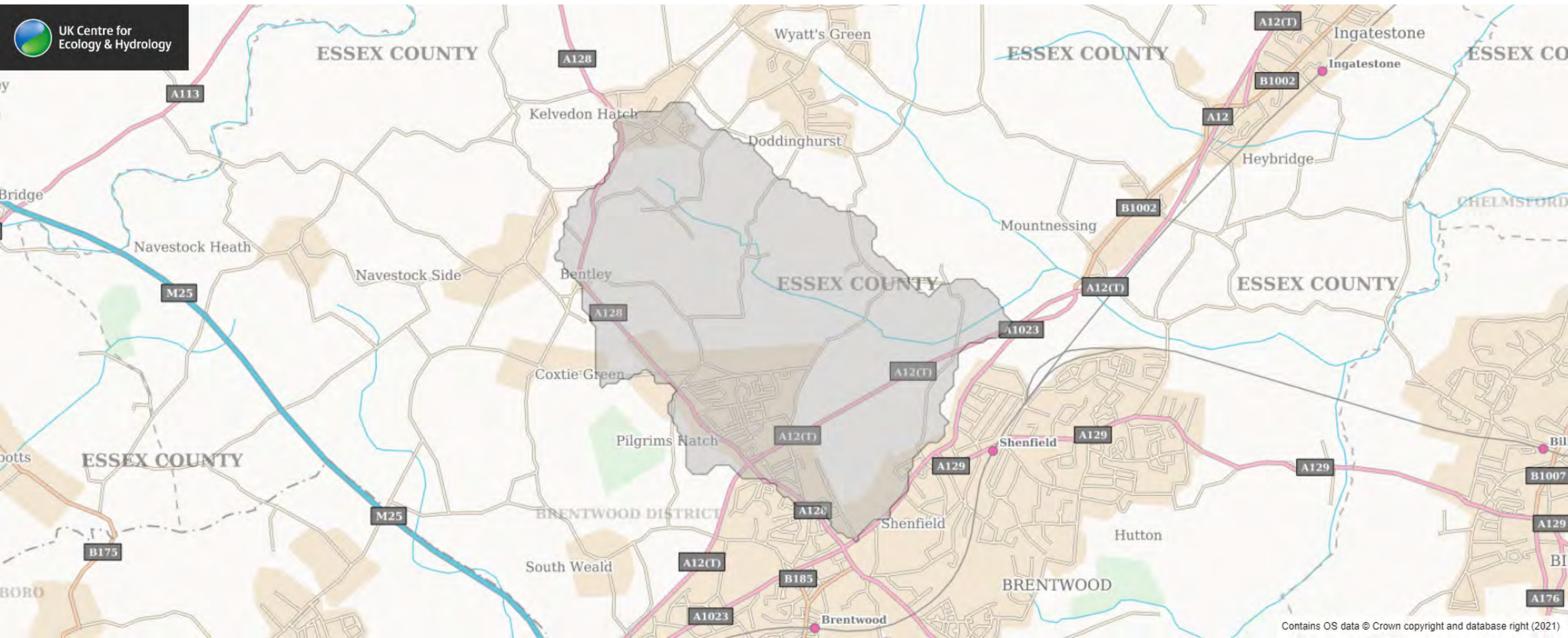

APPENDIX A: HYDROLOGICAL ASSESSMENT







AM Data Catchment Descriptors

	Station	Distance (SDM)	Years of data	QMED AM	L-CV Observed	L-CV Deurbanised	L-SKEW Observed	L-SKEW Deurbanised	Discordancy
1	27073 (Brompton Beck @ Snain	1.035	41	0.820	0.212	0.213	0.006	0.005	1.640
2	27051 (Crimple @ Burn Bridge)	1.363	49	4.564	0.217	0.218	0.143	0.142	0.802
3	26016 (Gypsey Race @ Kirby G	1.573	24	0.103	0.304	0.304	0.240	0.240	0.068
4	25019 (Leven @ Easby)	1.671	43	5.677	0.334	0.335	0.373	0.372	0.529
5	76011 (Coal Burn @ Coalburn)	1.782	44	1.840	0.168	0.168	0.302	0.302	1.348
6	36010 (Bumpstead Brook @ Bro	1.857	54	7.545	0.372	0.374	0.168	0.167	1.166
7	26014 (Water Forlomes @ Driffield	2.056	23	0.437	0.315	0.316	0.164	0.163	0.653
8	27010 (Hodge Beck @ Bransda	2.119	41	9.420	0.224	0.224	0.293	0.293	0.473
9	45816 (Haddeo @ Upton)	2.159	28	3.352	0.293	0.294	0.424	0.423	1.143
10	44008 (South Winterbourne @ V	2.208	30	0.496	0.421	0.422	0.289	0.289	2.143
11	39033 (Winterbourne Stream @	2.309	59	0.403	0.338	0.338	0.375	0.375	1.411
12	36004 (Chad Brook @ Long Mel	2.332	54	4.873	0.301	0.302	0.170	0.169	1.015
13	33054 (Babingley @ Castle Risir	2.337	45	1.136	0.229	0.229	0.183	0.182	0.610
14									
15	Rejected Stations								
16	49005 (Bolingey Stream @ Bolin	2.147	11	5.777	0.262	0.263	0.207	0.206	
17	7011 (Black Burn @ Pluscarden	2.249	9	5.205	0.491	0.491	0.521	0.521	
18									
19									

At-site data

Urbanisation

Growth Curve

QMED

Results

Growth Curve fittings - urban

Standardisation details

Standardised by median

Growth Curve L-moments

L-CV 0.224

L-skewness 0.314

Fitted parameters

	Location	Scale	Shape	H
GL	1.000	0.213	-0.314	
GEV	0.890	0.288	-0.212	
KAP3	0.943	0.246	-0.269	-0.400

Return periods

	GL	GEV	KAP3
2	1.000	1.000	1.000
5	1.370	1.399	1.381
10	1.673	1.721	1.694
20	2.030	2.082	2.056
25	2.160	2.209	2.185
30	2.272	2.317	2.296
50	2.621	2.640	2.637
75	2.939	2.921	2.941
100	3.189	3.136	3.177

AM Data Catchment Descriptors

	Station	Distance (SDM)	Years of data	QMED AM	L-CV Observed	L-CV Deurbanised	L-SKEW Observed	L-SKEW Deurbanised	Discordancy
1	76011 (Coal Burn @ Coalburn)	1.966	44	1.840	0.168	0.168	0.302	0.302	1.020
2	27073 (Brompton Beck @ Snain)	2.252	41	0.820	0.212	0.213	0.006	0.005	1.572
3	27051 (Crimple @ Burn Bridge)	2.426	49	4.564	0.217	0.218	0.143	0.142	0.381
4	26016 (Gypsey Race @ Kirby Gr	2.805	24	0.103	0.304	0.304	0.240	0.240	0.296
5	25019 (Leven @ Easby)	2.843	43	5.677	0.334	0.335	0.373	0.372	0.694
6	45816 (Haddeo @ Upton)	2.880	28	3.352	0.293	0.294	0.424	0.423	0.990
7	36010 (Bumpstead Brook @ Bro	3.161	54	7.545	0.372	0.374	0.168	0.167	1.641
8	49005 (Bolingey Stream @ Bolin	3.166	11	5.777	0.262	0.263	0.207	0.206	2.881
9	28033 (Dove @ Hollinsclough)	3.182	46	4.138	0.223	0.223	0.379	0.379	0.946
10	27010 (Hodge Beck @ Bransda	3.199	41	9.420	0.224	0.224	0.293	0.293	0.317
11	44008 (South Winterbourne @ v	3.281	30	0.496	0.421	0.422	0.289	0.289	1.651
12	26014 (Water Forlones @ Driffie	3.332	23	0.437	0.315	0.316	0.164	0.163	0.341
13	41020 (Bevern Stream @ Clappe	3.544	52	13.780	0.201	0.203	0.166	0.164	0.795
14	47022 (Tory Brook @ Newnham	3.562	26	6.649	0.250	0.252	0.149	0.146	0.474
15									
16	Rejected Stations								
17	7011 (Black Burn @ Pluscarden	3.488	9	5.205	0.491	0.491	0.521	0.521	
18									
19									

Growth Curve fittings - urban

Standardisation details

Standardised by median

Growth Curve L-moments

L-CV 0.230

L-skewness 0.284

Fitted parameters

	Location	Scale	Shape	H
GL	1.000	0.224	-0.284	
GEV	0.882	0.311	-0.170	
KAP3	0.940	0.262	-0.233	-0.400

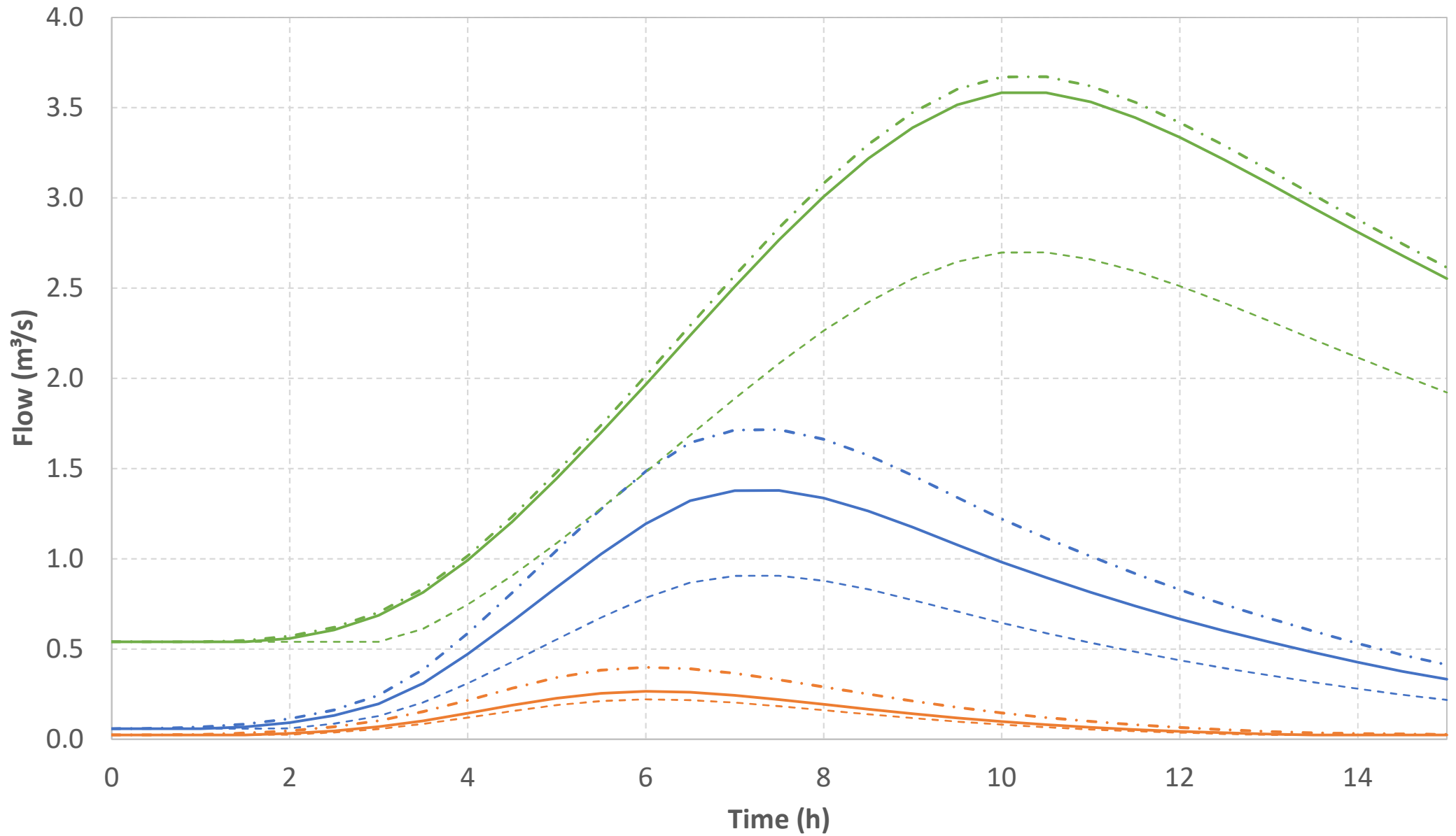
Return periods

	GL	GEV	KAP3
2	1.000	1.000	1.000
5	1.381	1.413	1.394
10	1.683	1.734	1.706
20	2.031	2.083	2.057
25	2.156	2.203	2.181
30	2.264	2.304	2.287
50	2.593	2.603	2.605
75	2.889	2.858	2.885
100	3.119	3.049	3.100

AM Data Catchment Descriptors									
	Station	Distance (SDM)	Years of data	QMED AM	L-CV Observed	L-CV Deurbanised	L-SKEW Observed	L-SKEW Deurbanised	Discordancy
1	36010 (Bumpstead Brook @ Bro	0.605	54	7.545	0.372	0.374	0.168	0.167	0.759
2	27073 (Brompton Beck @ Snain	0.630	41	0.820	0.212	0.213	0.006	0.005	1.304
3	26016 (Gypsey Race @ Kirby Gi	0.667	24	0.103	0.304	0.304	0.240	0.240	0.107
4	26014 (Water Forlomes @ Driffie	0.887	23	0.437	0.315	0.316	0.164	0.163	0.945
5	25019 (Leven @ Easby)	0.919	43	5.677	0.334	0.335	0.373	0.372	1.488
6	27051 (Crimple @ Burn Bridge)	1.060	49	4.564	0.217	0.218	0.143	0.142	1.188
7	36004 (Chad Brook @ Long Mel	1.078	54	4.873	0.301	0.302	0.170	0.169	0.657
8	39033 (Winterbourne Stream @	1.108	59	0.403	0.338	0.338	0.375	0.375	1.376
9	33054 (Babingley @ Castle Risir	1.109	45	1.136	0.229	0.229	0.183	0.182	1.063
10	36003 (Box @ Polstead)	1.185	61	3.900	0.311	0.313	0.082	0.080	0.783
11	36007 (Belchamp Brook @ Bard	1.210	56	4.635	0.373	0.374	0.101	0.100	1.331
12									
13	Rejected Stations								
14	7011 (Black Burn @ Pluscarden	1.169	8	5.205	0.491	0.491	0.521	0.521	
15	26013 (Driffild Trout Stream @	1.185	11	2.700	0.281	0.282	0.196	0.195	
16									
17									

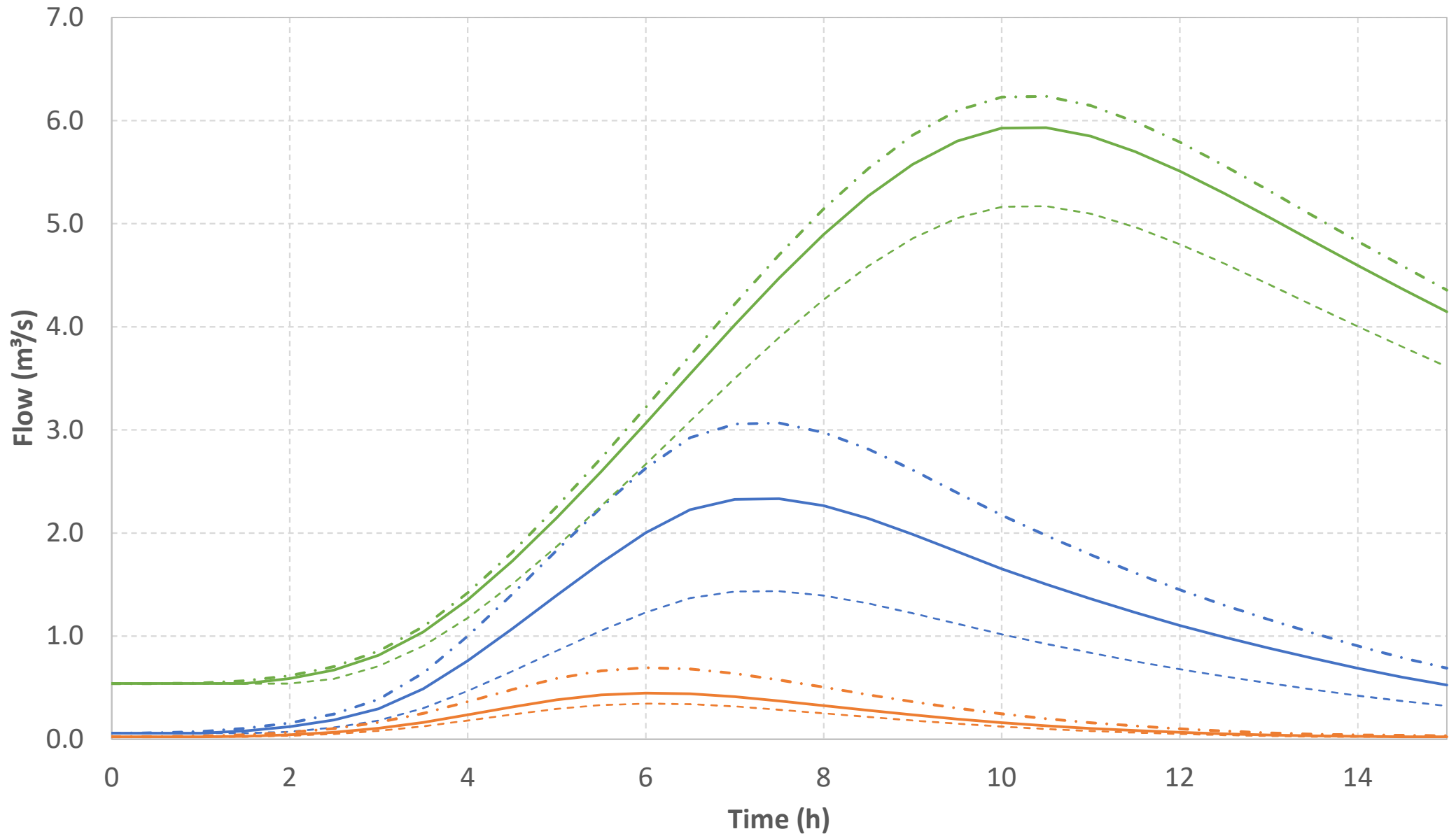
Growth Curve fittings - urban				
Standardisation details				
Standardised by median				
Growth Curve L-moments				
L-CV	0.288	L-skewness	0.194	
Fitted parameters				
	Location	Scale	Shape	H
GL	1.000	0.298	-0.194	
GEV	0.836	0.445	-0.037	
KAP3	0.917	0.362	-0.122	-0.400
Return periods				
	GL	GEV	KAP3	
2	1.000	1.000	1.000	
5	1.473	1.522	1.495	
10	1.815	1.880	1.846	
20	2.181	2.233	2.210	
25	2.306	2.347	2.332	
30	2.413	2.440	2.433	
50	2.728	2.703	2.728	
75	2.999	2.915	2.973	
100	3.204	3.067	3.155	

50.0% AEP (1 in 2 Year)



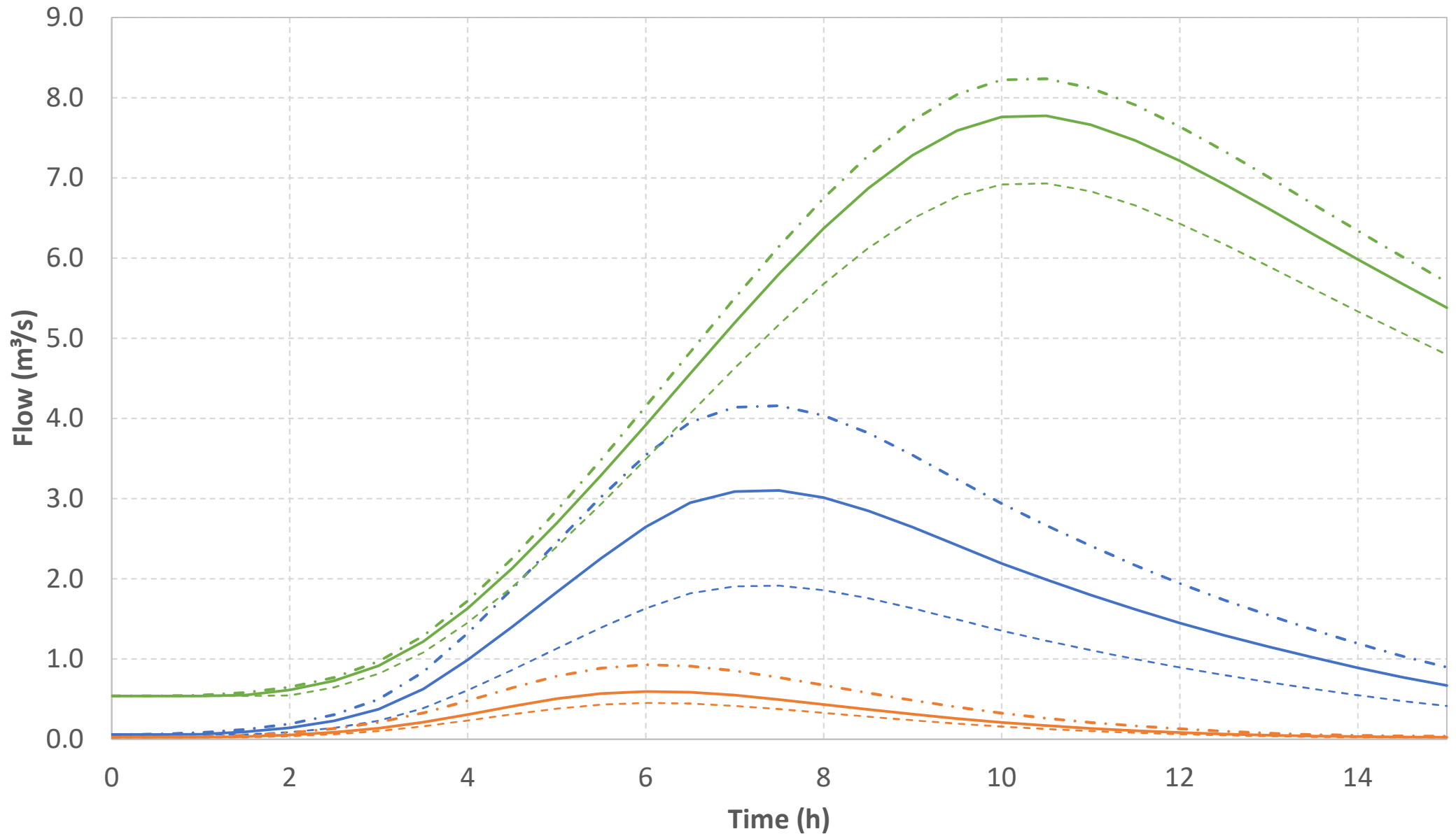
- | | | |
|---|------------------------------|----------------------------------|
| FEH Statistical (Shenfield Watercourse) | ReFH (Shenfield Watercourse) | EA Model (Shenfield Watercourse) |
| FEH Statistical (Small Tributary) | ReFH (Small Tributary) | EA Model (Small Tributary) |
| FEH Statistical (River Wid) | ReFH (River Wid) | EA Model (River Wid) |

10.0% AEP (1 in 10 Year)



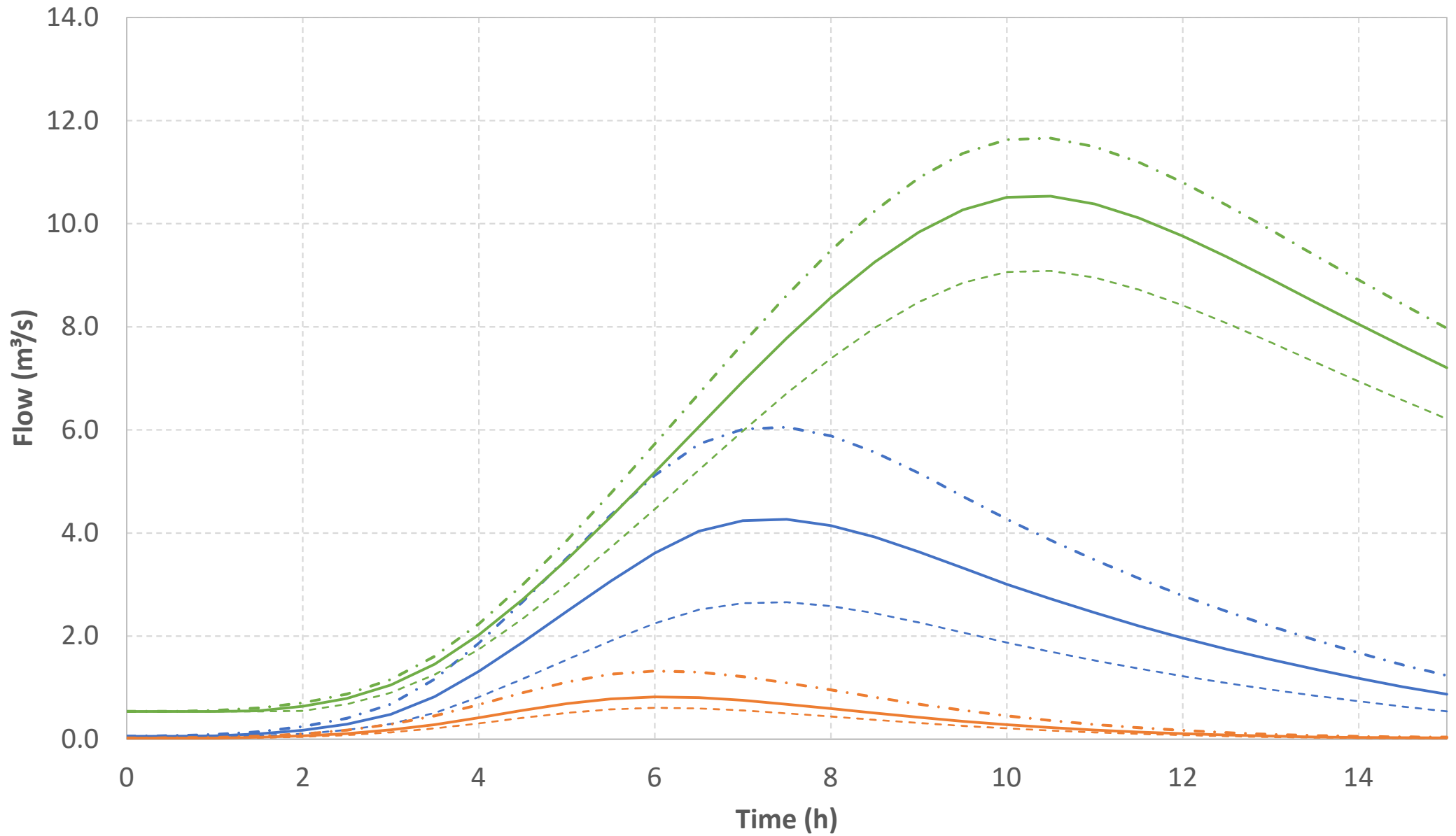
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| FEH Statistical (Shenfield Watercourse) | ReFH (Shenfield Watercourse) | EA Model (Shenfield Watercourse) |
| FEH Statistical (Small Tributary) | ReFH (Small Tributary) | EA Model (Small Tributary) |
| FEH Statistical (River Wid) | ReFH (River Wid) | EA Model (River Wid) |

3.3% AEP (1 in 30 Year)



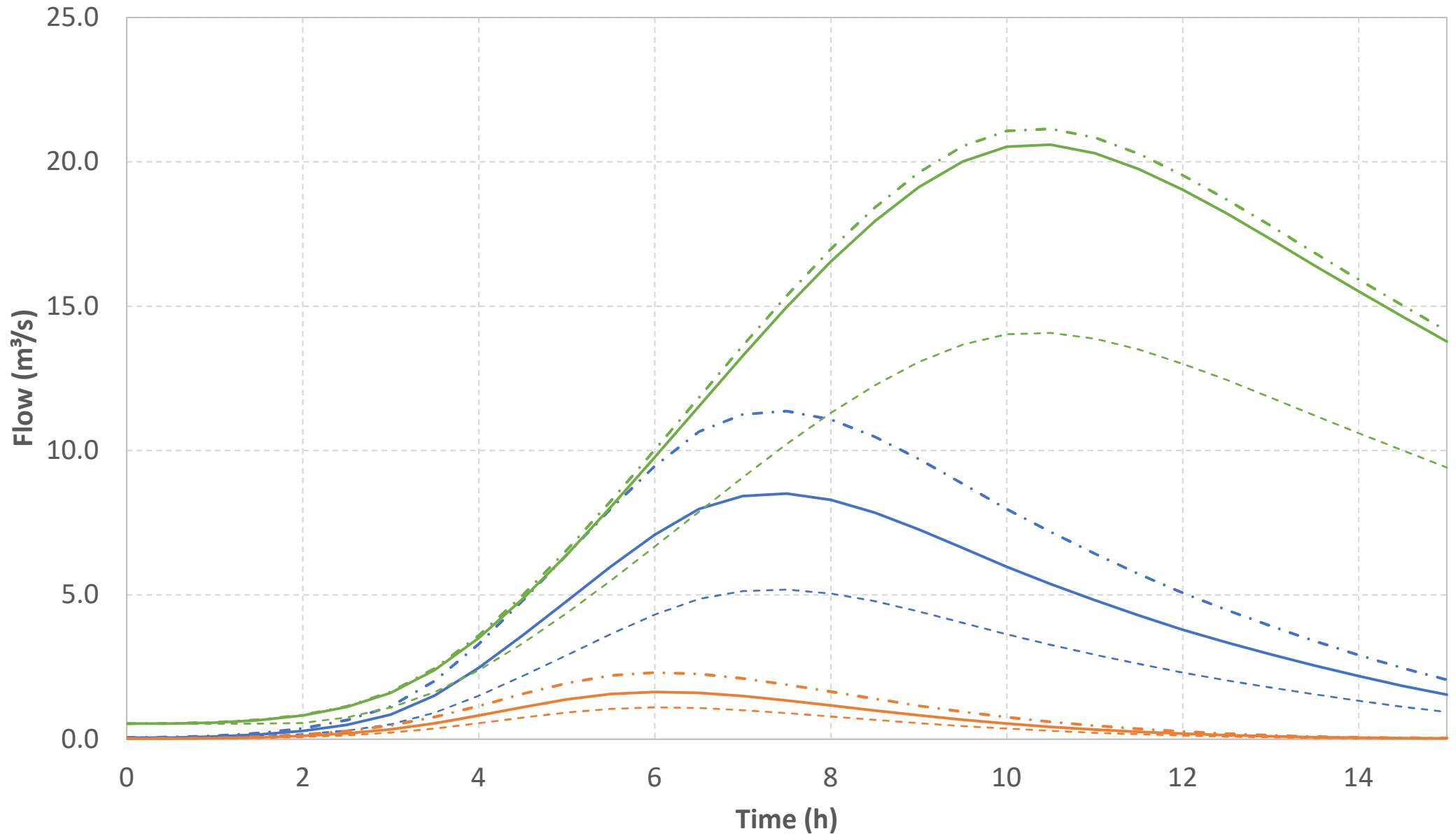
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|---|------------------------------|----------------------------------|
| FEH Statistical (Shenfield Watercourse) | ReFH (Shenfield Watercourse) | EA Model (Shenfield Watercourse) |
| FEH Statistical (Small Tributary) | ReFH (Small Tributary) | EA Model (Small Tributary) |
| FEH Statistical (River Wid) | ReFH (River Wid) | EA Model (River Wid) |

1.0% AEP (1 in 100 Year)



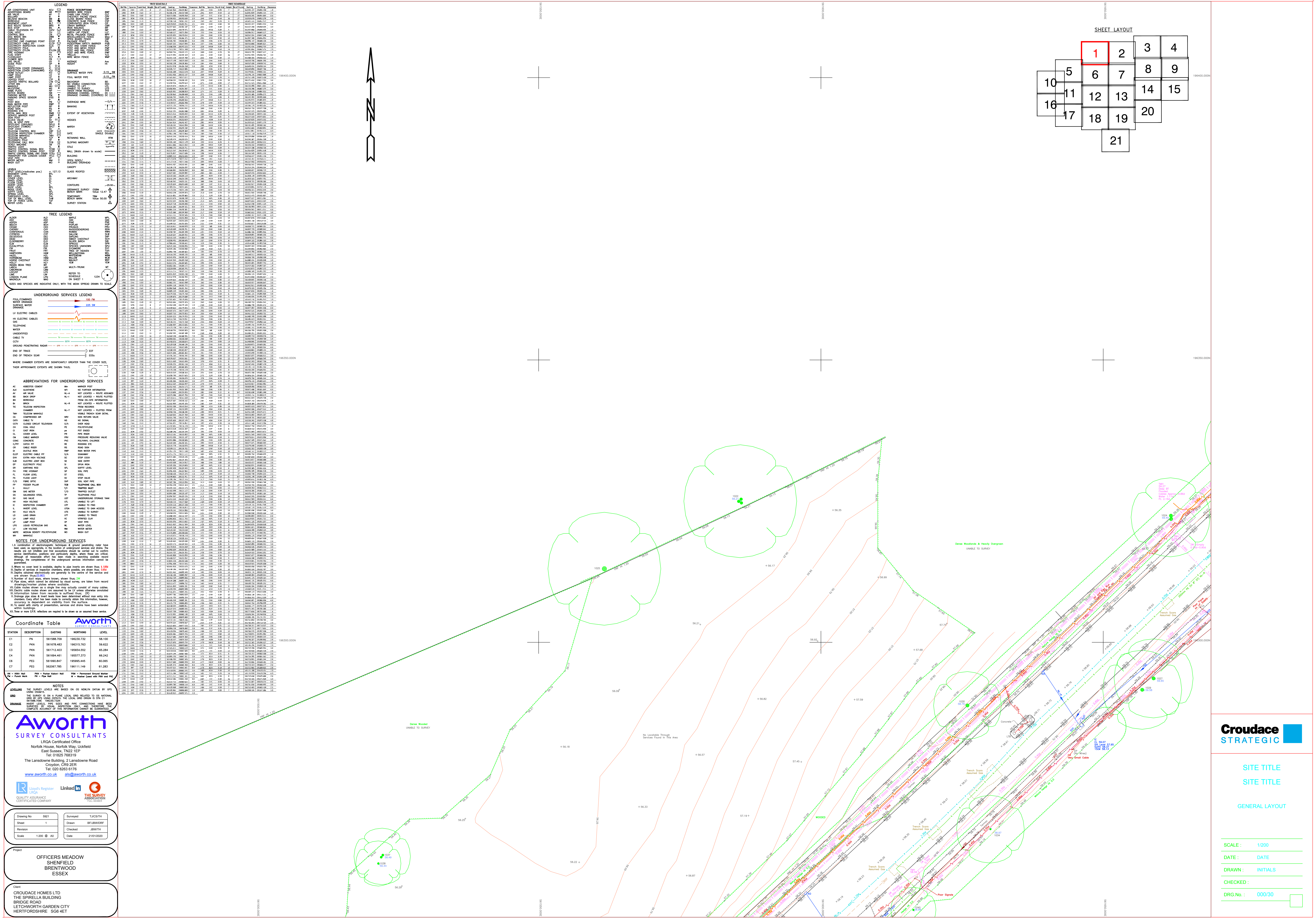
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|---|------------------------------|----------------------------------|
| FEH Statistical (Shenfield Watercourse) | ReFH (Shenfield Watercourse) | EA Model (Shenfield Watercourse) |
| FEH Statistical (Small Tributary) | ReFH (Small Tributary) | EA Model (Small Tributary) |
| FEH Statistical (River Wid) | ReFH (River Wid) | EA Model (River Wid) |

0.1% AEP (1 in 1000 Year)

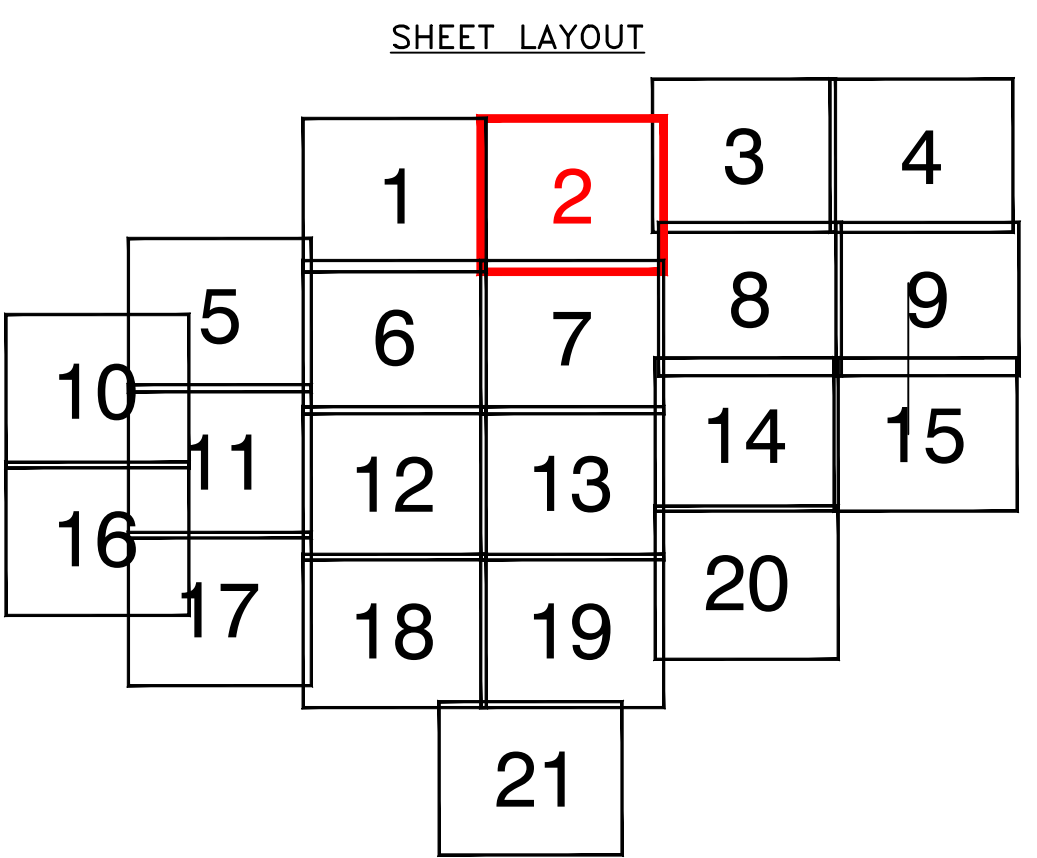


- | | | |
|---|------------------------------|----------------------------------|
| FEH Statistical (Shenfield Watercourse) | ReFH (Shenfield Watercourse) | EA Model (Shenfield Watercourse) |
| FEH Statistical (Small Tributary) | ReFH (Small Tributary) | EA Model (Small Tributary) |
| FEH Statistical (River Wid) | ReFH (River Wid) | EA Model (River Wid) |

APPENDIX B: SOURCES OF INFORMATION



Client
CROUDACE HOMES LTD
THE SPIRELLA BUILDING
BRIDGE ROAD
LETCWORTH GARDEN CITY
HERTFORDSHIRE SG6 4ET



Project

OFFICERS MEADOW
SHENFIELD
BRENTWOOD
ESSEX

Client

CROUDACE HOMES LTD
THE SPIRELLA BUILDING
BRIDGE ROAD
LETCHWORTH GARDEN CITY
HERTFORDSHIRE SG6 4ET

