

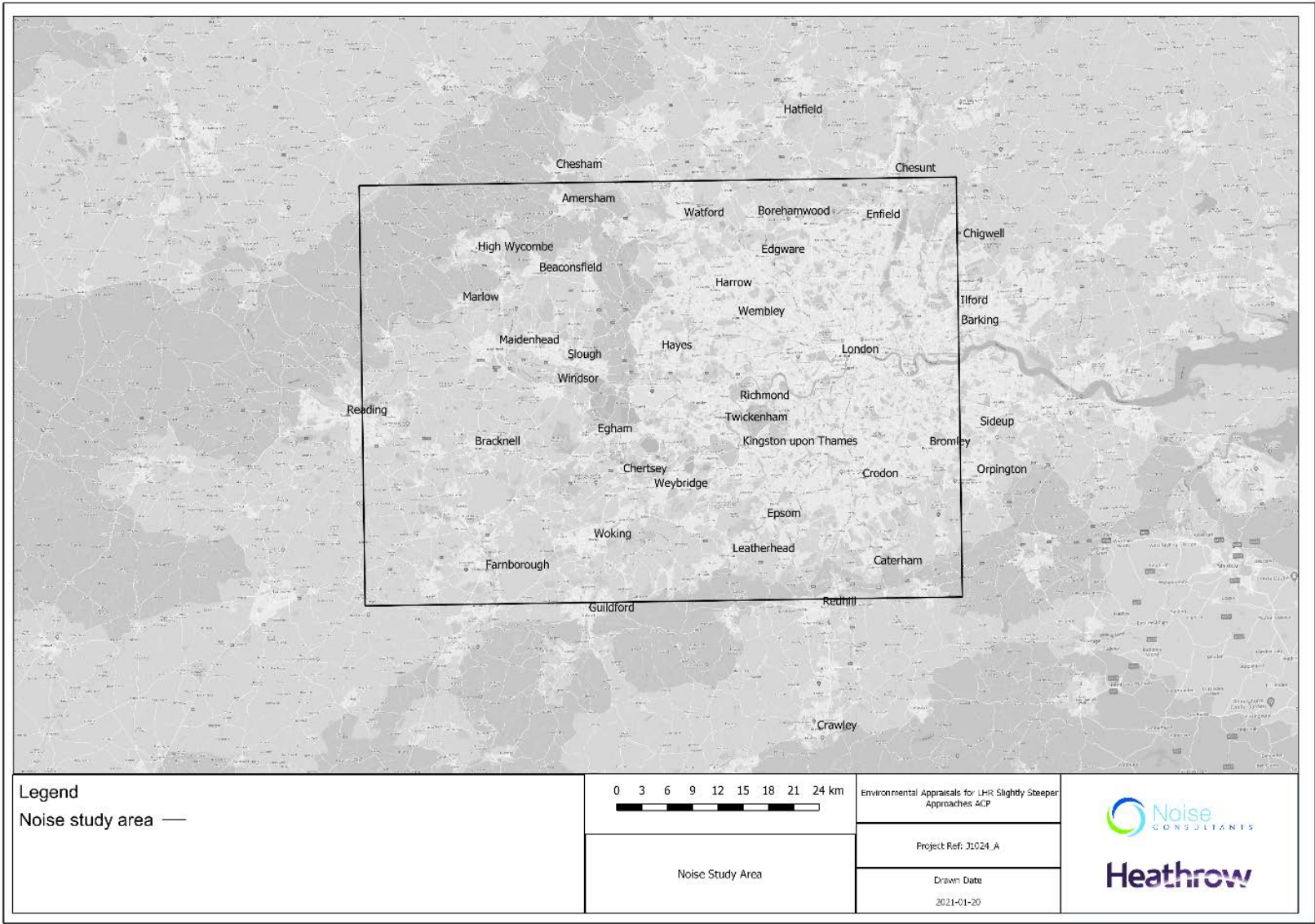
***SLIGHTLY STEEPER APPROACHES
FULL OPTIONS APPRAISAL***

APPENDIX A – NOISE CONTOURS AND DATA



Noise Information

All noise information presented in this Appendix has been computed for the Study Area presented below.



Quick Data Navigation

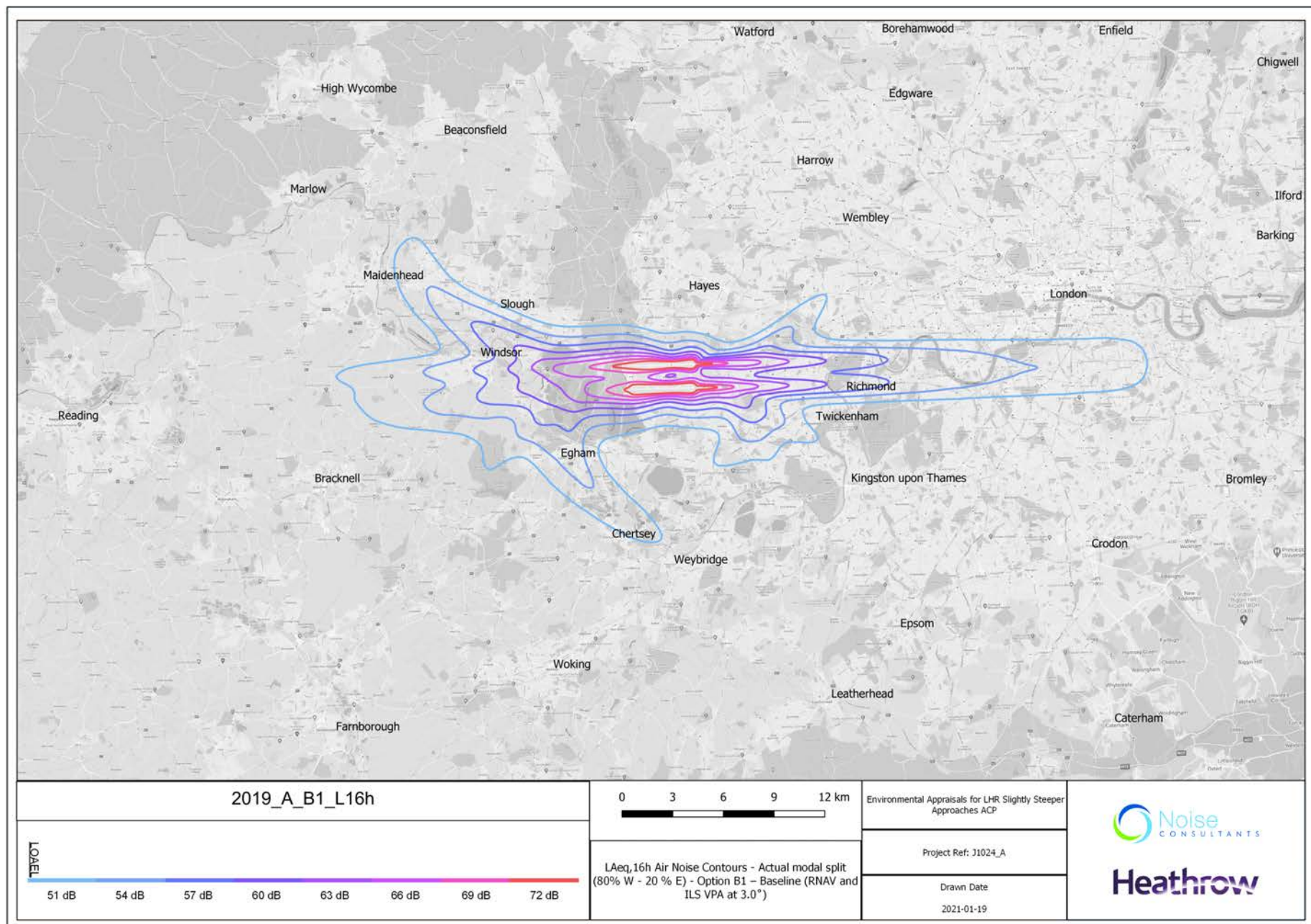
Click on the links below to navigate to specific noise exposure information.

Scenario	Contours	Data Tables
<u>Representative RNAV Usage</u> <u>80% West 20% East</u>	<u>51dB LAeq, 16 hours (day) contours</u>	<u>51dB LAeq, 16 hours (day)</u>
	<u>45 dB LAeq, 8 hours (night)</u>	<u>45 dB LAeq, 8 hours</u>
	<u>N65 (day)</u>	<u>N65</u>
	<u>N60 (night)</u>	<u>N60</u>
		<u>Points of Interest – Education</u>
		<u>Points of Interest - Healthcare</u>
		<u>Points of Interest – Places of worship</u>
<u>100% Easterly Operations</u>	<u>51dB LAeq, 16 hours (day) contours</u>	<u>51dB LAeq, 16 hours (day)</u>
	<u>45 dB LAeq, 8 hours (night)</u>	<u>45 dB LAeq, 8 hours</u>
	<u>N65 (day)</u>	<u>N65</u>
	<u>N60 (night)</u>	<u>N60</u>
		<u>Points of Interest – Education</u>
		<u>Points of Interest - Healthcare</u>
		<u>Points of Interest – Places of worship</u>
<u>100% Westerly Operations</u>	<u>51dB LAeq, 16 hours (day) contours</u>	<u>51dB LAeq, 16 hours (day)</u>
	<u>45 dB LAeq, 8 hours (night)</u>	<u>45 dB LAeq, 8 hours</u>
	<u>N65 (day)</u>	<u>N65</u>
	<u>N60 (night)</u>	<u>N60</u>
		<u>Points of Interest – Education</u>
		<u>Points of Interest - Healthcare</u>
		<u>Points of Interest – Places of worship</u>
<u>WebTAG Assessments</u>		

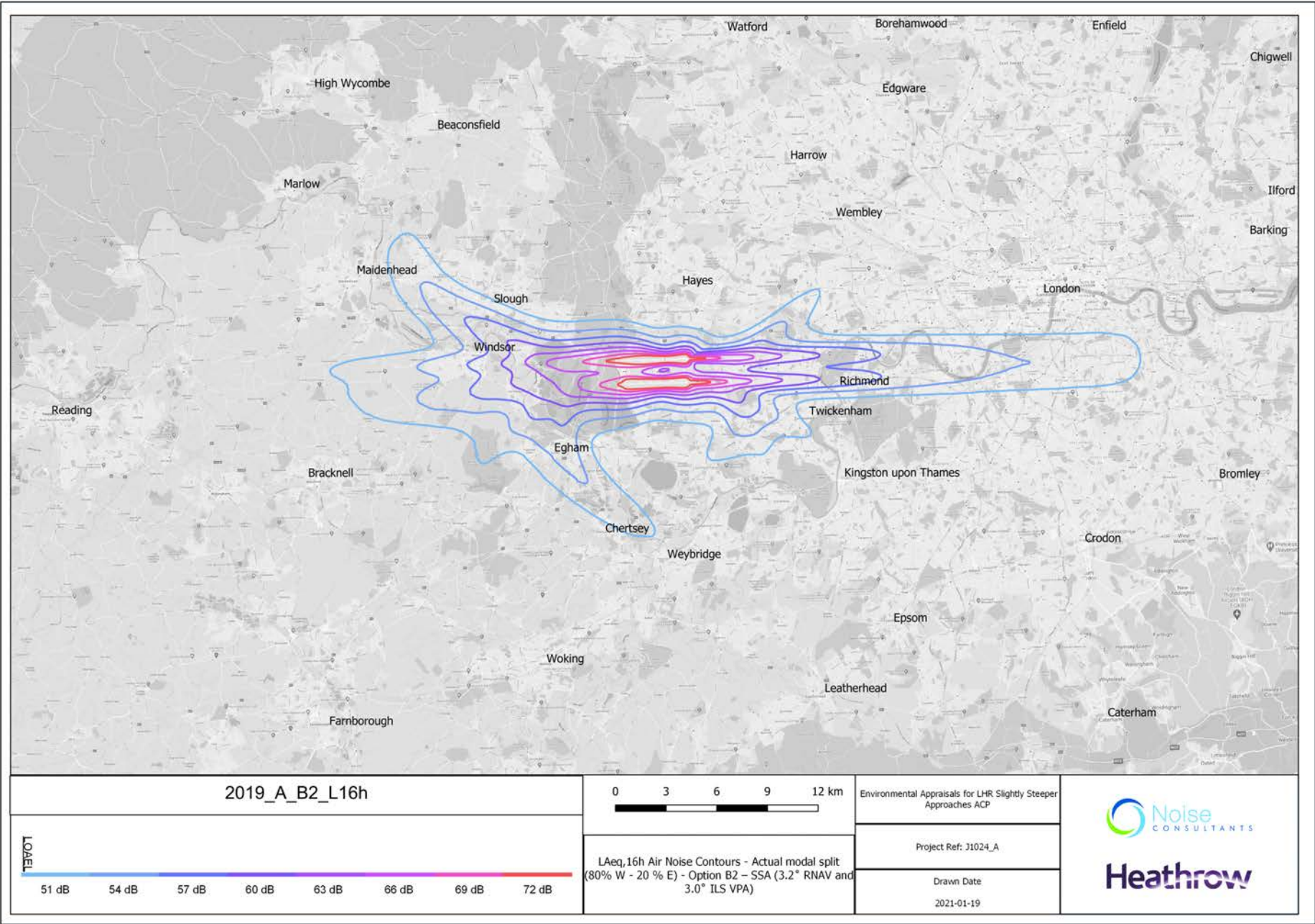
Representative Modal Split
80% West 20% East

Representative Modal Split
80% West 20% East
51dB LAeq, 16 hours (day)

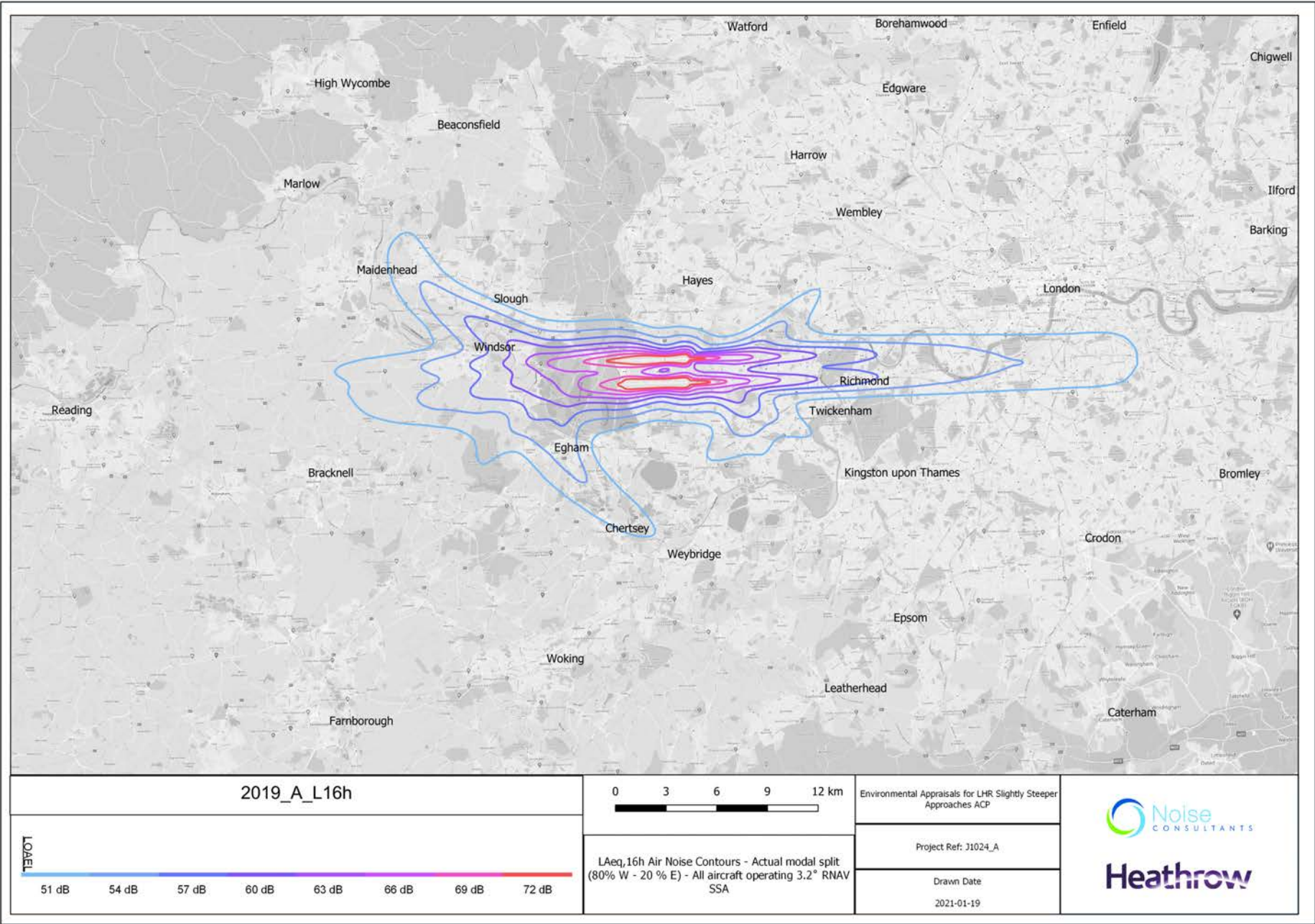
51dB LAeq, 16 hours (day) contours – Option B1 (Baseline) - 2019



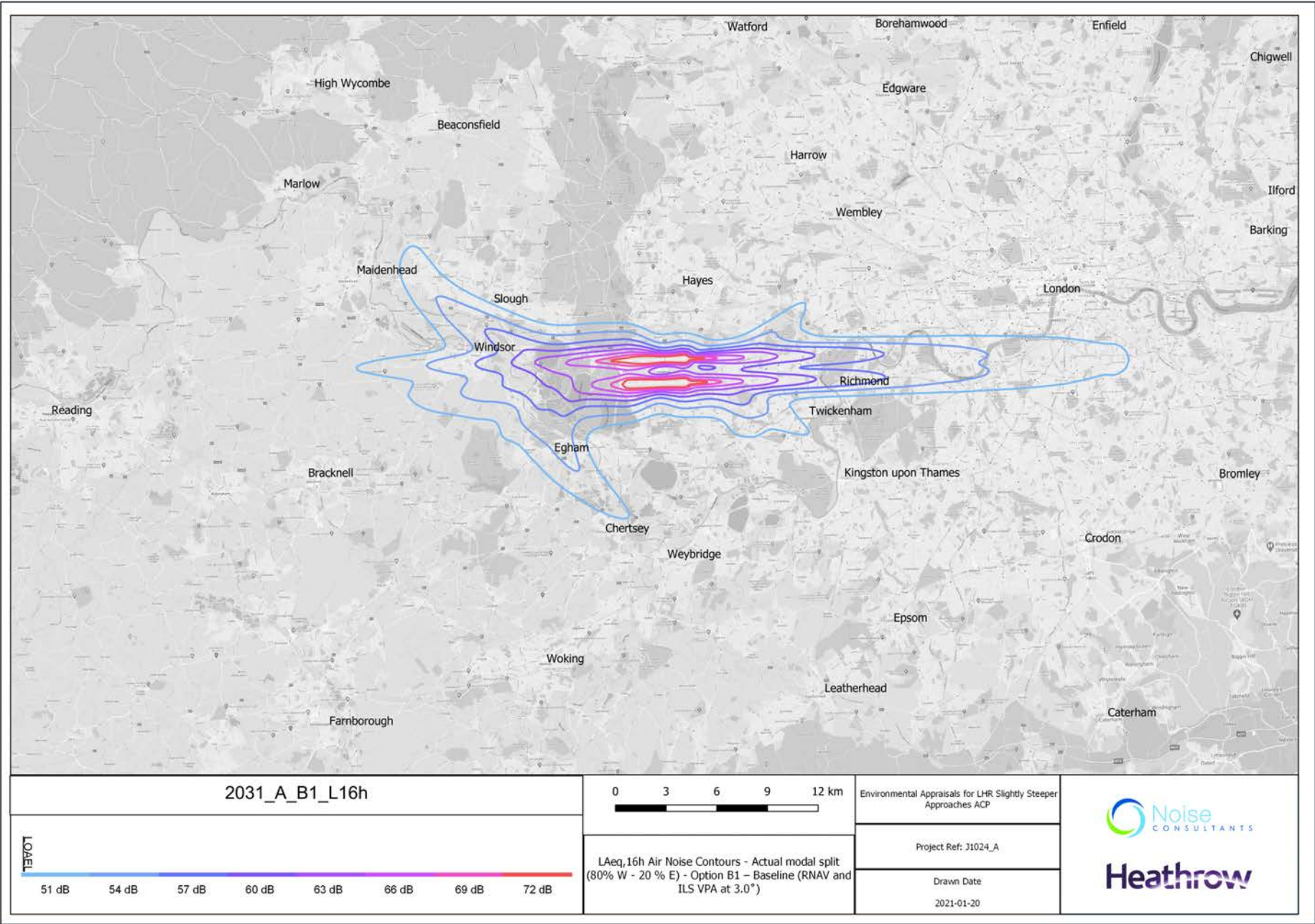
51dB LAeq, 16 hours (day) contours – Option B2 (SSA) - 2019



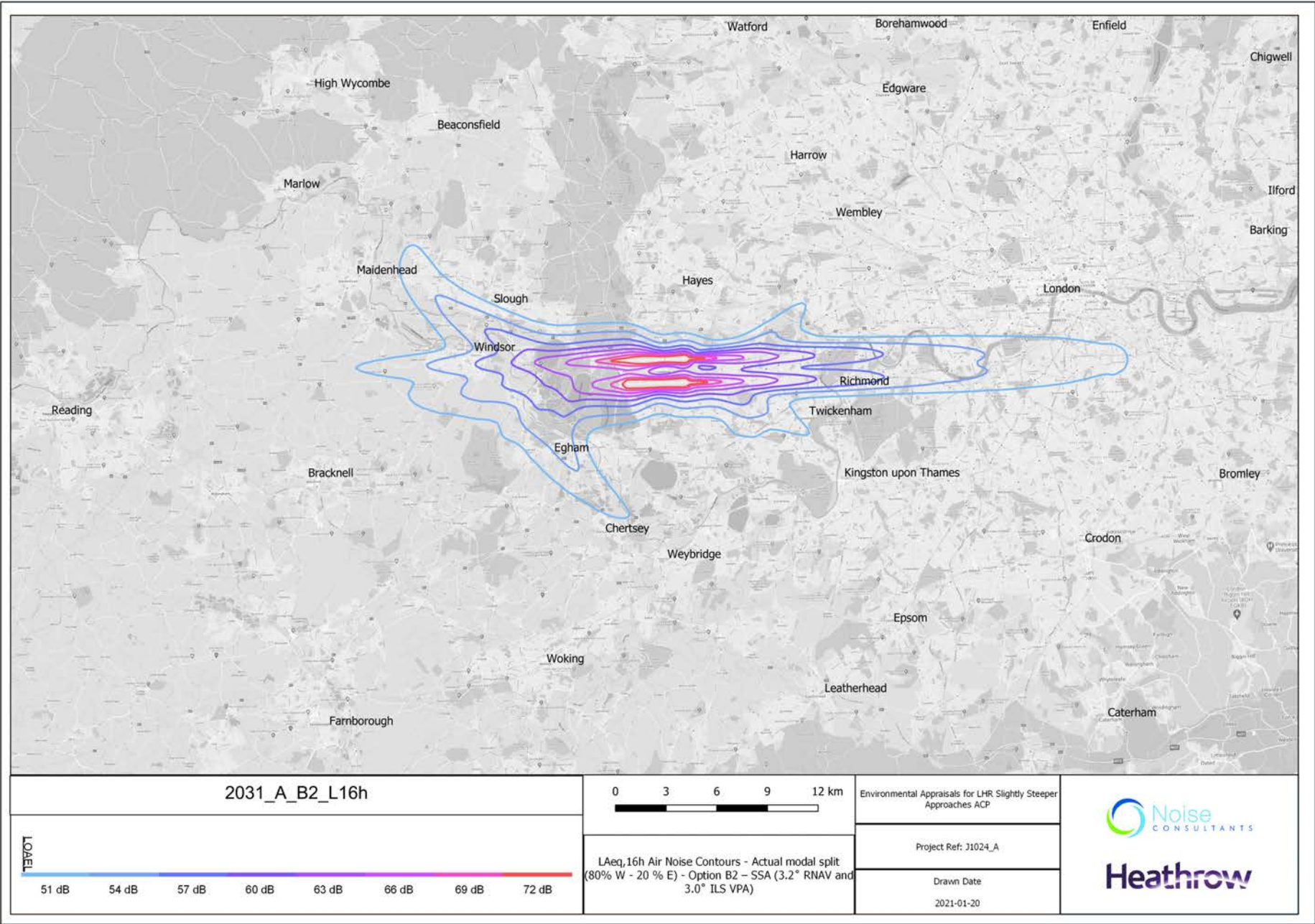
51dB LAeq, 16 hours (day) contours – All aircraft operating SSA - 2019



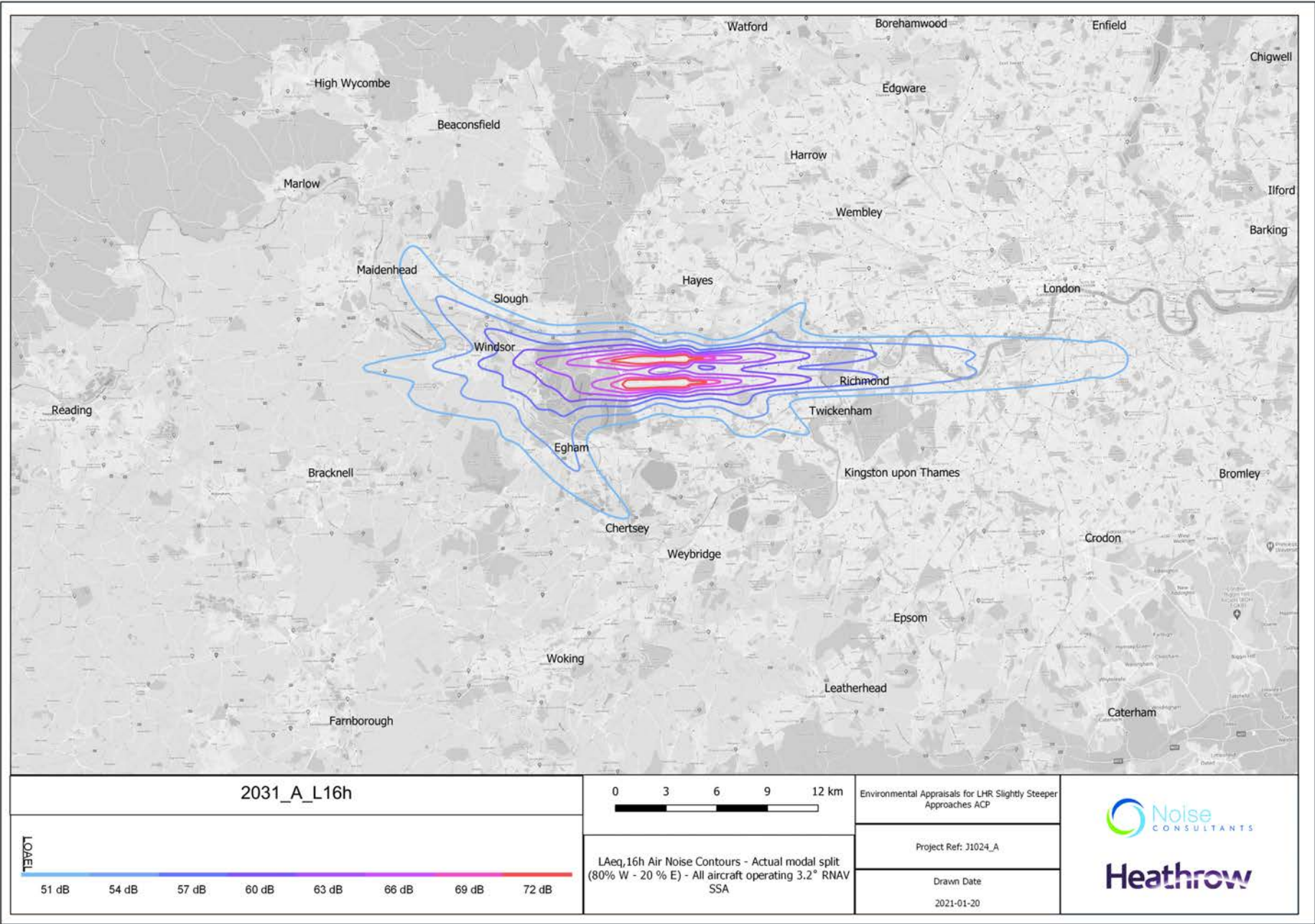
51dB LAeq, 16 hours (day) contours – Option B1 (Baseline) - 2031



51dB LAeq, 16 hours (day) contours – Option B2 (SSA) - 2031

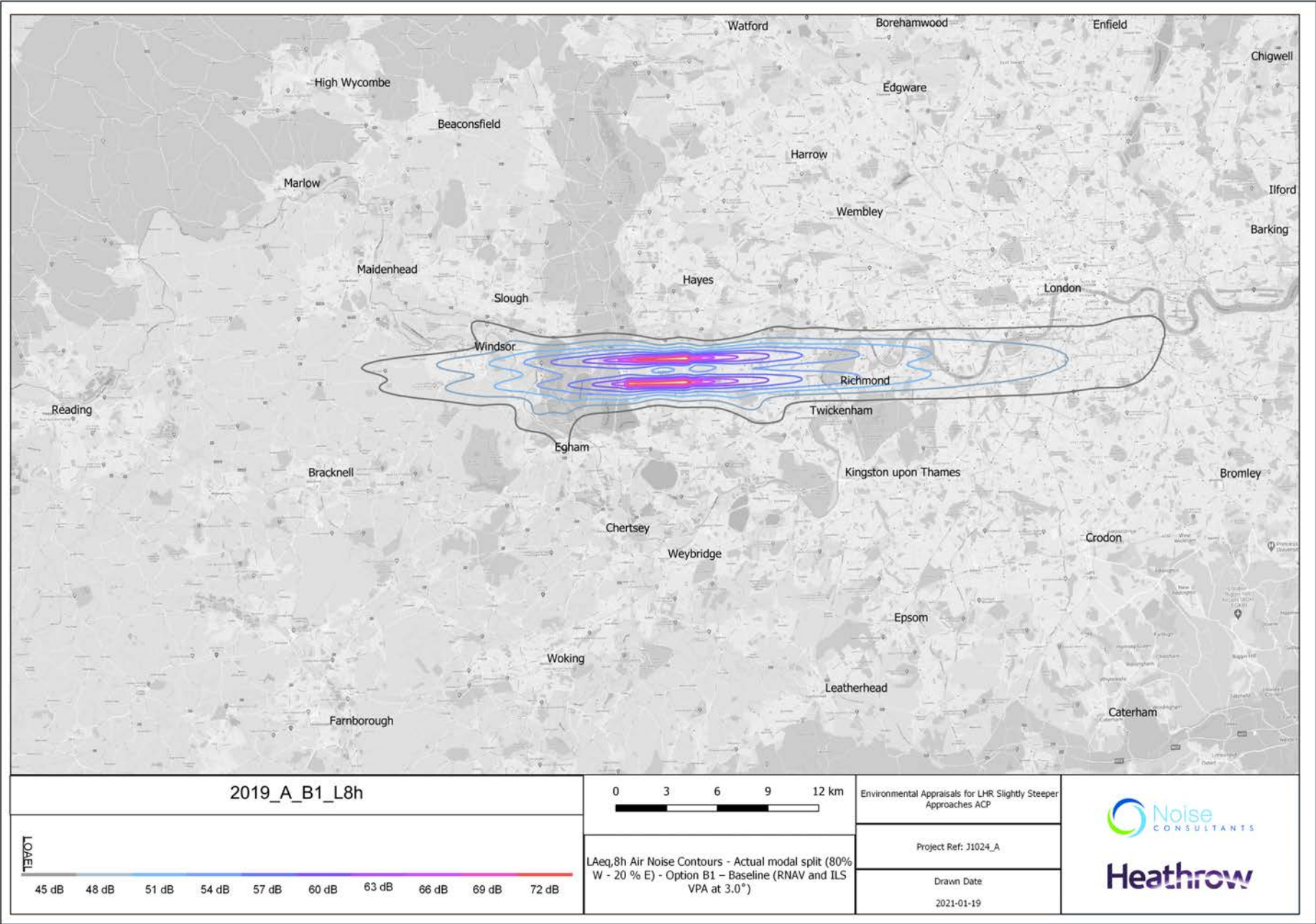


51dB LAeq, 16 hours (day) contours – All aircraft operating SSA - 2031

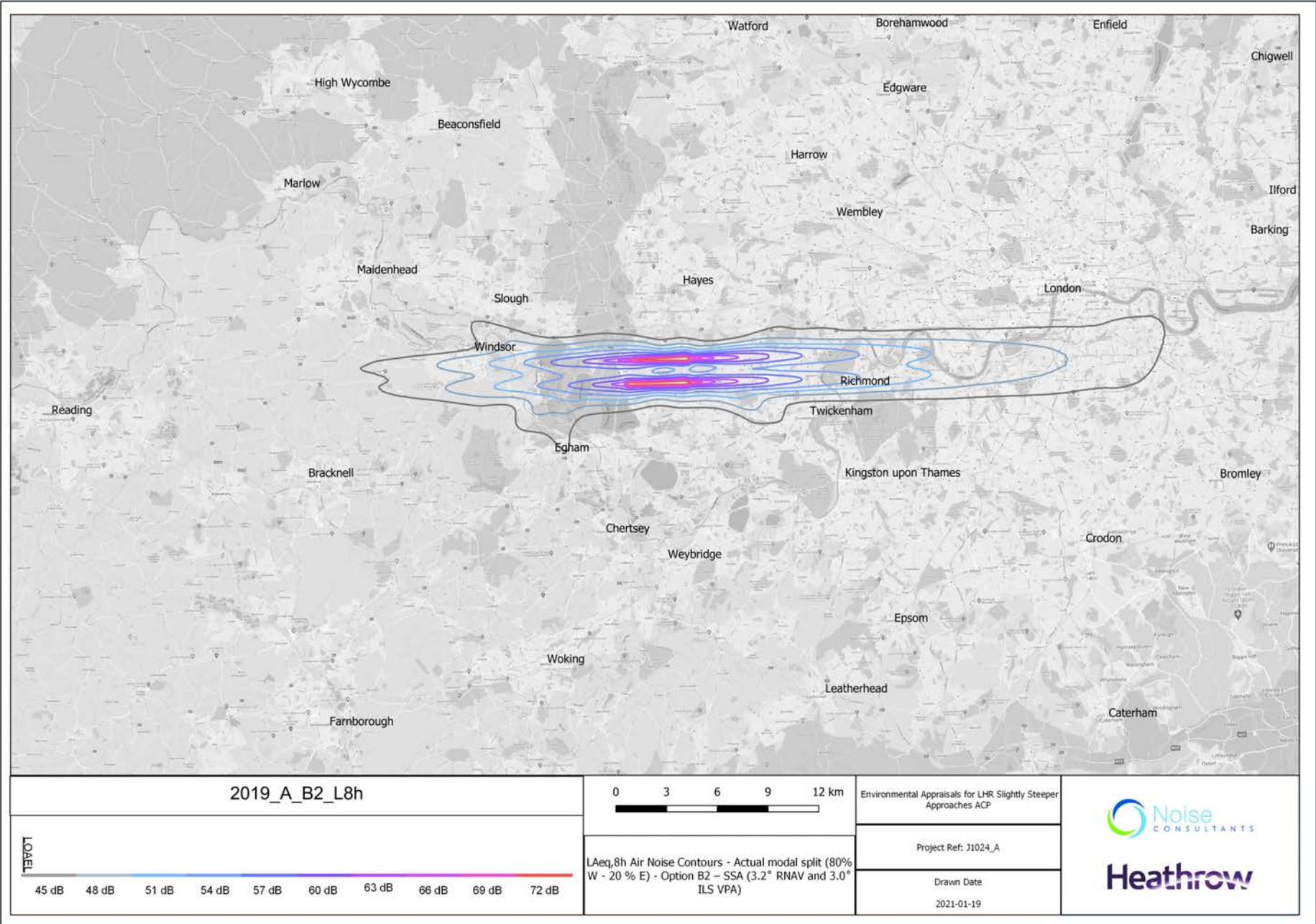


Representative Modal Split
80% West 20% East
45 dB LAeq, 8 hours (night)

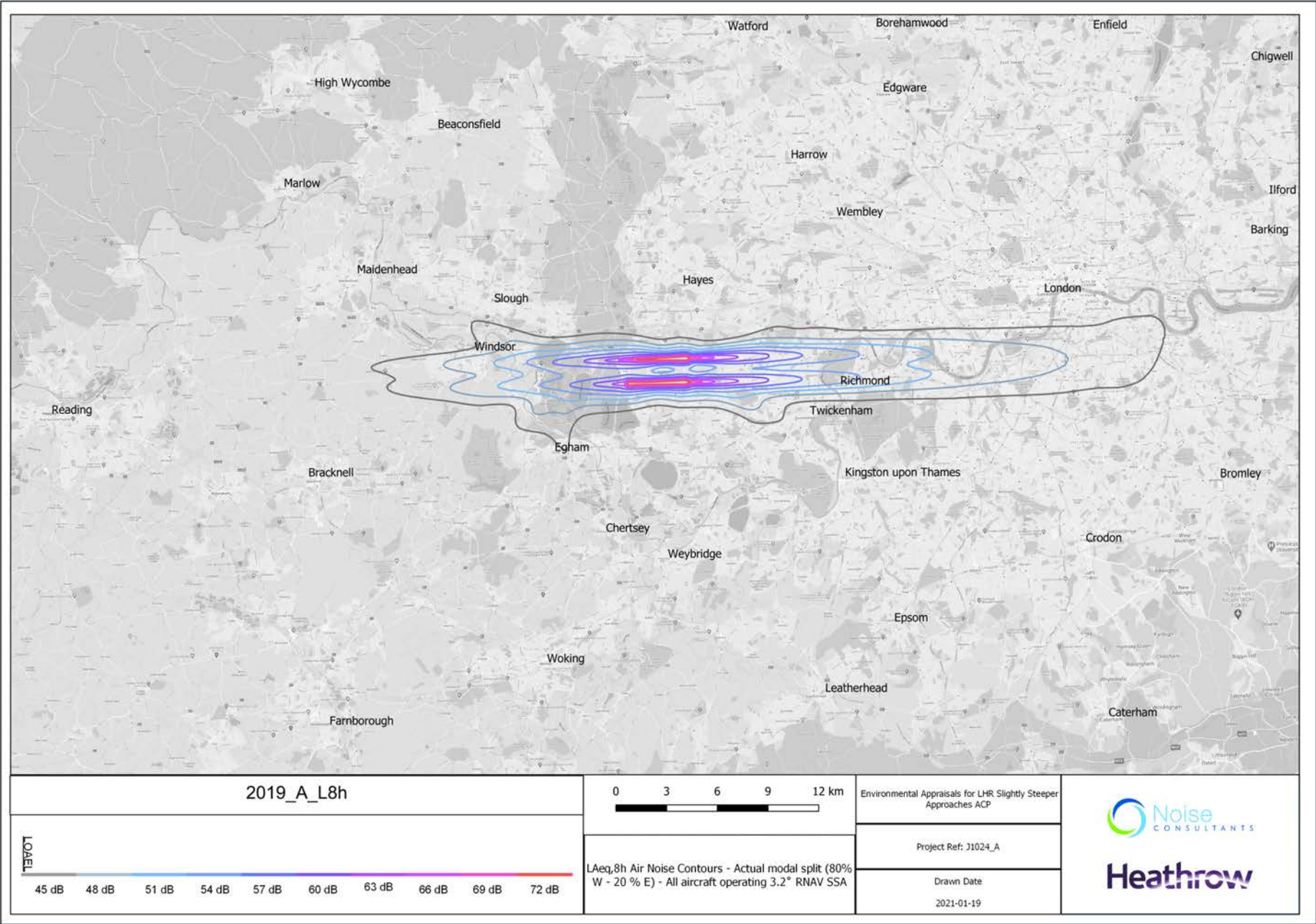
45 dB LAeq, 8 hours (night) contours – Option B1 (Baseline) - 2019



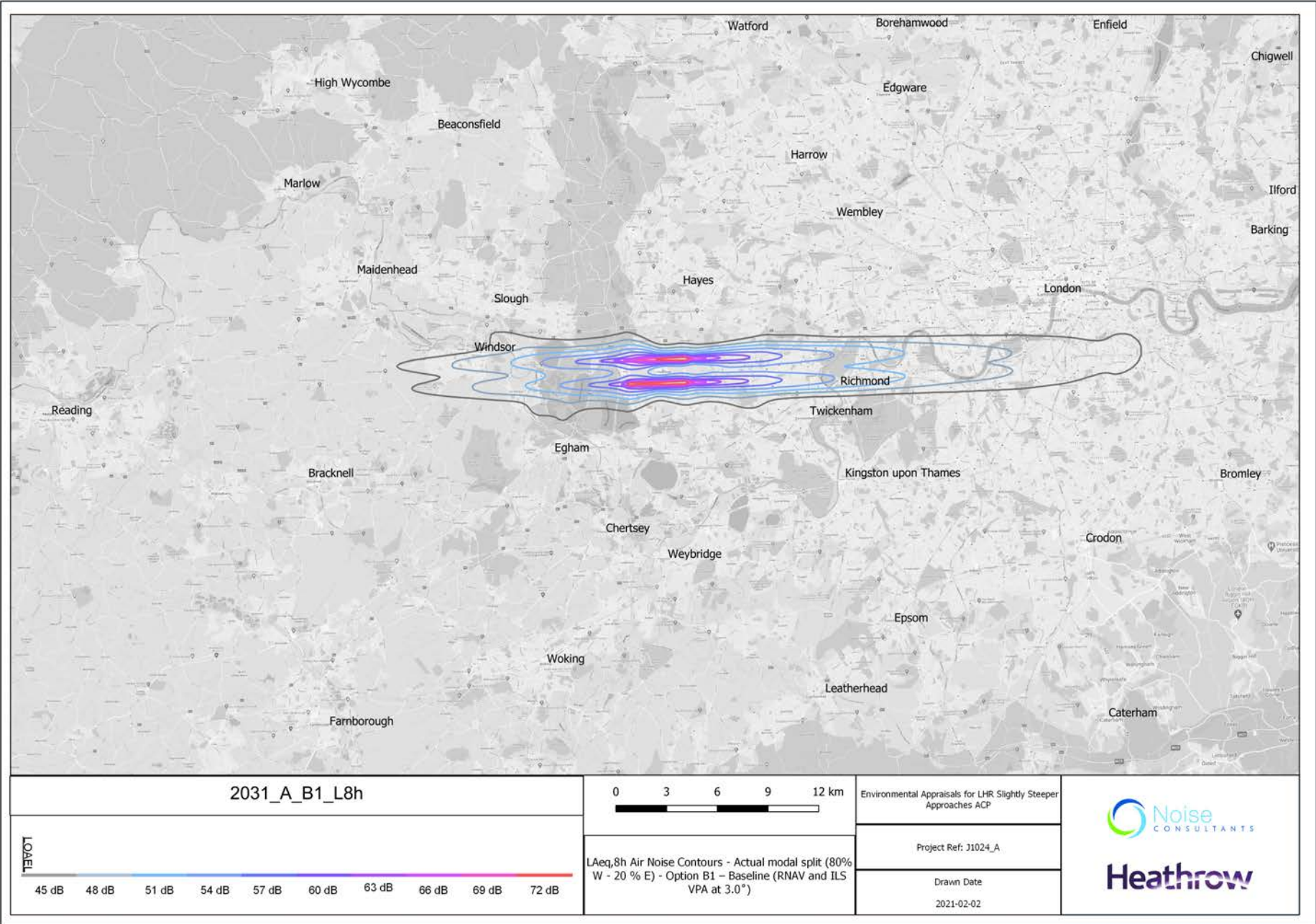
45 dB LAeq, 8 hours (night) contours – Option B2 (SSA) - 2019



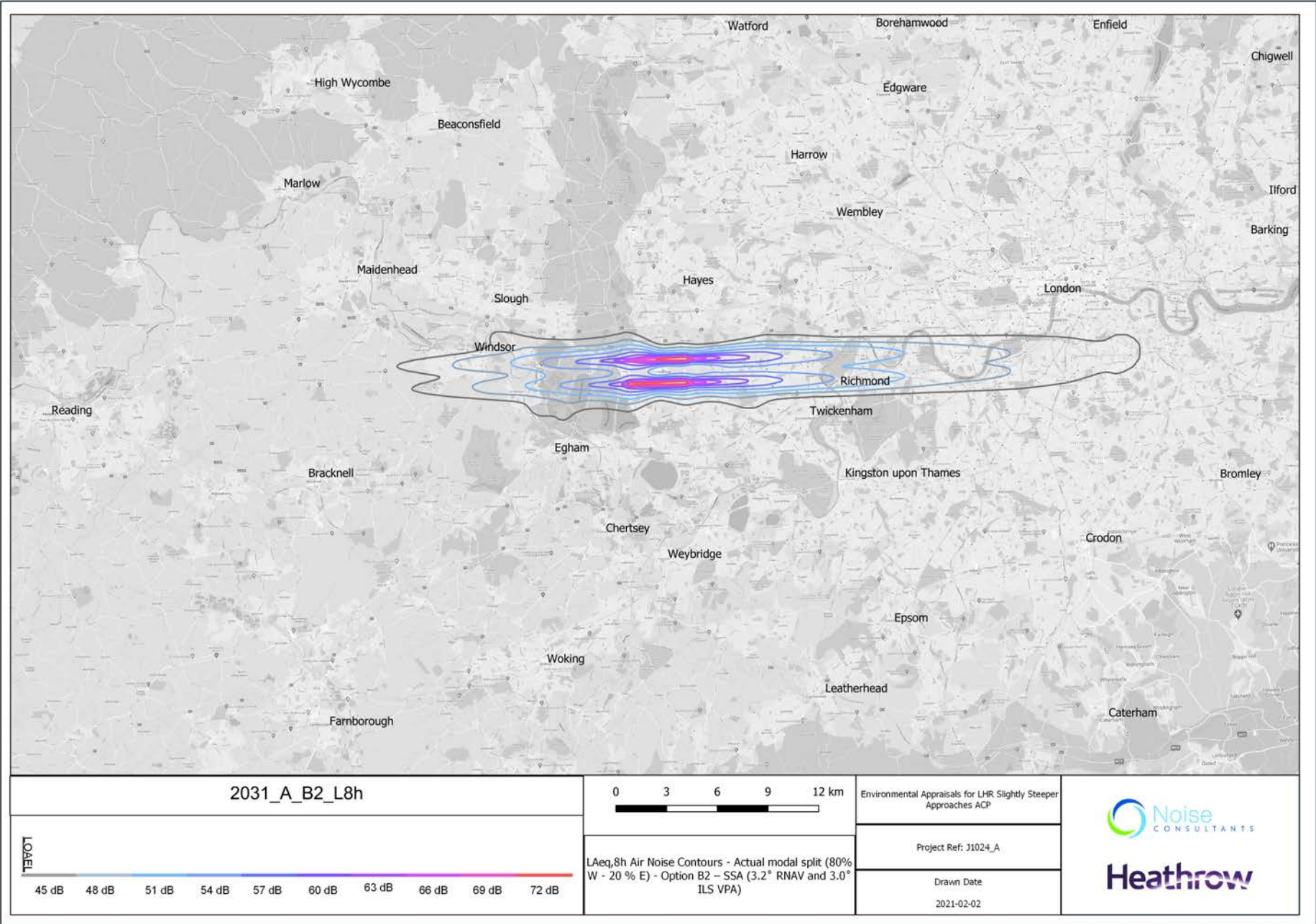
45 dB LAeq, 8 hours (night) contours – All aircraft operating SSA - 2019

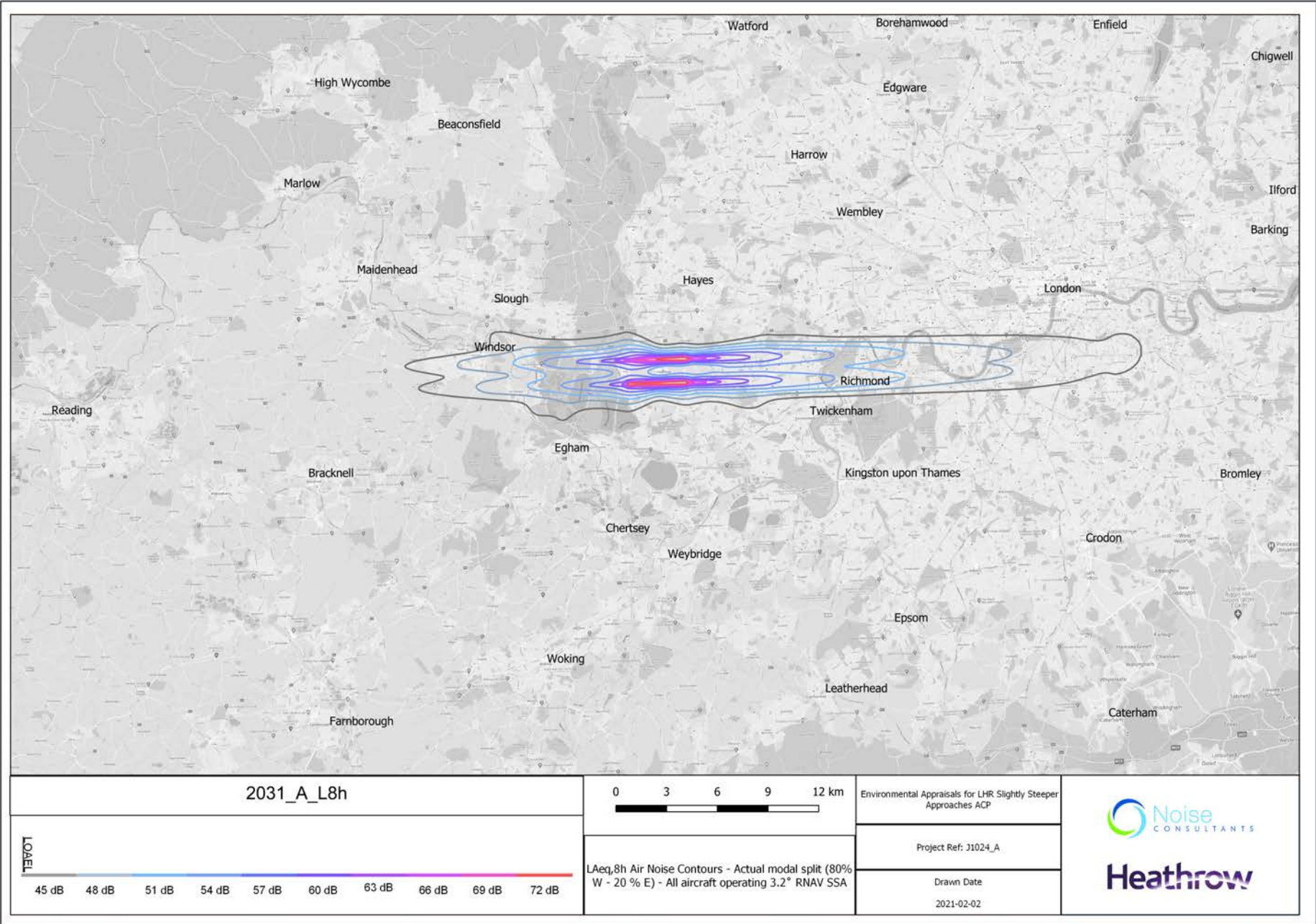


45 dB LAeq, 8 hours (night) contours – Option B1 (Baseline) - 2031



45 dB LAeq, 8 hours (night) contours – Option B2 (SSA) - 2031



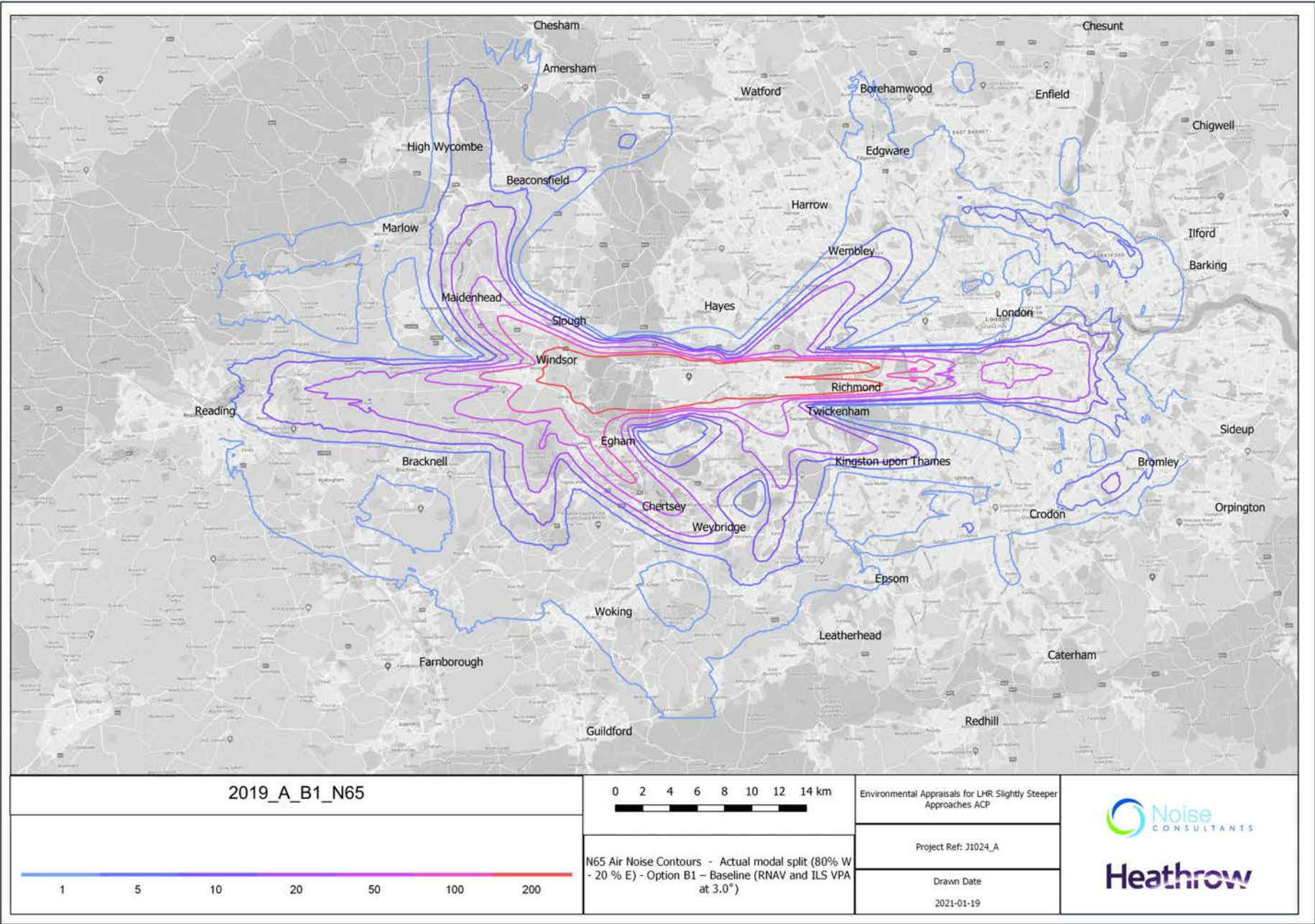


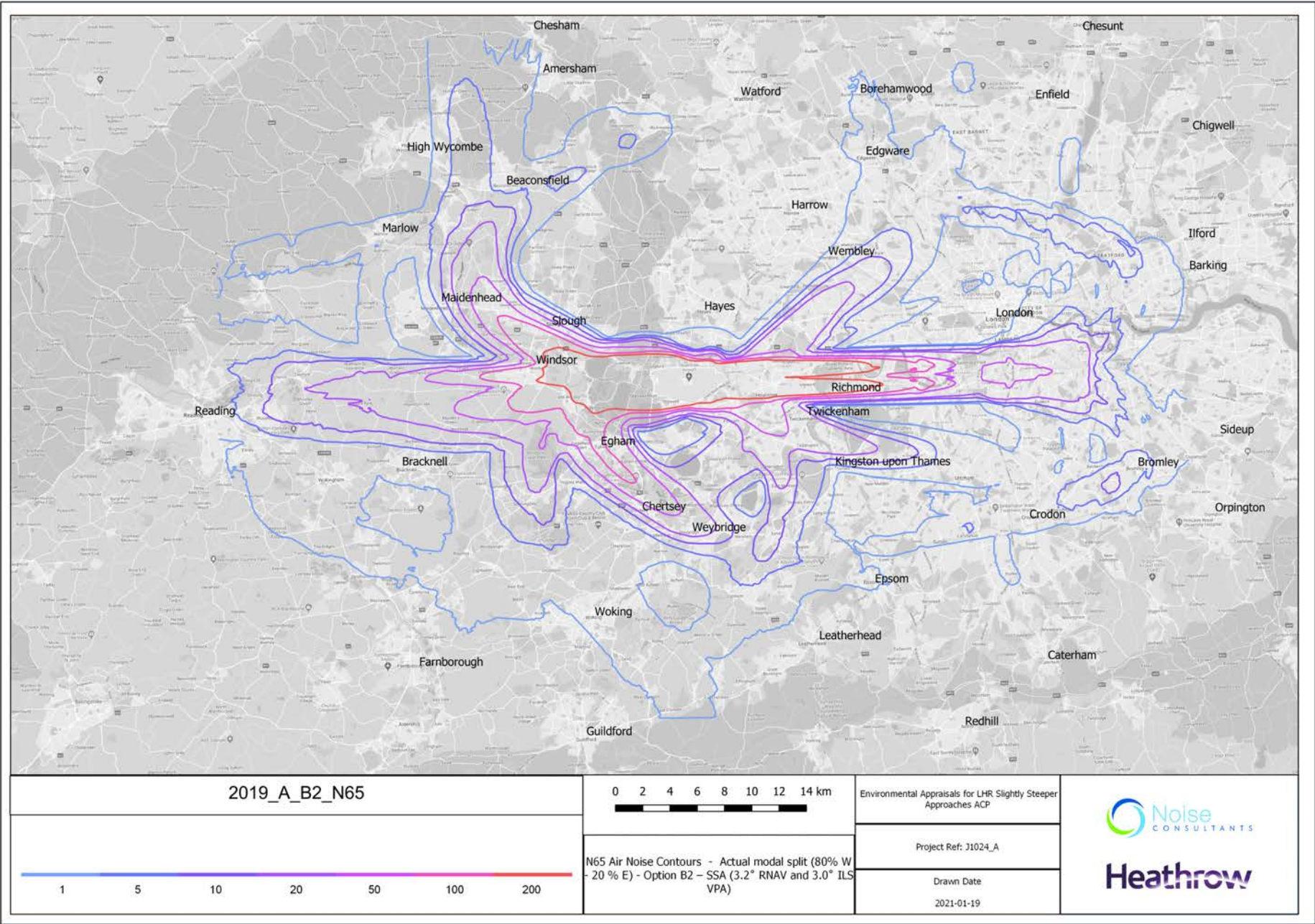
Representative Modal Split

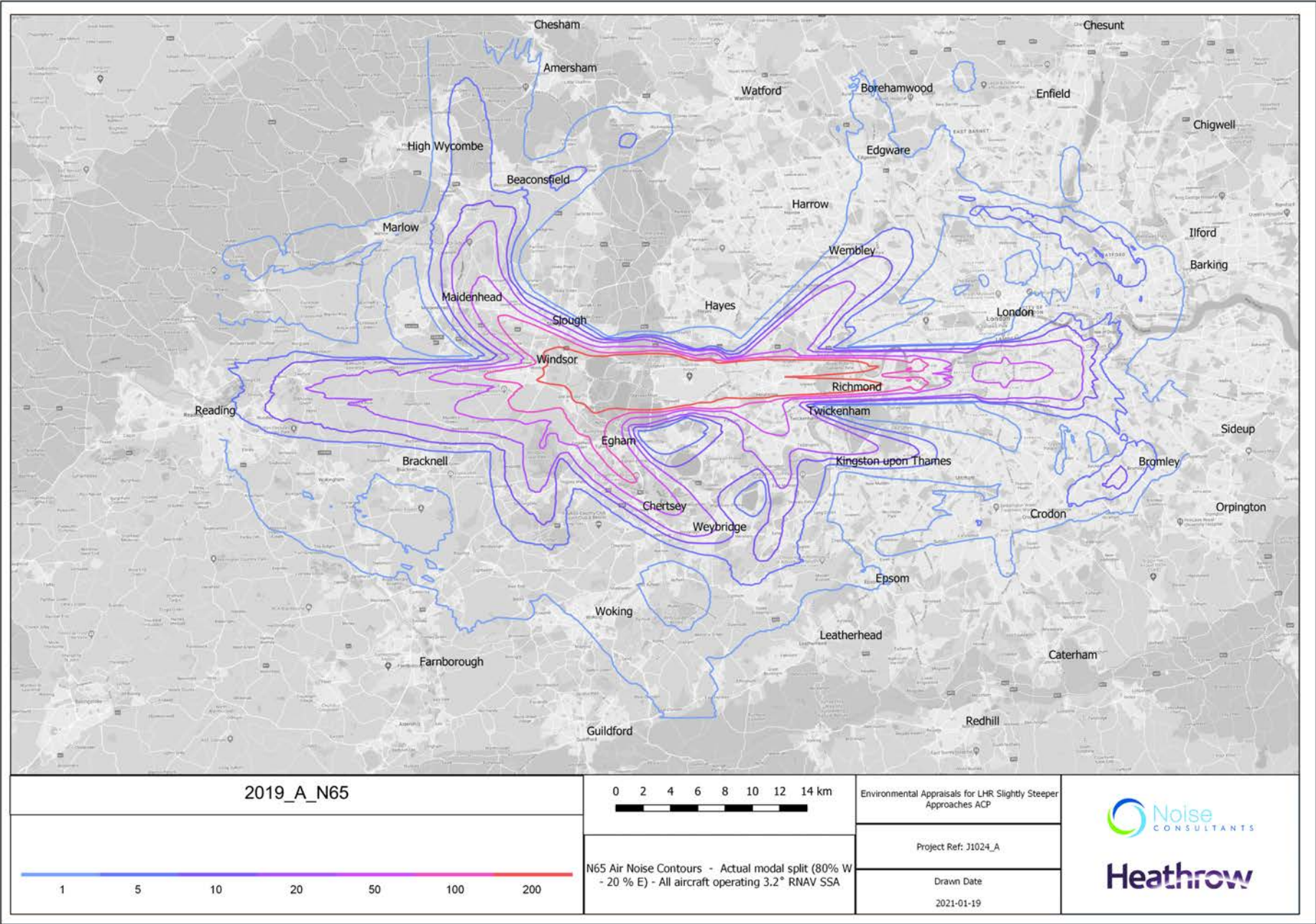
80% West 20% East

N65 (day)

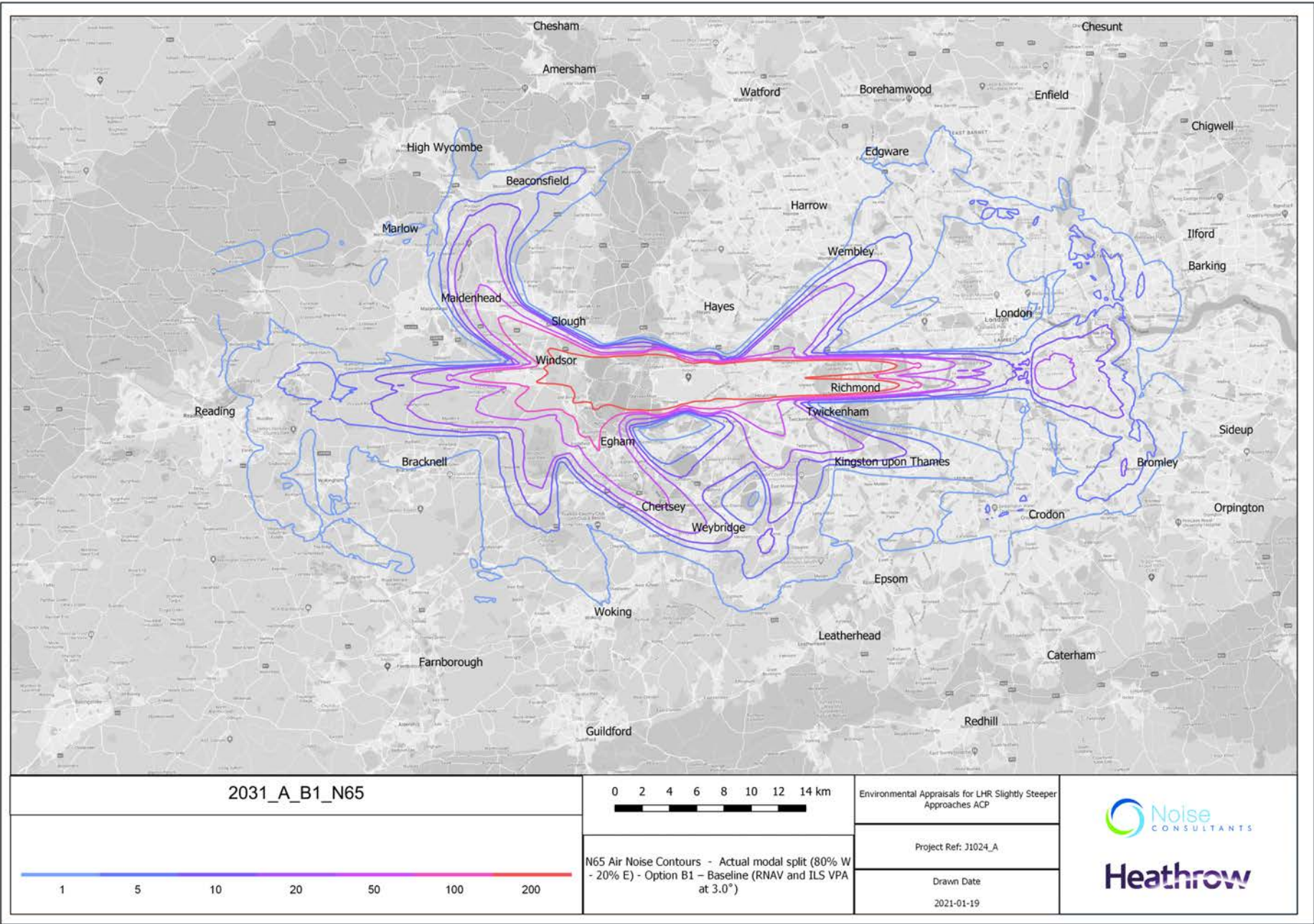
N65 (day) contours – Option B1 (Baseline) - 2019

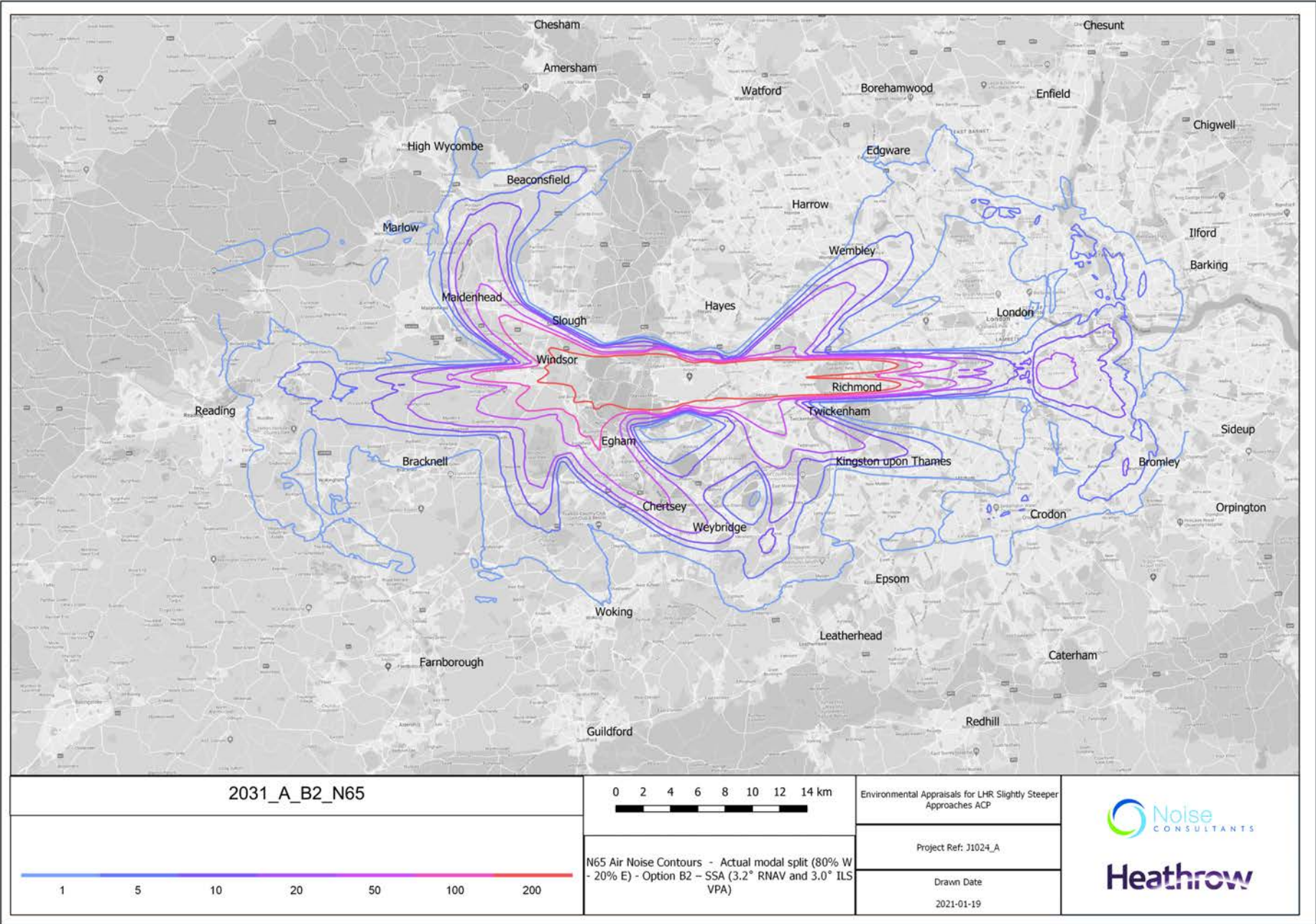




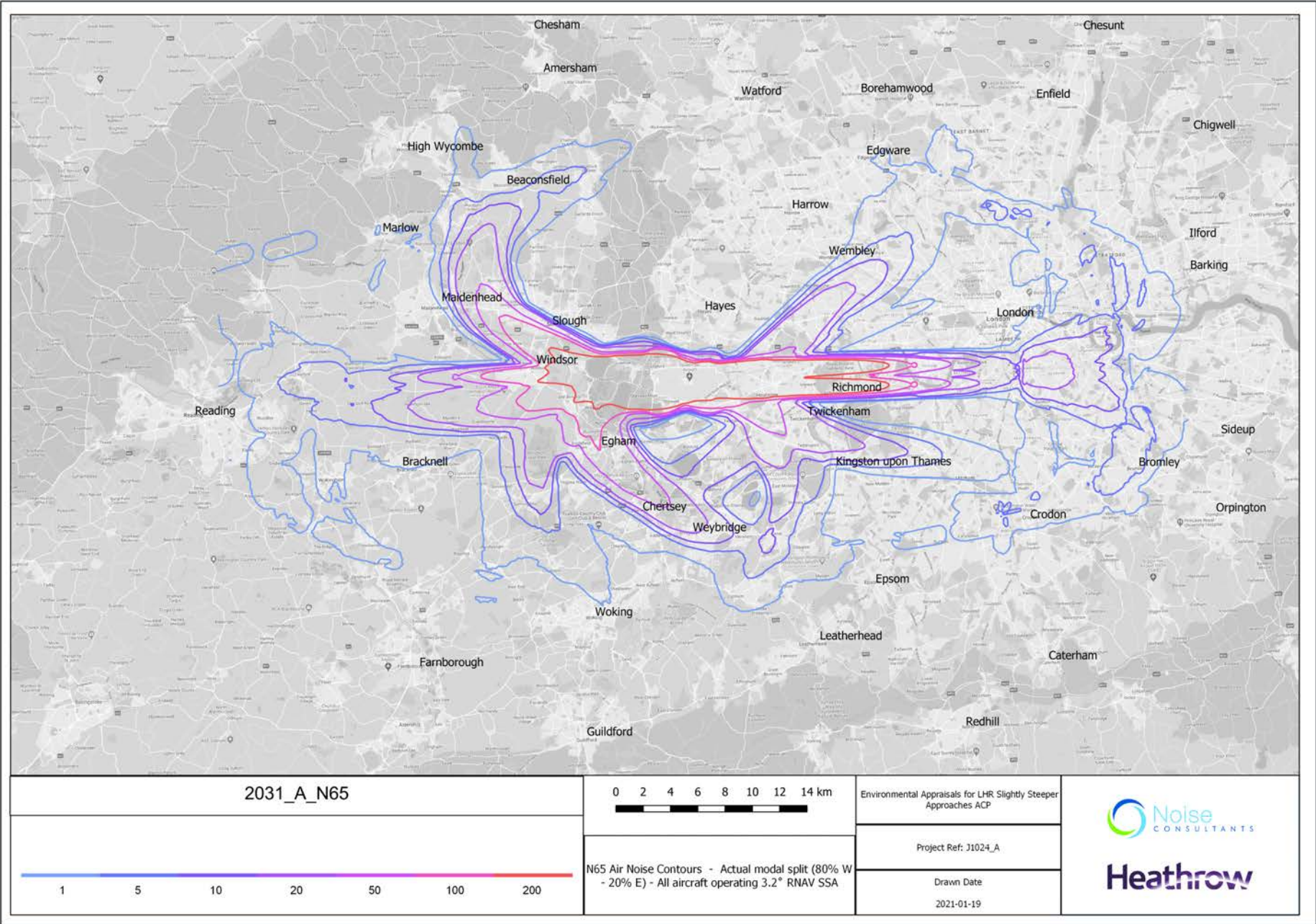


N65 (day) contours – Option B1 (Baseline) - 2031





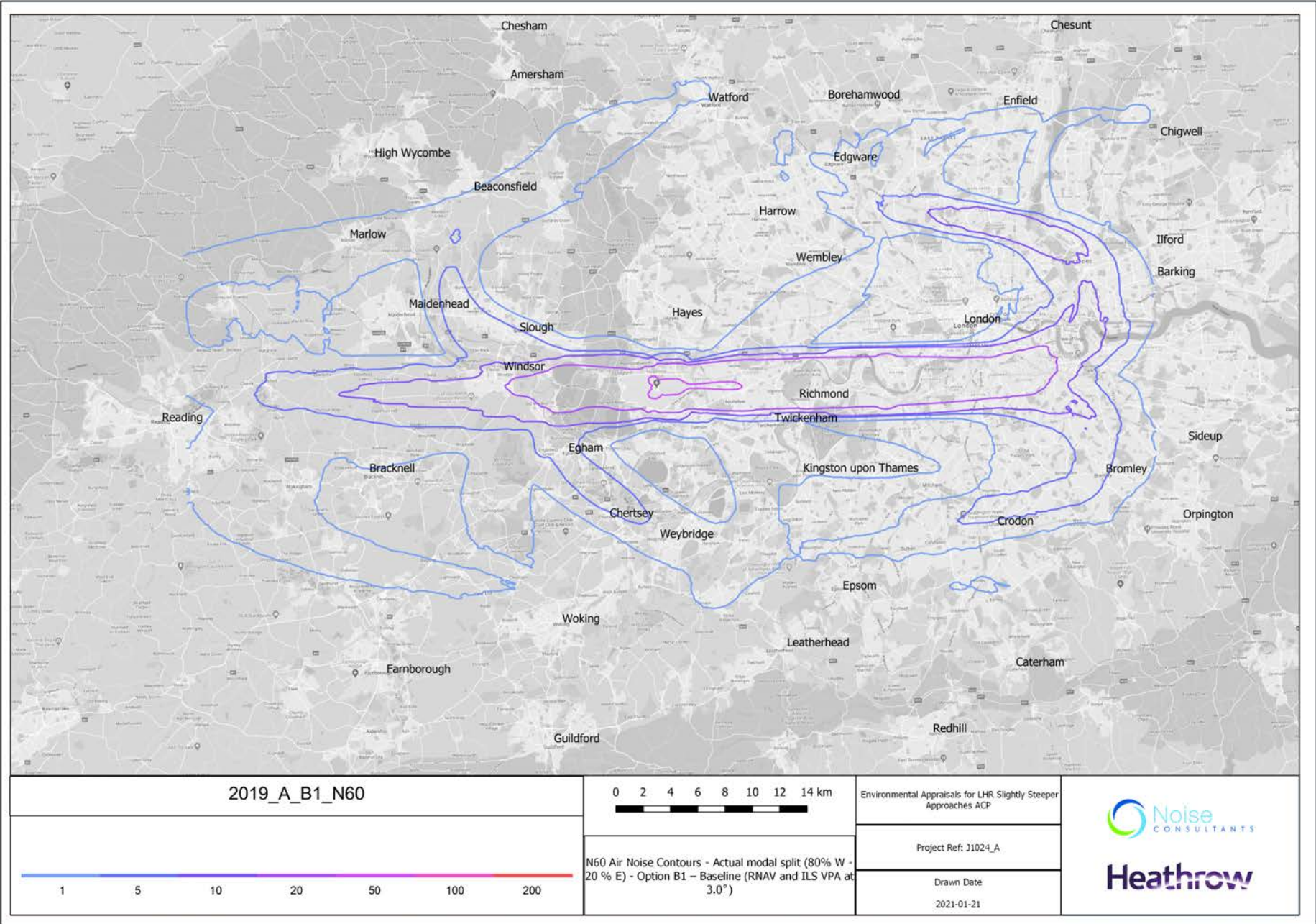
N65 (day) contours – All aircraft operating SSA - 2031



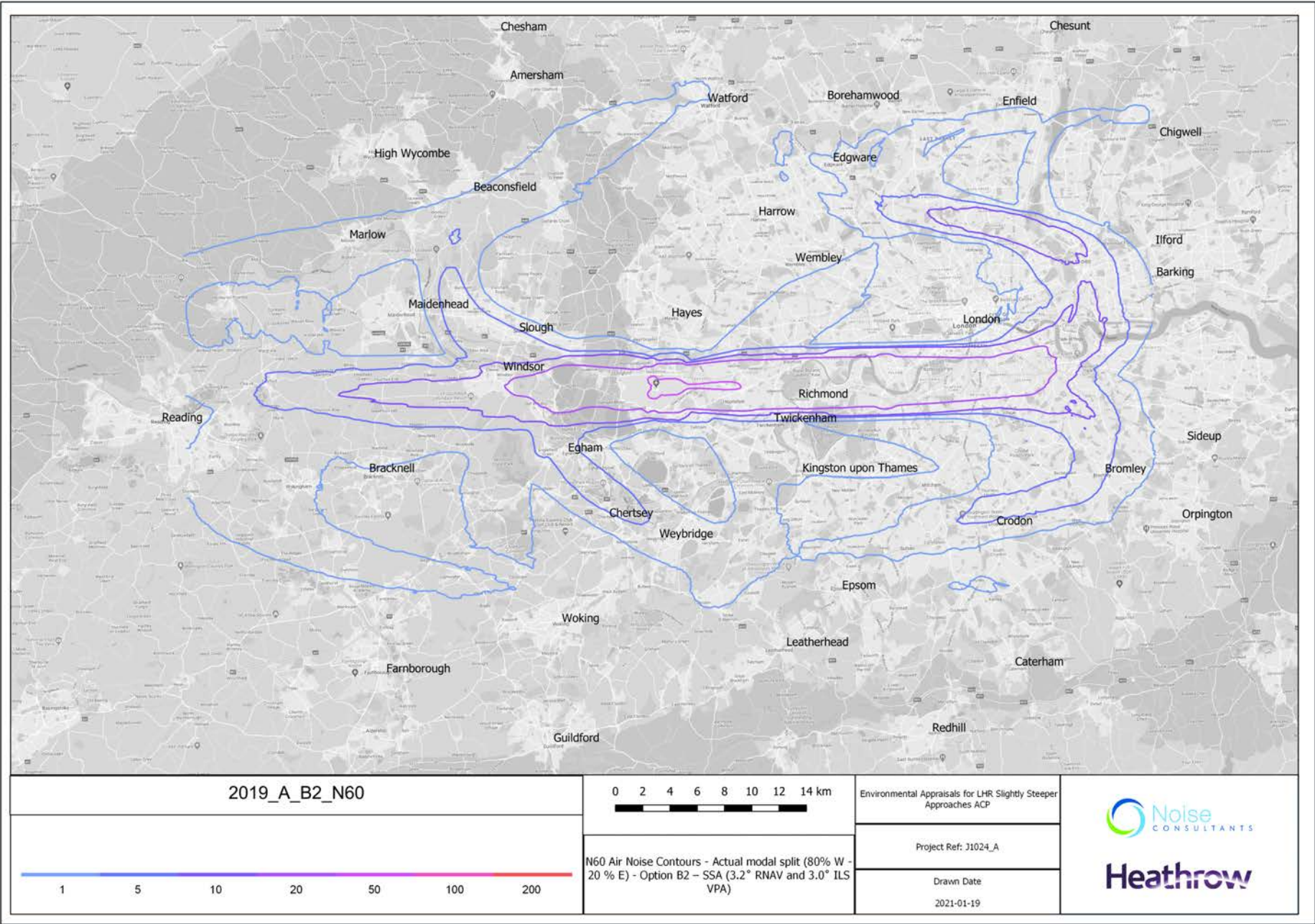
Representative Modal Split

80% West 20% East

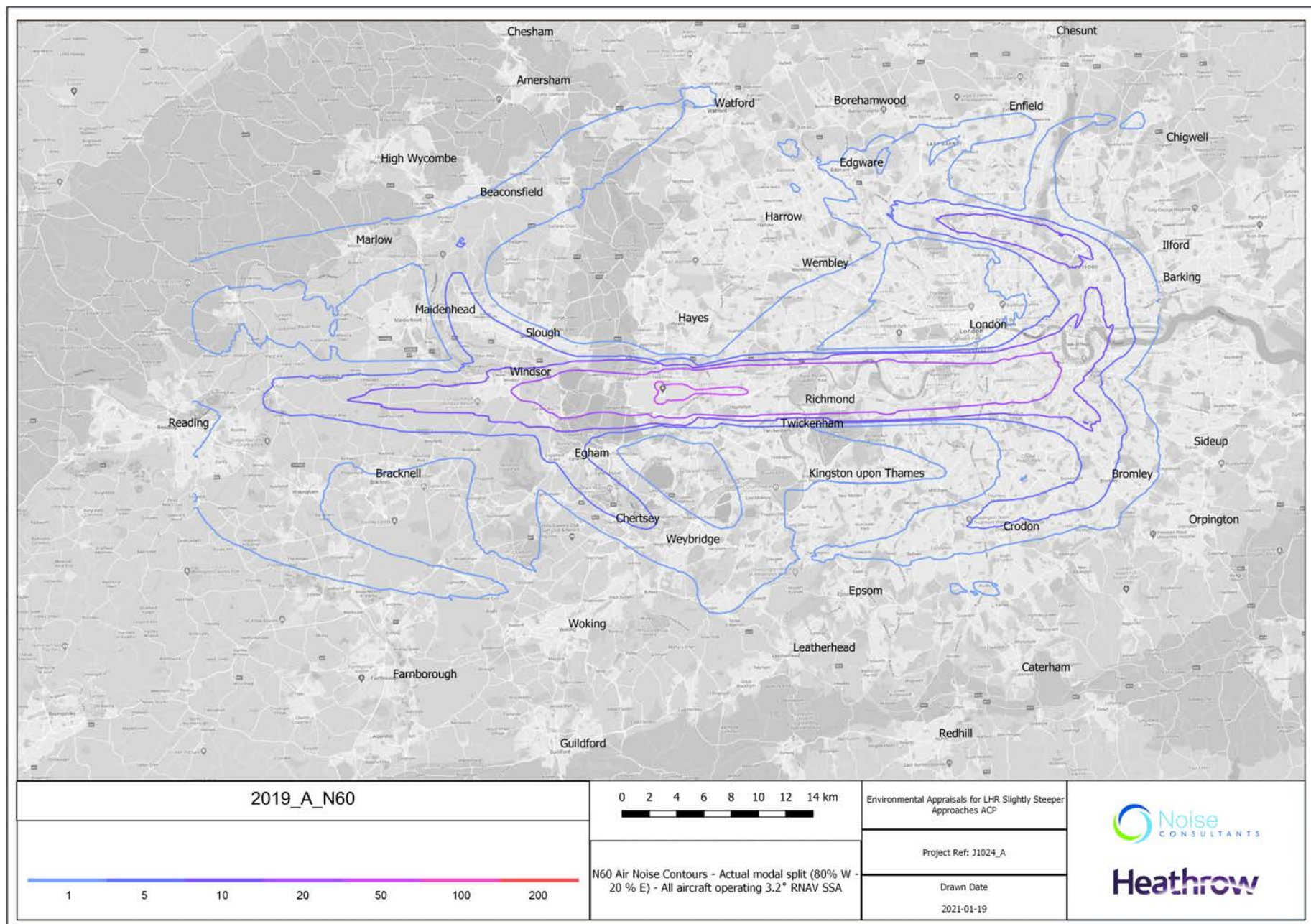
N60 (night)

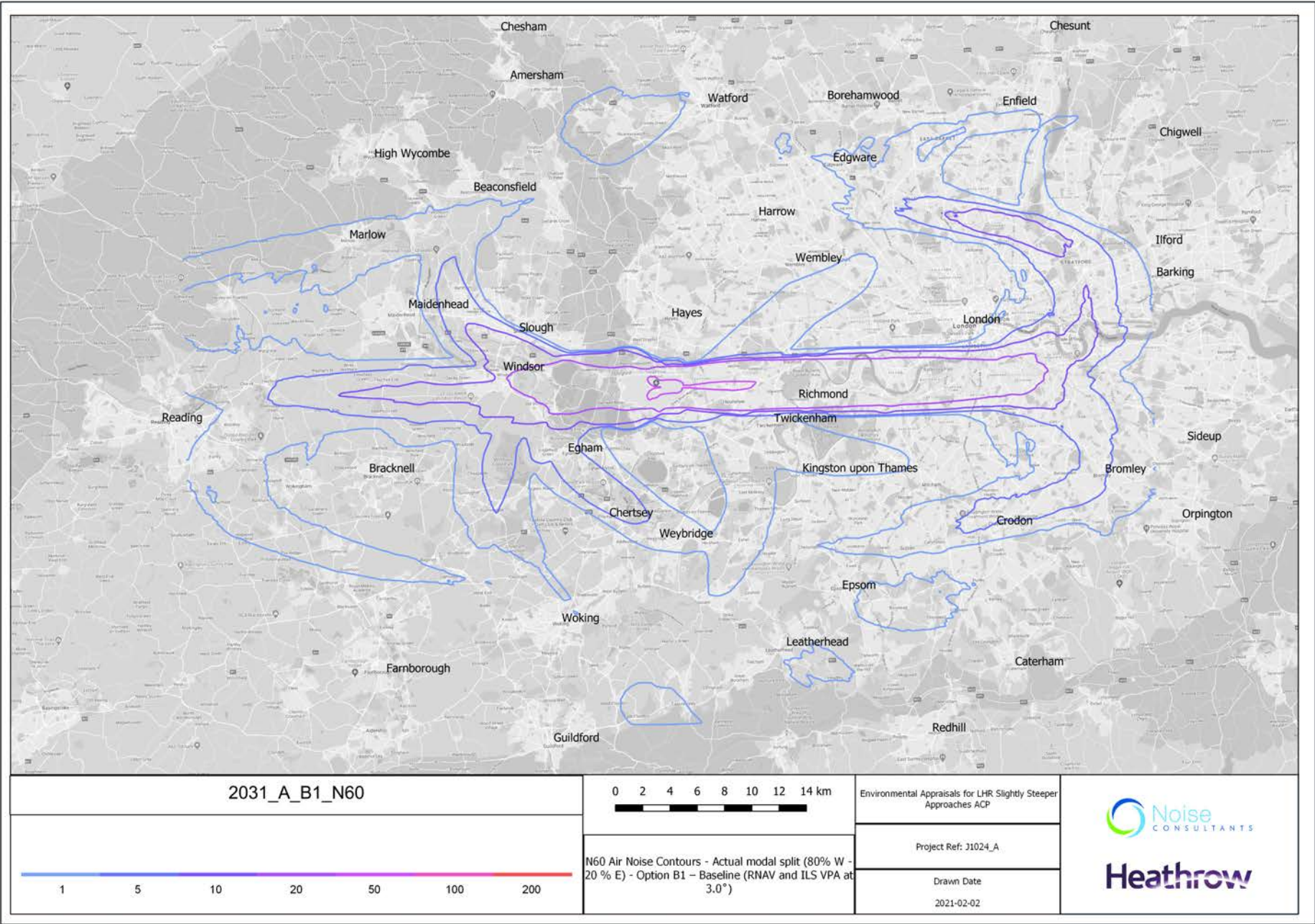


N60 (night) contours– Option B2 (SSA) - 2019

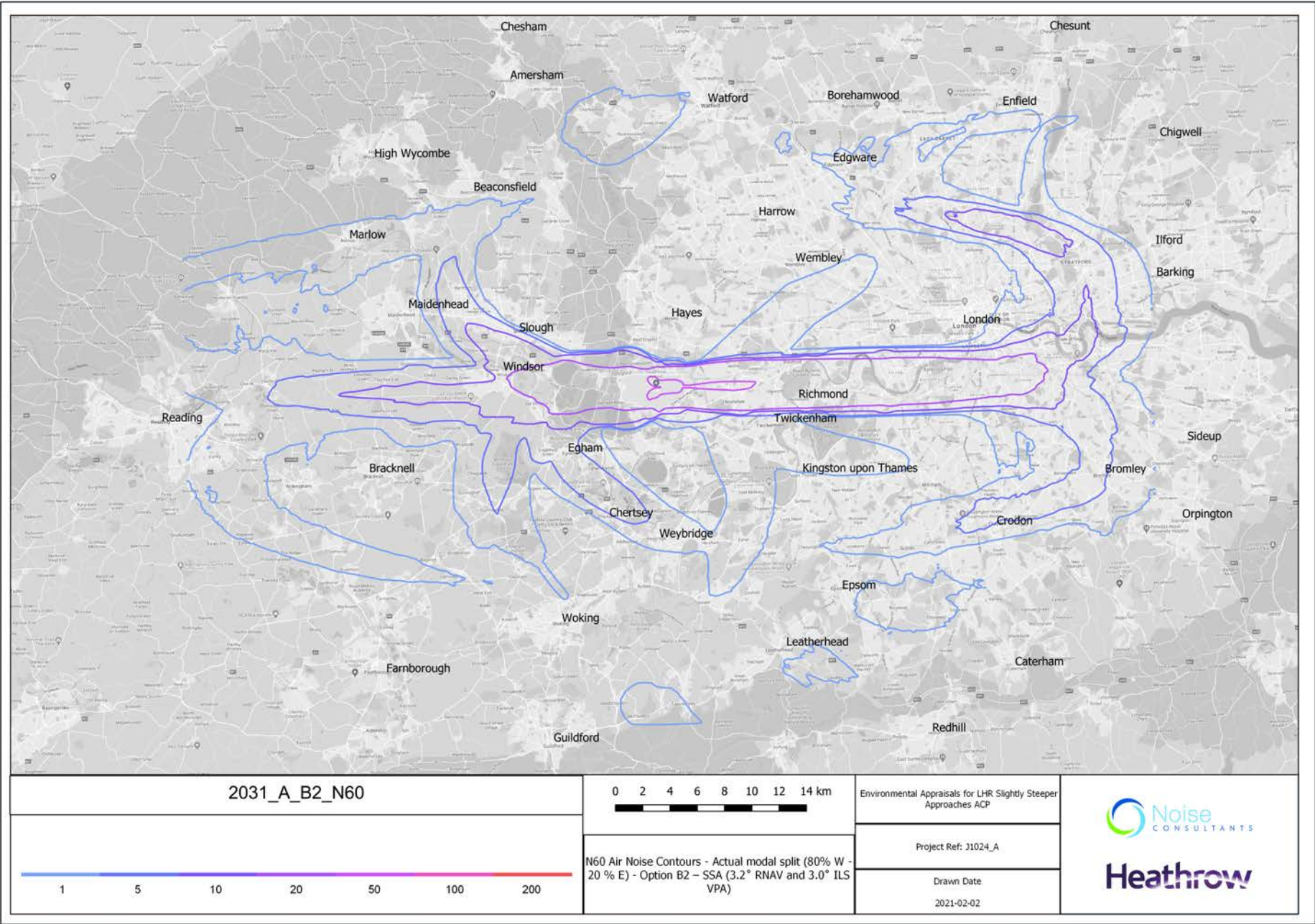


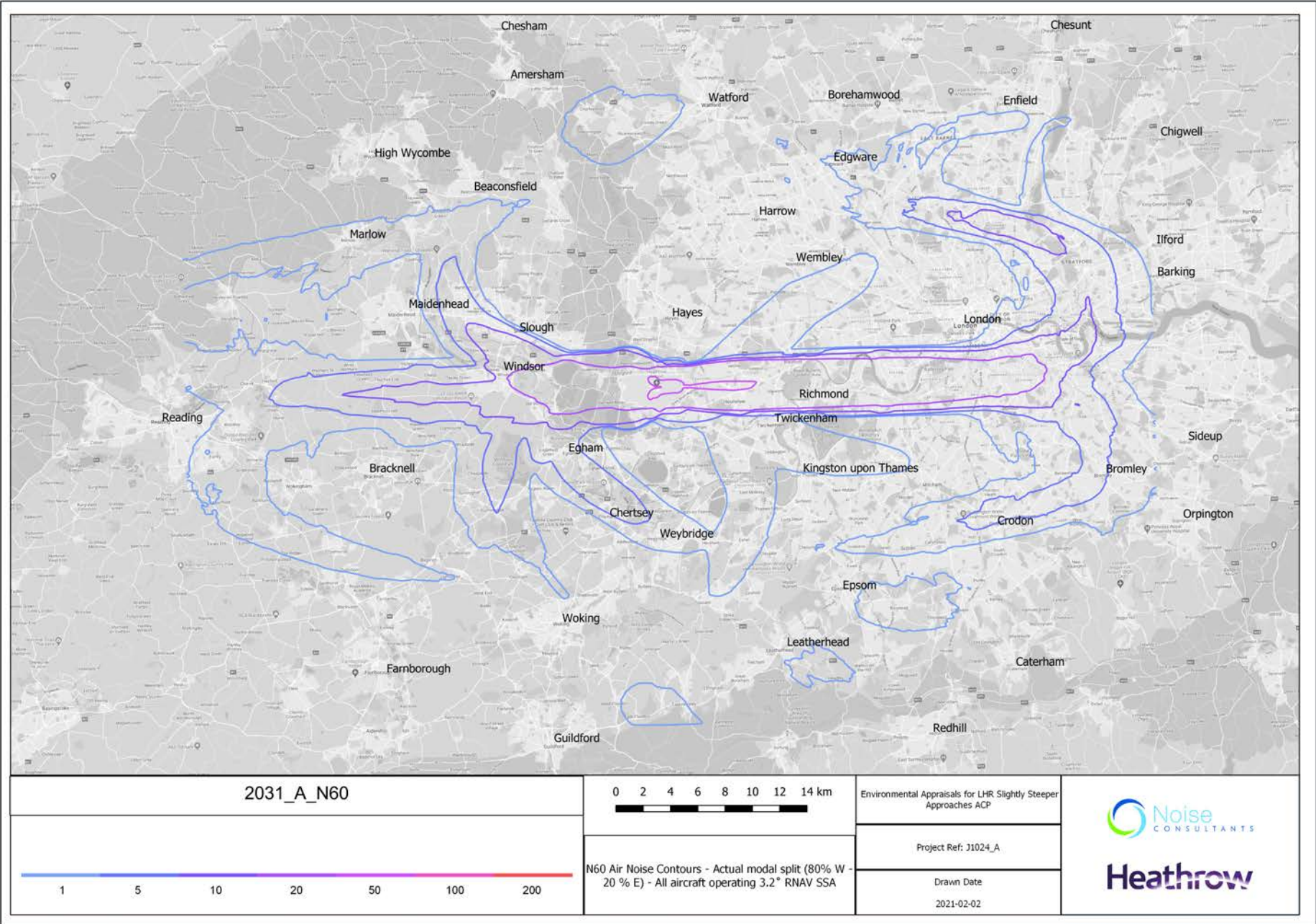
N60 (night) contours – All aircraft operating SSA - 2019





N60 (night) contours– Option B2 (SSA) - 2031





Representative Modal Split

80% West 20% East

Data Tables

L_{Aeq} Data Tables – 80% West 20% East - 2019

Contour L _{Aeq} , 16hr	Number of Dwellings, 2019 L _{Aeq} , 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	431322	430812	429225
54	189157	188303	182891
57	76143	75796	74495
60	36330	36337	35401
63	16011	15946	15391
66	4852	4827	4735
69	860	860	860
72	33	33	16

Contour L _{Aeq} , 16hr	Population Count, 2019 L _{Aeq} , 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1066136	1065102	1061061
54	483381	481558	469066
57	208009	207273	204337
60	105147	104991	102617
63	47649	47457	45859
66	14810	14756	14407
69	2611	2611	2611
72	80	80	41

Contour L _{Aeq} , 8hr	Number of Dwellings, 2019 L _{Aeq} , 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	432863	432642	432649
48	203239	202991	202253
51	79085	78957	79009
54	39232	39018	39213
57	16866	16878	16866
60	6462	6501	6462
63	984	1017	984
66	266	212	266
69	7	7	7
72	0	0	0

Contour L _{Aeq} , 8hr	Population Count, 2019 L _{Aeq} , 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	1048650	1047945	1048080
48	501545	501065	499326
51	211754	211380	211578
54	113565	112991	113521
57	51538	51607	51538
60	20803	20973	20803
63	3397	3501	3397
66	947	761	947
69	19	19	19
72	0	0	0

L_{Aeq} Data Tables - 80% West 20% East - 2031

Contour L _{Aeq} , 16hr	Number of Dwellings, 2031 L _{Aeq} , 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	388453	386424	385442
54	161532	160065	153244
57	71464	71410	67853
60	34293	34282	32800
63	14153	14164	13269
66	2982	3034	2667
69	455	455	419
72	9	9	9

Contour L _{Aeq} , 16hr	Population Count, 2031 L _{Aeq} , 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	938835	933867	931977
54	402515	399574	384315
57	189177	188990	181271
60	97174	97099	93251
63	41644	41477	38867
66	8679	8948	7661
69	1512	1512	1379
72	24	24	24

Contour L _{Aeq} , 8hr	Number of Dwellings, 2031 L _{Aeq} , 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	327339	323987	327116
48	148165	146374	147311
51	68912	68601	68910
54	31821	31856	31804
57	12190	12217	12185
60	2598	2577	2583
63	487	487	487
66	8	8	8
69	0	0	0
72	0	0	0

Contour L _{Aeq} , 8hr	Population Count, 2031 L _{Aeq} , 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	780664	773087	780058
48	363521	359577	361697
51	182109	181320	182102
54	90965	91422	90933
57	36641	36698	36628
60	8655	8569	8617
63	1693	1693	1693
66	20	20	20
69	0	0	0
72	0	0	0

LAeq Data Tables - 80% West 20% East - 2019

Contour LAeq, 16hr	Area Km^2, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	280.80	280.53	279.87
54	153.91	153.65	152.60
57	85.87	85.75	85.22
60	50.88	50.88	50.53
63	31.88	31.88	31.70
66	18.88	18.89	18.78
69	8.78	8.78	8.75
72	4.55	4.55	4.53

Contour LAeq, 8hr	Area Km^2, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	194.02	193.94	192.75
48	113.43	113.35	112.79
51	68.07	68.02	67.69
54	42.63	42.60	42.43
57	20.21	20.18	20.13
60	10.32	10.31	10.28
63	5.10	5.10	5.08
66	2.72	2.71	2.71
69	1.61	1.61	1.61
72	0.93	0.93	0.93

LAeq Data Tables - 80% West 20% East - 2031

Contour LAeq, 16hr	Area Km^2, 2031 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	224.83	224.58	223.54
54	126.05	125.78	123.86
57	71.16	71.15	70.08
60	42.07	42.09	41.53
63	25.36	25.37	25.10
66	12.65	12.65	12.52
69	6.43	6.43	6.39
72	3.71	3.71	3.69

Contour LAeq, 8hr	Area Km^2, 2031 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	146.49	145.95	145.54
48	89.96	89.58	89.49
51	55.22	55.09	55.01
54	29.55	29.48	29.46
57	14.06	14.07	14.02
60	6.69	6.66	6.67
63	3.43	3.43	3.42
66	1.98	1.99	1.99
69	1.14	1.14	1.14
72	0.65	0.65	0.65

N65 and N60 Data Tables - 80% West 20% East - 2019

N65	Number of Dwellings, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2316171	2312978	2269715
5	1074091	1073819	1060303
10	713805	713621	700150
20	539873	539969	533513
50	241693	241534	246348
100	131446	131446	126307
200	68538	68538	68103

N60	Number of Dwellings, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2185274	2181157	2154061
5	1093025	1093088	1077766
10	672990	672699	666983
20	338781	338819	335286
50	3768	3764	3798
100	0	0	0
200	0	0	0

N65	Population Count, N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	5846352	5838538	5729548
5	2663371	2662681	2631067
10	1762363	1761913	1728952
20	1333103	1333324	1315768
50	614171	613823	625240
100	341603	341603	329682
200	185586	185586	184675

N60	Population Count, N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	5472253	5460934	5390598
5	2685005	2685054	2644942
10	1619636	1618960	1602863
20	825243	825356	817090
50	11802	11787	11909
100	0	0	0
200	0	0	0

N65 and N60 Data Tables - 80% West 20% East - 2019

N60	Area Km^2, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	467.49	467.54	461.93
10	254.85	254.82	253.24
20	131.58	131.58	130.93
50	4.98	4.98	4.98
100	0	0	0
200	0	0	0

N65	Area Km^2, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	800.47	800.38	796.03
10	572.05	572.03	567.55
20	378.63	378.65	377.00
50	201.36	201.36	201.39
100	124.30	124.30	122.72
200	72.84	72.83	72.49

N65 and N60 Data Tables - 80% West 20% East - 2031

N65	Number of Dwellings, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2140018	2140018	2101681
5	972511	972511	947555
10	637652	637652	640305
20	386865	386865	386083
50	201960	201960	195600
100	126324	126324	122380
200	82194	82194	77923

N60	Number of Dwellings, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2151830	2163817	2108895
5	1112337	1112118	1090199
10	605362	605438	591776
20	328359	328334	322137
50	6607	6602	6791
100	0	0	0
200	0	0	0

N65	Population Count, N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	5209524	5209524	5099076
5	2333630	2333630	2278270
10	1539132	1539132	1548752
20	947682	947682	949341
50	506088	506088	491761
100	320888	320888	312072
200	213143	213143	203144

N60	Population Count, N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	5240036	5267940	5131461
5	2650923	2650403	2596943
10	1423398	1423720	1390774
20	782698	782603	768238
50	19593	19580	20131
100	0	0	0
200	0	0	0

N65 and N60 Data Tables - 80% West 20% East - 2031

N60	Area Km^2, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	446.31	446.16	438.63
10	230.42	230.41	226.24
20	125.41	125.40	124.46
50	5.11	5.11	5.14
100	0.00	0.00	0.00
200	0.00	0.00	0.00

N65	Area Km^2, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	662.98	662.98	658.23
10	475.44	475.44	474.18
20	299.67	299.67	298.91
50	173.76	173.76	171.87
100	114.97	114.97	113.06
200	72.71	72.71	71.10

Points of Interest – Education - 80% West 20% East - 2019

Contour LAeq, 16hr	Education, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	403	404	401
54	187	187	180
57	73	73	73
60	36	37	34
63	16	16	13
66	4	4	4
69	0	0	0
72	0	0	0

Contour LAeq, 8hr	Education, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	385	384	385
48	172	172	171
51	71	70	71
54	44	44	44
57	17	17	17
60	5	5	5
63	2	2	2
66	0	0	0
69	0	0	0
72	0	0	0

N65	Education, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2338	2331	2285
5	1033	1032	1011
10	693	693	684
20	516	516	502
50	224	224	224
100	130	130	126
200	67	67	67

N60	Education, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2201	2195	2170
5	1008	1008	998
10	637	637	625
20	306	306	302
50	2	2	2
100	0	0	0
200	0	0	0

Points of Interest – Education - 80% West 20% East - 2031

Contour LAeq, 16hr	Education, 2031 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	340	339	341
54	150	149	141
57	61	61	60
60	30	31	27
63	10	10	9
66	2	2	2
69	0	0	0
72	0	0	0

Contour LAeq, 8hr	Education, 2031 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	275	274	274
48	130	129	130
51	59	59	59
54	33	33	33
57	9	9	9
60	2	2	2
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

N65	Education, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1930	1930	1899
5	847	847	823
10	551	551	558
20	346	346	350
50	183	183	178
100	120	120	112
200	73	73	68

N60	Education, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1947	1958	1901
5	932	930	922
10	528	528	506
20	277	277	271
50	6	6	6
100	0	0	0
200	0	0	0

Points of Interest – Healthcare - 80% West 20% East - 2019

Contour LAeq, 16hr	Healthcare, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	806	807	805
54	355	354	342
57	149	149	144
60	57	58	54
63	20	19	16
66	7	7	7
69	1	1	1
72	0	0	0

Contour LAeq, 8hr	Healthcare, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	781	780	781
48	358	358	357
51	149	147	149
54	80	80	80
57	26	26	26
60	8	8	8
63	3	3	3
66	0	0	0
69	0	0	0
72	0	0	0

N65	Healthcare, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4512	4501	4412
5	1978	1976	1952
10	1345	1345	1326
20	1026	1026	1016
50	465	465	474
100	251	251	248
200	137	137	136

N60	Healthcare, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4225	4219	4175
5	1941	1940	1921
10	1239	1239	1222
20	618	618	614
50	7	7	7
100	0	0	0
200	0	0	0

Points of Interest – Healthcare - 80% West 20% East - 2031

Contour LAeq, 16hr	Healthcare, 2031 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	692	691	688
54	290	289	272
57	132	132	122
60	50	51	46
63	13	13	12
66	4	4	3
69	1	1	1
72	0	0	0

Contour LAeq, 8hr	Healthcare, 2031 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	567	566	565
48	269	267	266
51	122	122	122
54	53	53	53
57	12	12	12
60	4	4	4
63	1	1	1
66	0	0	0
69	0	0	0
72	0	0	0

N65	Healthcare, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3715	3715	3640
5	1661	1661	1622
10	1084	1084	1114
20	692	692	712
50	361	361	353
100	229	229	216
200	142	142	135

N60	Healthcare, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3728	3752	3653
5	1794	1793	1764
10	1012	1012	969
20	565	565	557
50	20	20	20
100	0	0	0
200	0	0	0

Points of Interest – Places of worship - 80% West 20% East - 2019

Contour LAeq, 16hr	Place of Worship, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1371	1370	1367
54	584	583	567
57	257	258	252
60	101	102	97
63	43	42	39
66	11	11	11
69	1	1	1
72	0	0	0

Contour LAeq, 8hr	Place of Worship, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	1329	1327	1329
48	604	604	602
51	248	246	247
54	132	132	132
57	48	48	48
60	17	17	17
63	4	4	4
66	0	0	0
69	0	0	0
72	0	0	0

N65	Place of Worship, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	7497	7485	7333
5	3321	3319	3281
10	2266	2266	2234
20	1727	1727	1703
50	770	769	783
100	421	421	417
200	230	230	228

N60	Place of Worship, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	7013	6998	6939
5	3267	3266	3224
10	2069	2070	2037
20	1052	1052	1047
50	15	14	15
100	0	0	0
200	0	0	0

Points of Interest – Places of worship - 80% West 20% East - 2031

Contour LAeq, 16hr	Place of Worship, 2031 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1162	1162	1154
54	473	473	451
57	218	219	205
60	89	90	83
63	34	32	31
66	6	6	5
69	1	1	1
72	0	0	0

Contour LAeq, 8hr	Place of Worship, 2031 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	982	974	980
48	434	432	430
51	205	204	205
54	91	91	91
57	29	29	29
60	6	6	6
63	1	1	1
66	0	0	0
69	0	0	0
72	0	0	0

N65	Place of Worship, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	6142	6142	6047
5	2822	2822	2737
10	1832	1832	1873
20	1163	1163	1184
50	594	594	582
100	382	382	368
200	238	238	230

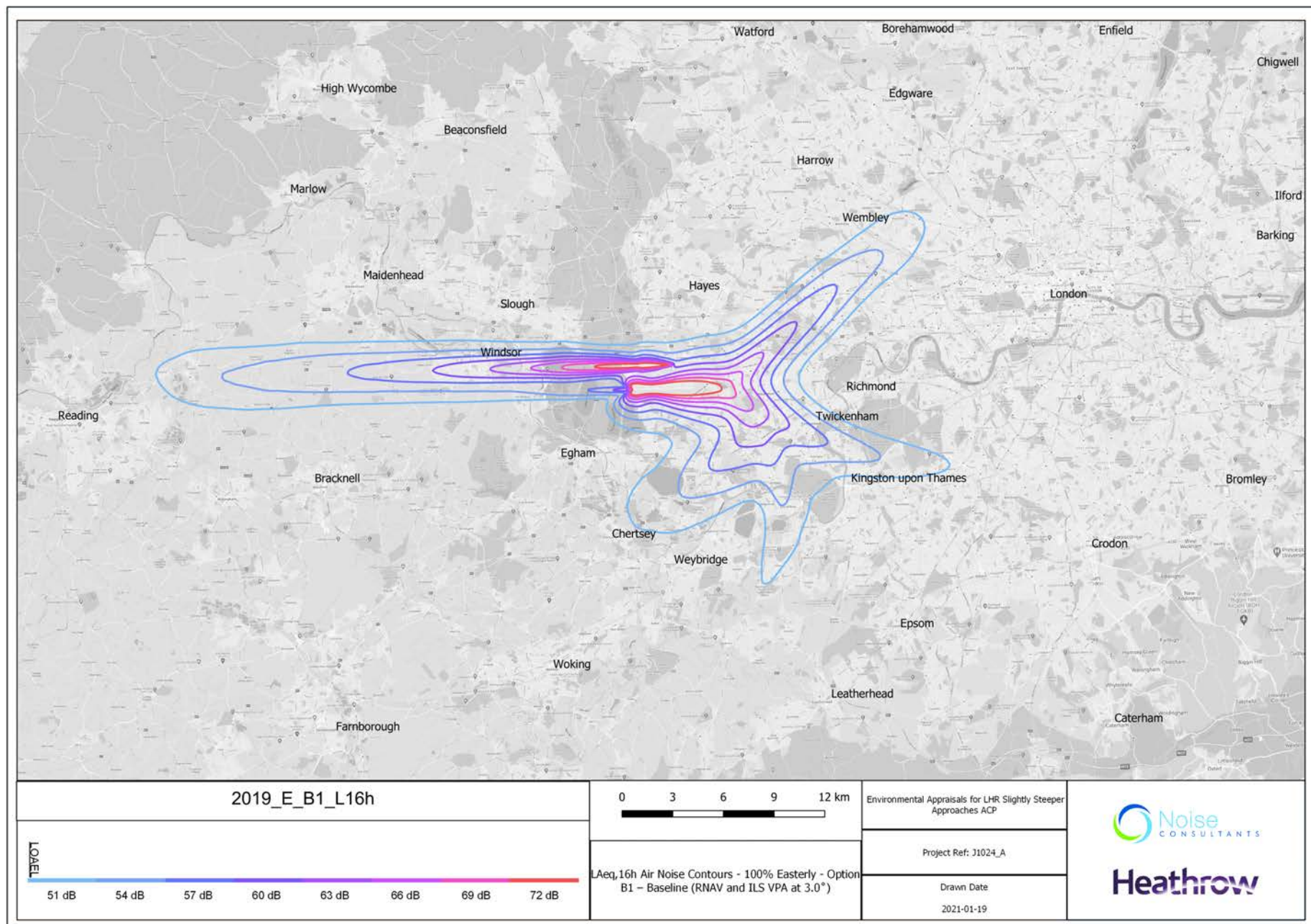
N60	Place of Worship, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	6236	6276	6128
5	3042	3041	2994
10	1694	1694	1633
20	979	979	971
50	31	31	32
100	0	0	0
200	0	0	0

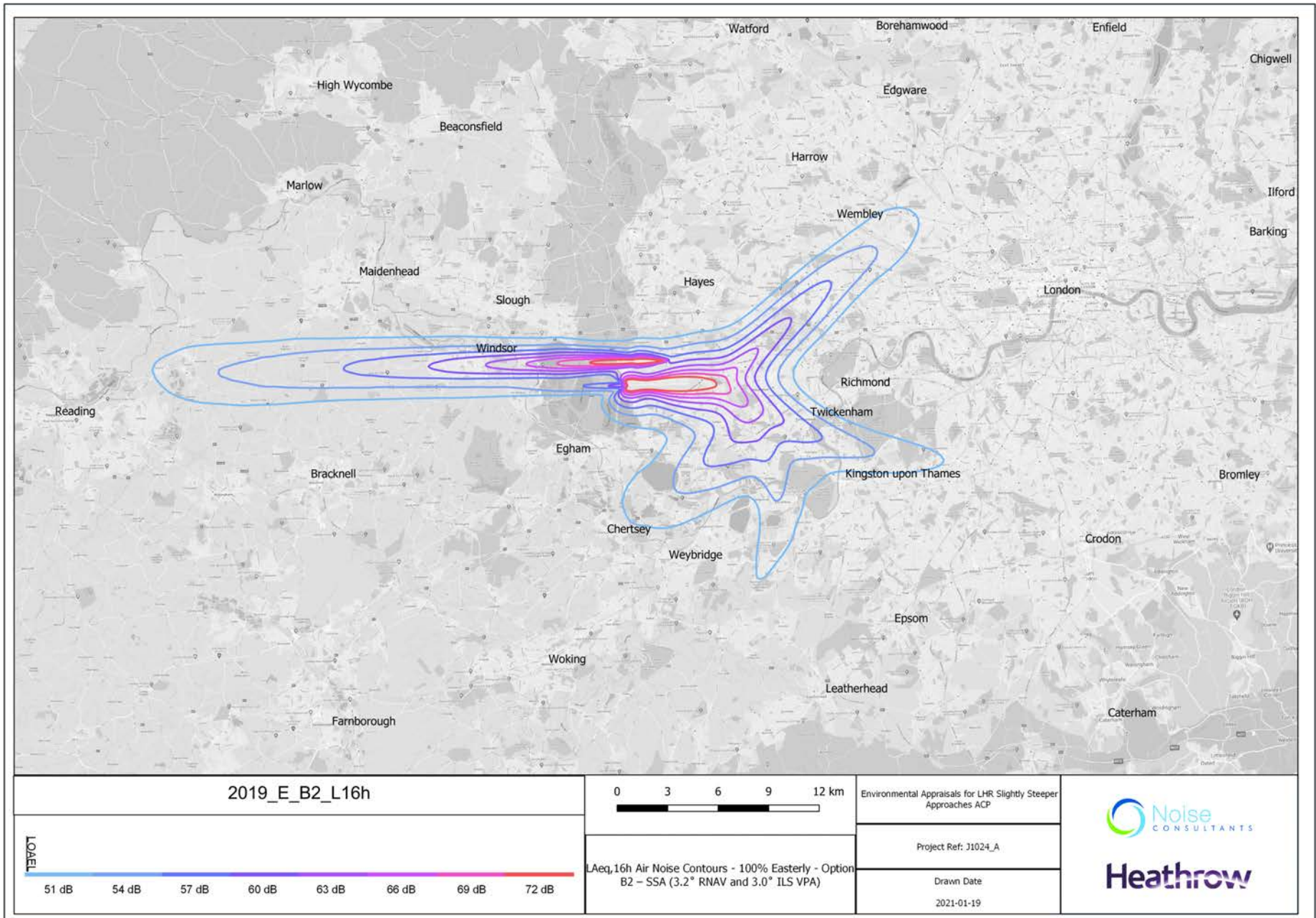
100% Easterly Operations

100% Easterly Operations

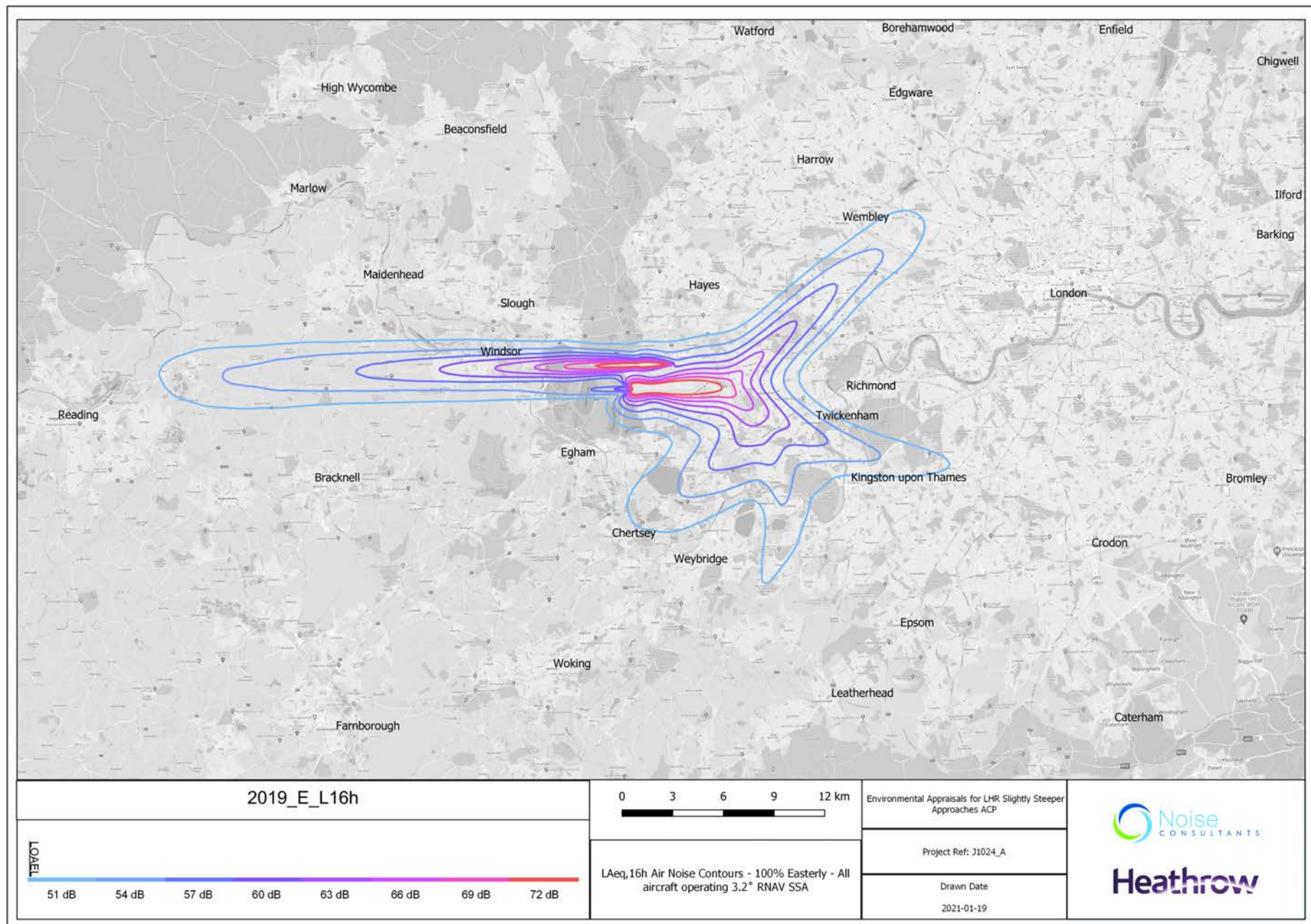
51 dB LAeq, 16 hours (day)

51dB LAeq, 16 hours (day) contours – Option B1 (Baseline) – 2019 – Easterly

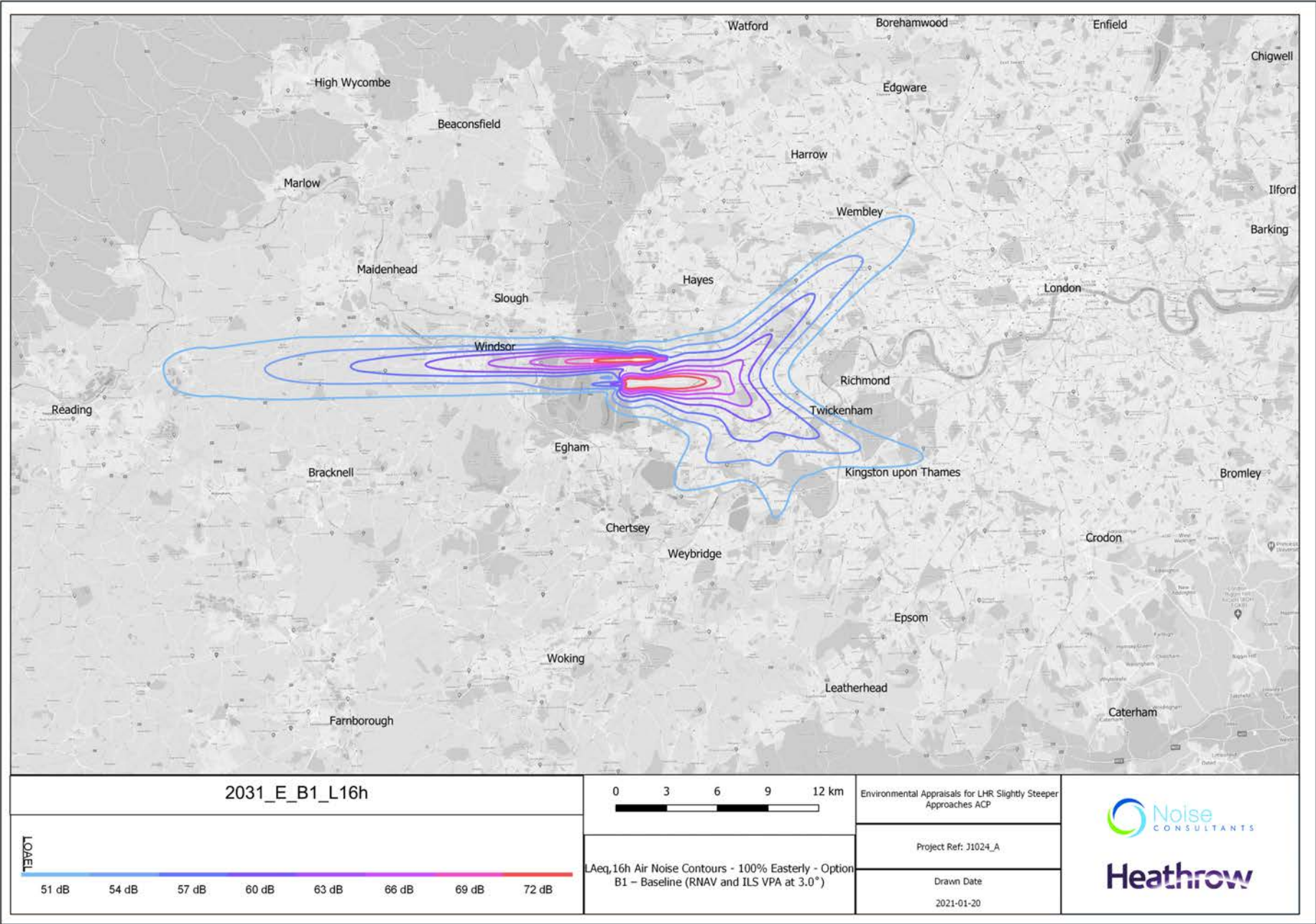




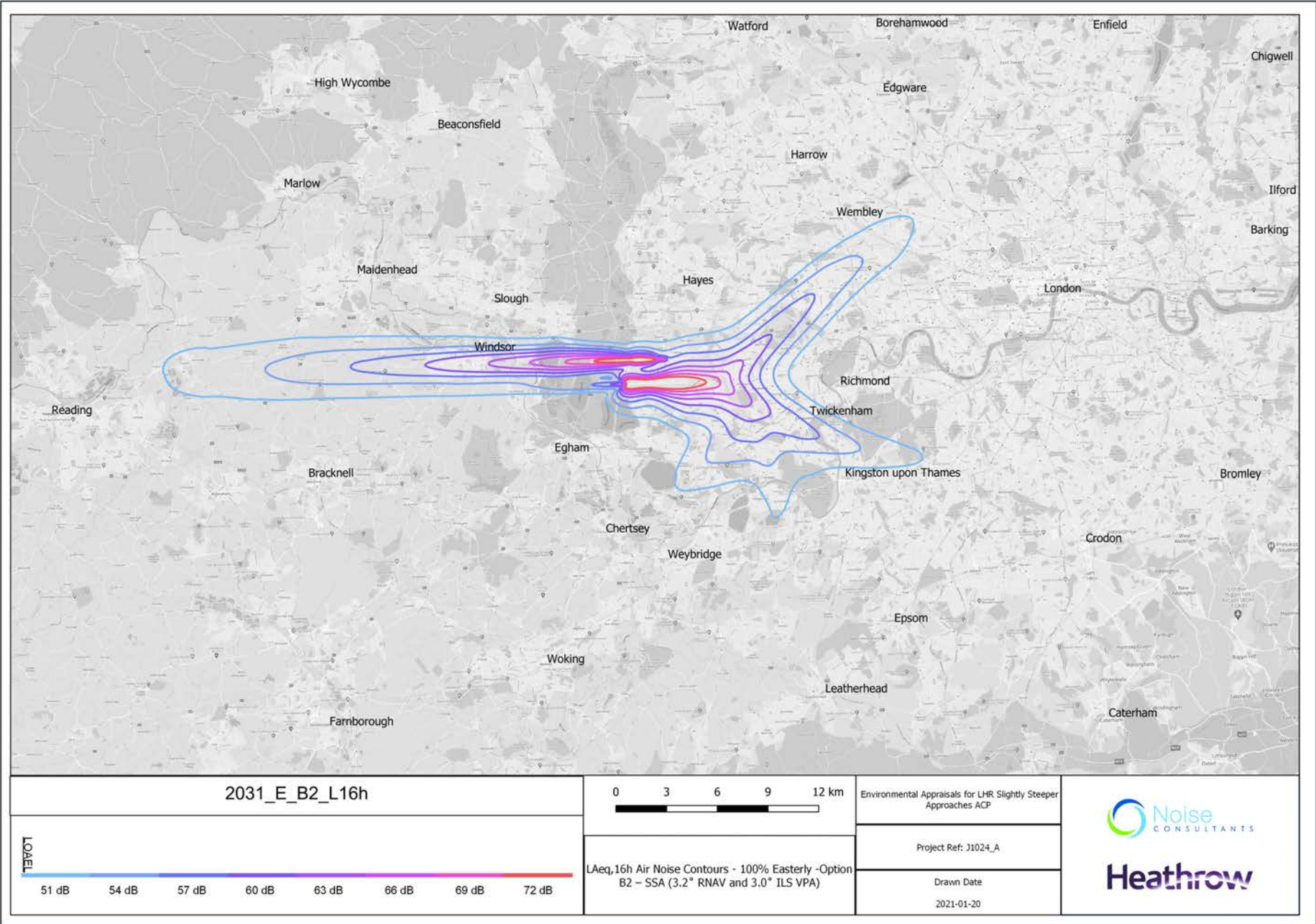
51dB LAeq, 16 hours (day) contours – All aircraft operating SSA – 2019 – Easterly



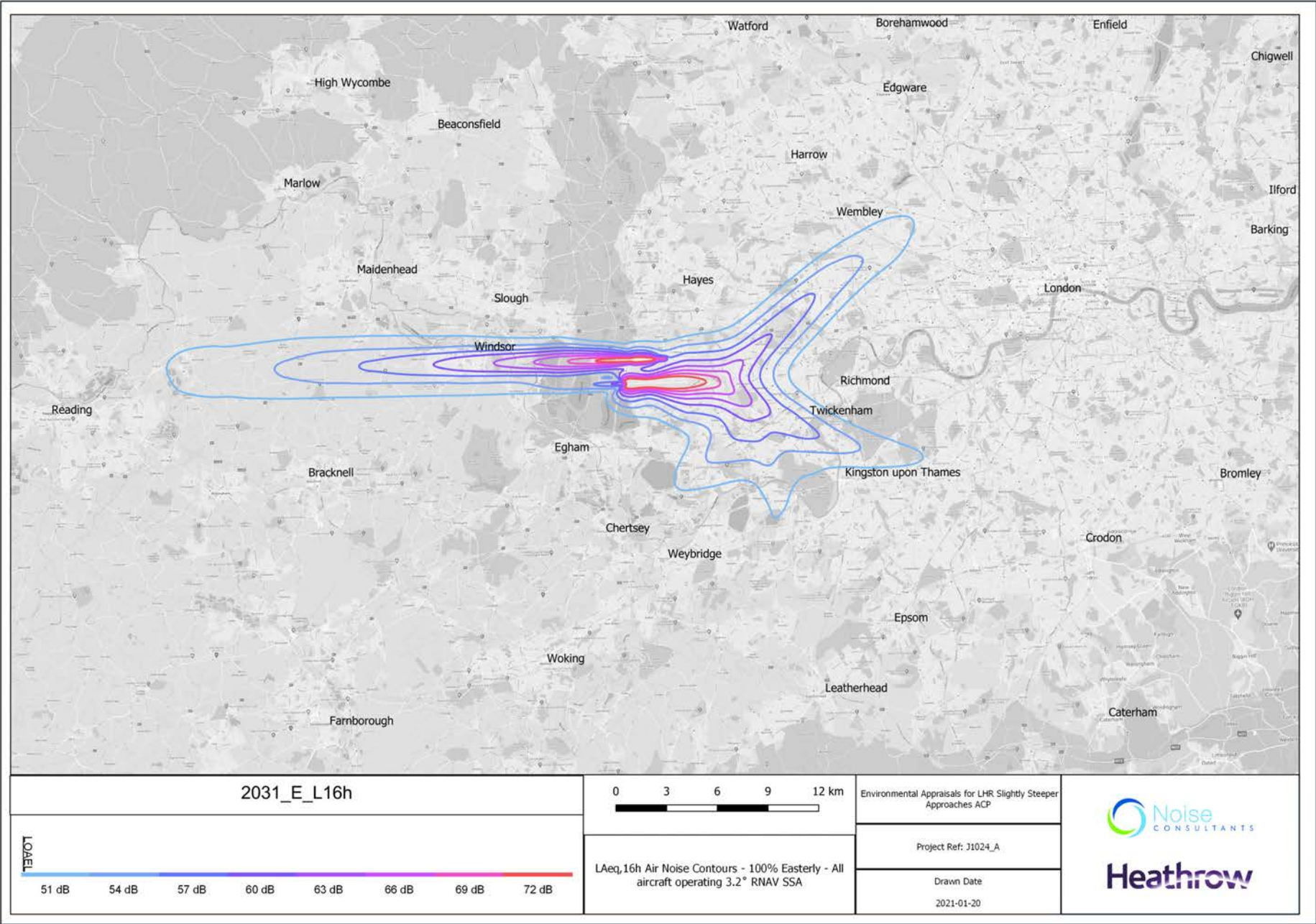
51dB LAeq, 16 hours (day) contours – Option B1 (Baseline) – 2031 – Easterly



51dB LAeq, 16 hours (day) contours – Option B2 (SSA) – 2031 – Easterly



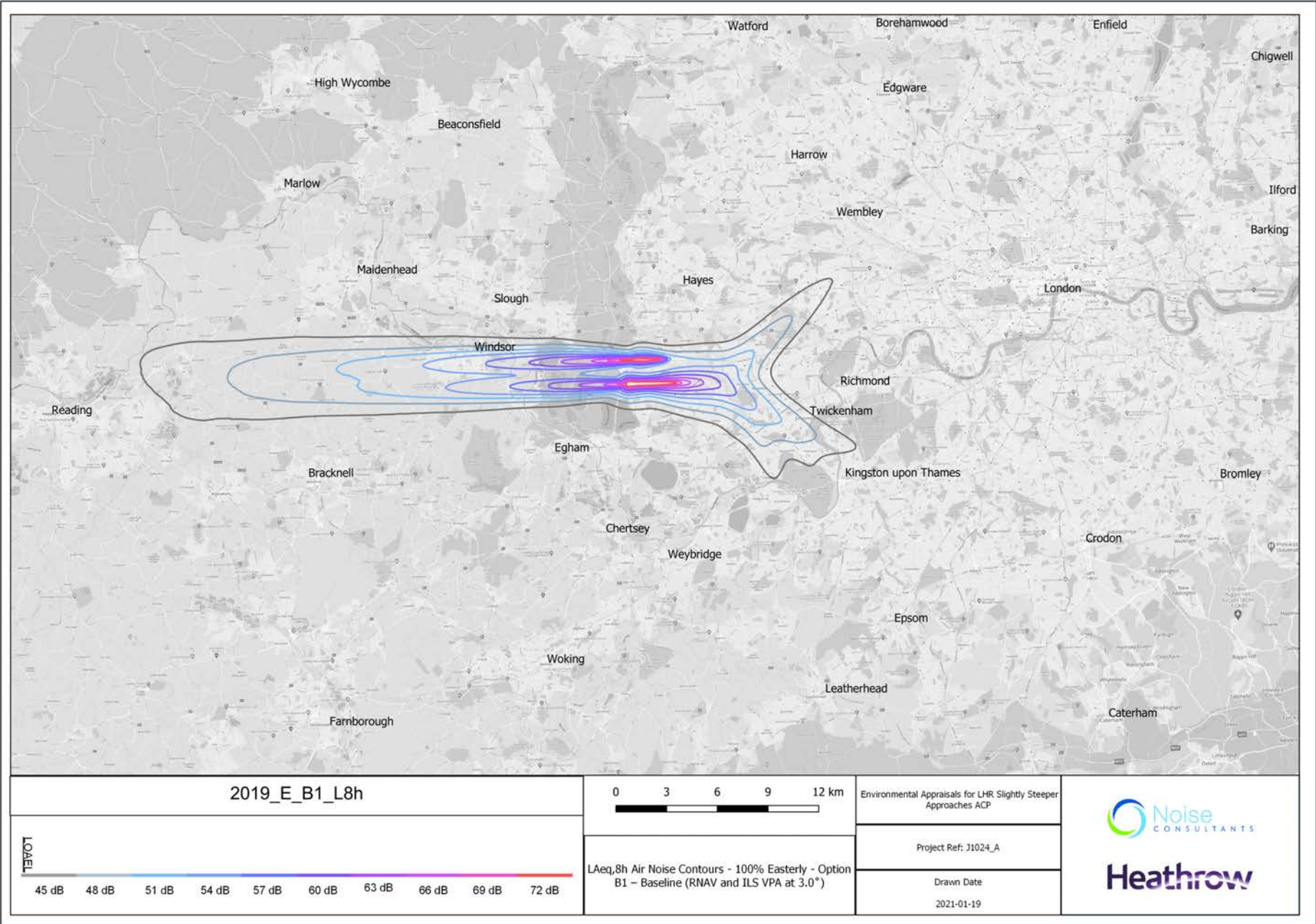
51dB LAeq, 16 hours (day) contours – All aircraft operating SSA – 2031 – Easterly



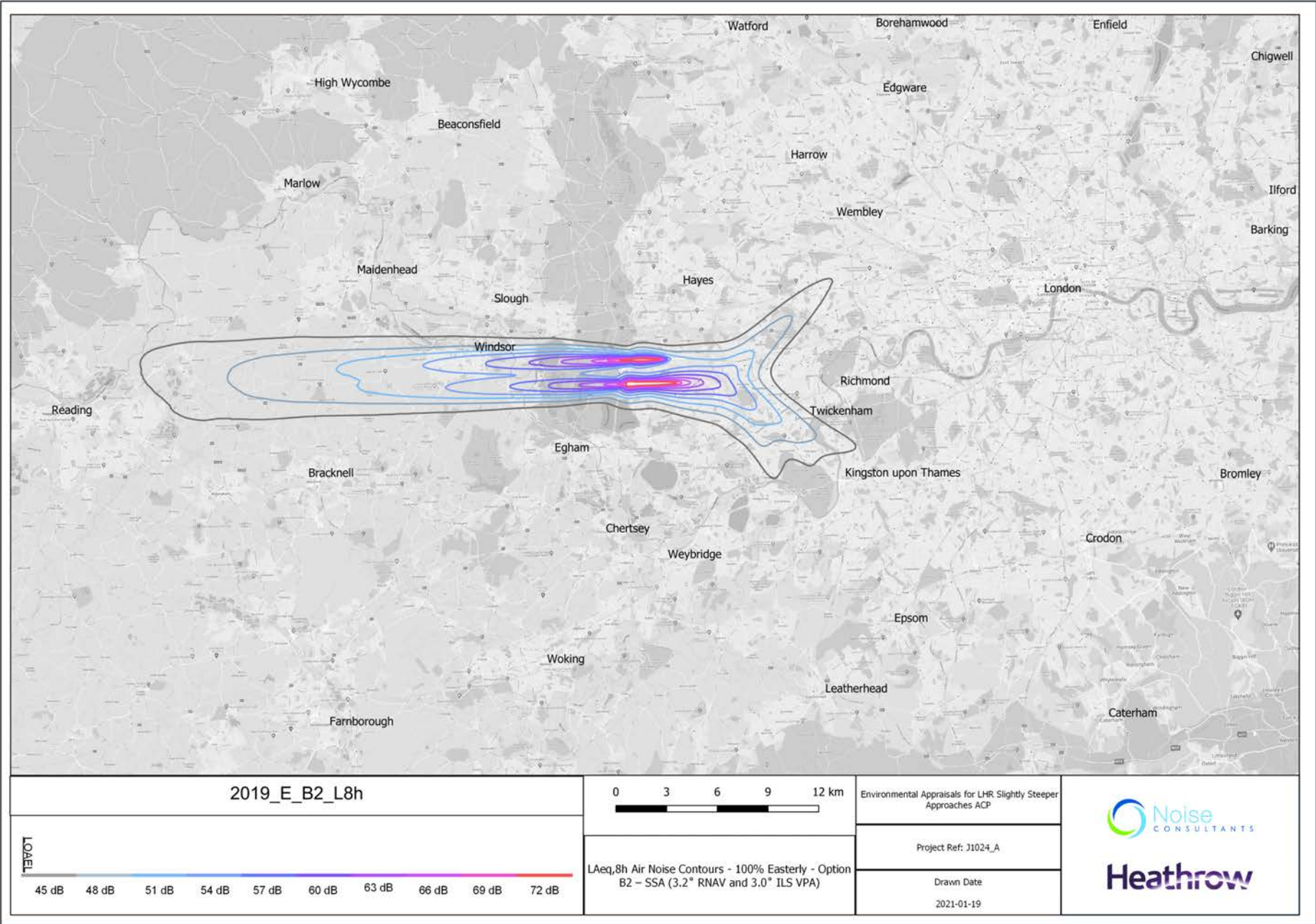
100% Easterly Operations

45 dB LAeq, 8 hours (night)

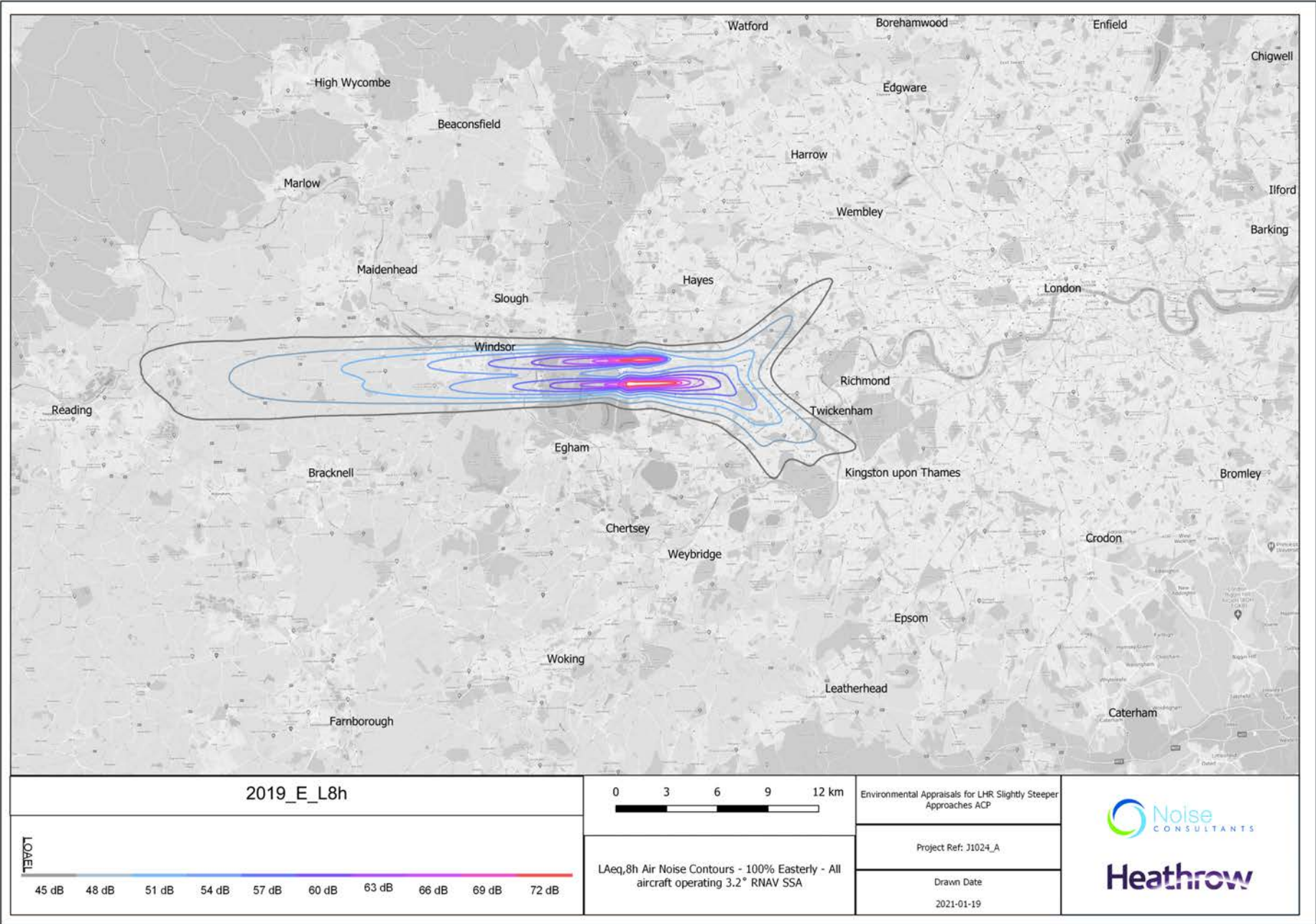
45 dB LAeq, 8 hours (night) contours – Option B1 (Baseline) – 2019 – Easterly



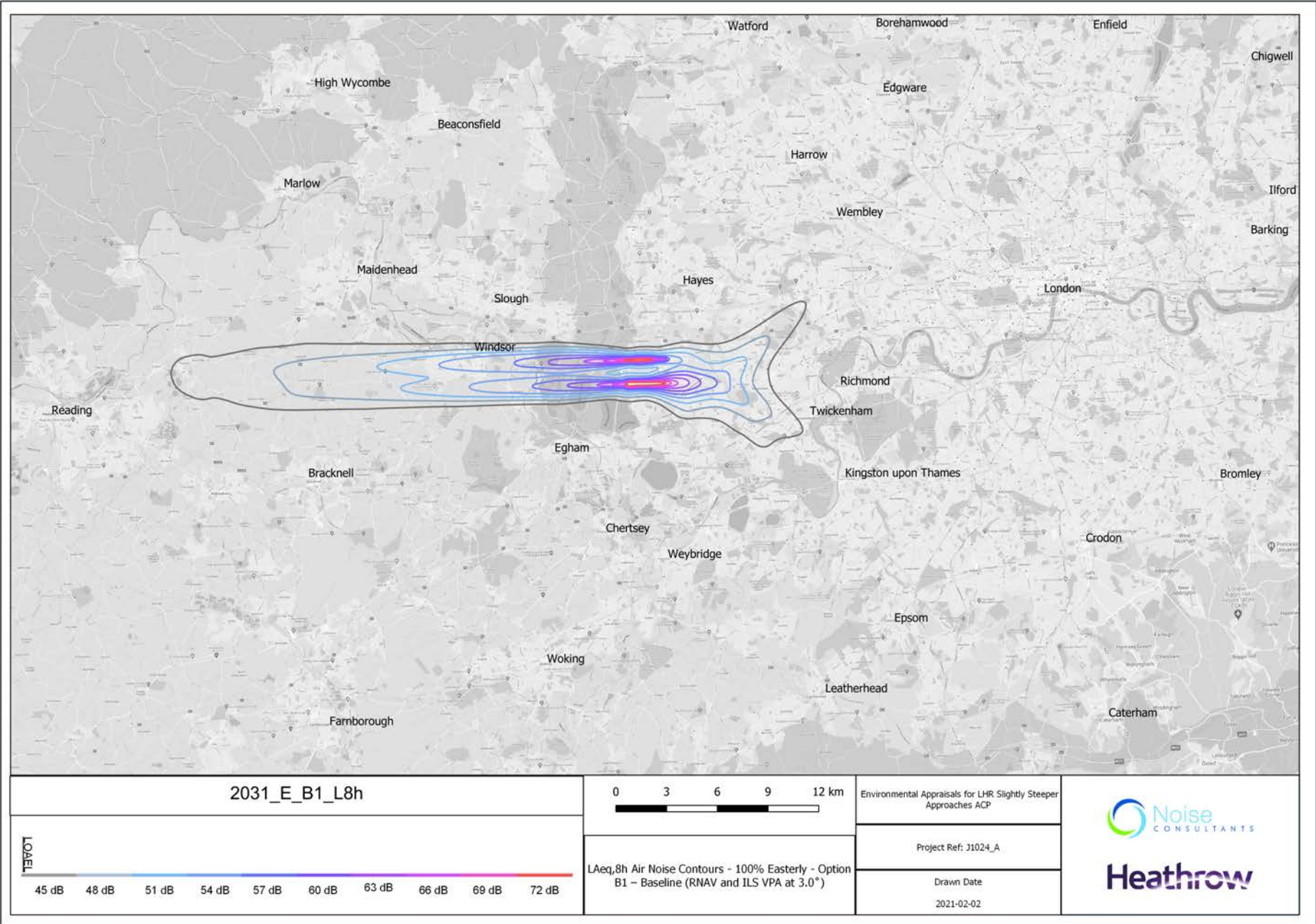
45 dB LAeq, 8 hours (night) contours – Option B2 (SSA) – 2019 – Easterly



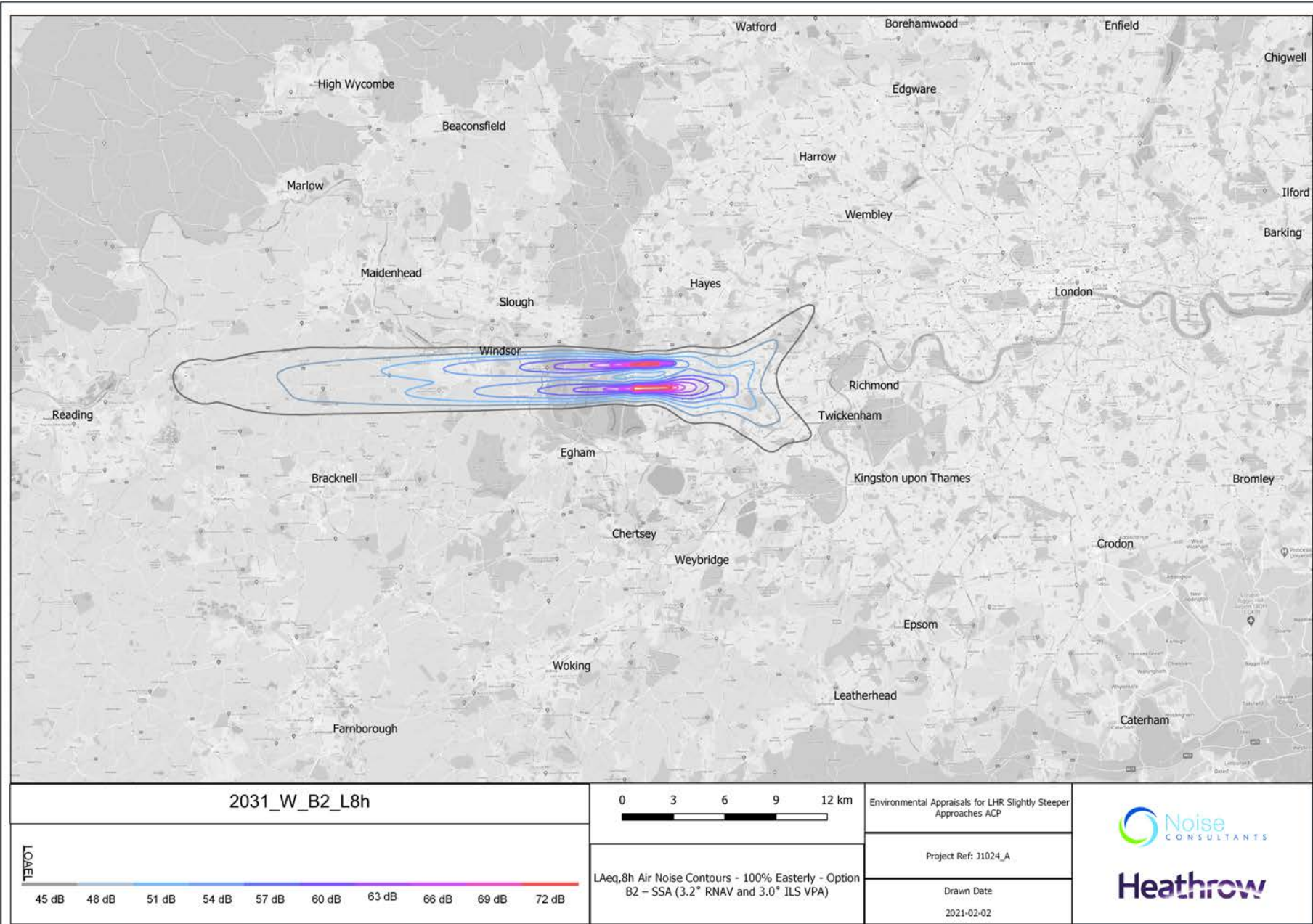
45 dB LAeq, 8 hours (night) contours – All aircraft operating SSA – 2019 – Easterly



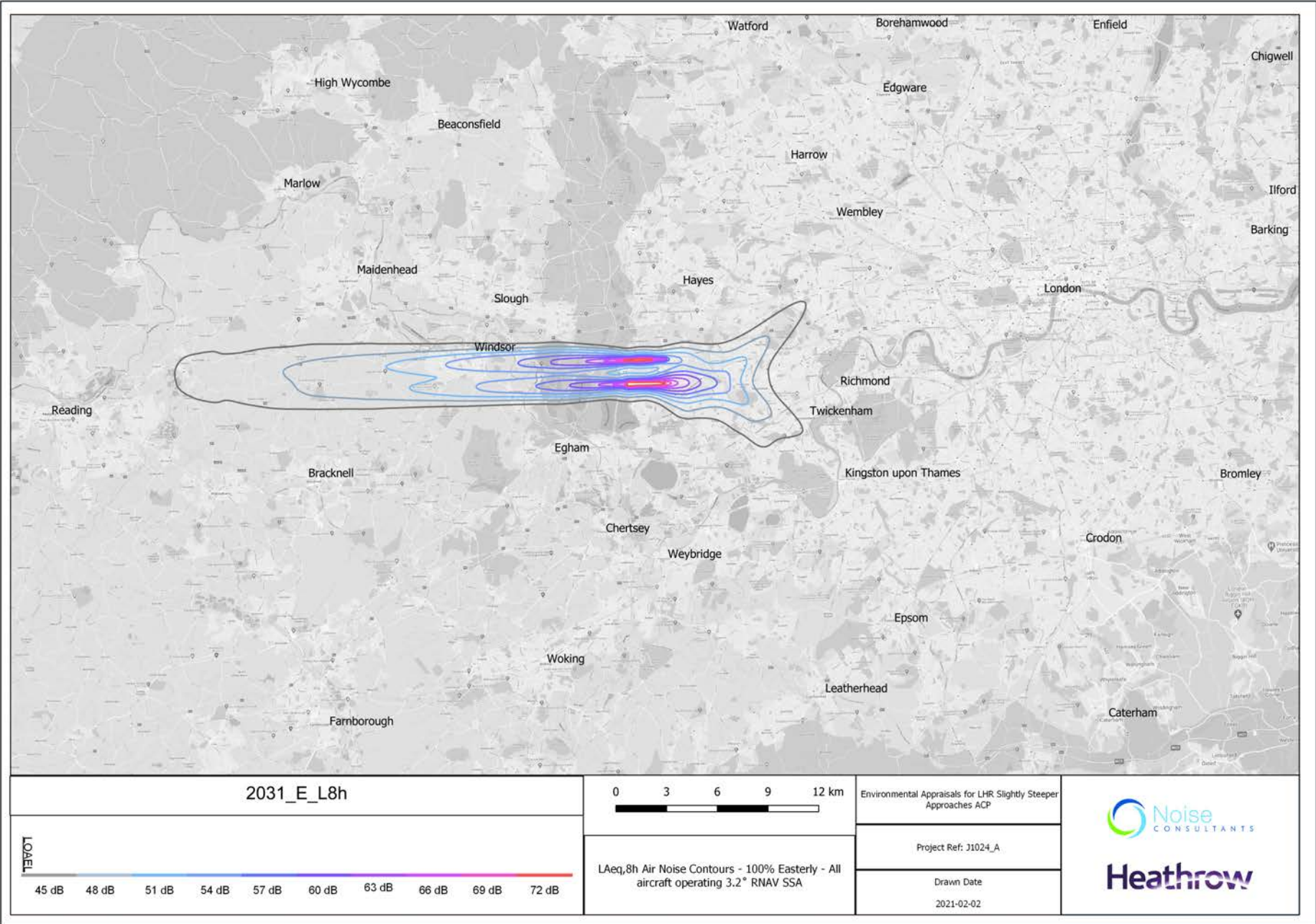
45 dB LAeq, 8 hours (night) contours – Option B1 (Baseline) – 2031 – Easterly



45 dB LAeq, 8 hours (night) contours – Option B2 (SSA) – 2031 – Easterly



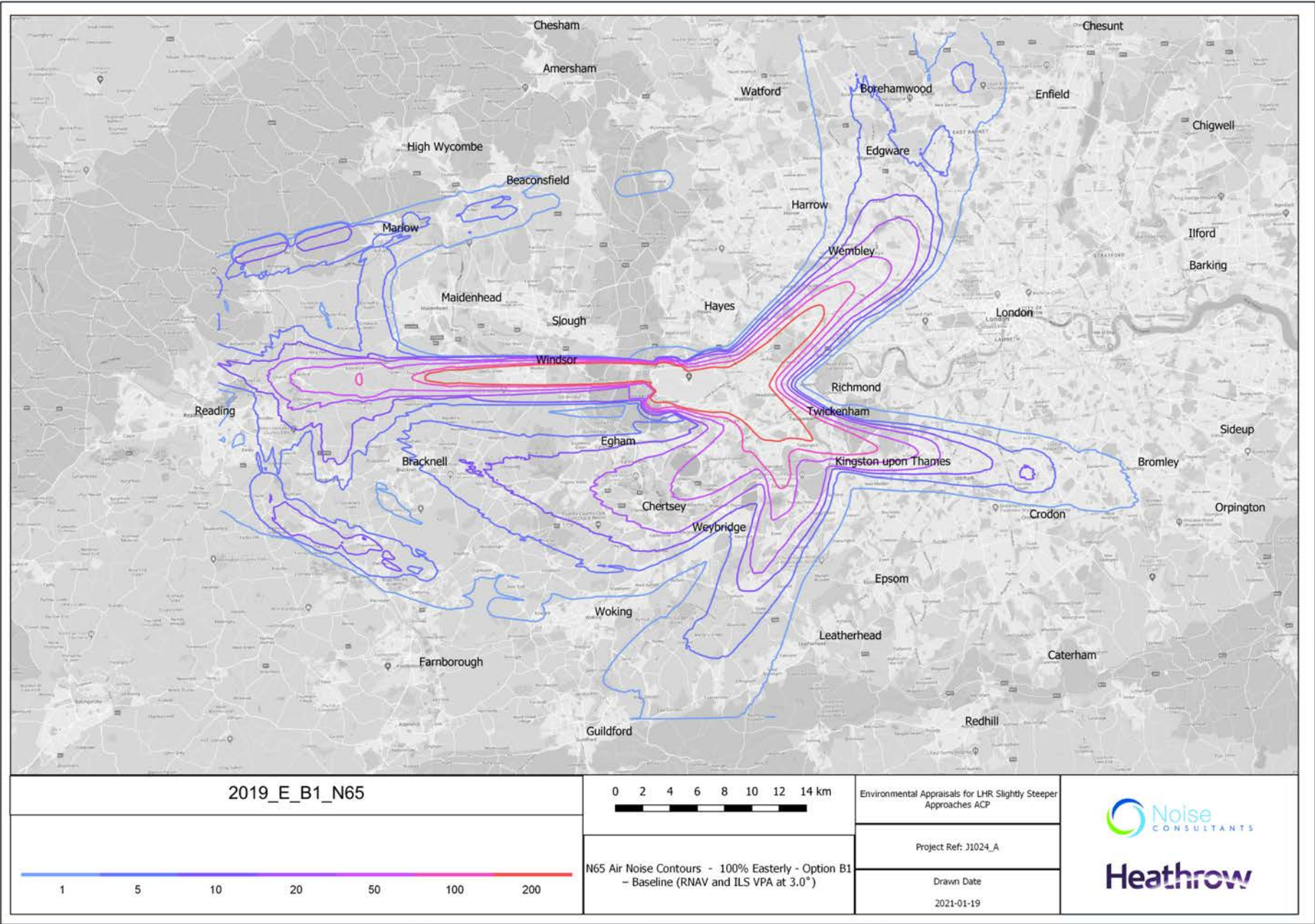
45 dB LAeq, 8 hours (night) contours – All aircraft operating SSA – 2031 – Easterly

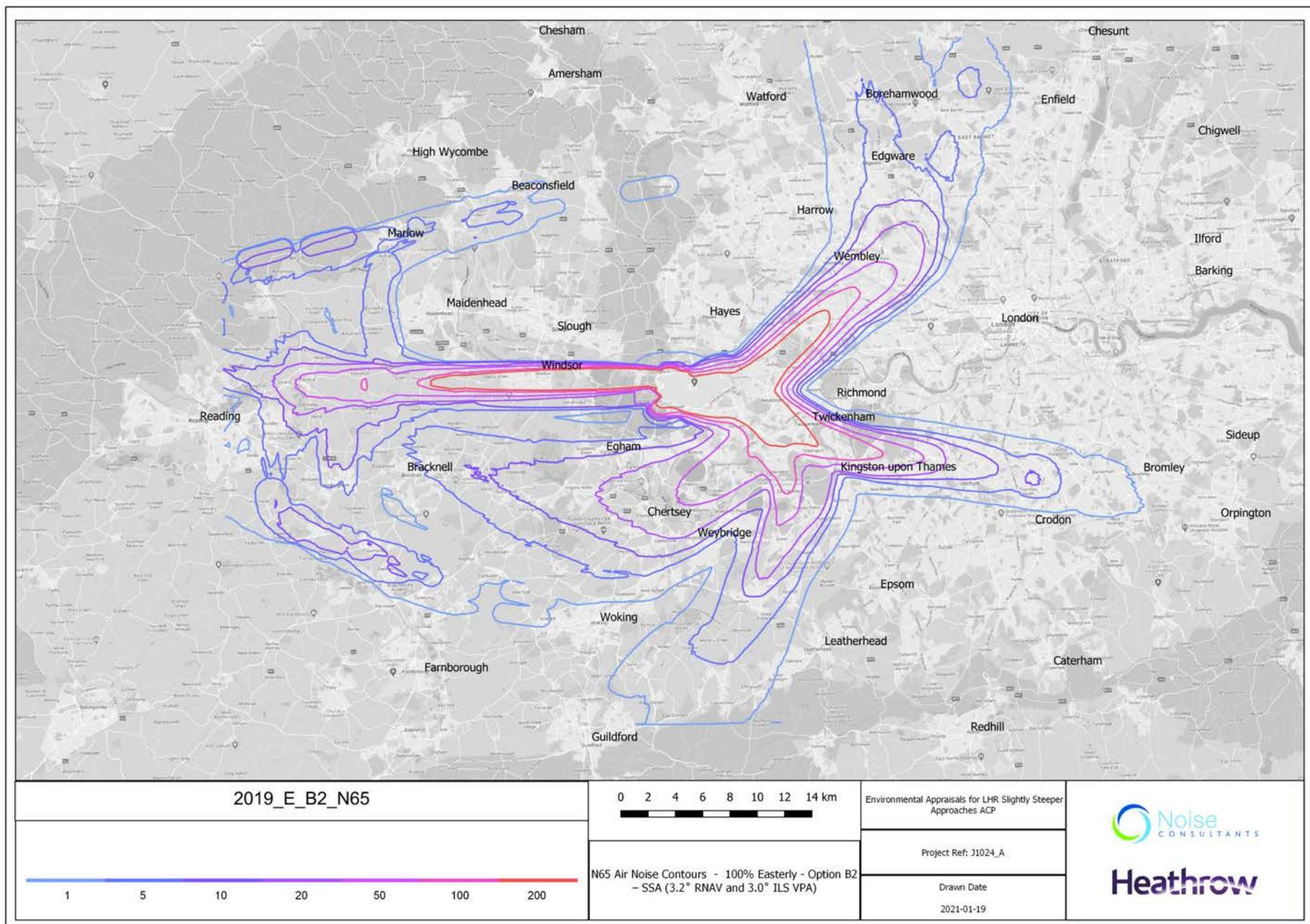


100% Easterly Operations

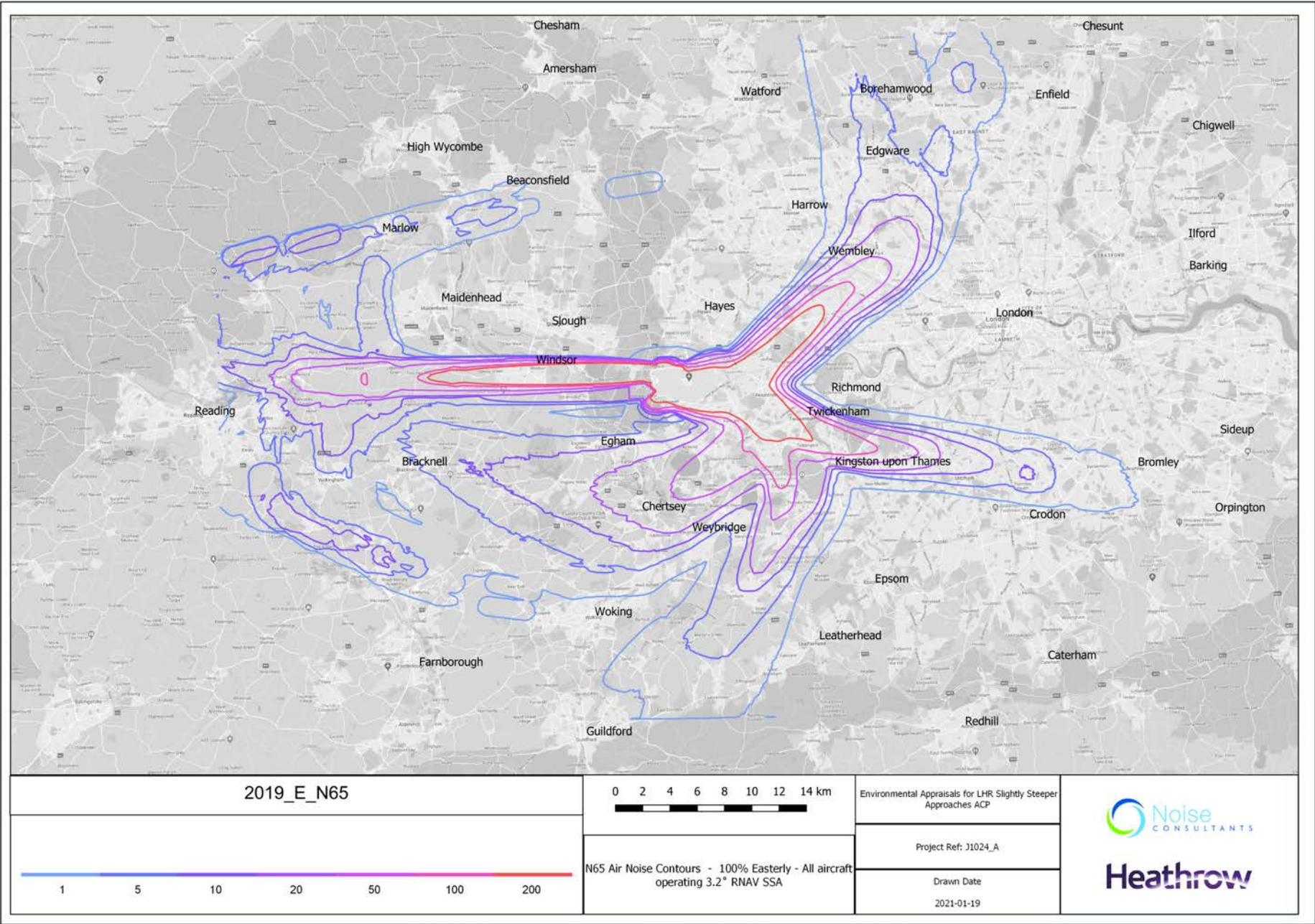
N65 (day)

N65 (day) contours – Option B1 (Baseline) – 2019 – Easterly

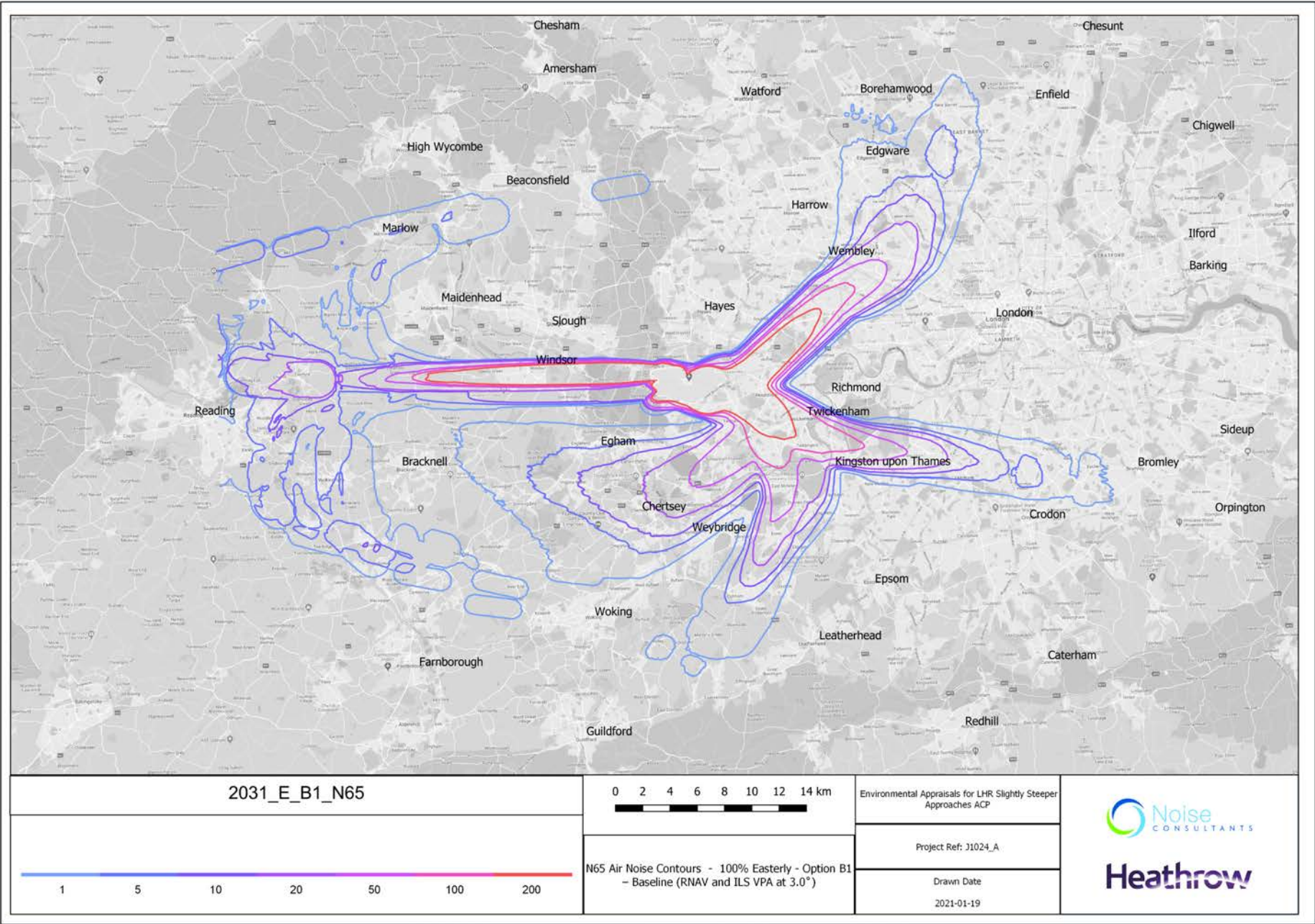




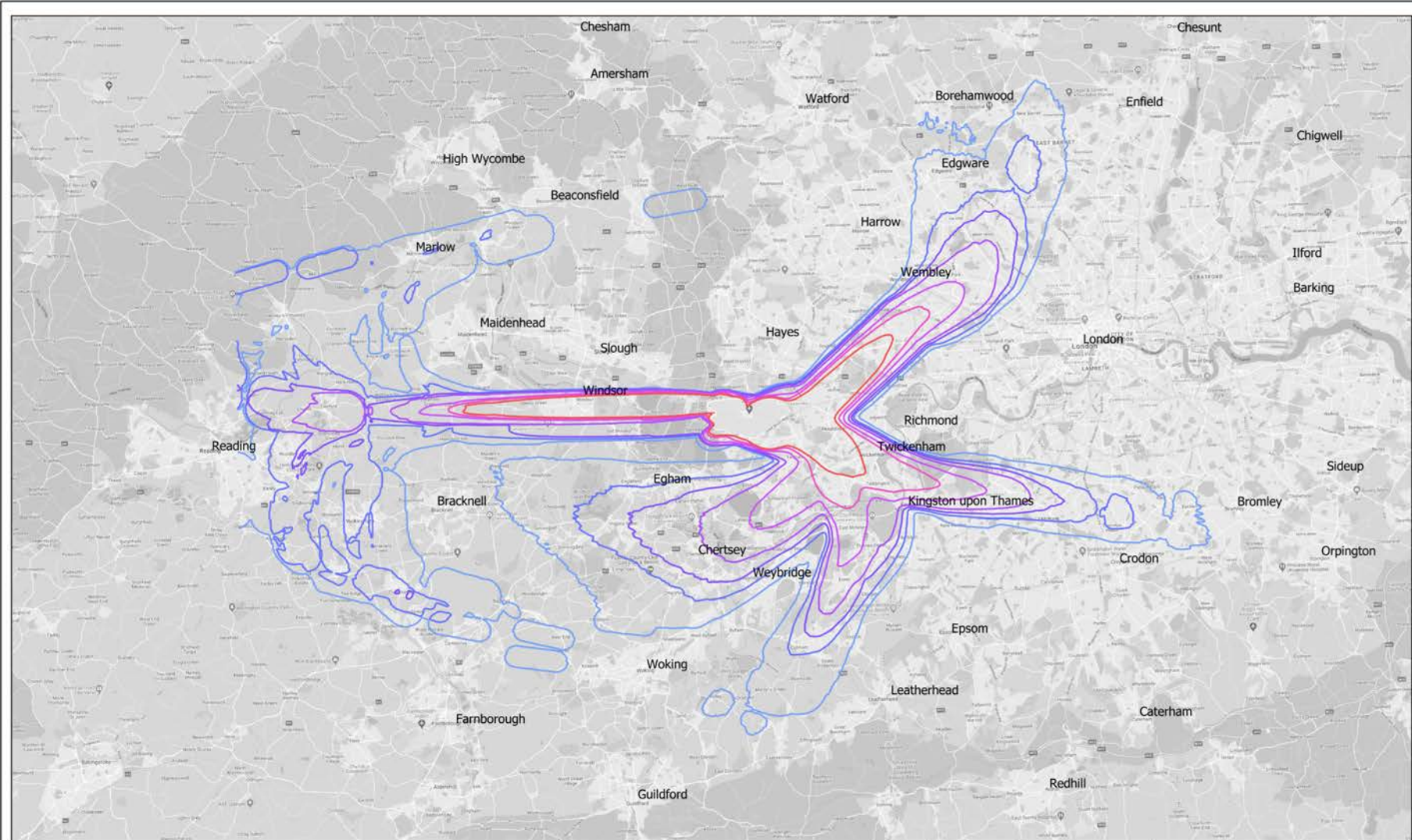
N65 (day) contours – All aircraft operating SSA – 2019 – Easterly



N65 (day) contours – Option B1 (Baseline) – 2031 – Easterly

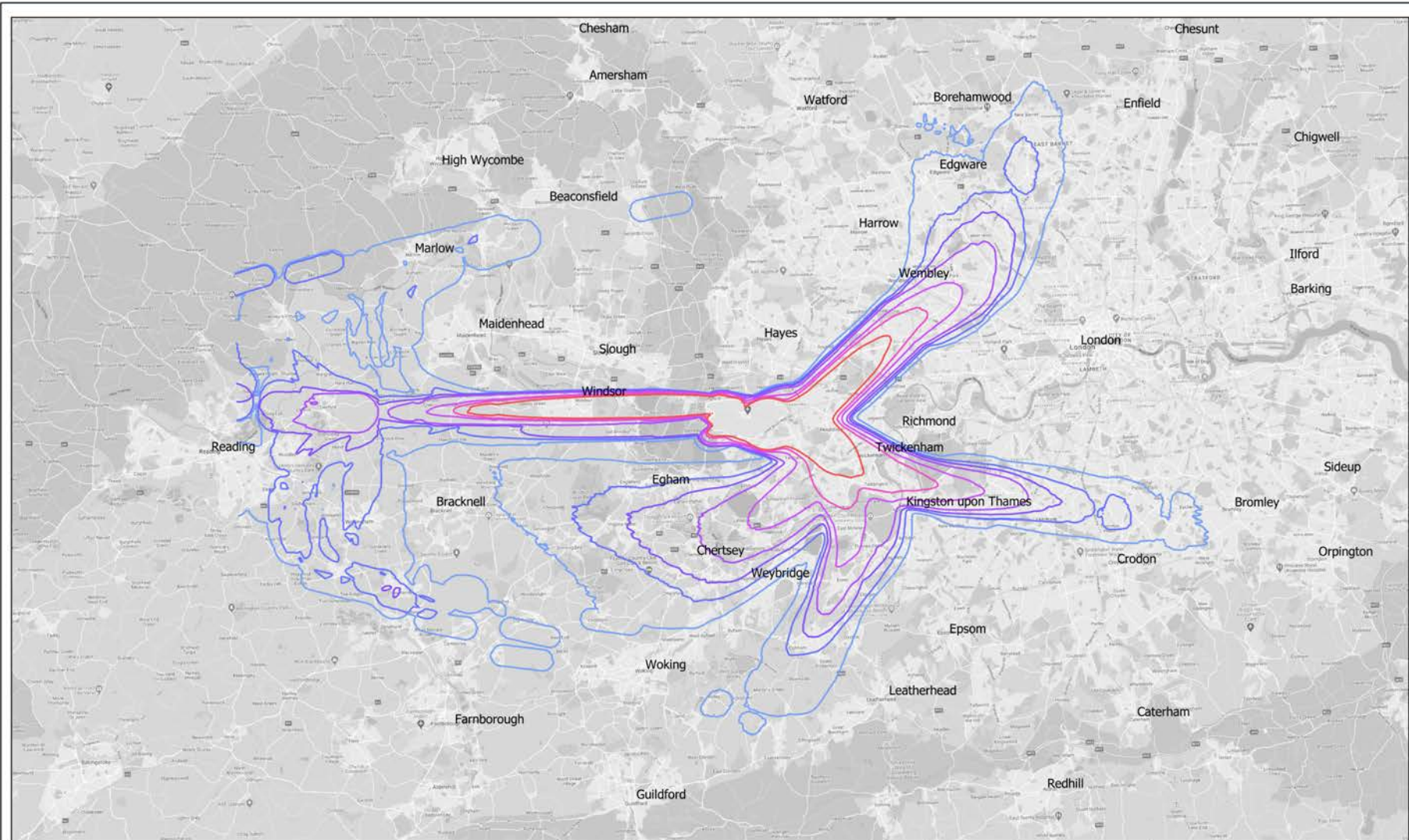


N65 (day) contours – Option B2 (SSA) – 2031 – Easterly



2031_E_B2_N65	0 2 4 6 8 10 12 14 km	Environmental Appraisals for LHR Slightly Steeper Approaches ACP	 
	N65 Air Noise Contours - 100% Easterly - Option B2 - SSA (3.2° RNAV and 3.0° ILS VPA)	Project Ref: J1024_A	
		Drawn Date 2021-01-19	

N65 (day) contours – All aircraft operating SSA – 2031 – Easterly



2031_E_N65

0 2 4 6 8 10 12 14 km

Environmental Appraisals for LHR Slightly Steeper Approaches ACP



Project Ref: J1024_A

Drawn Date

2021-01-19

Heathrow

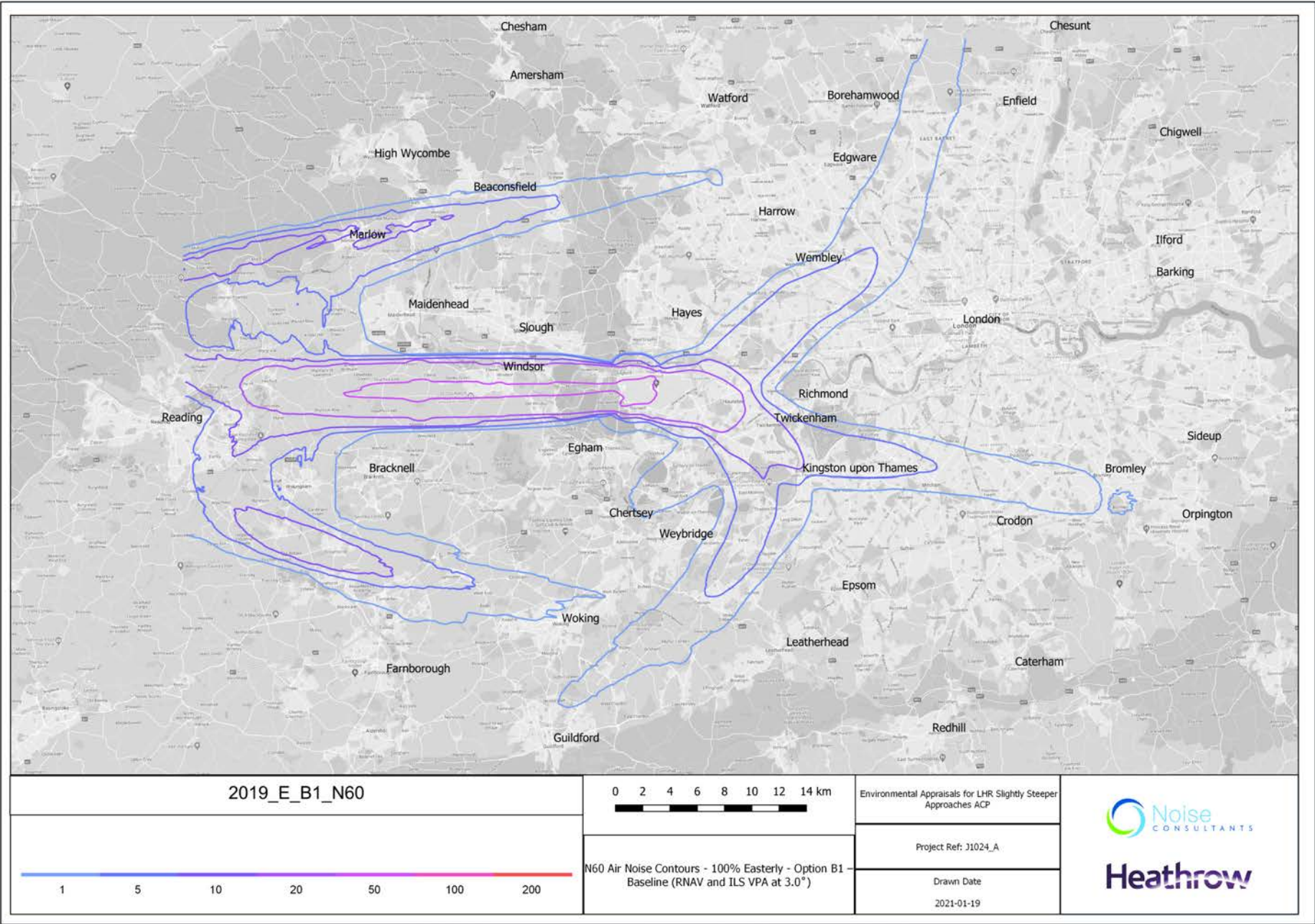
N65 Air Noise Contours - 100% Easterly - All aircraft operating 3.2° RNAV SSA

1 5 10 20 50 100 200

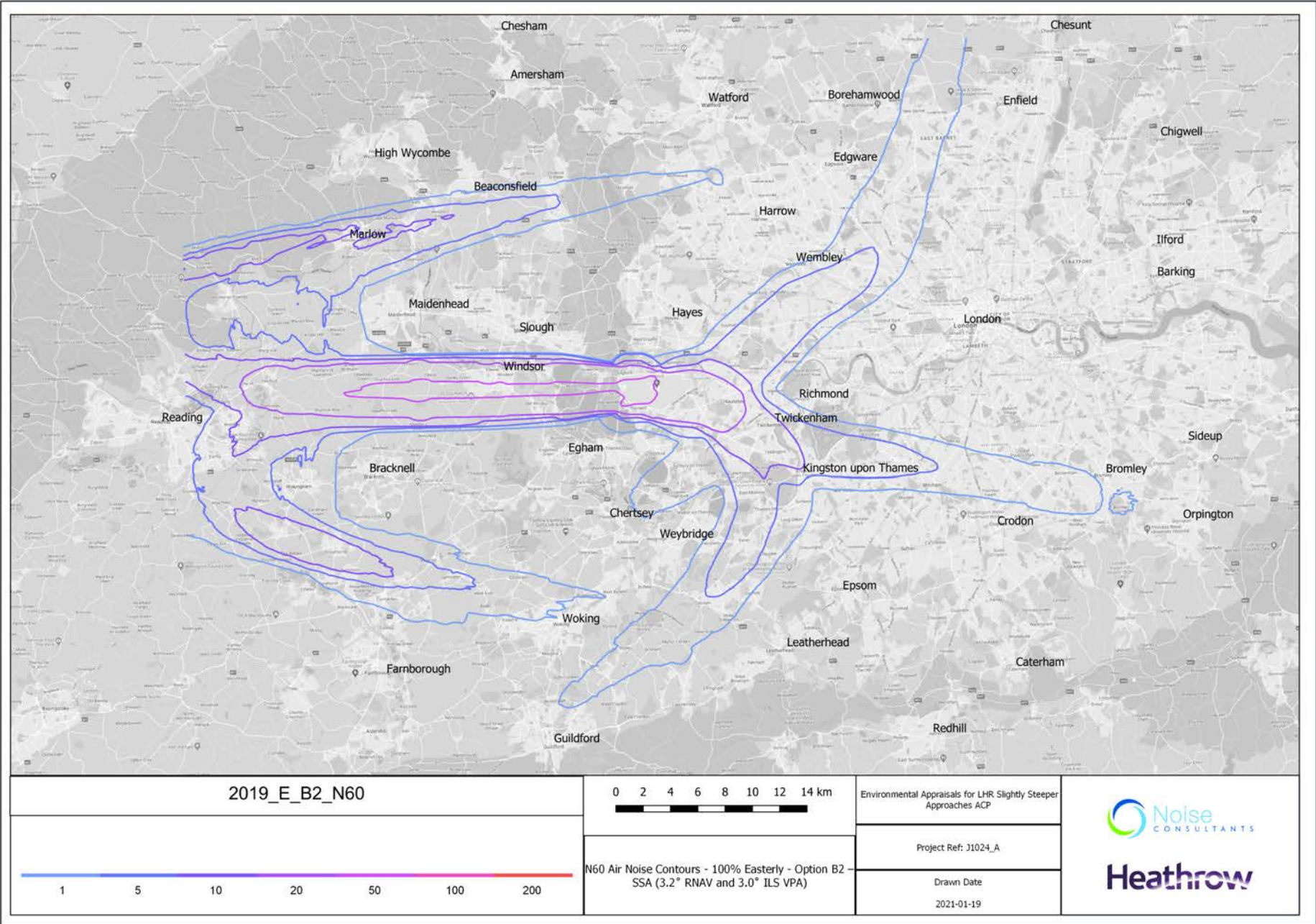
100% Easterly Operations

N60 (night)

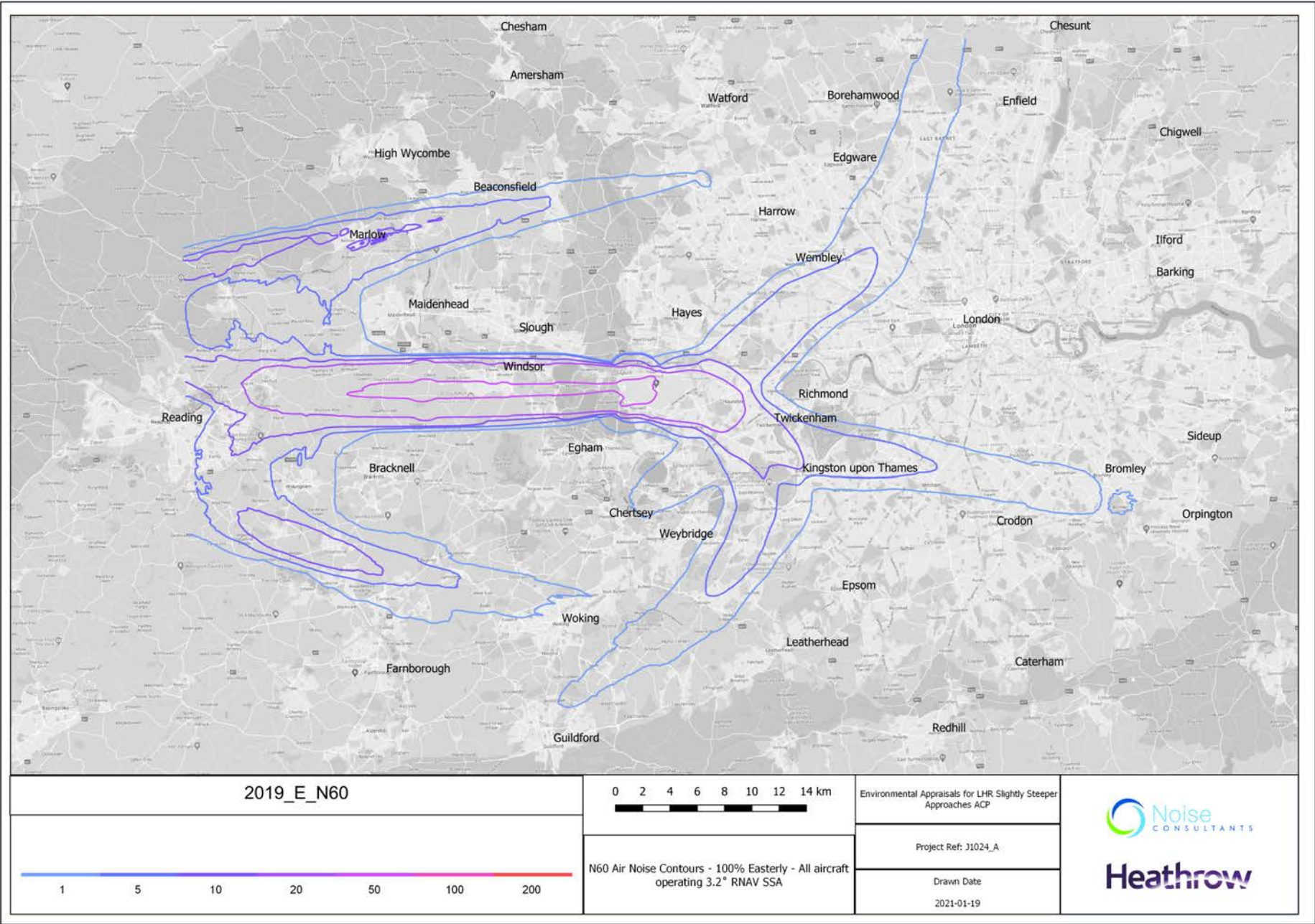
N60 (night) contours – Option B1 (Baseline) – 2019 – Easterly



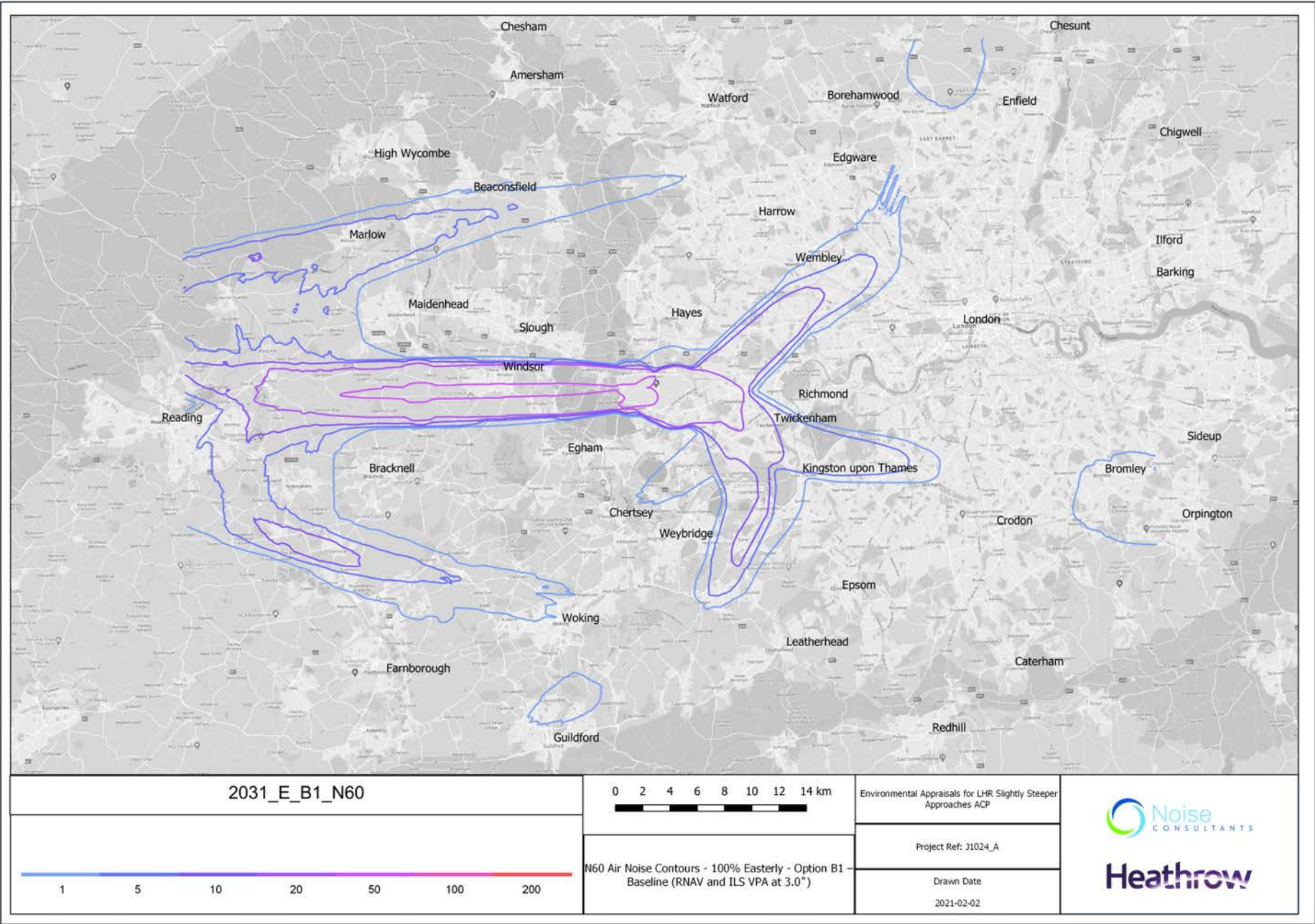
N60 (night) contours– Option B2 (SSA) – 2019 – Easterly



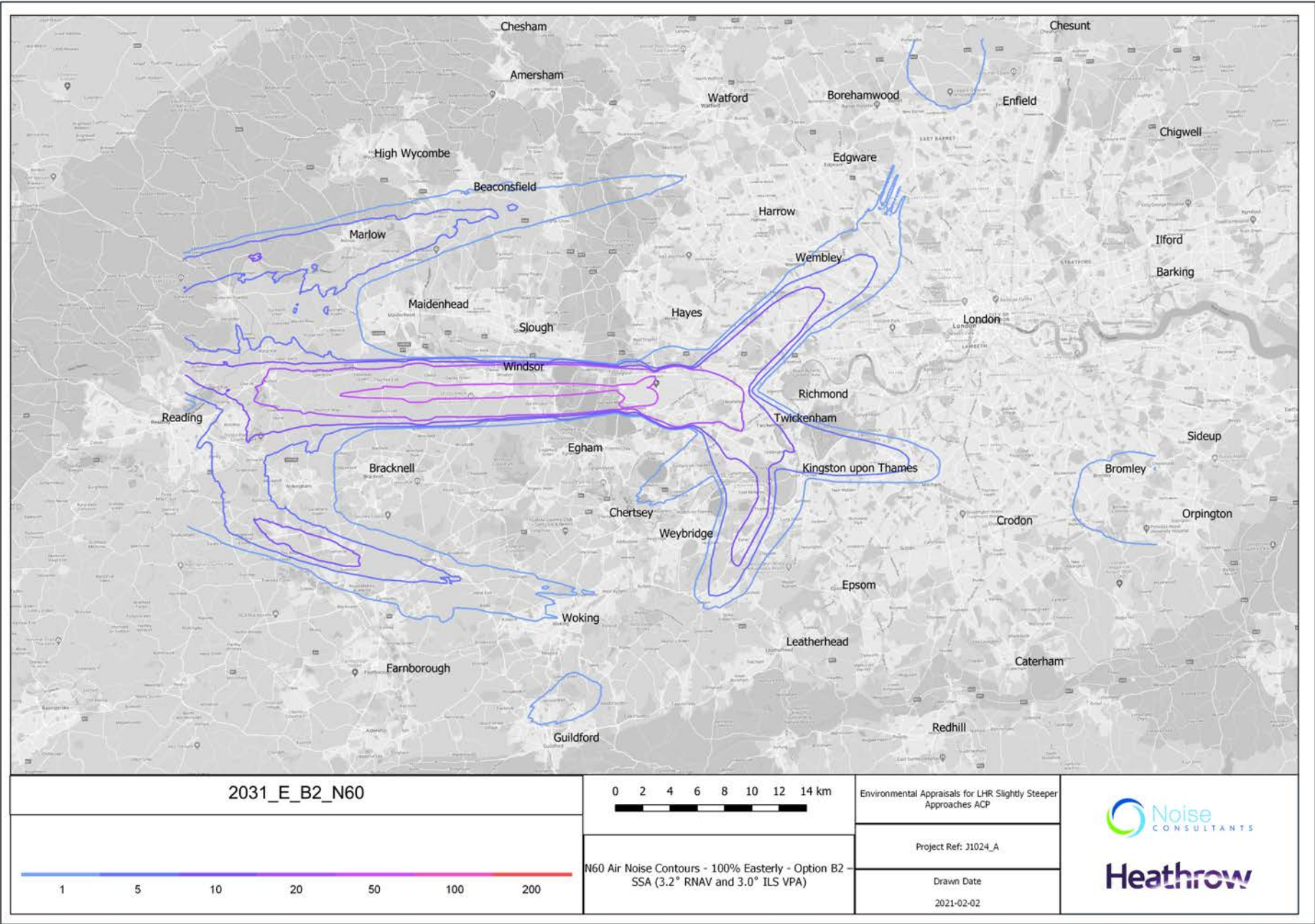
N60 (night) contours – All aircraft operating SSA – 2019 – Easterly



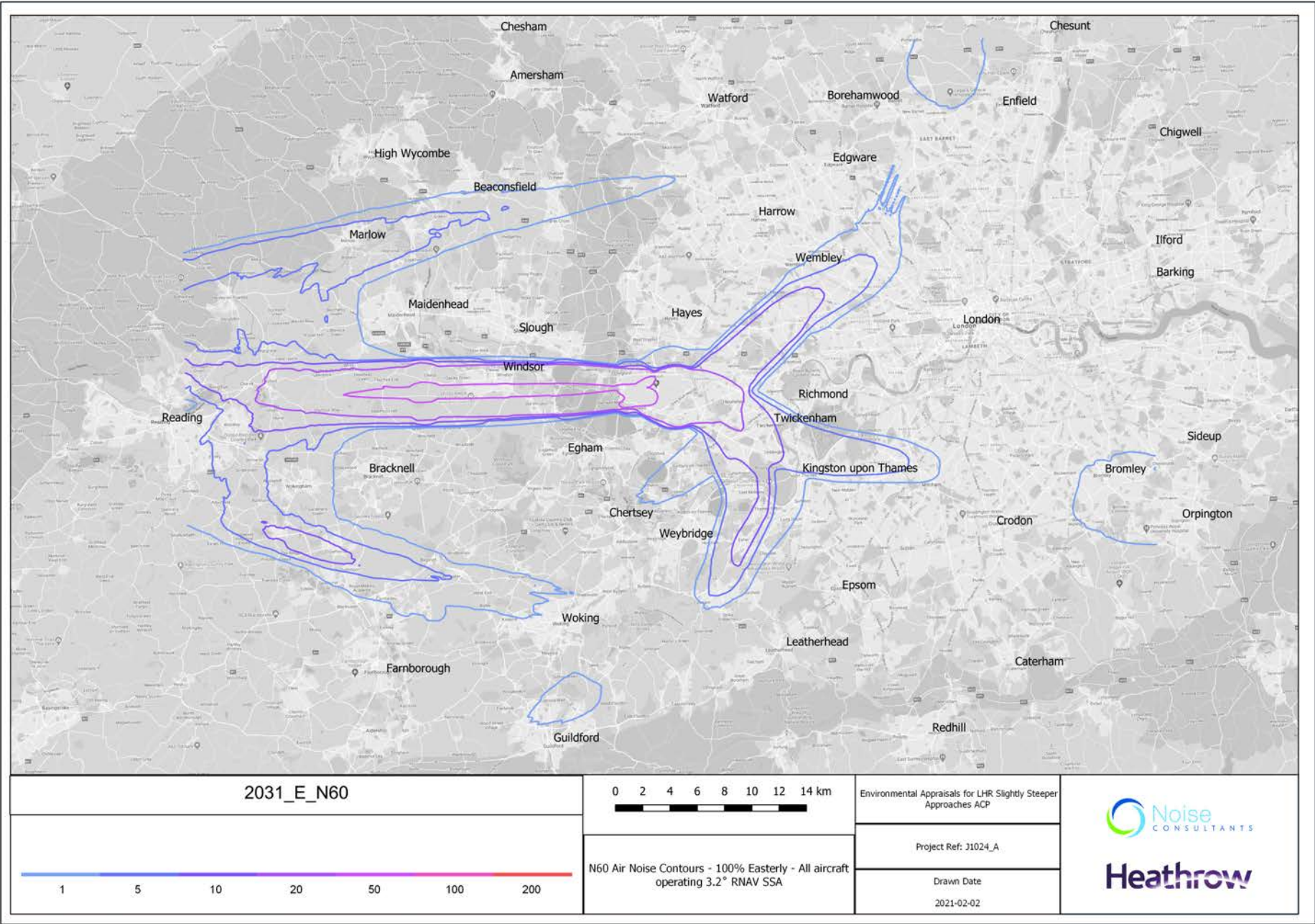
N60 (night) contours – Option B1 (Baseline) – 2031 – Easterly



N60 (night) contours– Option B2 (SSA) – 2031 – Easterly



N60 (night) contours – All aircraft operating SSA – 2031 – Easterly



100% Easterly Operations

Data Tables

LAeq Data Tables – Easterly - 2019

Contour LAeq, 16hr	Number of Dwellings, 2019 LAeq, 16hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	266725	266725	266445
54	170034	170034	170018
57	96120	96120	96092
60	45377	45377	44524
63	15951	15951	15819
66	3866	3866	3826
69	762	762	762
72	268	268	268

Contour LAeq, 16hr	Population Count, 2019 LAeq, 16hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	706111	706111	706328
54	447422	447422	447382
57	257381	257381	257226
60	126052	126052	123876
63	46518	46518	46229
66	10885	10885	10782
69	2098	2098	2098
72	749	749	749

Contour LAeq, 8hr	Number of Dwellings, 2019 LAeq, 8hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	129993	129993	129993
48	70432	70432	70409
51	38127	38127	38007
54	17066	17066	16355
57	2316	2316	2305
60	837	837	837
63	289	289	273
66	71	71	71
69	0	0	0
72	0	0	0

Contour LAeq, 8hr	Population Count, 2019 LAeq, 8hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	342736	342736	342730
48	190123	190123	190075
51	101593	101593	101271
54	42214	42214	40475
57	5761	5761	5714
60	2058	2058	2058
63	674	674	642
66	159	159	159
69	0	0	0
72	0	0	0

L_{Aeq} Data Tables – Easterly - 2031

Contour L _{Aeq} , 16hr	Number of Dwellings, 2031 L _{Aeq} , 16hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	242377	242104	242271
54	148639	148508	148561
57	75547	75542	75331
60	33372	33376	32113
63	7580	7543	7575
66	1540	1540	1540
69	482	482	469
72	85	85	49

Contour L _{Aeq} , 16hr	Population Count, 2031 L _{Aeq} , 16hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	621539	620743	621201
54	380568	380056	380429
57	198901	198954	198391
60	89237	89213	86366
63	20829	20734	20819
66	3902	3902	3902
69	1263	1263	1240
72	230	230	158

Contour L _{Aeq} , 8hr	Number of Dwellings, 2031 L _{Aeq} , 8hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	93627	93510	93476
48	51823	51835	51758
51	25949	25910	25757
54	9634	9631	8666
57	1571	1522	1404
60	492	492	459
63	173	173	169
66	0	0	0
69	0	0	0
72	0	0	0

Contour L _{Aeq} , 8hr	Population Count, 2031 L _{Aeq} , 8hr 100% East mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	245375	245035	245040
48	136108	136150	135941
51	64275	64205	63842
54	21817	21774	19649
57	3820	3722	3454
60	1159	1159	1058
63	352	352	347
66	0	0	0
69	0	0	0
72	0	0	0

LAeq Data Tables – Easterly - 2019

Contour LAeq, 16hr	Area Km^2, 2019 LAeq, 16hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	271.08	271.08	270.30
54	152.42	152.42	151.96
57	81.47	81.47	80.66
60	45.44	45.44	45.01
63	25.42	25.42	25.16
66	14.65	14.65	14.51
69	8.35	8.35	8.28
72	4.56	4.56	4.53

Contour LAeq, 8hr	Area Km^2, 2019 LAeq, 8hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	188.51	188.51	188.23
48	112.09	112.09	111.43
51	66.93	66.93	66.10
54	37.78	37.78	37.27
57	19.07	19.07	18.80
60	10.25	10.25	10.13
63	5.20	5.20	5.14
66	2.57	2.57	2.54
69	1.41	1.41	1.40
72	0.81	0.81	0.81

LAeq Data Tables – Easterly - 2031

Contour LAeq, 16hr	Area Km^2, 2031 LAeq, 16hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	220.48	220.32	219.76
54	119.98	119.96	118.51
57	65.22	65.20	64.35
60	35.63	35.62	35.10
63	19.70	19.71	19.43
66	11.32	11.32	11.18
69	6.22	6.22	6.15
72	3.46	3.46	3.44

Contour LAeq, 8hr	Area Km^2, 2031 LAeq, 8hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	140.63	140.64	140.19
48	85.43	85.43	83.55
51	52.61	52.61	51.27
54	28.44	28.43	27.66
57	13.38	13.40	13.09
60	6.81	6.81	6.68
63	3.24	3.24	3.19
66	1.66	1.66	1.65
69	0.93	0.93	0.92
72	0.53	0.53	0.53

N65 and N60 Data Tables – Easterly - 2019

N65	Number of Dwellings, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1175562	1175562	1170429
5	746117	746117	737077
10	495153	495153	492168
20	343798	343798	343741
50	221150	221150	221043
100	146979	146979	146935
200	83072	83071	82884

N60	Number of Dwellings, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	862680	862680	857154
5	378665	378665	374638
10	139741	139741	137515
20	62274	62274	62195
50	6436	6436	6793
100	0	0	0
200	0	0	0

N65	Population Count, N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3059640	3059640	3045951
5	1963984	1963984	1942229
10	1310124	1310124	1303240
20	906063	906063	905917
50	581435	581435	581133
100	387894	387894	387784
200	224789	224786	224297

N60	Population Count, N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2244708	2244708	2229620
5	991695	991695	981503
10	368239	368239	362657
20	165323	165323	165094
50	15892	15892	16648
100	0	0	0
200	0	0	0

N65 and N60 Data Tables – Easterly - 2031

N65	Number of Dwellings, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1016239	1018557	1015267
5	642034	642499	636871
10	447743	447551	446761
20	336166	336330	336384
50	210099	210092	210071
100	147056	147056	146902
200	79120	79114	79015

N60	Number of Dwellings, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	665057	669570	661172
5	355618	355755	352935
10	183091	185422	180776
20	65732	65755	65544
50	5679	5679	5694
100	0	0	0
200	0	0	0

N65	Population Count, N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2580384	2586380	2578706
5	1637293	1638337	1623718
10	1142499	1142164	1139847
20	858755	859159	859352
50	537119	537081	537049
100	375776	375776	375318
200	210125	210115	209879

N60	Population Count, N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1687409	1698659	1677968
5	905416	905663	898579
10	468991	474488	463112
20	169510	169584	169122
50	13757	13757	13807
100	0	0	0
200	0	0	0

N65 and N60 Data Tables – Easterly - 2019

N60	Area Km^2, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	532.13	532.13	521.80
10	251.84	251.84	244.53
20	134.10	134.10	133.43
50	24.51	24.51	24.26
100	0.00	0.00	0.00
200	0.00	0.00	0.00

N65	Area Km^2, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	778.29	778.29	764.45
10	473.24	473.24	466.59
20	309.54	309.55	308.21
50	189.33	189.34	189.81
100	109.98	109.97	109.29
200	70.17	70.16	69.49

N65 and N60 Data Tables – Easterly - 2031

N60	Area Km ² , 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	448.80	448.64	436.80
10	225.90	227.05	222.03
20	125.33	125.34	124.63
50	21.89	21.89	21.61
100	0.00	0.00	0.00
200	0.00	0.00	0.00

N65	Area Km ² , 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	524.81	524.73	513.90
10	348.98	348.94	348.90
20	247.47	247.47	249.67
50	148.88	148.86	148.03
100	100.14	100.14	99.45
200	66.40	66.39	65.56

Points of Interest – Education – Easterly - 2019

Contour LAeq, 16hr	Education, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	282	282	284
54	176	176	176
57	101	101	101
60	42	42	42
63	12	12	12
66	4	4	4
69	0	0	0
72	0	0	0

Contour LAeq, 8hr	Education, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	136	136	136
48	75	75	75
51	38	38	38
54	13	13	12
57	1	1	1
60	0	0	0
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

N65	Education, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1215	1215	1212
5	798	798	781
10	514	514	509
20	357	357	357
50	242	242	242
100	155	155	154
200	78	78	78

N60	Education, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	898	898	892
5	416	416	412
10	165	165	158
20	65	65	65
50	9	9	10
100	0	0	0
200	0	0	0

Points of Interest – Education – Easterly – 2031

Contour LAeq, 16hr	Education, 2031 LAeq, 16hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	241	242	241
54	147	147	147
57	76	74	76
60	31	31	28
63	5	5	5
66	2	2	2
69	0	0	0
72	0	0	0

Contour LAeq, 8hr	Education, 2031 LAeq, 8hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	90	90	90
48	50	50	50
51	26	26	25
54	8	8	8
57	0	0	0
60	0	0	0
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

N65	Education, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	984	986	984
5	622	622	613
10	430	430	429
20	326	325	326
50	209	209	209
100	140	140	140
200	75	75	75

N60	Education, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	664	668	662
5	365	365	365
10	185	188	182
20	64	64	64
50	8	8	9
100	0	0	0
200	0	0	0

Points of Interest – Healthcare – Easterly - 2019

Contour LAeq, 16hr	Healthcare, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	540	540	542
54	352	352	352
57	206	206	206
60	86	86	86
63	22	22	21
66	9	9	9
69	1	1	1
72	1	1	1

Contour LAeq, 8hr	Healthcare, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	271	271	271
48	132	132	132
51	73	73	73
54	35	35	34
57	3	3	3
60	1	1	1
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

N65	Healthcare, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2355	2355	2349
5	1530	1530	1503
10	1005	1005	1000
20	686	686	686
50	469	469	469
100	324	324	323
200	172	172	172

N60	Healthcare, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1729	1729	1720
5	792	792	785
10	298	298	289
20	115	115	115
50	14	14	17
100	0	0	0
200	0	0	0

Points of Interest – Healthcare – Easterly – 2031

Contour LAeq, 16hr	Healthcare, 2031 LAeq, 16hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	463	464	463
54	302	301	302
57	143	141	143
60	60	60	57
63	12	12	11
66	3	3	3
69	1	1	1
72	0	0	0

Contour LAeq, 8hr	Healthcare, 2031 LAeq, 8hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	162	162	162
48	88	89	88
51	53	54	52
54	24	24	23
57	1	1	1
60	0	0	0
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

N65	Healthcare, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1890	1897	1891
5	1199	1198	1192
10	827	826	826
20	634	633	634
50	416	416	416
100	297	297	297
200	158	158	158

N60	Healthcare, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1261	1268	1258
5	699	698	698
10	364	368	356
20	117	117	117
50	13	13	15
100	0	0	0
200	0	0	0

Points of Interest – Places of worship – Easterly - 2019

Contour LAeq, 16hr	Place of Worship, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	886	886	887
54	562	562	562
57	324	324	324
60	145	145	144
63	36	36	34
66	12	12	12
69	2	2	2
72	2	2	2

Contour LAeq, 8hr	Place of Worship, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	439	439	439
48	219	219	219
51	119	119	119
54	63	63	61
57	5	5	5
60	2	2	2
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

N60	Place of Worship, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2854	2854	2840
5	1300	1300	1288
10	459	459	450
20	191	191	191
50	20	20	24
100	0	0	0
200	0	0	0

N65	Place of Worship, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3867	3867	3853
5	2514	2514	2467
10	1657	1657	1652
20	1130	1130	1130
50	752	752	752
100	505	505	504
200	282	282	282

Points of Interest – Places of worship – Easterly - 2031

Contour LAeq, 16hr	Place of Worship, 2031 LAeq, 16hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	2322	2326	2310
48	1256	1257	1254
51	759	761	759
54	477	477	477
57	231	229	231
60	99	99	96
63	18	18	16
66	5	5	5
69	2	2	2
72	0	0	0

N65	Place of Worship, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3100	3110	3103
5	1955	1955	1947
10	1362	1360	1362
20	1042	1041	1042
50	665	665	665
100	465	465	465
200	250	250	250

Contour LAeq, 8hr	Place of Worship, 2031 LAeq, 8hr 100% Easterly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	266	266	266
48	147	149	147
51	87	87	85
54	44	44	41
57	3	3	3
60	0	0	0
63	0	0	0
66	0	0	0
69	0	0	0
72	0	0	0

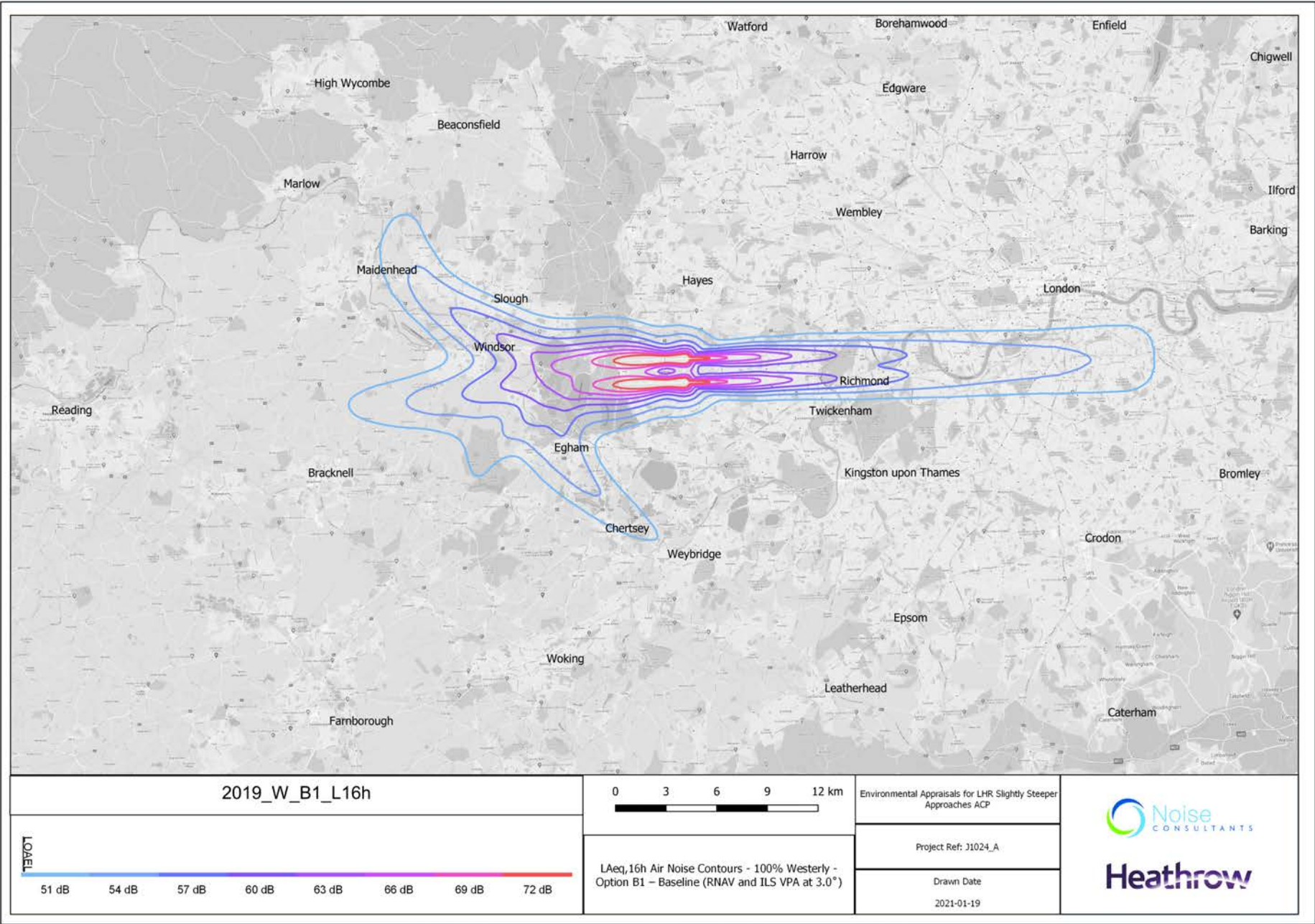
N60	Place of Worship, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2099	2111	2092
5	1141	1141	1136
10	583	589	574
20	199	199	198
50	17	17	20
100	0	0	0
200	0	0	0

100% Westerly Operations

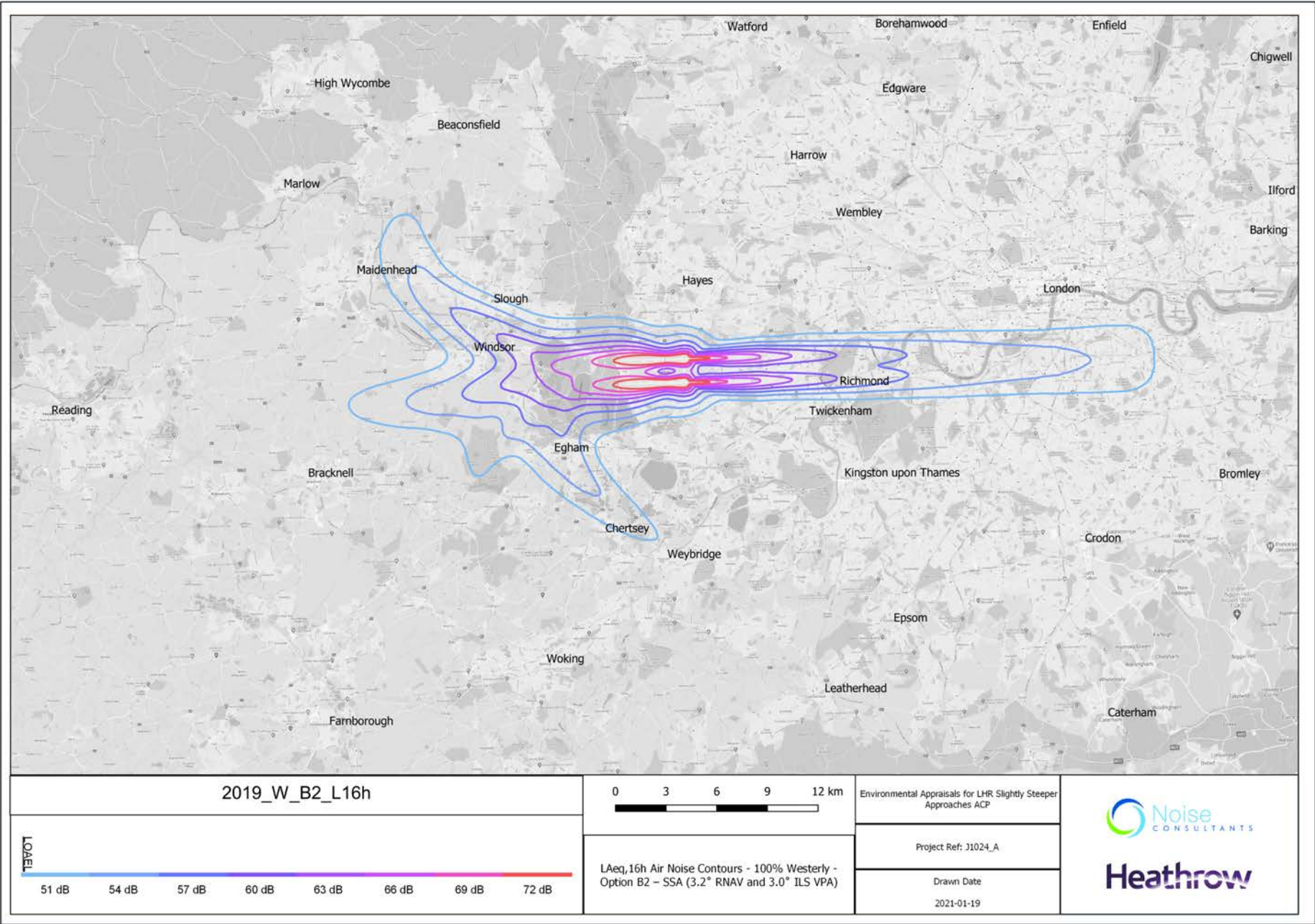
100% Westerly Operations

51 dB LAeq, 8 hours (day)

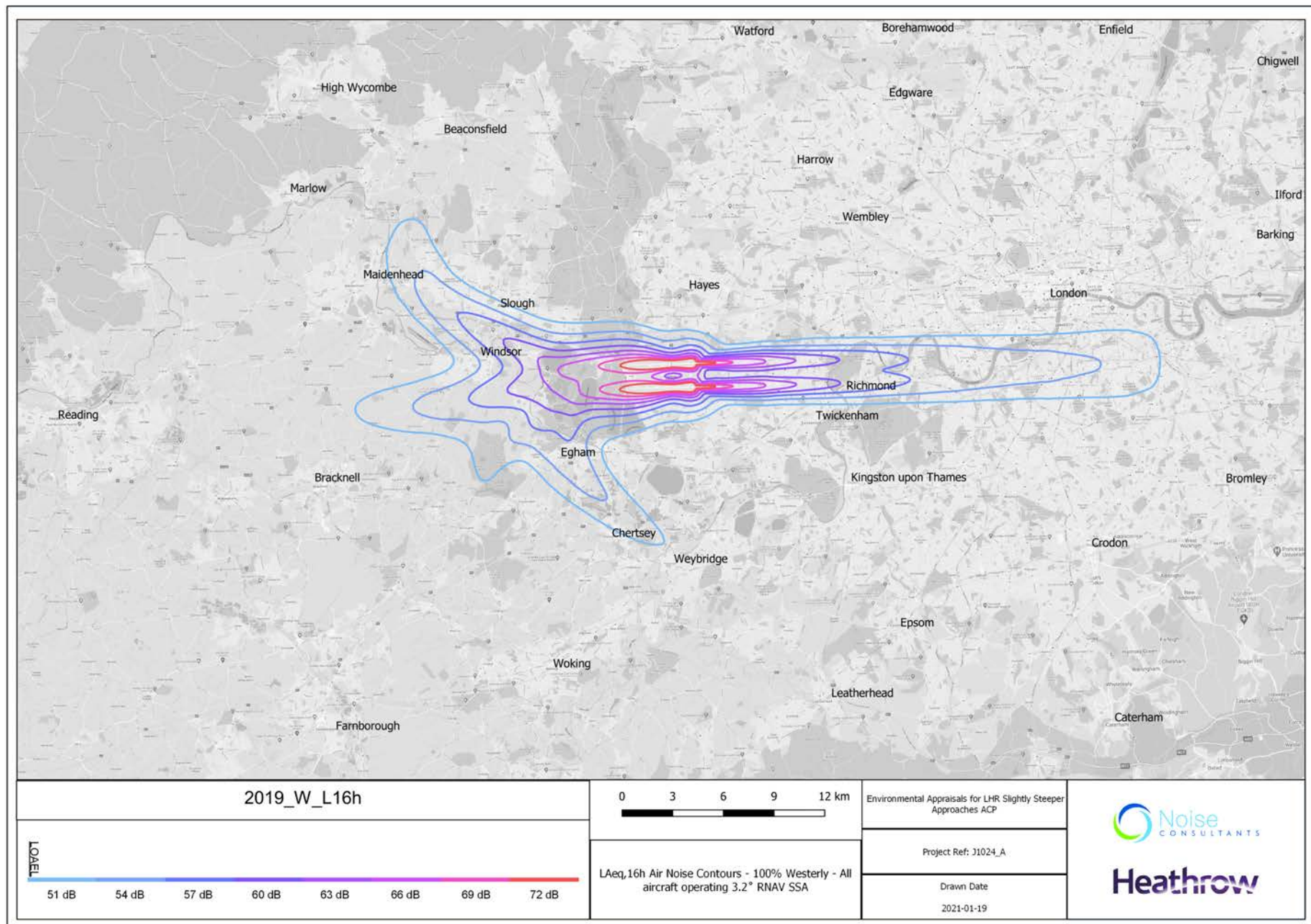
51dB LAeq, 16 hours (day) contours – Option B1 (Baseline) – 2019 – Westerly



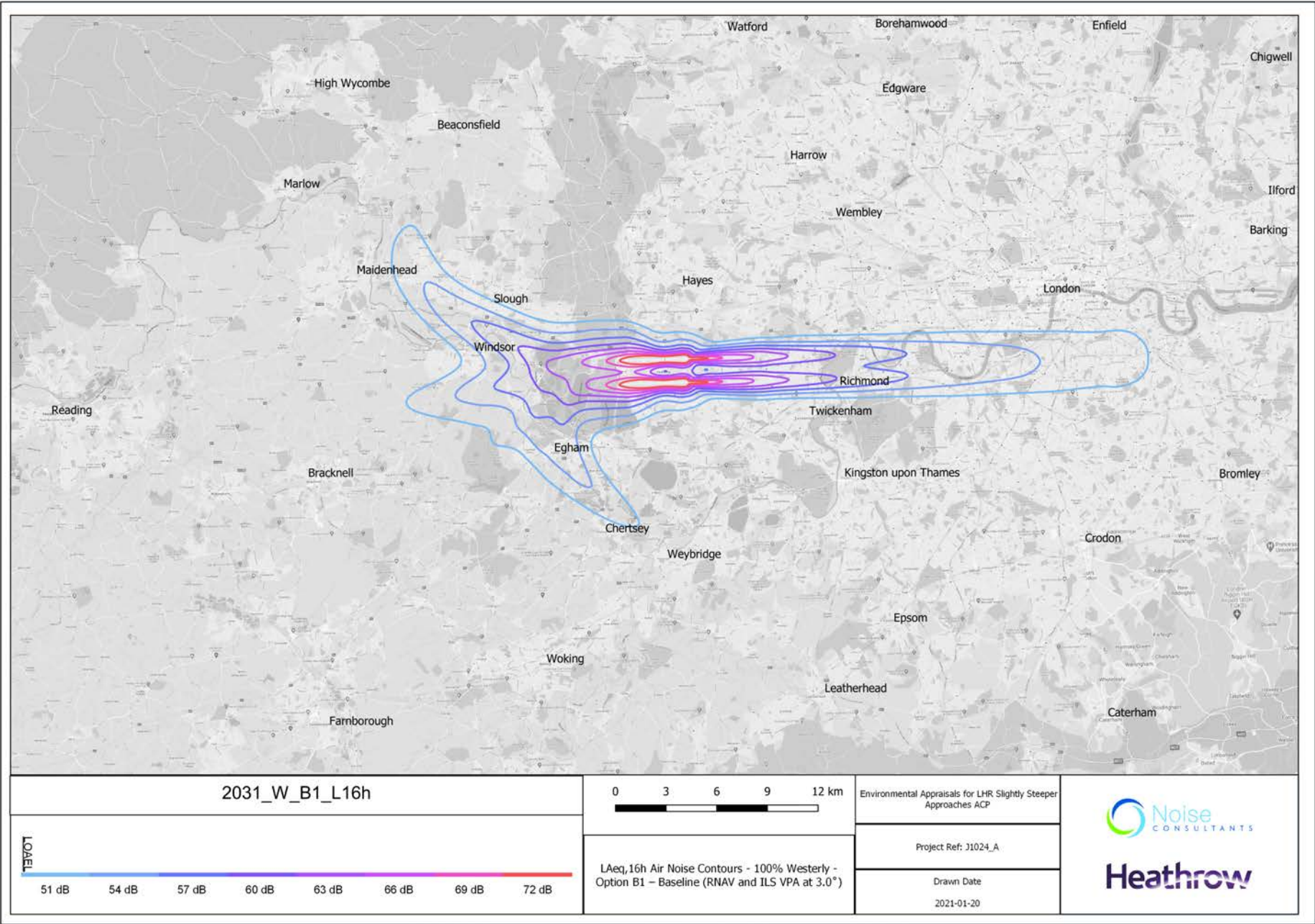
51dB LAeq, 16 hours (day) contours – Option B2 (SSA) – 2019 – Westerly



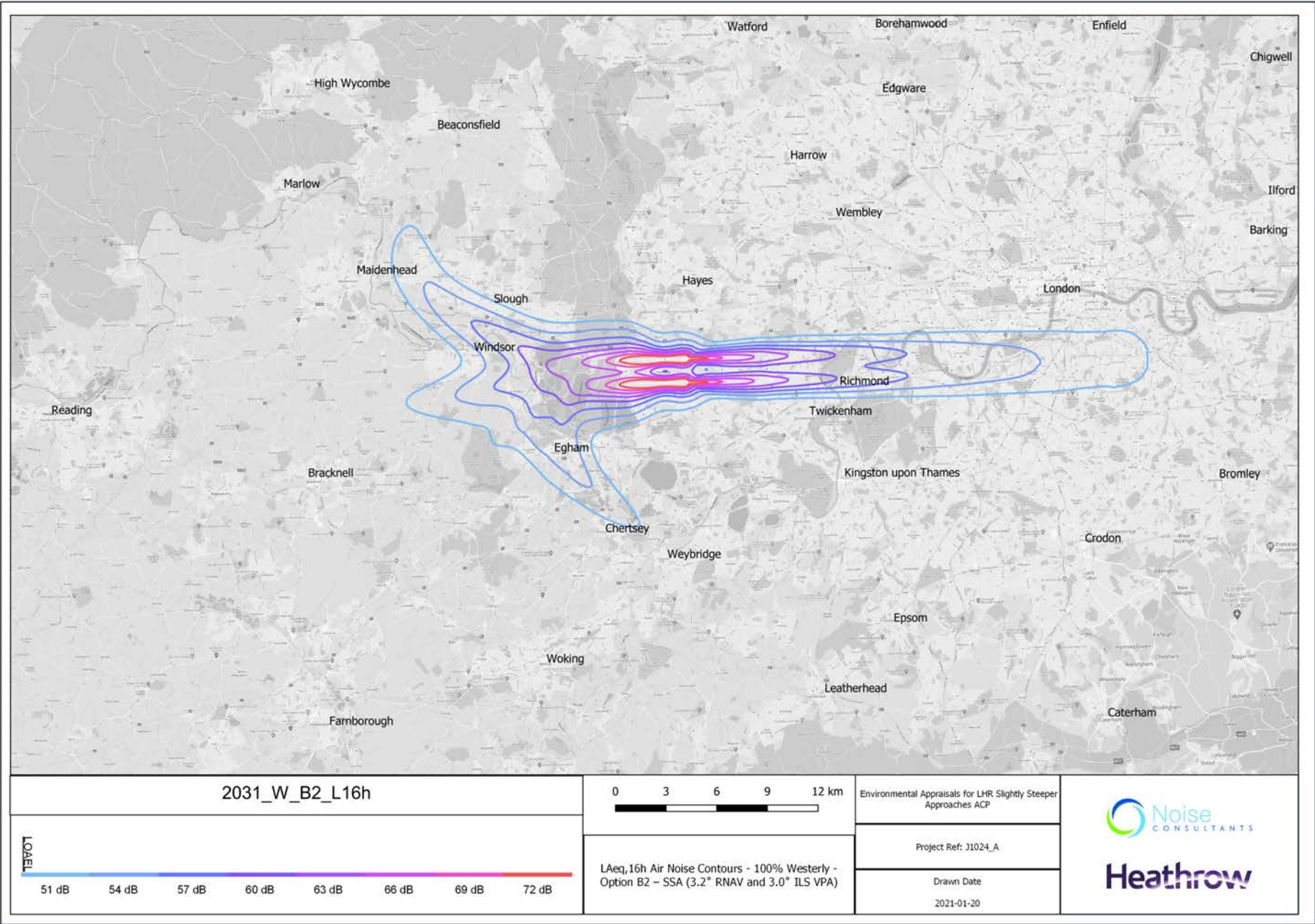
51dB LAeq, 16 hours (day) contours – All aircraft operating SSA – 2019 – Westerly



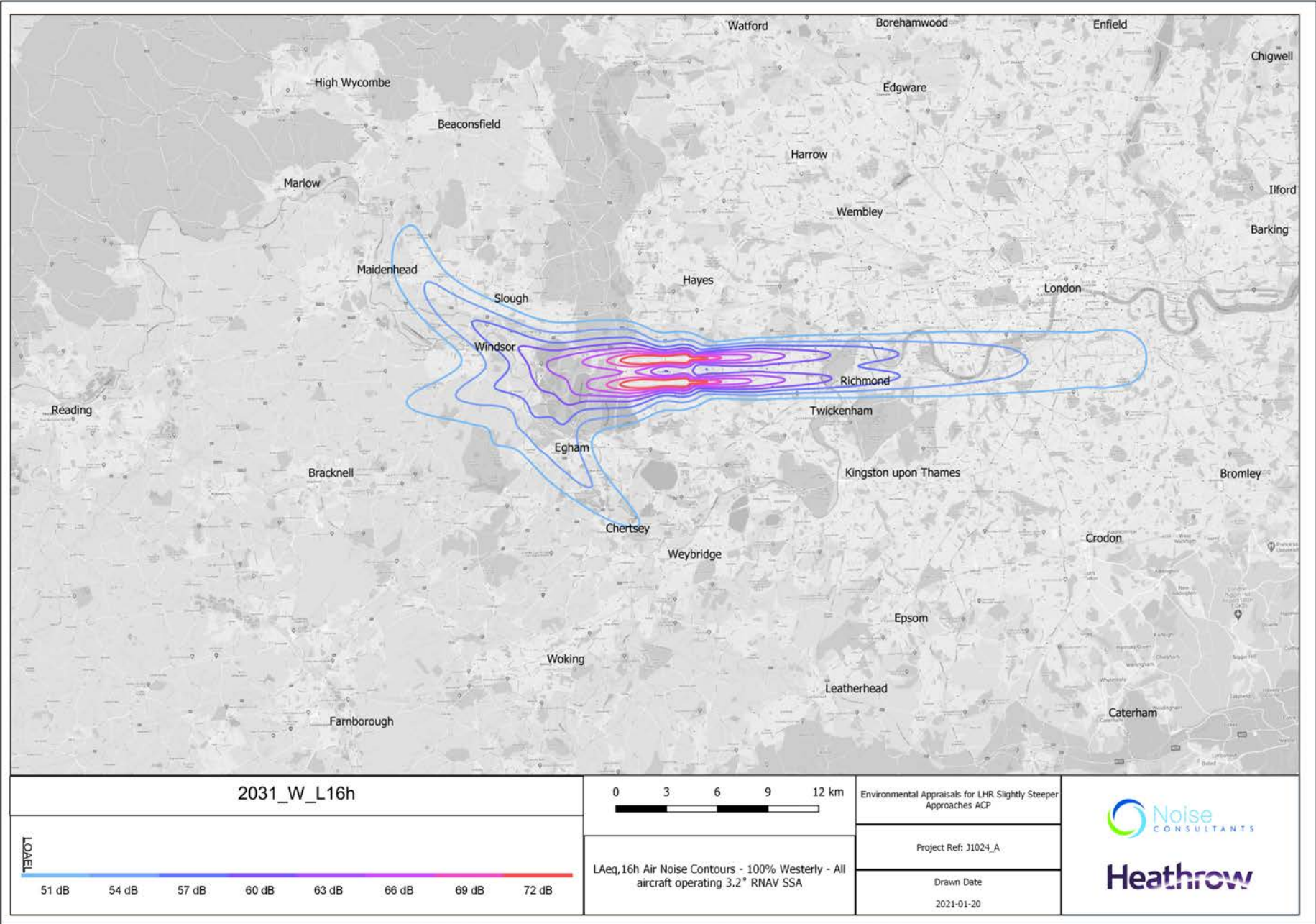
51dB LAeq, 16 hours (day) contours – Option B1 (Baseline) – 2031 – Westerly



51dB LAeq, 16 hours (day) contours – Option B2 (SSA) – 2031 – Westerly



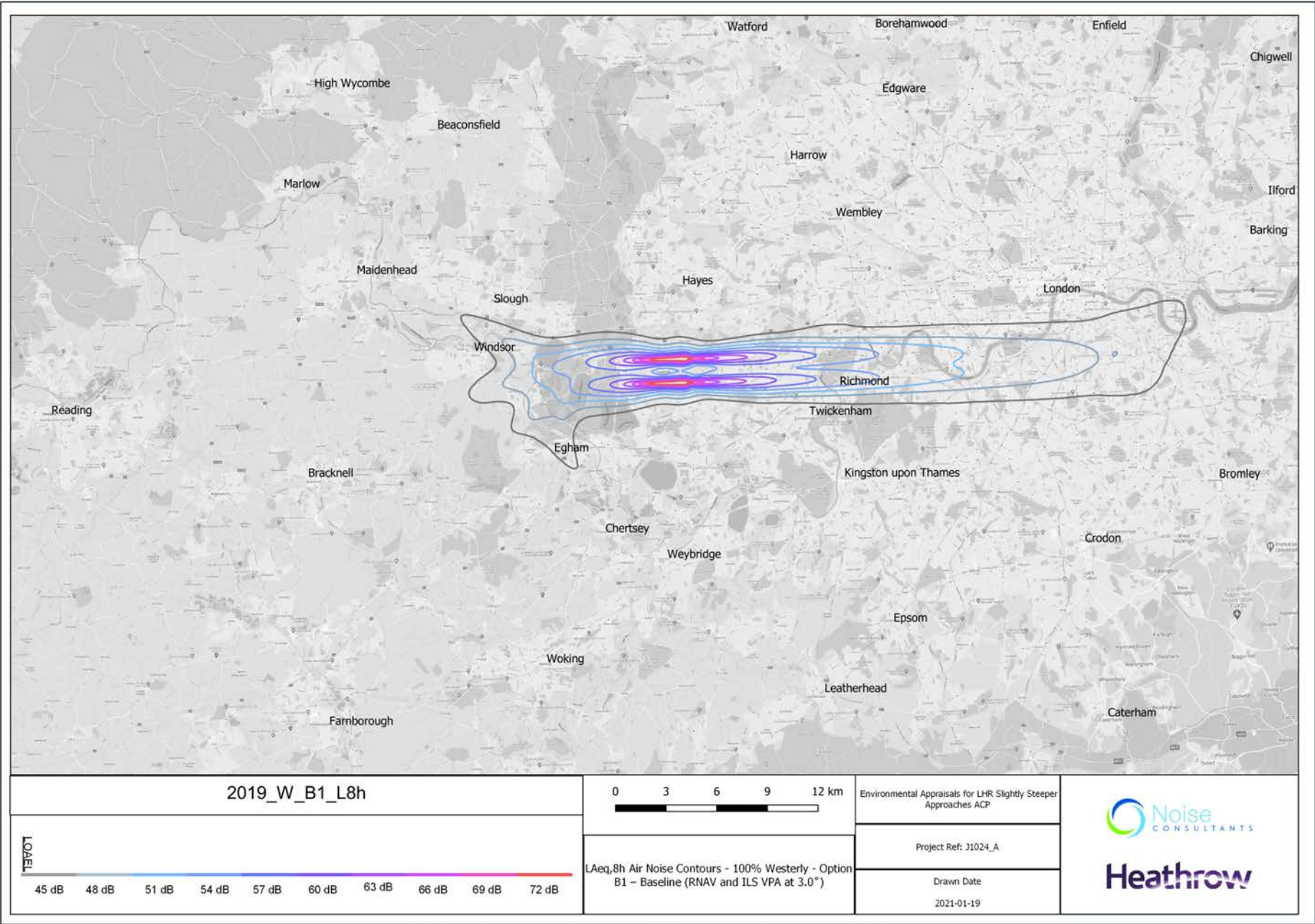
51dB LAeq, 16 hours (day) contours – All aircraft operating SSA – 2031 – Westerly



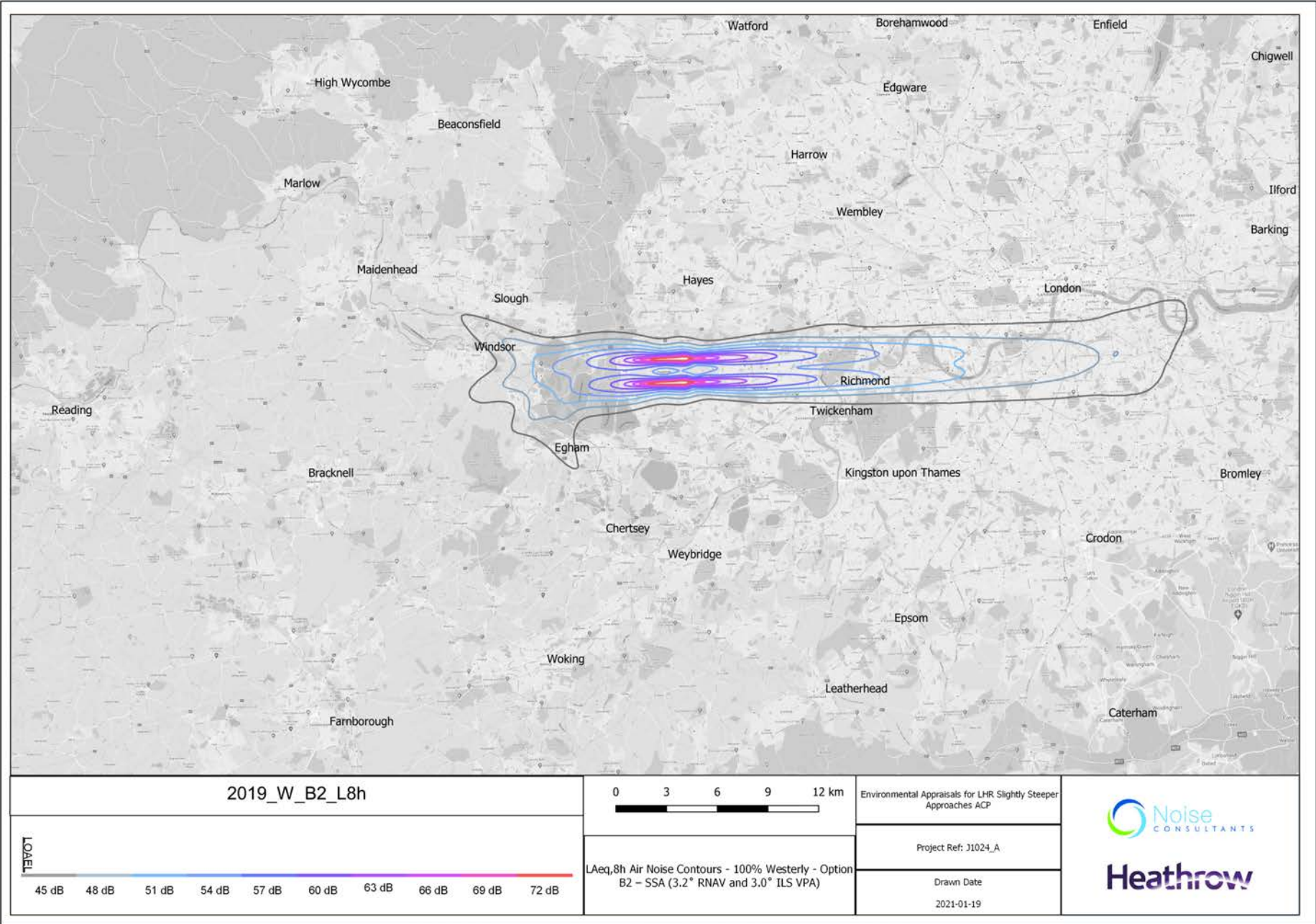
100% Westerly Operations

45 dB LAeq, 8 hours (night)

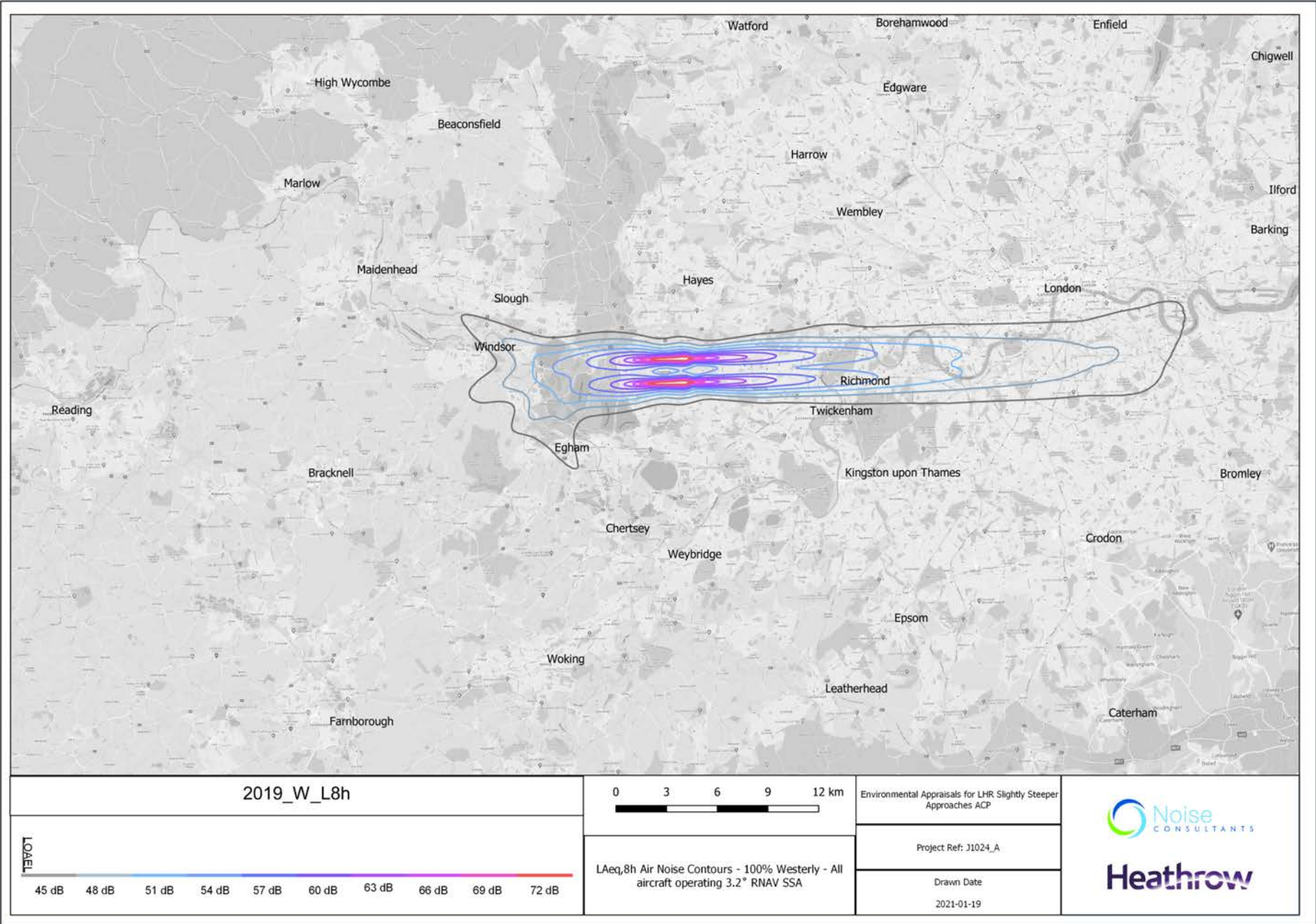
45 dB LAeq, 8 hours (night) contours – Option B1 (Baseline) – 2019 – Westerly



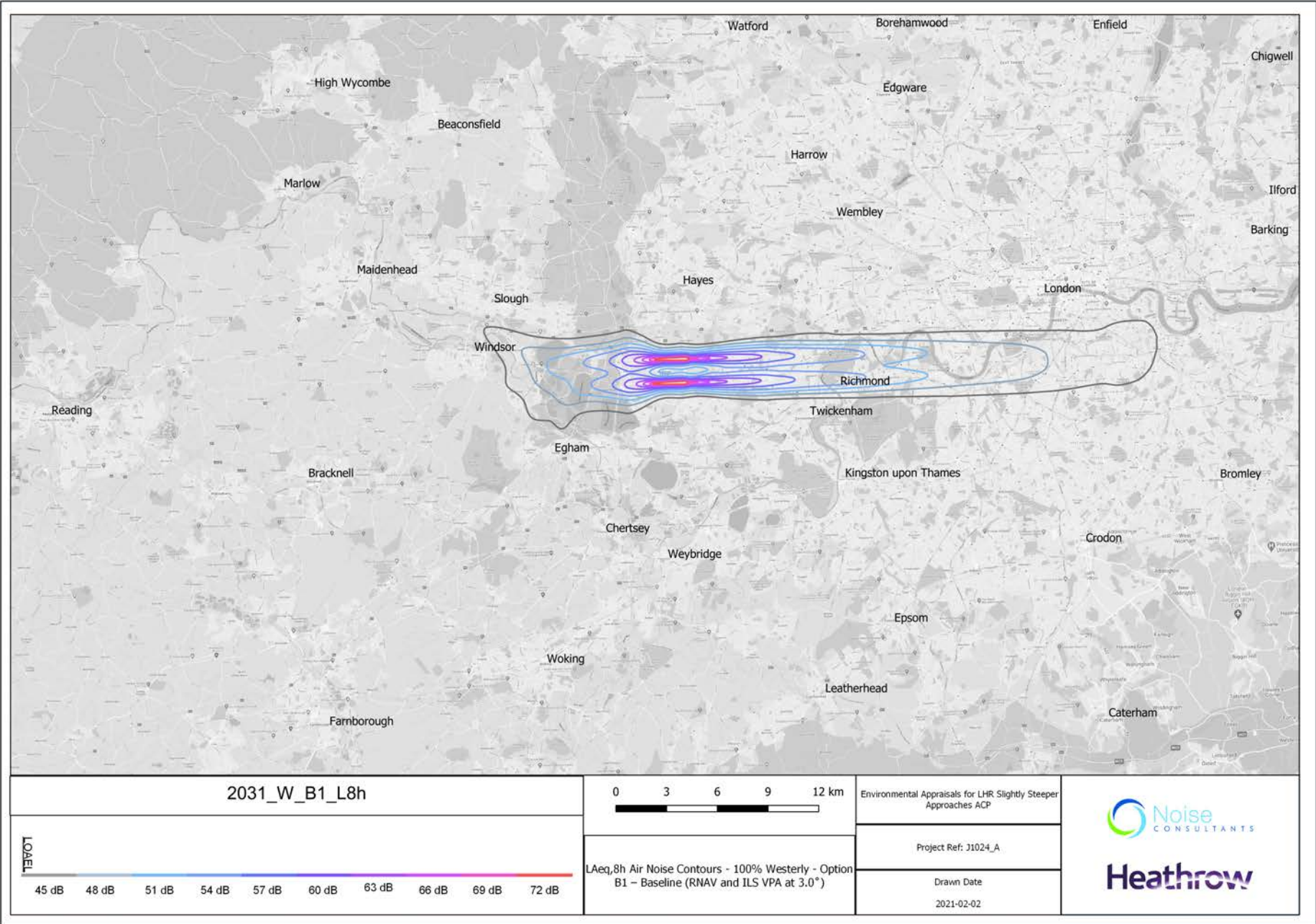
45 dB LAeq, 8 hours (night) contours – Option B2 (SSA) – 2019 – Westerly



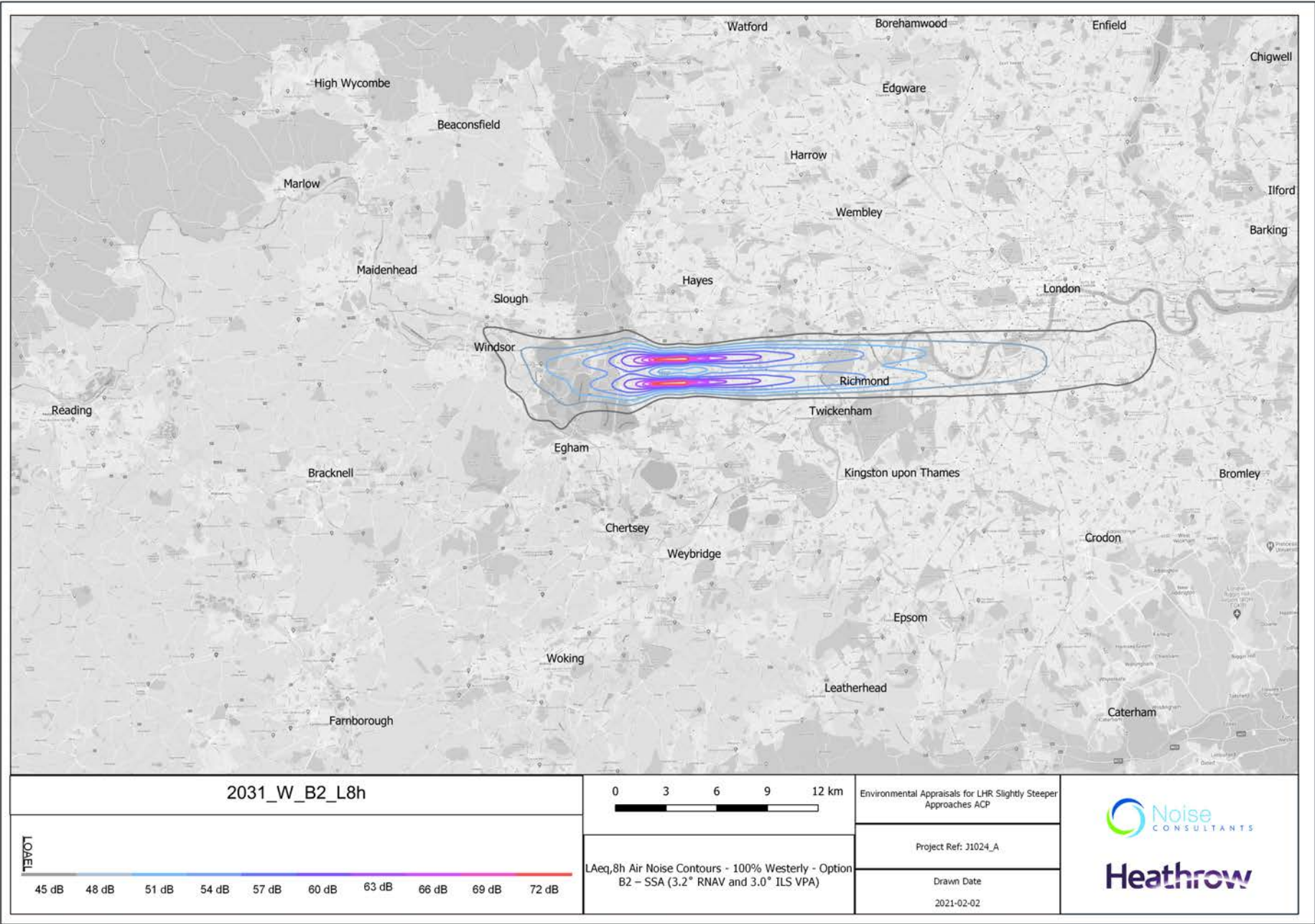
45 dB LAeq, 8 hours (night) contours – All aircraft operating SSA – 2019 – Westerly



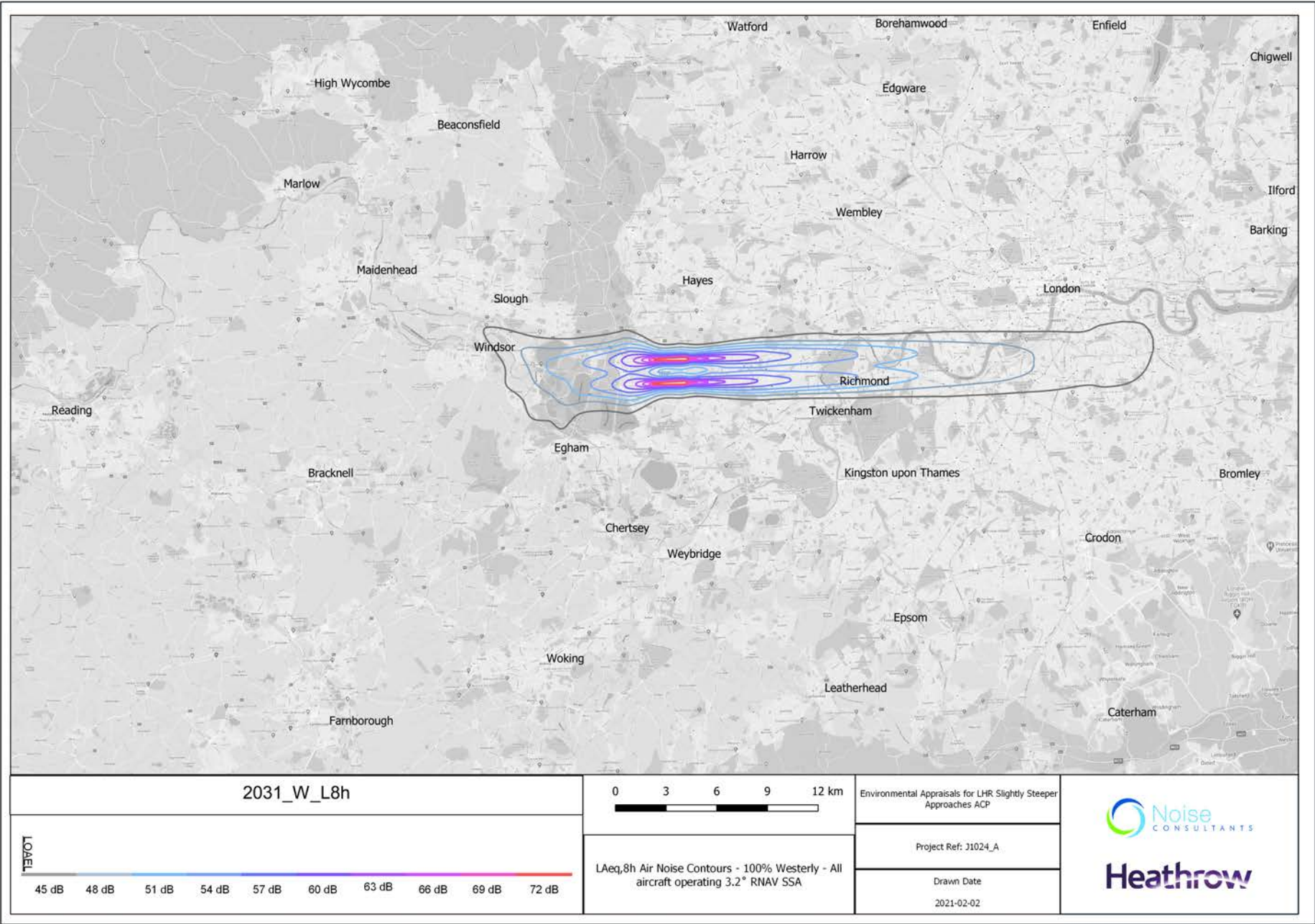
45 dB LAeq, 8 hours (night) contours – Option B1 (Baseline) – 2031 – Westerly



45 dB LAeq, 8 hours (night) contours – Option B2 (SSA) – 2031 – Westerly



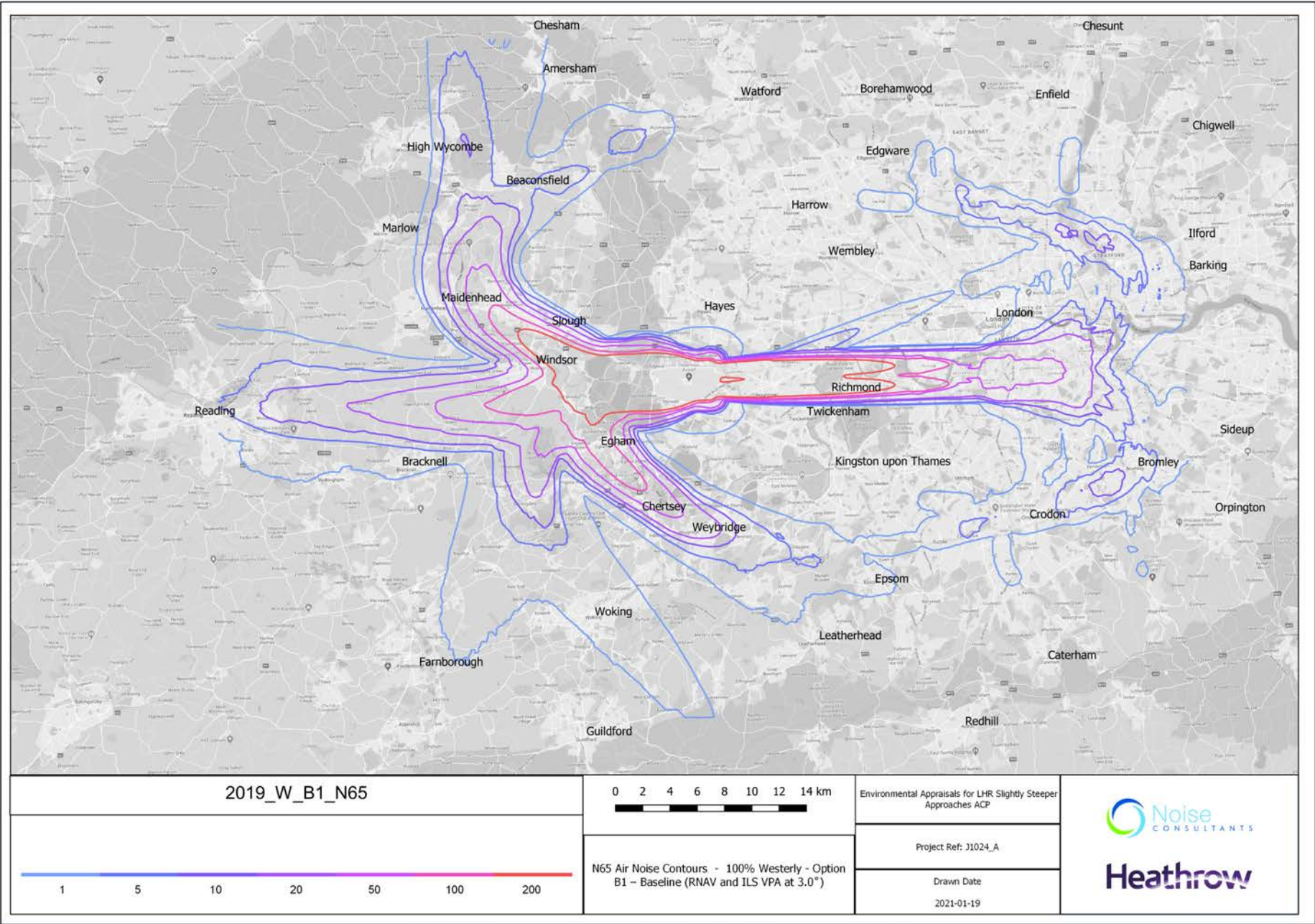
45 dB LAeq, 8 hours (night) contours – All aircraft operating SSA – 2031 – Westerly



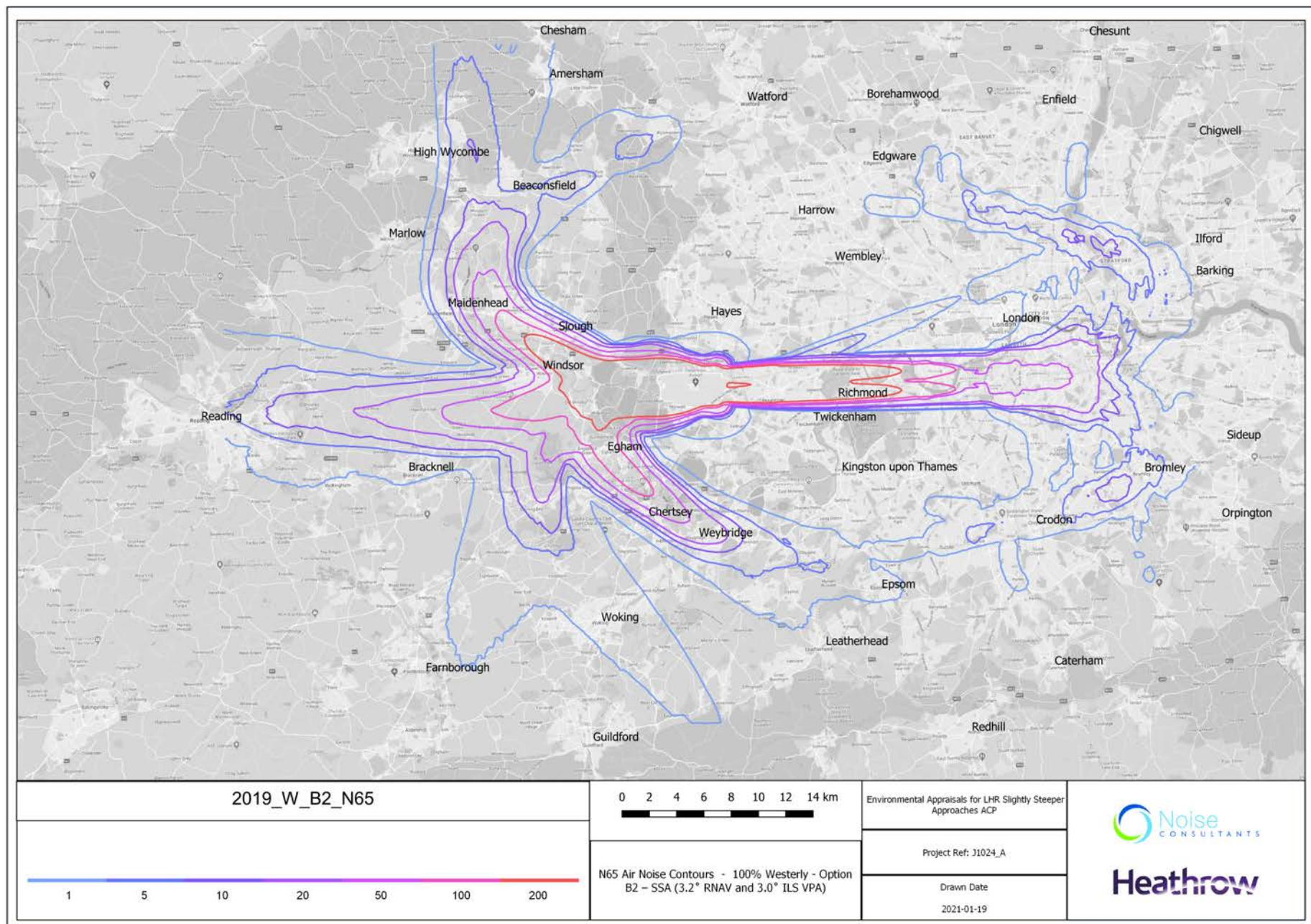
100% Westerly Operations

N65 (day)

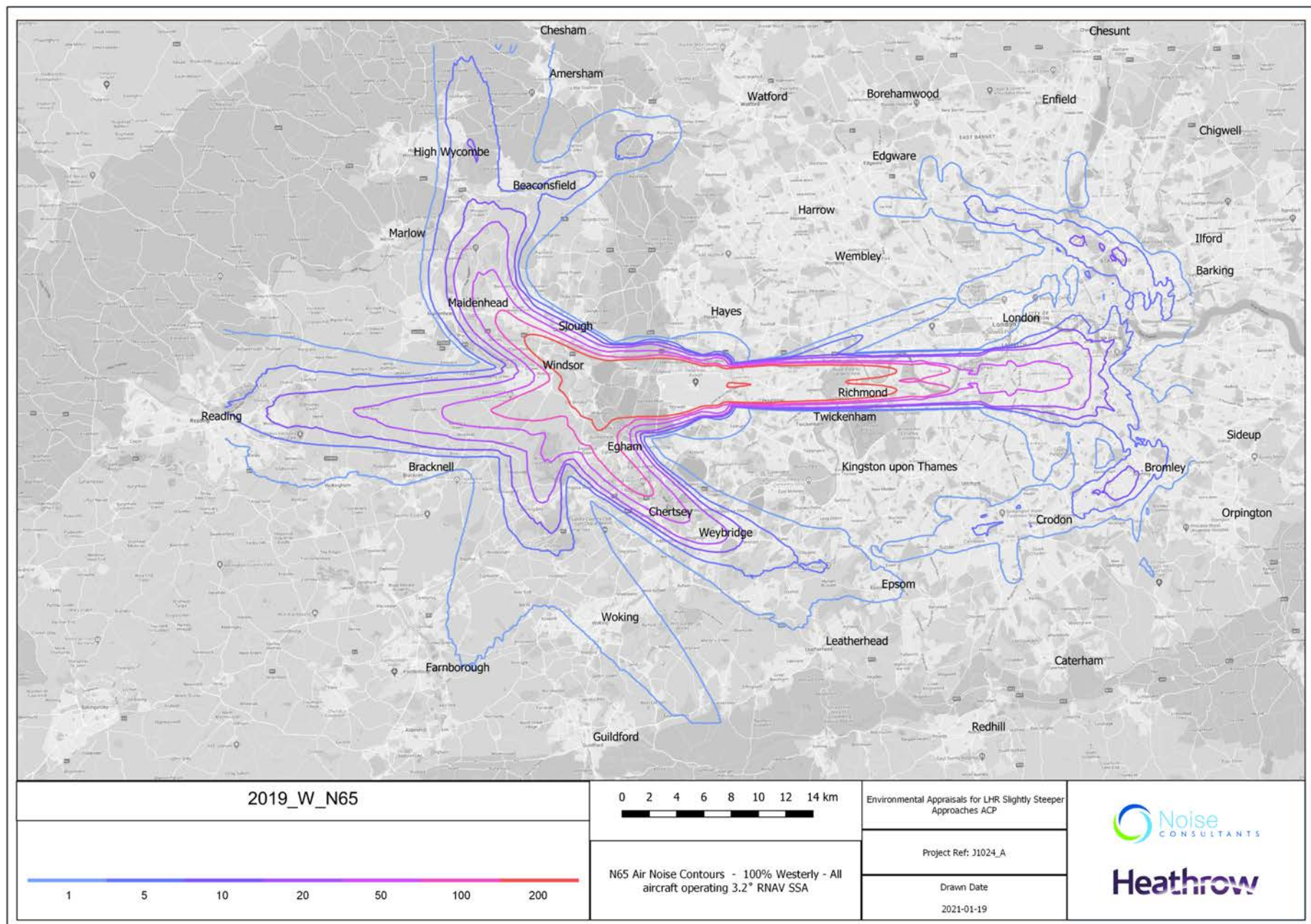
N65 (day) contours – Option B1 (Baseline) – 2019 – Westerly



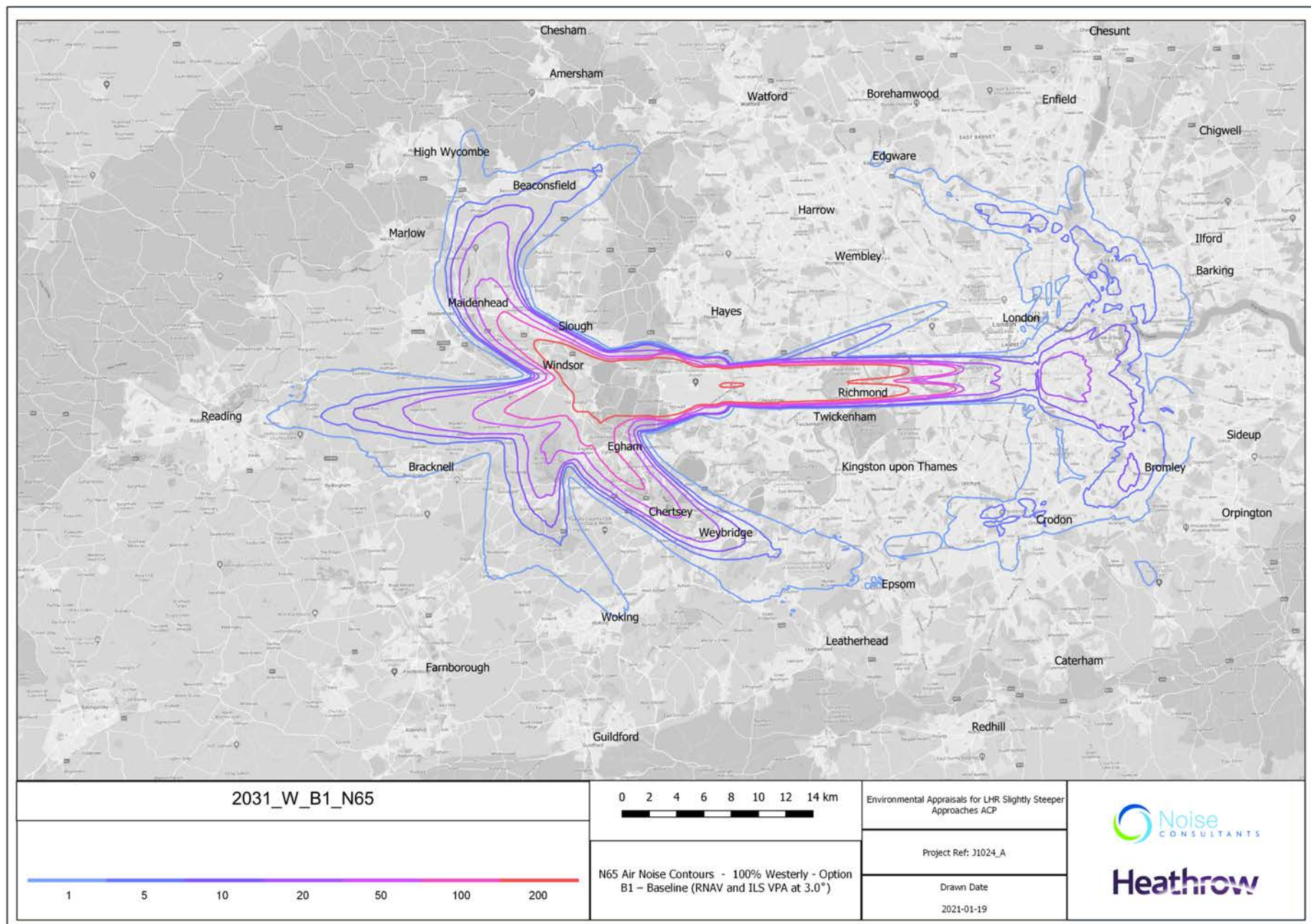
N65 (day) contours – Option B2 (SSA) – 2019 – Westerly



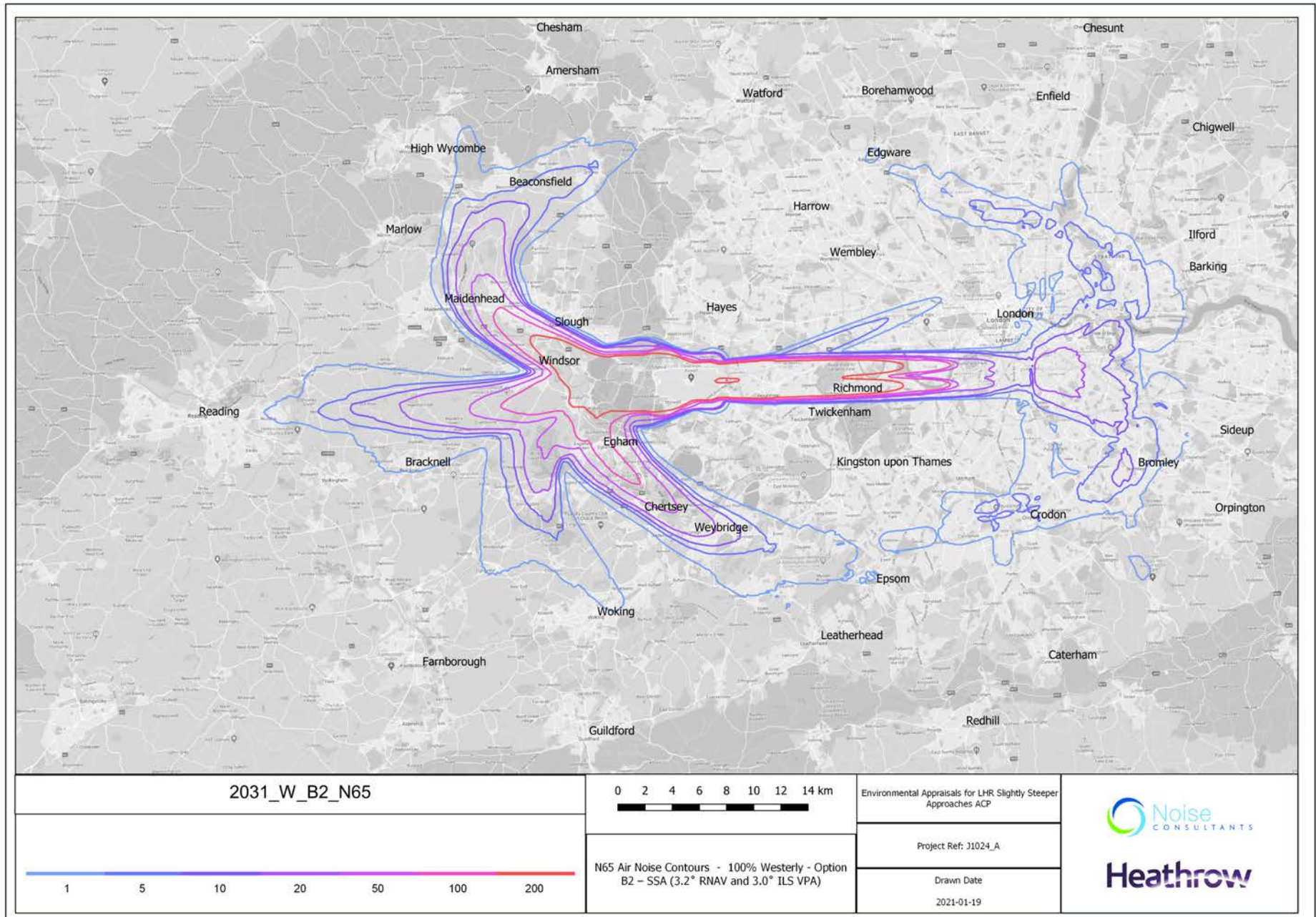
N65 (day) contours – All aircraft operating SSA – 2019 – Westerly



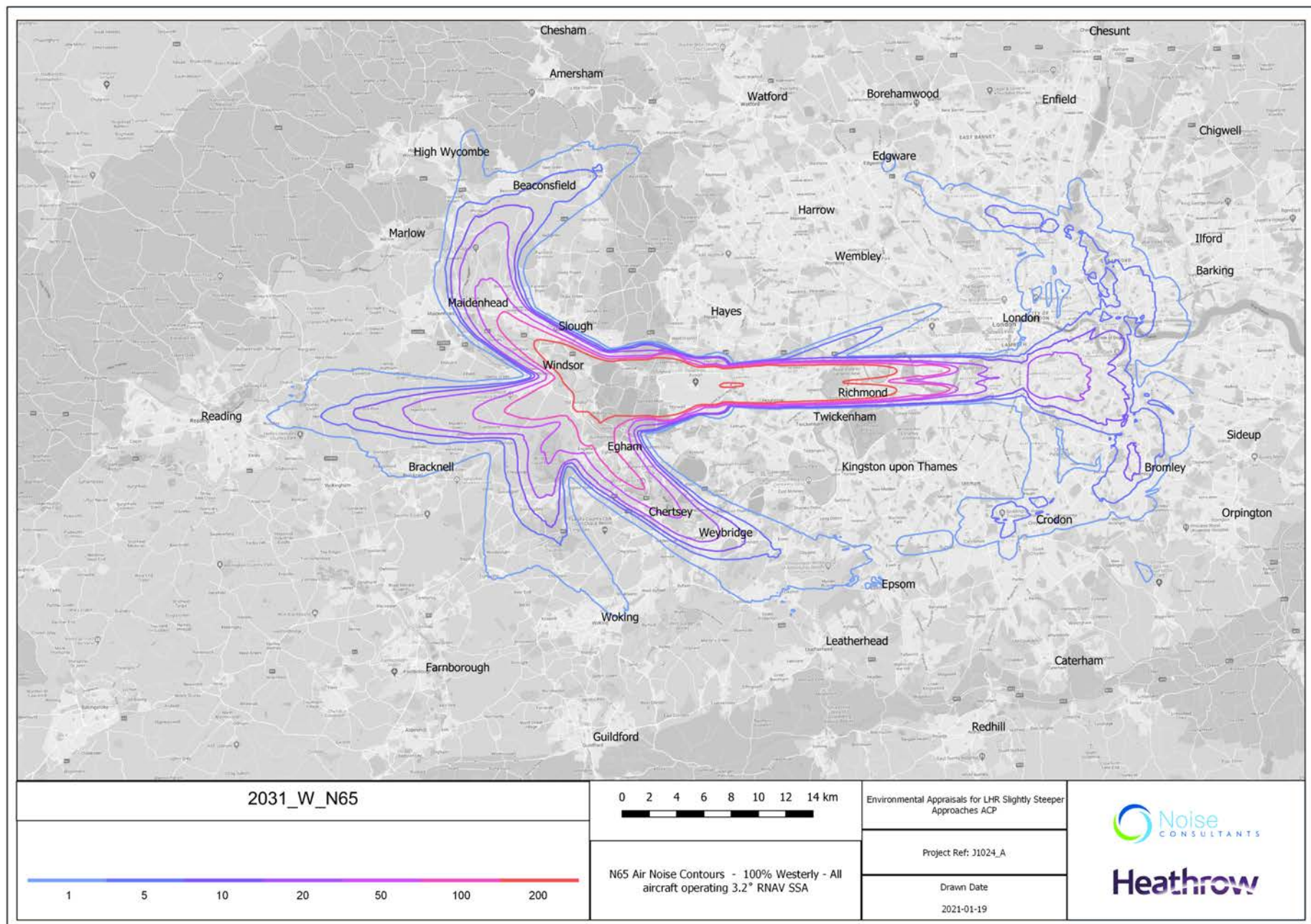
N65 (day) contours – Option B1 (Baseline) – 2031 – Westerly



N65 (day) contours – Option B2 (SSA) – 2031 – Westerly

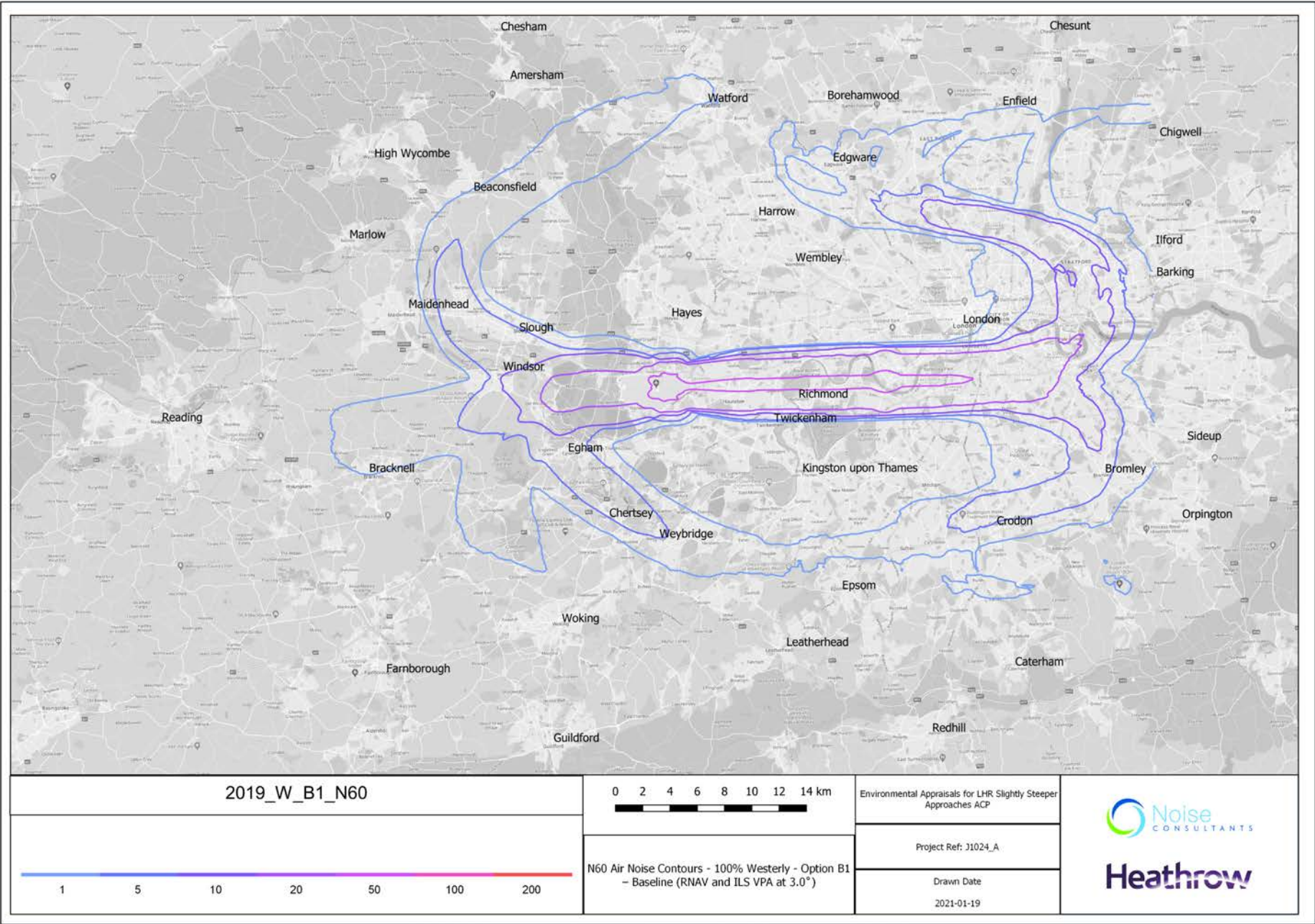


N65 (day) contours – All aircraft operating SSA – 2031 – Westerly

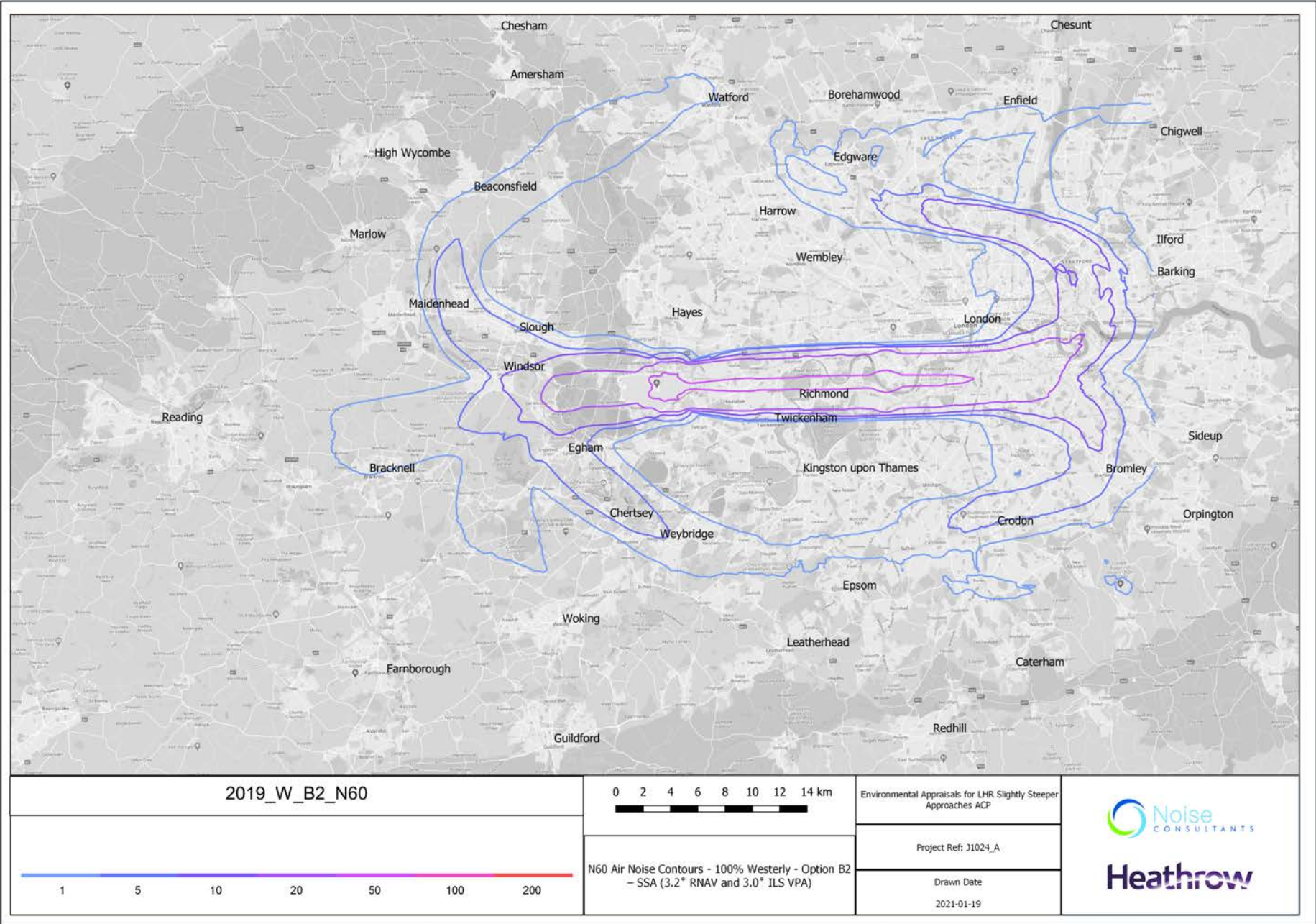


100% Westerly Operations

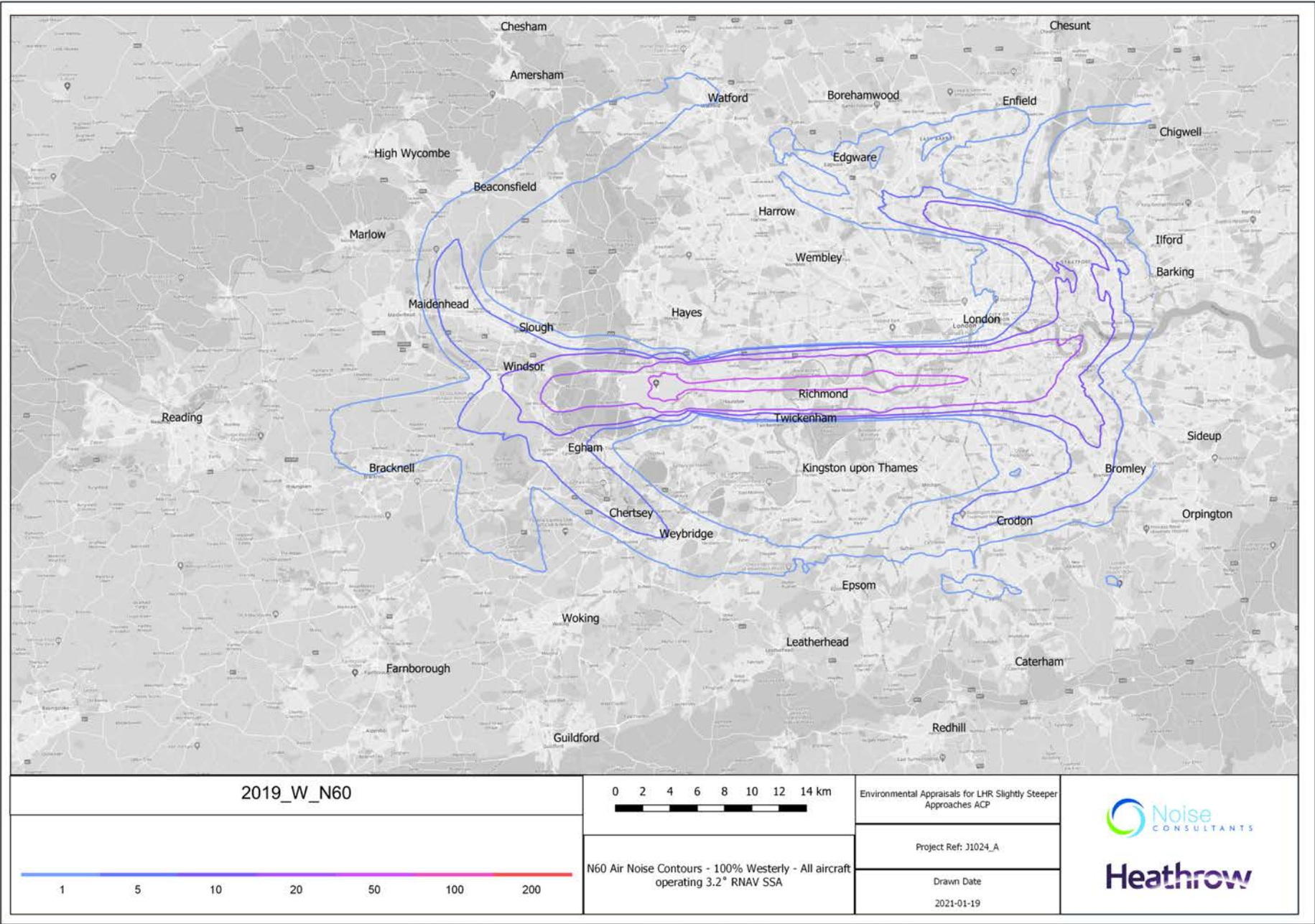
N60 (night)



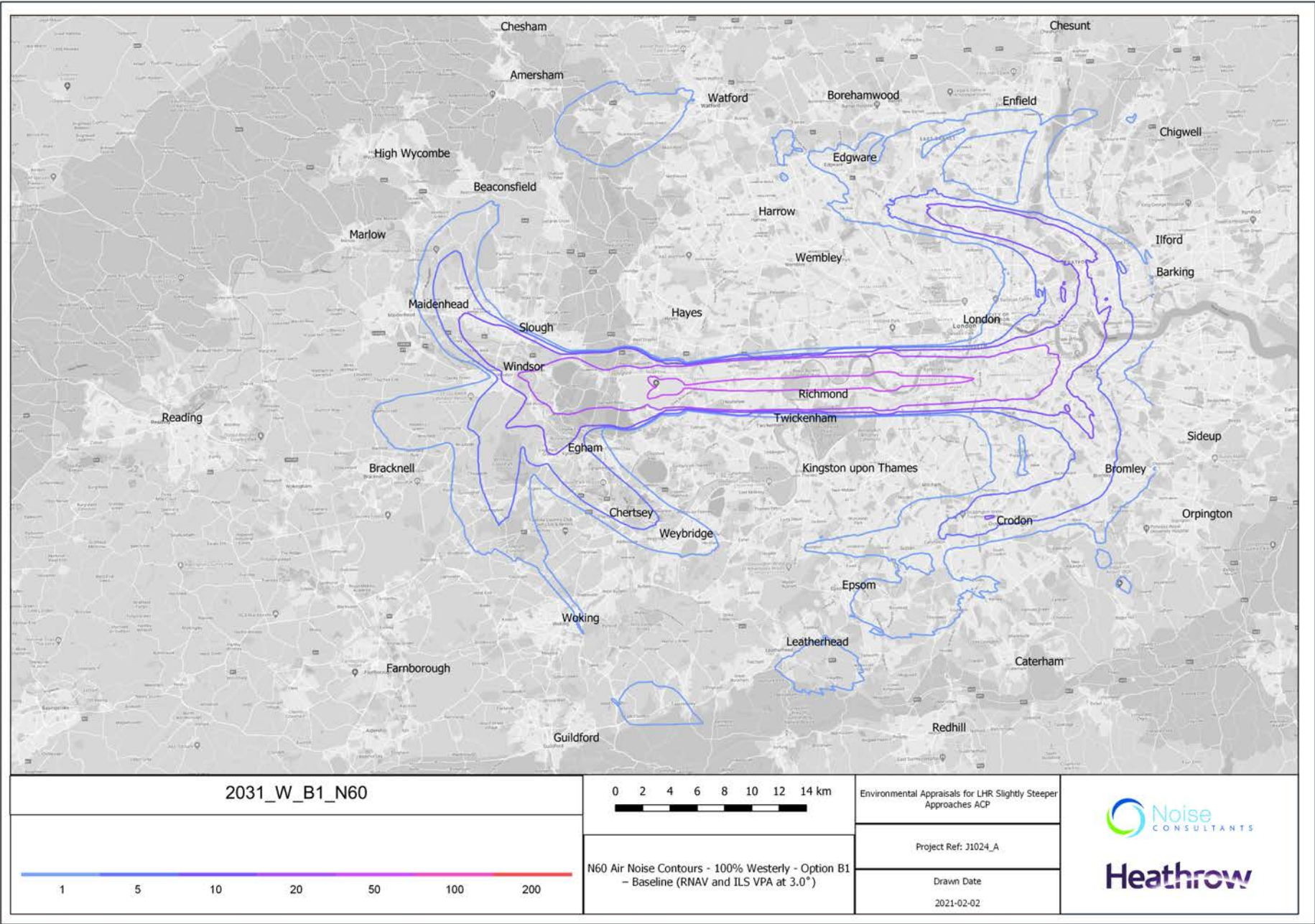
N60 (night) contours– Option B2 (SSA) – 2019 – Westerly



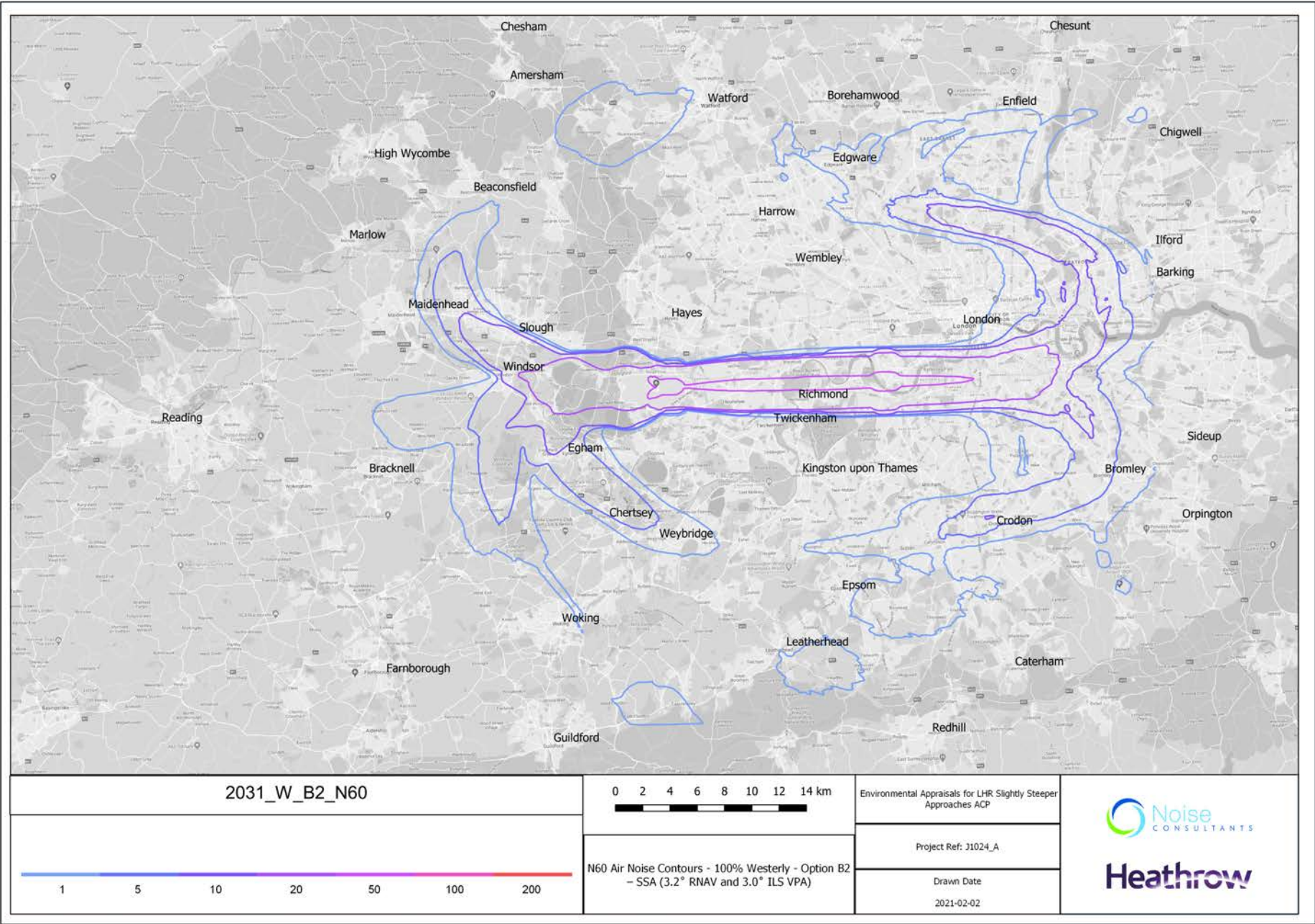
N60 (night) contours – All aircraft operating SSA – 2019 – Westerly



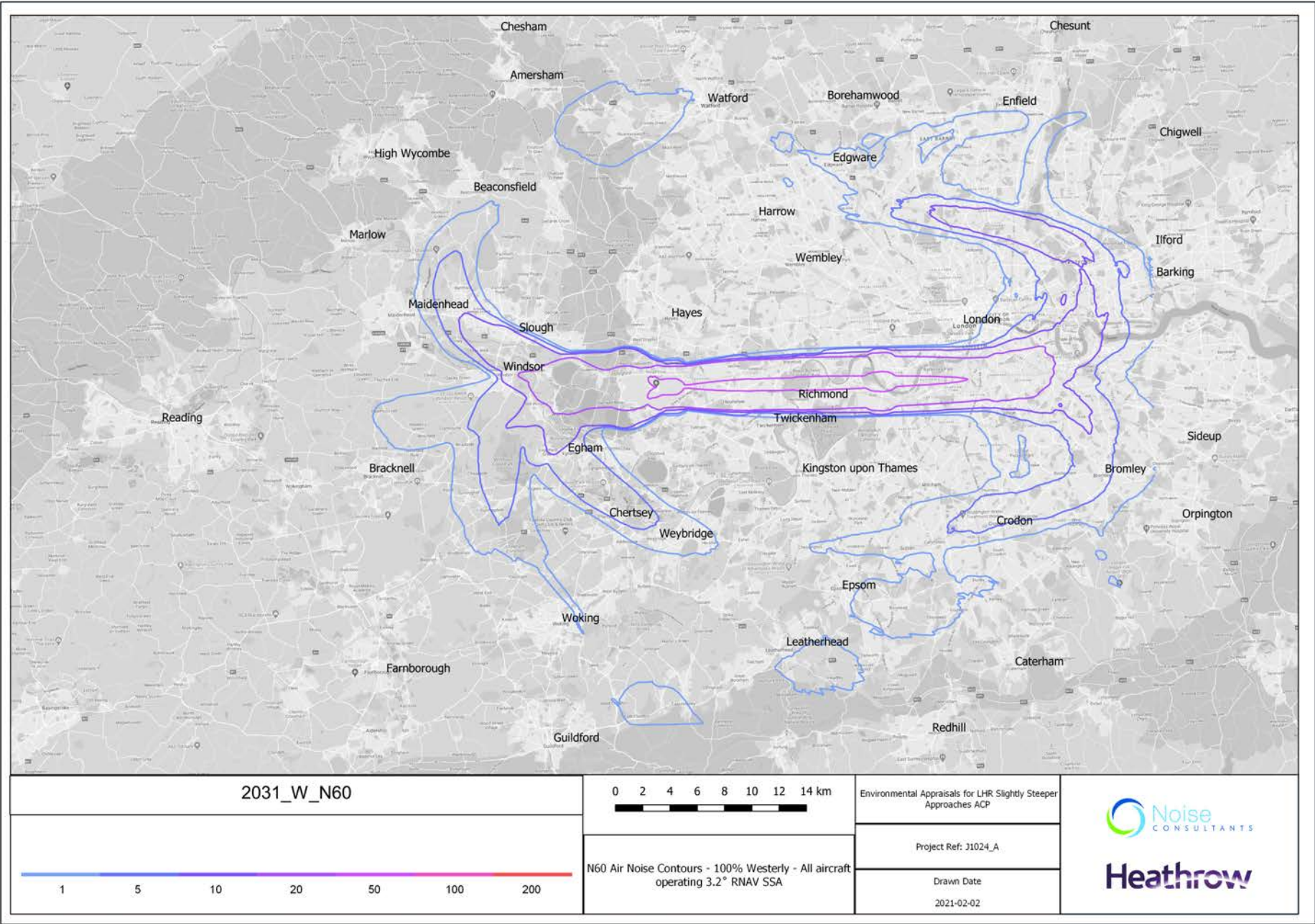
N60 (night) contours – Option B1 (Baseline) – 2031 – Westerly



N60 (night) contours– Option B2 (SSA) – 2031 – Westerly



N60 (night) contours – All aircraft operating SSA – 2031 – Westerly



100% Westerly Operations

Data tables

LAeq Data Tables – Westerly - 2019

Contour LAeq, 16hr	Number of Dwellings, 2019 LAeq, 16hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	449278	449278	448492
54	235653	235653	234282
57	78700	78700	77374
60	37534	37534	37083
63	17682	17682	17205
66	6513	6513	6060
69	1193	1193	1174
72	16	16	8

Contour LAeq, 16hr	Population Count, 2019 LAeq, 16hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1098552	1098552	1096457
54	585670	585670	582556
57	212124	212124	208614
60	106920	106920	105540
63	52412	52412	51092
66	19717	19717	18514
69	3579	3579	3515
72	41	41	22

Contour LAeq, 8hr	Number of Dwellings, 2019 LAeq, 8hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	501666	501666	499617
48	238195	238195	243115
51	96841	96841	95229
54	50926	50926	50198
57	21105	21105	20514
60	8903	8903	8730
63	2044	2044	1924
66	388	388	388
69	7	7	7
72	0	0	0

Contour LAeq, 8hr	Population Count, 2019 LAeq, 8hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	1196704	1196704	1192137
48	580563	580563	594066
51	253153	253153	249388
54	142769	142769	141104
57	63976	63976	62415
60	28123	28123	27599
63	6972	6972	6510
66	1374	1374	1374
69	19	19	19
72	0	0	0

LAeq Data Tables – Westerly - 2031

Contour LAeq, 16hr	Number of Dwellings, 2031 LAeq, 16hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	430022	430287	425236
54	194902	194984	185050
57	78379	78362	75707
60	37147	37122	36257
63	16529	16440	15402
66	4493	4471	4141
69	689	702	580
72	9	9	9

Contour LAeq, 16hr	Population Count, 2031 LAeq, 16hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1028059	1028708	1017981
54	477192	477412	454013
57	205759	205671	199352
60	103427	103375	100963
63	48243	48100	45083
66	13532	13447	12495
69	2321	2341	1930
72	24	24	24

Contour LAeq, 8hr	Number of Dwellings, 2031 LAeq, 8hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	385403	385051	381158
48	180773	180270	169806
51	78649	78657	75704
54	40933	40885	38666
57	15970	15981	15018
60	4601	4631	4169
63	695	695	695
66	9	9	9
69	0	0	0
72	0	0	0

Contour LAeq, 8hr	Population Count, 2031 LAeq, 8hr 100% West mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	913358	912577	904264
48	437645	436373	412004
51	204727	204655	197912
54	113425	113325	108377
57	47633	47668	44831
60	14693	14788	13589
63	2389	2389	2389
66	24	24	24
69	0	0	0
72	0	0	0

LAeq Data Tables – Westerly - 2019

Contour LAeq, 16hr	Area Km ² , 2019 LAeq, 16hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	271.94	271.94	271.64
54	162.84	162.84	162.60
57	90.19	90.19	89.54
60	51.97	51.97	51.61
63	32.41	32.41	32.22
66	19.69	19.69	19.61
69	9.14	9.14	9.10
72	4.65	4.65	4.63

Contour LAeq, 8hr	Area Km ² , 2019 LAeq, 8hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	193.25	193.25	192.75
48	113.42	113.42	114.09
51	69.33	69.33	68.90
54	44.28	44.28	44.01
57	20.40	20.40	20.30
60	10.19	10.19	10.14
63	5.06	5.06	5.04
66	2.52	2.52	2.51
69	1.40	1.40	1.40
72	0.76	0.76	0.76

LAeq Data Tables – Westerly - 2031

Contour LAeq, 16hr	Area Km^2, 2031 LAeq, 16hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	227.98	227.85	227.16
54	134.57	134.55	132.36
57	75.97	75.99	74.75
60	42.84	42.83	42.22
63	25.47	25.47	25.17
66	13.30	13.32	13.15
69	6.58	6.58	6.53
72	3.70	3.70	3.68

Contour LAeq, 8hr	Area Km^2, 2031 LAeq, 8hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	147.84	147.85	146.93
48	89.25	89.23	87.10
51	55.97	55.96	54.62
54	31.13	31.14	30.36
57	14.49	14.49	14.20
60	7.09	7.10	6.96
63	3.22	3.21	3.16
66	1.71	1.71	1.69
69	0.93	0.93	0.92
72	0.54	0.54	0.53

N65 and N60 Data Tables – Westerly - 2019

N65	Number of Dwellings, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1892906	1892906	1853952
5	933353	933360	925414
10	591922	592030	575223
20	470577	470609	459372
50	273123	273179	274970
100	137240	137197	131705
200	78186	78186	76449

N60	Number of Dwellings, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1963294	1963294	1932403
5	1168466	1168466	1157185
10	792287	792287	779866
20	405918	405918	403582
50	56234	56234	53714
100	0	0	0
200	0	0	0

N65	Population Count, N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4703588	4703588	4604276
5	2284443	2284453	2271874
10	1440888	1441102	1401663
20	1150670	1150680	1121713
50	684032	684160	688443
100	353292	353210	341494
200	210832	210832	206555

N60	Population Count, N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4890750	4890750	4810272
5	2879338	2879338	2850402
10	1924758	1924758	1894102
20	980280	980280	975121
50	138213	138213	132323
100	0	0	0
200	0	0	0

N65 and N60 Data Tables – Westerly - 2031

N65	Number of Dwellings, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1694715	1703582	1658480
5	876010	877269	832441
10	548768	548894	544760
20	315582	315559	318858
50	183829	183829	177425
100	142535	142520	135137
200	86465	86465	81938

N60	Number of Dwellings, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1970698	1987281	1930376
5	1200380	1201850	1181404
10	735997	736137	716221
20	380215	380019	37438
50	55098	55071	51748
100	0	0	0
200	0	0	0

N65	Population Count, N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4064497	4085796	3960767
5	2082192	2084644	1979070
10	1304901	1305295	1295117
20	768869	768894	780620
50	457829	457829	443812
100	357029	356994	340957
200	224071	224071	213845

N60	Population Count, N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4773888	4814133	4673717
5	2869413	2873281	2824860
10	1736655	1736840	1687712
20	902989	902550	888882
50	132234	132185	124456
100	0	0	0
200	0	0	0

N65 and N60 Data Tables – Westerly - 2019

N60	Area Km^2, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	451.11	451.11	445.98
10	263.23	263.23	259.35
20	137.70	137.70	137.29
50	22.55	22.55	22.06
100	0.00	0.00	0.00
200	0.00	0.00	0.00

N65	Area Km^2, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	652.92	652.92	652.47
10	432.88	432.88	427.88
20	324.35	324.35	321.10
50	206.92	206.92	207.15
100	132.88	132.87	131.69
200	83.21	83.61	82.78

N65 and N60 Data Tables – Westerly - 2031

N60	Area Km ² , 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	434.16	434.12	427.23
10	248.73	248.70	244.53
20	133.82	133.81	132.59
50	20.09	20.08	19.68
100	0.00	0.00	0.00
200	0.00	0.00	0.00

N65	Area Km ² , 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
5	499.15	499.22	487.24
10	356.69	356.68	353.71
20	261.69	261.69	262.01
50	171.17	171.16	169.92
100	124.64	124.62	122.90
200	81.27	81.27	79.24

Points of Interest – Education – Westerly - 2019

Contour LAeq, 16hr	Education, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	411	411	408
54	207	207	209
57	73	73	73
60	39	39	39
63	18	18	16
66	6	6	5
69	2	2	2
72	0	0	0

Contour LAeq, 8hr	Education, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	451	451	451
48	210	210	215
51	92	92	89
54	49	49	49
57	20	20	19
60	7	7	7
63	2	2	2
66	0	0	0
69	0	0	0
72	0	0	0

N65	Education, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1900	1900	1878
5	885	885	874
10	550	550	534
20	439	439	428
50	257	257	255
100	133	133	127
200	74	74	73

N60	Education, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1950	1950	1915
5	1118	1118	1097
10	732	732	720
20	363	363	358
50	60	60	56
100	0	0	0
200	0	0	0

Points of Interest – Education – Westerly - 2031

Contour LAeq, 16hr	Education, 2031 LAeq, 16hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	363	362	360
54	166	166	157
57	67	67	64
60	33	33	33
63	15	15	13
66	3	3	3
69	2	2	0
72	0	0	0

Contour LAeq, 8hr	Education, 2031 LAeq, 8hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	323	323	315
48	147	148	141
51	66	66	63
54	41	41	39
57	16	16	16
60	4	4	2
63	2	2	2
66	0	0	0
69	0	0	0
72	0	0	0

N65	Education, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1499	1506	1486
5	720	721	695
10	449	449	451
20	280	280	287
50	166	166	161
100	124	124	123
200	80	80	76

N60	Education, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	1743	1754	1704
5	999	1000	976
10	623	625	597
20	319	319	314
50	53	53	50
100	0	0	0
200	0	0	0

Points of Interest – Healthcare – Westerly - 2019

Contour LAeq, 16hr	Healthcare, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	814	814	814
54	427	427	437
57	142	142	142
60	62	62	62
63	22	22	19
66	9	9	8
69	3	3	3
72	0	0	0

Contour LAeq, 8hr	Healthcare, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	887	887	886
48	452	452	459
51	182	182	178
54	97	97	97
57	32	32	31
60	10	10	10
63	4	4	4
66	1	1	1
69	0	0	0
72	0	0	0

N65	Healthcare, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3733	3733	3676
5	1698	1698	1670
10	1059	1059	1026
20	860	860	841
50	526	526	526
100	266	266	251
200	143	143	140

N60	Healthcare, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3738	3738	3675
5	2146	2146	2113
10	1433	1433	1407
20	722	722	717
50	122	122	111
100	0	0	0
200	0	0	0

Points of Interest – Healthcare – Westerly - 2031

Contour LAeq, 16hr	Healthcare, 2031 LAeq, 16hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	739	738	733
54	329	332	313
57	133	133	130
60	55	55	55
63	19	19	16
66	6	6	6
69	3	3	1
72	0	0	0

Contour LAeq, 8hr	Healthcare, 2031 LAeq, 8hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	645	647	637
48	299	300	287
51	135	136	131
54	74	74	71
57	21	21	20
60	7	7	5
63	3	3	3
66	0	0	0
69	0	0	0
72	0	0	0

N65	Healthcare, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	2888	2921	2860
5	1413	1416	1337
10	881	881	891
20	528	528	552
50	330	330	323
100	246	246	237
200	151	151	145

N60	Healthcare, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	3327	3342	3258
5	1939	1942	1907
10	1219	1221	1183
20	646	645	636
50	111	111	102
100	0	0	0
200	0	0	0

Points of Interest – Places of worship – Westerly - 2019

Contour LAeq, 16hr	Place of Worship, 2019 LAeq, 16hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1395	1395	1393
54	726	726	735
57	250	250	249
60	114	114	114
63	44	44	40
66	17	17	16
69	4	4	4
72	0	0	0

Contour LAeq, 8hr	Place of Worship, 2019 LAeq, 8hr average mode summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	1491	1491	1491
48	750	750	760
51	298	298	294
54	164	164	164
57	56	56	55
60	25	25	25
63	6	6	6
66	1	1	1
69	0	0	0
72	0	0	0

N65	Place of Worship, 2019 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	6170	6170	6066
5	2890	2890	2818
10	1814	1815	1761
20	1484	1484	1448
50	900	900	899
100	447	447	430
200	249	249	246

N60	Place of Worship, 2019 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	6248	6248	6145
5	3610	3610	3554
10	2407	2407	2364
20	1222	1222	1215
50	185	185	171
100	0	0	0
200	0	0	0

Points of Interest – Places of worship – Westerly - 2031

Contour LAeq, 16hr	Place of Worship, 2031 LAeq, 16hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
51	1270	1268	1262
54	548	552	516
57	232	231	226
60	102	102	102
63	39	39	35
66	9	9	9
69	4	4	1
72	0	0	0

Contour LAeq, 8hr	Place of Worship, 2031 LAeq, 8hr 100% Westerly summer day		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
45	1101	1103	1088
48	494	493	466
51	226	227	221
54	123	123	118
57	41	41	39
60	14	14	11
63	4	4	4
66	0	0	0
69	0	0	0
72	0	0	0

N65	Place of Worship, 2031 N65		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	4839	4890	4782
5	2424	2426	2283
10	1550	1550	1559
20	922	922	956
50	555	555	542
100	418	418	404
200	258	258	250

N60	Place of Worship, 2031 N60		
	Option B1 – Baseline (RNAV and ILS VPA at 3.0°)	Option B2 – SSA (3.2° RNAV and 3.0° ILS VPA)	All aircraft operating 3.2o RNAV SSA
1	5596	5627	5497
5	3291	3297	3241
10	2055	2057	1987
20	1089	1088	1075
50	170	170	159
100	0	0	0
200	0	0	0

WebTAG Assessment

WebTAG assessment – Option B2 – Permanently Adopt Slightly Steeper 3.2° RNAV approaches

Proposal Name: Environmental Appraisals for LHR SSA ACP

Present Value Base Year

2010

Current Year

2019

Proposal Opening year:

2021

Project (Road, Rail or Aviation):

aviation

	WebTAG assessment	Sensitivity test excluding impacts below 51 dB (for aviation proposals only)
Net present value of change in noise (£, 2010 prices):	£27,632,143	£10,544,020
	*positive value reflects a net benefit (i.e. a reduction in noise)	
Net present value of impact on sleep disturbance (£, 2010 prices):	£10,122,037	£1,825,547
Net present value of impact on amenity (£, 2010 prices):	£14,917,345	£6,125,713
Net present value of impact on AMI (£, 2010 prices):	£51,097	£51,097
Net present value of impact on stroke (£, 2010 prices):	£1,013,021	£1,013,021
Net present value of impact on dementia (£, 2010 prices):	£1,528,642	£1,528,642

Quantitative results

households experiencing increased daytime noise in forecast year:

households experiencing reduced daytime noise in forecast year:

households experiencing increased night time noise in forecast year:

households experiencing reduced night time noise in forecast year:

12408

41825

1008

12170

Proposal Name: Environmental Appraisals for LHR SSA ACP

Present Value Base Year

2010

Current Year

2019

Proposal Opening year:

2021

Project (Road, Rail or Aviation):

aviation

	WebTAG assessment	Sensitivity test excluding impacts below 51 dB (for aviation proposals only)
Net present value of change in noise (£, 2010 prices):	£122,622,883	£64,132,206
	*positive value reflects a net benefit (i.e. a reduction in noise)	
Net present value of impact on sleep disturbance (£, 2010 prices):	£4,081,168	£360,761
Net present value of impact on amenity (£, 2010 prices):	£100,309,773	£45,539,503
Net present value of impact on AMI (£, 2010 prices):	£1,143,780	£1,143,780
Net present value of impact on stroke (£, 2010 prices):	£6,816,434	£6,816,434
Net present value of impact on dementia (£, 2010 prices):	£10,271,727	£10,271,727

Quantitative results

households experiencing increased daytime noise in forecast year:
 households experiencing reduced daytime noise in forecast year:
 households experiencing increased night time noise in forecast year:
 households experiencing reduced night time noise in forecast year:

8305
208668
0
3477