0	7.0	O K
10080 min Summer	7.486	0.386	0.0	6.4	O K
15 min Winter	7.326	0.226	0.0	3.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	129.750	0.0	27
30 min Summer	87.385	0.0	41
60 min Summer	56.129	0.0	72
120 min Summer	34.756	0.0	130
180 min Summer	25.838	0.0	190
240 min Summer	20.787	0.0	250
360 min Summer	15.320	0.0	368
480 min Summer	12.316	0.0	488
600 min Summer	10.389	0.0	606
720 min Summer	9.035	0.0	726
960 min Summer	7.242	0.0	964
1440 min Summer	5.291	0.0	1442
2160 min Summer	3.857	0.0	1880
2880 min Summer	3.078	0.0	2248
4320 min Summer	2.236	0.0	3028
5760 min Summer	1.780	0.0	3816
7200 min Summer	1.492	0.0	4624
8640 min Summer	1.293	0.0	5448
10080 min Summer	1.145	0.0	6256
15 min Winter	129.750	0.0	26

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	7.404	0.304	0.0	5.1	O K
60 min Winter	7.488	0.388	0.0	6.5	O K
120 min Winter	7.575	0.475	0.0	7.9	O K
180 min Winter	7.623	0.523	0.0	8.7	O K
240 min Winter	7.655	0.555	0.0	9.2	O K
360 min Winter	7.700	0.600	0.0	10.0	O K
480 min Winter	7.731	0.631	0.0	10.5	O K
600 min Winter	7.752	0.652	0.0	10.8	O K
720 min Winter	7.767	0.667	0.0	11.1	O K
960 min Winter	7.787	0.687	0.0	11.4	O K
1440 min Winter	7.800	0.700	0.0	11.6	O K
2160 min Winter	7.788	0.688	0.0	11.4	O K
2880 min Winter	7.760	0.660	0.0	11.0	O K
4320 min Winter	7.708	0.608	0.0	10.1	O K
5760 min Winter	7.654	0.554	0.0	9.2	O K
7200 min Winter	7.601	0.501	0.0	8.3	O K
8640 min Winter	7.549	0.449	0.0	7.5	O K
10080 min Winter	7.499	0.399	0.0	6.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	87.385	0.0	41
60 min Winter	56.129	0.0	70
120 min Winter	34.756	0.0	128
180 min Winter	25.838	0.0	186
240 min Winter	20.787	0.0	246
360 min Winter	15.320	0.0	362
480 min Winter	12.316	0.0	480
600 min Winter	10.389	0.0	596
720 min Winter	9.035	0.0	714
960 min Winter	7.242	0.0	944
1440 min Winter	5.291	0.0	1400
2160 min Winter	3.857	0.0	2056
2880 min Winter	3.078	0.0	2624
4320 min Winter	2.236	0.0	3284
5760 min Winter	1.780	0.0	4200
7200 min Winter	1.492	0.0	5048
8640 min Winter	1.293	0.0	5896
10080 min Winter	1.145	0.0	6760

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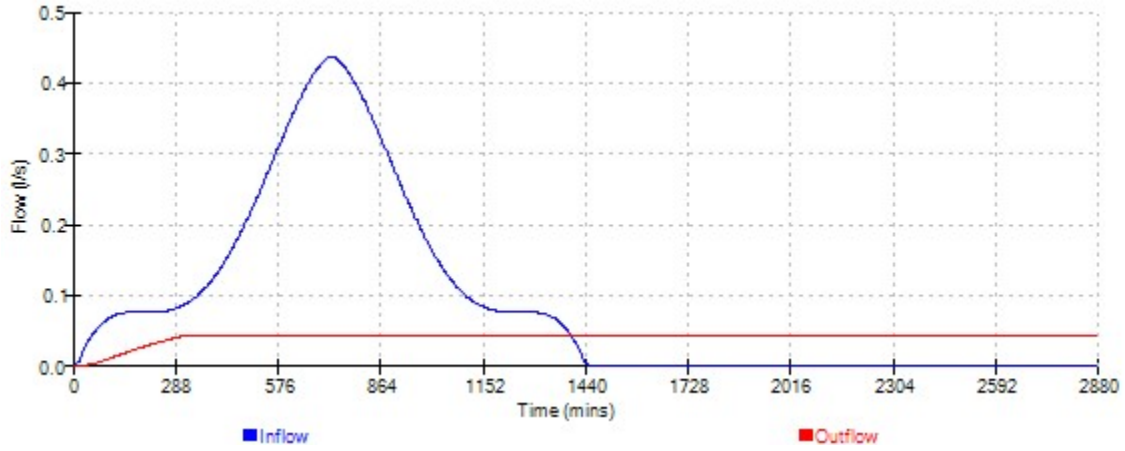
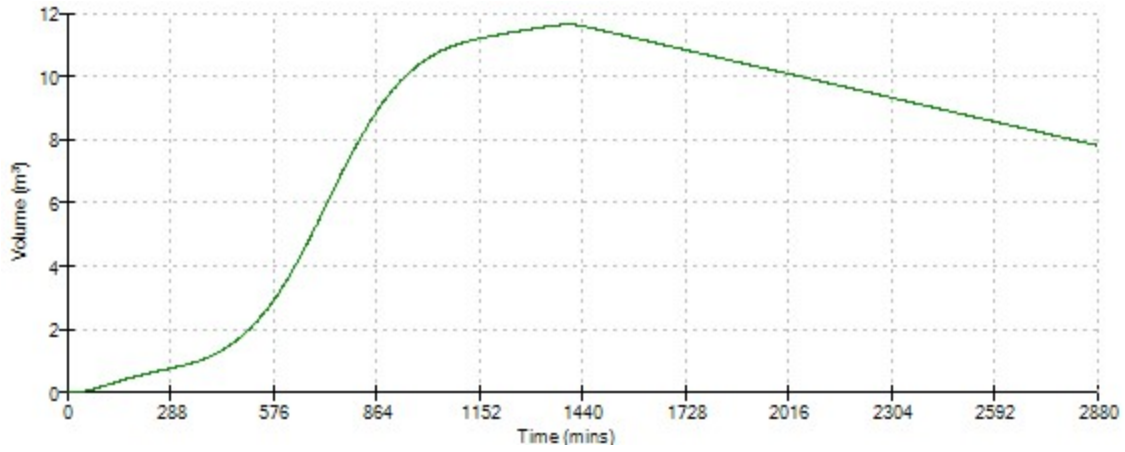
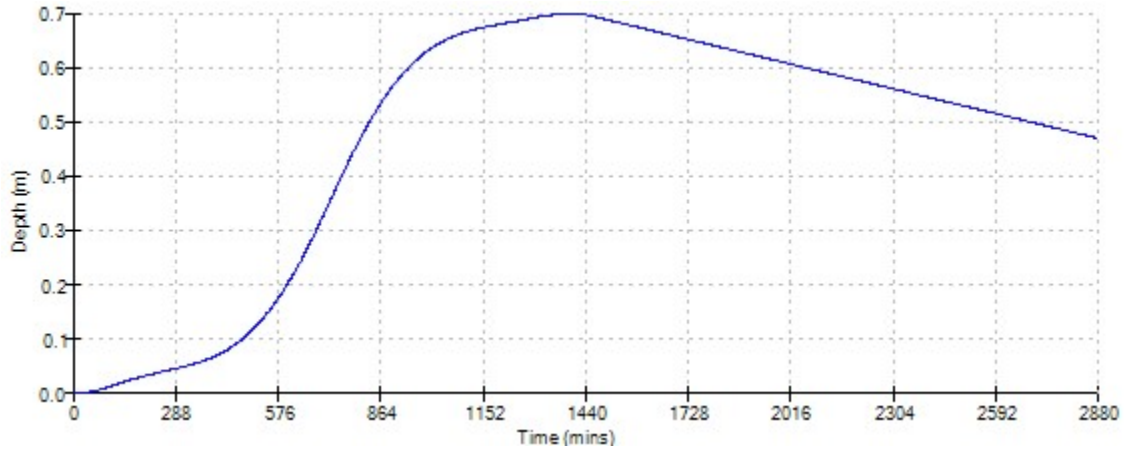
Event: 1440 min Winter







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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.345	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.014

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.005	4	8	0.005	8	12	0.005

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Model Details

Storage is Online Cover Level (m) 8.400

Cellular Storage Structure

Invert Level (m) 7.100 Safety Factor 4.0
Infiltration Coefficient Base (m/hr) 0.03600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.03600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	17.5	17.5	0.801	0.0	17.5
0.800	17.5	17.5			

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Summary of Results for 30 year Return Period (+40%)

Half Drain Time : 1666 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	7.255	0.155	0.0	2.6	O K
30 min Summer	7.306	0.206	0.0	3.4	O K
60 min Summer	7.361	0.261	0.0	4.3	O K
120 min Summer	7.418	0.318	0.0	5.3	O K
180 min Summer	7.450	0.350	0.0	5.8	O K
240 min Summer	7.472	0.372	0.0	6.2	O K
360 min Summer	7.501	0.401	0.0	6.7	O K
480 min Summer	7.519	0.419	0.0	7.0	O K
600 min Summer	7.531	0.431	0.0	7.2	O K
720 min Summer	7.539	0.439	0.0	7.3	O K
960 min Summer	7.547	0.447	0.0	7.4	O K
1440 min Summer	7.545	0.445	0.0	7.4	O K
2160 min Summer	7.533	0.433	0.0	7.2	O K
2880 min Summer	7.519	0.419	0.0	7.0	O K
4320 min Summer	7.489	0.389	0.0	6.5	O K
5760 min Summer	7.458	0.358	0.0	6.0	O K
7200 min Summer	7.428	0.328	0.0	5.5	O K
8640 min Summer	7.399	0.299	0.0	5.0	O K
10080 min Summer	7.372	0.272	0.0	4.5	O K
15 min Winter	7.274	0.174	0.0	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	100.188	0.0	26
30 min Summer	66.831	0.0	41
60 min Summer	42.696	0.0	70
120 min Summer	26.458	0.0	130
180 min Summer	19.758	0.0	190
240 min Summer	15.981	0.0	248
360 min Summer	11.853	0.0	368
480 min Summer	9.576	0.0	486
600 min Summer	8.109	0.0	606
720 min Summer	7.077	0.0	724
960 min Summer	5.704	0.0	962
1440 min Summer	4.204	0.0	1344
2160 min Summer	3.093	0.0	1692
2880 min Summer	2.486	0.0	2076
4320 min Summer	1.825	0.0	2900
5760 min Summer	1.464	0.0	3696
7200 min Summer	1.235	0.0	4536
8640 min Summer	1.075	0.0	5280
10080 min Summer	0.956	0.0	6056
15 min Winter	100.188	0.0	26

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Summary of Results for 30 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	7.332	0.232	0.0	3.9	O K
60 min Winter	7.394	0.294	0.0	4.9	O K
120 min Winter	7.458	0.358	0.0	6.0	O K
180 min Winter	7.495	0.395	0.0	6.6	O K
240 min Winter	7.520	0.420	0.0	7.0	O K
360 min Winter	7.555	0.455	0.0	7.6	O K
480 min Winter	7.578	0.478	0.0	7.9	O K
600 min Winter	7.593	0.493	0.0	8.2	O K
720 min Winter	7.604	0.504	0.0	8.4	O K
960 min Winter	7.617	0.517	0.0	8.6	O K
1440 min Winter	7.622	0.522	0.0	8.7	O K
2160 min Winter	7.606	0.506	0.0	8.4	O K
2880 min Winter	7.587	0.487	0.0	8.1	O K
4320 min Winter	7.542	0.442	0.0	7.4	O K
5760 min Winter	7.494	0.394	0.0	6.6	O K
7200 min Winter	7.447	0.347	0.0	5.8	O K
8640 min Winter	7.402	0.302	0.0	5.0	O K
10080 min Winter	7.359	0.259	0.0	4.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	66.831	0.0	41
60 min Winter	42.696	0.0	70
120 min Winter	26.458	0.0	128
180 min Winter	19.758	0.0	186
240 min Winter	15.981	0.0	244
360 min Winter	11.853	0.0	362
480 min Winter	9.576	0.0	478
600 min Winter	8.109	0.0	594
720 min Winter	7.077	0.0	710
960 min Winter	5.704	0.0	938
1440 min Winter	4.204	0.0	1384
2160 min Winter	3.093	0.0	1972
2880 min Winter	2.486	0.0	2228
4320 min Winter	1.825	0.0	3156
5760 min Winter	1.464	0.0	4040
7200 min Winter	1.235	0.0	4904
8640 min Winter	1.075	0.0	5712
10080 min Winter	0.956	0.0	6464

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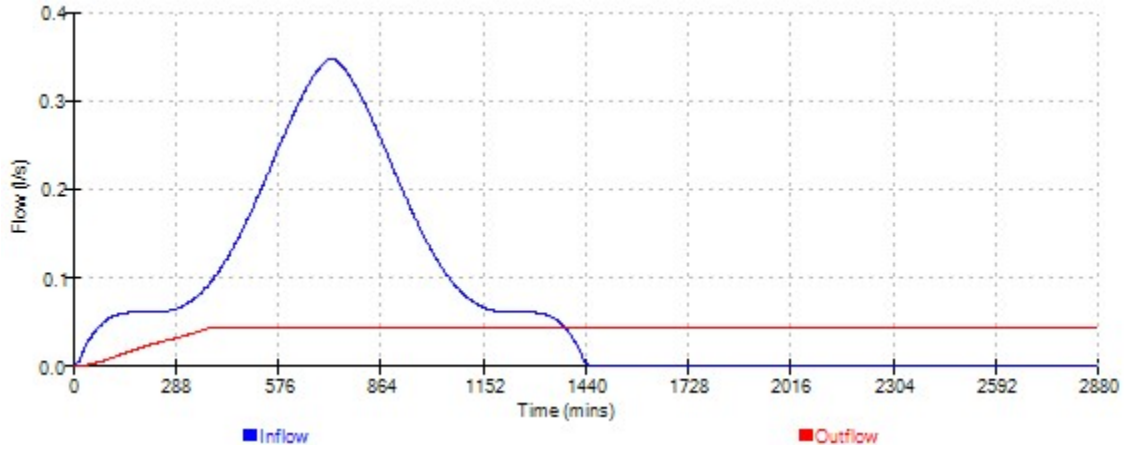
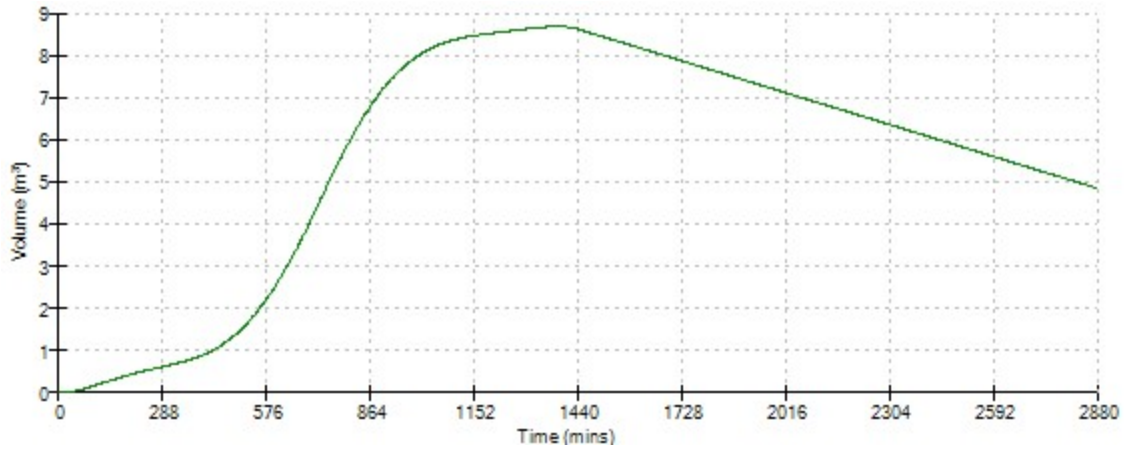
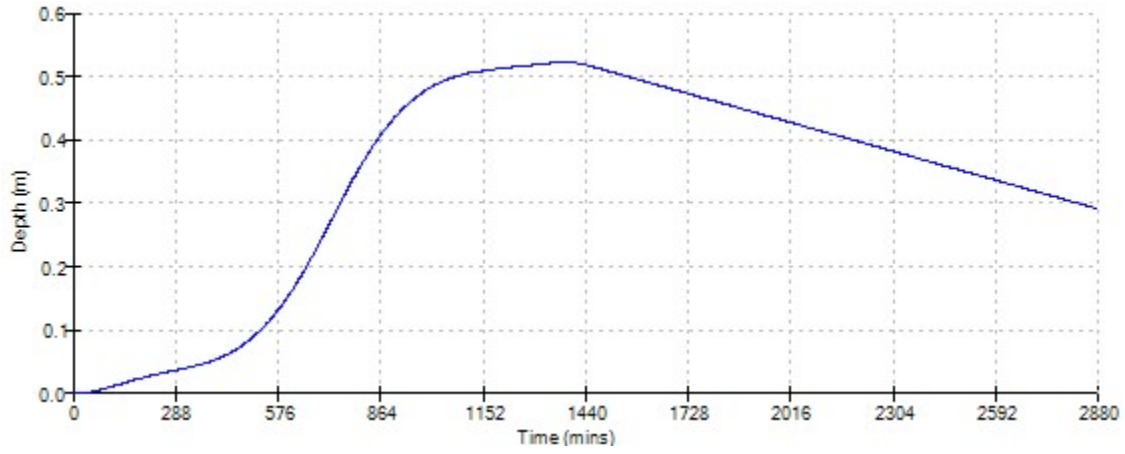
Event: 1440 min Winter







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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Shortest Storm (mins)	15
Ratio R	0.345	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.014

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.005	4	8	0.005	8	12	0.005

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Model Details

Storage is Online Cover Level (m) 8.400

Cellular Storage Structure

Invert Level (m) 7.100 Safety Factor 4.0
Infiltration Coefficient Base (m/hr) 0.03600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.03600

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	17.5	17.5	0.801	0.0	17.5
0.800	17.5	17.5			

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Summary of Results for 10 year Return Period (+40%)

Half Drain Time : 1258 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	7.222	0.122	0.0	2.0	O K
30 min Summer	7.261	0.161	0.0	2.7	O K
60 min Summer	7.302	0.202	0.0	3.4	O K
120 min Summer	7.345	0.245	0.0	4.1	O K
180 min Summer	7.370	0.270	0.0	4.5	O K
240 min Summer	7.387	0.287	0.0	4.8	O K
360 min Summer	7.409	0.309	0.0	5.1	O K
480 min Summer	7.423	0.323	0.0	5.4	O K
600 min Summer	7.431	0.331	0.0	5.5	O K
720 min Summer	7.436	0.336	0.0	5.6	O K
960 min Summer	7.440	0.340	0.0	5.6	O K
1440 min Summer	7.438	0.338	0.0	5.6	O K
2160 min Summer	7.430	0.330	0.0	5.5	O K
2880 min Summer	7.419	0.319	0.0	5.3	O K
4320 min Summer	7.393	0.293	0.0	4.9	O K
5760 min Summer	7.366	0.266	0.0	4.4	O K
7200 min Summer	7.340	0.240	0.0	4.0	O K
8640 min Summer	7.315	0.215	0.0	3.6	O K
10080 min Summer	7.291	0.191	0.0	3.2	O K
15 min Winter	7.237	0.137	0.0	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	79.132	0.0	26
30 min Summer	52.325	0.0	41
60 min Summer	33.265	0.0	70
120 min Summer	20.627	0.0	130
180 min Summer	15.467	0.0	188
240 min Summer	12.572	0.0	248
360 min Summer	9.379	0.0	366
480 min Summer	7.611	0.0	484
600 min Summer	6.469	0.0	604
720 min Summer	5.663	0.0	722
960 min Summer	4.588	0.0	954
1440 min Summer	3.408	0.0	1180
2160 min Summer	2.529	0.0	1560
2880 min Summer	2.046	0.0	1968
4320 min Summer	1.516	0.0	2808
5760 min Summer	1.226	0.0	3624
7200 min Summer	1.039	0.0	4400
8640 min Summer	0.908	0.0	5184
10080 min Summer	0.811	0.0	5944
15 min Winter	79.132	0.0	26

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Summary of Results for 10 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	7.281	0.181	0.0	3.0	O K
60 min Winter	7.327	0.227	0.0	3.8	O K
120 min Winter	7.376	0.276	0.0	4.6	O K
180 min Winter	7.405	0.305	0.0	5.1	O K
240 min Winter	7.425	0.325	0.0	5.4	O K
360 min Winter	7.452	0.352	0.0	5.8	O K
480 min Winter	7.469	0.369	0.0	6.1	O K
600 min Winter	7.480	0.380	0.0	6.3	O K
720 min Winter	7.488	0.388	0.0	6.4	O K
960 min Winter	7.495	0.395	0.0	6.6	O K
1440 min Winter	7.495	0.395	0.0	6.6	O K
2160 min Winter	7.482	0.382	0.0	6.3	O K
2880 min Winter	7.465	0.365	0.0	6.1	O K
4320 min Winter	7.424	0.324	0.0	5.4	O K
5760 min Winter	7.381	0.281	0.0	4.7	O K
7200 min Winter	7.339	0.239	0.0	4.0	O K
8640 min Winter	7.300	0.200	0.0	3.3	O K
10080 min Winter	7.264	0.164	0.0	2.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	52.325	0.0	40
60 min Winter	33.265	0.0	70
120 min Winter	20.627	0.0	128
180 min Winter	15.467	0.0	186
240 min Winter	12.572	0.0	244
360 min Winter	9.379	0.0	360
480 min Winter	7.611	0.0	476
600 min Winter	6.469	0.0	590
720 min Winter	5.663	0.0	704
960 min Winter	4.588	0.0	928
1440 min Winter	3.408	0.0	1352
2160 min Winter	2.529	0.0	1688
2880 min Winter	2.046	0.0	2144
4320 min Winter	1.516	0.0	3036
5760 min Winter	1.226	0.0	3920
7200 min Winter	1.039	0.0	4752
8640 min Winter	0.908	0.0	5528
10080 min Winter	0.811	0.0	6256

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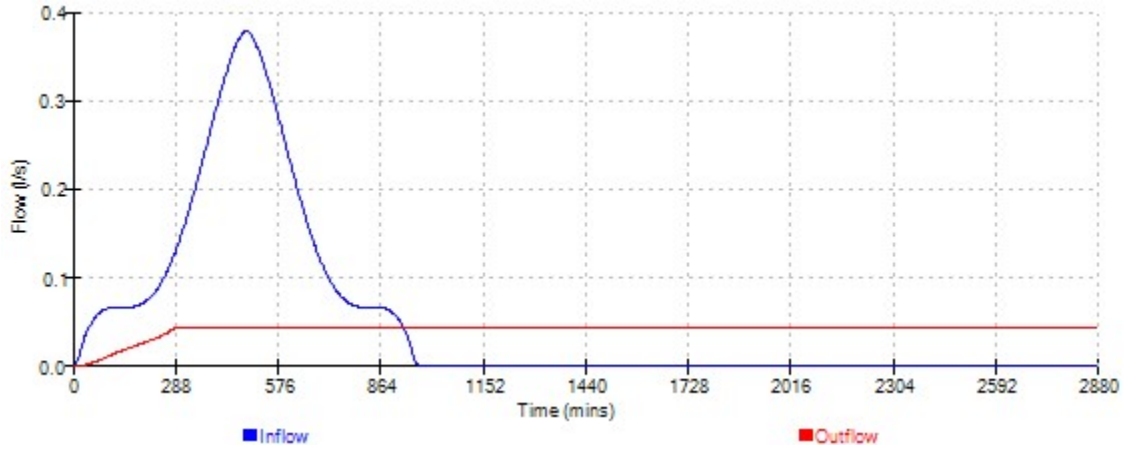
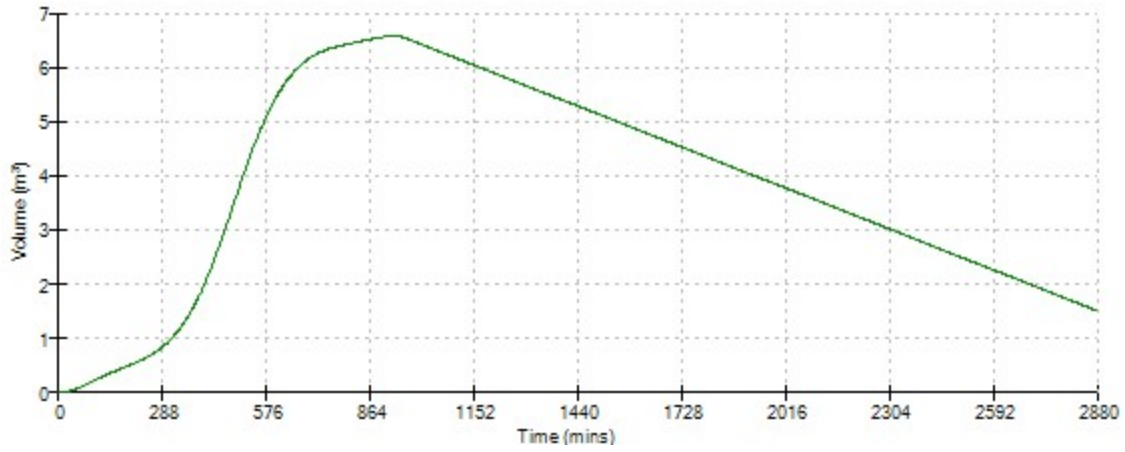
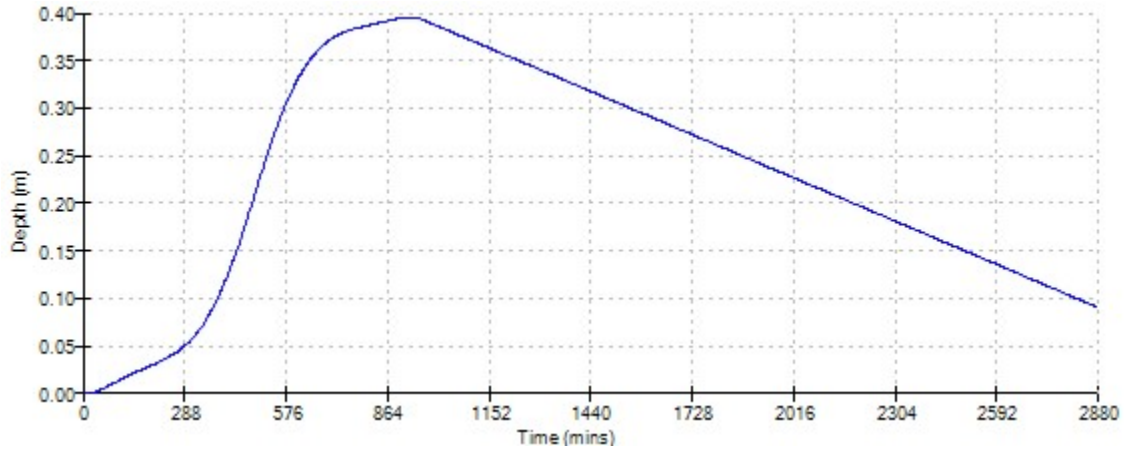
Event: 960 min Winter







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