Appendix 9-4: Air Noise Modelling Results and Figures

9-4. Air noise modelling results and figures

9-4.1 Introduction

9-4.1.1 This appendix of the Environmental Impact Assessment Report (EIAR), prepared by Bickerdike Allen Partners LLP (BAP), presents the results of the air noise modelling. The modelling methodology, including the derivation of the dwelling and population counts, is described in Appendix 9-2.

9-4.2 Assessment Scenarios

9-4.2.1 Three scenarios have been included in the air noise assessment, these are:

- Current Receiving Environment (2025)
- 2029 Permitted Operation
- 2029 Proposed Operation

9-4.3 Assessment Metrics

9-4.3.1 For each assessment scenario, the following metrics have been assessed.

- L_{den}, the average annual 24-hour noise level with a 5 dB penalty applied during the evening (19:00-23:00) and a 10 dB penalty applied during the night (23:00-07:00)
- L_{night}, the average annual noise level at night (23:00-07:00)
- $L_{Aeq,16h}$, the average summer noise level during the 16-hour day (07:00-23:00)
- $L_{Aeq,8h}$, the average summer noise level during the night (23:00-07:00)
- L_{day}, the average annual noise level during the 12-hour day (07:00-19:00)
- $L_{evening}$, the average annual noise level during the evening (19:00-23:00)
- N65, the number of aircraft exceeding 65 dB L_{Amax} during the average summer day (07:00-23:00)
- N60, the number of aircraft exceeding 60 dB L_{Amax} during the average summer night (23:00-07:00)
- Number of people highly annoyed
- Number of people highly sleep disturbed
- Number of additional awakenings
- Hourly noise levels, based on the annual average
- Noise levels of individual flights

9-4.4 Assessment Results

Figures

9-4.4.1 For each assessment scenario and applicable metric (i.e. L_{den}, L_{night}, $L_{Aeq,16h}$, $L_{Aeq,8h}$, L_{day}, $L_{evening}$, N65 and N60), the results are first presented in a series of figures showing contours on an Ordnance Survey Ireland base map.

9-4.4.2 Table 9-4-1 provides a reference to aid finding a specific figure.

Table 9-4-1: Contour figure references

Scenario	Metric and figure reference							
	L_{den}	L_{night}	$L_{Aeq,16h}$	$L_{Aeq,8h}$	L_{day}	$L_{evening}$	**N65**	N60
Current Receiving Environment	9-4-001	9-4-002	9-4-003	9-4-004	9-4-005	9-4-006	9-4-007	9-4-008
2029 Proposed Operation	9-4-009	9-4-010	9-4-011	9-4-012	9-4-013	9-4-014	9-4-015	9-4-016
2029 Permitted Operation	9-4-017	9-4-018	9-4-019	9-4-020	9-4-021	9-4-022	9-4-023	9-4-024

Contour Areas, Dwelling and Population Counts

9-4.4.3 For each assessment scenario and applicable metric, the tables below present the area of each contour, as well as the number of dwellings and people within it. The dwelling and population counts are presented in three categories:

- Existing dwellings
- Consented dwellings, i.e. those with planning permission that are not yet built
- Zoned dwellings, i.e. those that are expected to be built in areas zoned for residential development.

9-4.4.4 All of the areas and counts below are cumulative, i.e. the people within a 60 dB contour would also be counted as within the corresponding 50 dB contour. Table 9-4-2 provides a reference to aid finding a specific result.

Table 9-4-2: Contour area, dwelling and population count table references

Metric	Result item and table reference						
	Contour Areas	Existing Dwelling Counts	Consented Dwelling Counts	Zoned Dwelling Counts	Existing Population Counts	Consented Population Counts	Zoned Population Counts
L_{den}	9-4-3	9-4-11	9-4-19	9-4-27	9-4-35	9-4-43	9-4-51
L_{night}	9-4-4	9-4-12	9-4-20	9-4-28	9-4-36	9-4-44	9-4-52
$L_{Aeq,16h}$	9-4-5	9-4-13	9-4-21	9-4-29	9-4-37	9-4-45	9-4-53
$L_{Aeq,8h}$	9-4-6	9-4-14	9-4-22	9-4-30	9-4-38	9-4-46	9-4-54
N65	9-4-7	9-4-15	9-4-23	9-4-31	9-4-39	9-4-47	9-4-55
N60	9-4-8	9-4-16	9-4-24	9-4-32	9-4-40	9-4-48	9-4-56
L_{day}	9-4-9	9-4-17	9-4-25	9-4-33	9-4-41	9-4-49	9-4-57
$L_{evening}$	9-4-10	9-4-18	9-4-26	9-4-34	9-4-42	9-4-50	9-4-58

Table 9-4-3: Contour areas, L_{den} metric

Metric Value, dB L_{den}	Scenario and contour area, km^2		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	631.0	606.2	677.9
≥ 50	250.7	228.6	248.3
≥ 55	111.6	94.2	103.2
≥ 60	42.2	37.1	40.6
≥ 65	14.6	12.4	13.7
≥ 70	4.8	4.4	4.9
≥ 75	1.8	1.6	1.8

Table 9-4-4: Contour areas, L_{night} metric

Metric Value, dB L_{night}	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	303.1	303.0	326.4
≥ 45	132.8	132.1	141.8
≥ 50	58.2	52.7	57.1
≥ 55	19.7	18.3	20.2
≥ 60	6.5	6.2	6.8
≥ 65	2.1	2.1	2.3
≥ 70	0.8	0.9	0.9

Table 9-4-5: Contour areas, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	141.9	119.3	132.8
≥ 54	83.4	68.4	76.9
≥ 57	47.7	39.6	44.4
≥ 60	27.3	21.3	24.5
≥ 63	14.4	11.4	12.9
≥ 66	8.1	6.4	7.2
≥ 69	4.5	3.5	4.0

Table 9-4-6: Contour areas, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	144.0	155.6	167.2
≥ 48	92.9	92.6	100.3
≥ 51	52.7	52.6	57.0
≥ 54	27.5	29.1	31.9
≥ 57	13.9	14.5	16.0
≥ 60	7.2	7.7	8.4
≥ 63	3.8	3.9	4.4

Table 9-4-7: Contour areas, N65 metric

Metric Value, N65	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	211.8	188.0	194.7
≥ 25	165.5	148.9	152.6
≥ 50	131.5	105.4	111.9
≥ 100	71.3	60.9	69.3
≥ 200	45.7	38.9	43.3

Metric Value, N65	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 500	0.0	0.0	0.0

Table 9-4-8: Contour areas, N60 metric

Metric Value, N60	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	173.6	196.8	221.3
≥ 25	98.6	81.2	87.5
≥ 50	31.1	34.8	40.9
≥ 100	0.0	0.0	0.2
≥ 200	0.0	0.0	0.0
≥ 500	0.0	0.0	0.0

Table 9-4-9: Contour areas, L_{day} metric

Metric Value, dB L_{day}	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	402.1	328.3	372.6
≥ 50	166.9	135.6	152.5
≥ 55	68.7	54.2	61.6
≥ 60	26.7	20.0	23.5
≥ 65	9.8	7.4	8.5
≥ 70	3.6	2.7	3.1
≥ 75	1.4	1.0	1.2

Table 9-4-10: Contour areas, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and contour area, km²		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	280.9	299.6	322.0
≥ 50	118.3	120.9	128.7
≥ 55	46.3	48.2	51.4
≥ 60	15.9	17.4	18.8
≥ 65	5.8	6.3	6.8
≥ 70	2.0	2.2	2.4
≥ 75	0.8	0.8	0.9

Table 9-4-11: Existing dwelling counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	149,580	114,736	124,949
≥ 50	54,149	41,125	45,939

Metric Value, dB L_{den}	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 55	17,054	10,671	12,024
≥ 60	4,236	2,250	2,562
≥ 65	117	78	94
≥ 70	7	6	7
≥ 75	0	0	0

Table 9-4-12: Existing dwelling counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	87,798	60,310	64,810
≥ 45	29,652	19,005	20,190
≥ 50	8,769	5,708	6,292
≥ 55	2,272	1,114	1,235
≥ 60	59	18	24
≥ 65	2	0	0
≥ 70	0	0	0

Table 9-4-13: Existing dwelling counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	20,628	15,647	17,818
≥ 54	8,926	6,237	7,313
≥ 57	3,105	2,317	2,775
≥ 60	1,297	770	1,213
≥ 63	117	73	100
≥ 66	48	27	35
≥ 69	8	3	3

Table 9-4-14: Existing dwelling counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	30,723	23,361	25,560
≥ 48	13,270	10,565	11,606
≥ 51	7,259	5,687	6,269
≥ 54	3,641	1,835	2,028
≥ 57	131	234	757
≥ 60	67	30	36
≥ 63	11	6	8

Table 9-4-15: Existing dwelling counts, N65 metric

Metric Value, N65	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	34,742	30,856	32,390
≥ 25	28,305	21,652	22,745
≥ 50	17,705	10,129	10,919
≥ 100	5,762	4,117	4,526
≥ 200	3,156	2,608	2,764
≥ 500	0	0	0

Table 9-4-16: Existing dwelling counts, N60 metric

Metric Value, N60	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	31,557	24,728	27,226
≥ 25	15,466	7,108	7,567
≥ 50	4,812	5,168	5,327
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-17: Existing dwelling counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	85,962	63,311	76,697
≥ 50	29,750	18,651	23,213
≥ 55	7,319	4,183	5,163
≥ 60	1,216	368	1,134
≥ 65	55	40	50
≥ 70	5	0	3
≥ 75	0	0	0

Table 9-4-18: Existing dwelling counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and existing dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	55,846	56,044	61,848
≥ 50	16,893	16,114	17,180
≥ 55	3,565	3,278	3,902
≥ 60	139	175	421
≥ 65	18	29	31
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-19: Consented dwelling counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	4,336	3,218	3,218
≥ 50	2,035	2,097	2,098
≥ 55	1,097	812	1,030
≥ 60	153	34	34
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-20: Consented dwelling counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	2,839	2,174	2,205
≥ 45	1,503	1,254	1,267
≥ 50	290	55	130
≥ 55	0	0	26
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-21: Consented dwelling counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	1,450	985	1,218
≥ 54	627	489	504
≥ 57	34	34	34
≥ 60	26	0	0
≥ 63	0	0	0
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-22: Consented dwelling counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	1,505	1,269	1,275
≥ 48	724	814	1,031
≥ 51	175	55	130
≥ 54	147	26	34

Metric Value, dB $L_{Aeq,8h}$	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 57	0	0	0
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-23: Consented dwelling counts, N65 metric

Metric Value, N65	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	1,858	1,669	1,704
≥ 25	1,477	1,258	1,477
≥ 50	1,258	568	637
≥ 100	213	153	153
≥ 200	54	34	34
≥ 500	0	0	0

Table 9-4-24: Consented dwelling counts, N60 metric

Metric Value, N60	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	1,475	1,636	1,751
≥ 25	791	594	693
≥ 50	281	281	281
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-25: Consented dwelling counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	3,123	2,750	2,902
≥ 50	1,756	1,552	1,554
≥ 55	559	133	268
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-26: Consented dwelling counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	2,225	2,129	2,179

Metric Value, dB $L_{evening}$	Scenario and consented dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 50	1,154	1,141	1,233
≥ 55	34	34	133
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-27: Zoned dwelling counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	2,000	2,000	2,000
≥ 50	2,000	2,000	2,000
≥ 55	1,800	1,800	1,800
≥ 60	1,044	718	826
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-28: Zoned dwelling counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	2,000	2,000	2,000
≥ 45	1,900	1,800	1,800
≥ 50	1,584	1,152	1,584
≥ 55	100	500	500
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-29: Zoned dwelling counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	1,800	1,800	1,800
≥ 54	1,800	1,800	1,800
≥ 57	1,044	718	1,044
≥ 60	500	0	500
≥ 63	0	0	0
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-30: Zoned dwelling counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	2,000	1,900	1,900
≥ 48	1,800	1,800	1,800
≥ 51	1,044	1,152	1,584
≥ 54	500	500	718
≥ 57	0	0	0
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-31: Zoned dwelling counts, N65 metric

Metric Value, N65	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	1,800	1,800	1,800
≥ 25	1,800	1,800	1,800
≥ 50	1,800	1,800	1,800
≥ 100	1,584	1,044	1,044
≥ 200	1,044	718	826
≥ 500	0	0	0

Table 9-4-32: Zoned dwelling counts, N60 metric

Metric Value, N60	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	1,800	1,800	1,800
≥ 25	1,800	1,800	1,800
≥ 50	1,584	1,584	1,584
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-33: Zoned dwelling counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	2,000	2,000	2,000
≥ 50	1,800	1,800	1,800
≥ 55	1,800	1,368	1,584
≥ 60	500	0	400
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-34: Zoned dwelling counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and zoned dwelling count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	2,000	2,000	2,000
≥ 50	1,800	1,800	1,800
≥ 55	1,368	1,044	1,260
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-35: Existing population counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	440,608	334,665	363,719
≥ 50	160,321	123,062	137,829
≥ 55	51,564	31,756	35,761
≥ 60	13,068	6,472	7,315
≥ 65	310	215	265
≥ 70	13	13	13
≥ 75	0	0	0

Table 9-4-36: Existing population counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	260,830	179,886	192,793
≥ 45	88,814	56,243	59,801
≥ 50	27,721	16,937	18,698
≥ 55	7,537	3,454	3,819
≥ 60	150	47	65
≥ 65	2	0	0
≥ 70	0	0	0

Table 9-4-37: Existing population counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	59,172	44,707	50,792
≥ 54	25,847	17,792	21,002
≥ 57	9,010	6,725	7,992
≥ 60	3,990	2,476	3,748

Metric Value, dB $L_{Aeq,16h}$	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 63	336	206	285
≥ 66	132	73	98
≥ 69	19	7	7

Table 9-4-38: Existing population counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	91,579	69,572	76,299
≥ 48	41,035	31,830	34,992
≥ 51	23,406	16,868	18,625
≥ 54	11,737	5,307	5,822
≥ 57	355	745	2,435
≥ 60	172	80	99
≥ 63	24	13	17

Table 9-4-39: Existing population counts, N65 metric

Metric Value, N65	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	102,894	91,515	96,060
≥ 25	83,815	63,450	66,835
≥ 50	50,731	29,418	31,789
≥ 100	16,499	11,645	12,879
≥ 200	8,973	7,468	7,941
≥ 500	0	0	0

Table 9-4-40: Existing population counts, N60 metric

Metric Value, N60	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	95,367	74,022	81,696
≥ 25	47,835	20,356	21,769
≥ 50	13,522	14,574	15,041
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-41: Existing population counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	248,596	186,567	225,308

Metric Value, dB L_{day}	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 50	86,627	53,400	67,585
≥ 55	21,015	11,785	14,656
≥ 60	3,747	1,178	3,515
≥ 65	151	110	138
≥ 70	10	0	7
≥ 75	0	0	0

Table 9-4-42: Existing population counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and existing population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	163,718	165,681	182,854
≥ 50	47,933	45,837	48,871
≥ 55	10,110	9,417	11,022
≥ 60	395	521	1,376
≥ 65	45	79	85
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-43: Consented population counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	11,822	8,671	8,671
≥ 50	5,358	5,543	5,546
≥ 55	2,839	2,196	2,710
≥ 60	477	113	113
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-44: Consented population counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	7,615	5,786	5,888
≥ 45	3,864	3,183	3,227
≥ 50	849	173	398
≥ 55	0	0	90
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-45: Consented population counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	3,688	2,497	3,047
≥ 54	1,708	1,387	1,431
≥ 57	113	113	113
≥ 60	90	0	0
≥ 63	0	0	0
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-46: Consented population counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	3,872	3,233	3,252
≥ 48	1,992	2,203	2,713
≥ 51	539	173	398
≥ 54	461	90	113
≥ 57	0	0	0
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-47: Consented population counts, N65 metric

Metric Value, N65	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	4,851	4,329	4,440
≥ 25	3,805	3,208	3,805
≥ 50	3,208	1,605	1,740
≥ 100	606	449	449
≥ 200	168	113	113
≥ 500	0	0	0

Table 9-4-48: Consented population counts, N60 metric

Metric Value, N60	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	3,776	4,220	4,584
≥ 25	2,120	1,551	1,832
≥ 50	821	821	821
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-49: Consented population counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	8,413	7,375	7,768
≥ 50	4,531	4,008	4,015
≥ 55	1,576	394	759
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-50: Consented population counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and consented population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	5,945	5,639	5,807
≥ 50	2,881	2,837	3,098
≥ 55	113	113	394
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-51: Zoned population counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	6,000	6,000	6,000
≥ 50	6,000	6,000	6,000
≥ 55	5,400	5,400	5,400
≥ 60	3,132	2,154	2,478
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-52: Zoned population counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	6,000	6,000	6,000
≥ 45	5,700	5,400	5,400
≥ 50	4,752	3,456	4,752
≥ 55	300	1,500	1,500

Metric Value, dB L_{night}	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-53: Zoned population counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	5,400	5,400	5,400
≥ 54	5,400	5,400	5,400
≥ 57	3,132	2,154	3,132
≥ 60	1,500	0	1,500
≥ 63	0	0	0
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-54: Zoned population counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	6,000	5,700	5,700
≥ 48	5,400	5,400	5,400
≥ 51	3,132	3,456	4,752
≥ 54	1,500	1,500	2,154
≥ 57	0	0	0
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-55: Zoned population counts, N65 metric

Metric Value, N65	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	5,400	5,400	5,400
≥ 25	5,400	5,400	5,400
≥ 50	5,400	5,400	5,400
≥ 100	4,752	3,132	3,132
≥ 200	3,132	2,154	2,478
≥ 500	0	0	0

Table 9-4-56: Zoned population counts, N60 metric

Metric Value, N60	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	5,400	5,400	5,400
≥ 25	5,400	5,400	5,400
≥ 50	4,752	4,752	4,752
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-57: Zoned population counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	6,000	6,000	6,000
≥ 50	5,400	5,400	5,400
≥ 55	5,400	4,104	4,752
≥ 60	1,500	0	1,200
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-58: Zoned population counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and zoned population count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	6,000	6,000	6,000
≥ 50	5,400	5,400	5,400
≥ 55	4,104	3,132	3,780
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Community Building Counts

9-4.4.5 For each assessment scenario and applicable metric, the tables below present the number of community buildings within each contour. The following community buildings have been assessed:

- Education buildings
- Residential healthcare facilities
- Religious buildings

9-4.4.6 Not all metrics will be relevant for all receptors, e.g. education buildings are not typically noise-sensitive at night, however full results have been presented for completeness.

9-4.4.7 All of the counts below are cumulative, i.e. the buildings within a 60 dB contour would also be counted as within the corresponding 50 dB contour. Table 9-4-59 provides a reference to aid finding a specific result.

Table 9-4-59: Community building count table references

Metric	Result item and table reference		
	Education Buildings	Residential Healthcare Facilities	Religious Buildings
L_{den}	9-4-60	9-4-68	9-4-76
L_{night}	9-4-61	9-4-69	9-4-77
$L_{Aeq,16h}$	9-4-62	9-4-70	9-4-78
$L_{Aeq,8h}$	9-4-63	9-4-71	9-4-79
N65	9-4-64	9-4-72	9-4-80
N60	9-4-65	9-4-73	9-4-81
L_{day}	9-4-66	9-4-74	9-4-82
$L_{evening}$	9-4-67	9-4-75	9-4-83

Table 9-4-60: Education building counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	175	123	135
≥ 50	48	33	41
≥ 55	8	7	8
≥ 60	2	3	3
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-61: Education building counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	81	63	68
≥ 45	17	8	10
≥ 50	3	4	5
≥ 55	1	0	0
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-62: Education building counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	13	8	11
≥ 54	6	5	6
≥ 57	5	4	4
≥ 60	2	1	2
≥ 63	0	0	0
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-63: Education building counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	17	13	15
≥ 48	6	6	8
≥ 51	3	4	5
≥ 54	1	2	2
≥ 57	1	0	0
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-64: Education building counts, N65 metric

Metric Value, N65	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	31	24	25
≥ 25	24	17	18
≥ 50	14	8	8
≥ 100	5	5	5
≥ 200	4	3	4

Metric Value, N65	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 500	0	0	0

Table 9-4-65: Education building counts, N60 metric

Metric Value, N60	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	15	11	17
≥ 25	6	6	6
≥ 50	3	3	3
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-66: Education building counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	95	68	76
≥ 50	24	12	16
≥ 55	6	5	5
≥ 60	1	1	2
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-67: Education building counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and education building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	55	57	62
≥ 50	11	9	12
≥ 55	5	5	5
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-68: Residential healthcare facility counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	16	12	12
≥ 50	9	7	8

Metric Value, dB L_{den}	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 55	5	4	4
≥ 60	3	3	3
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-69: Residential healthcare facility counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	11	10	11
≥ 45	3	4	4
≥ 50	2	3	3
≥ 55	1	1	1
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-70: Residential healthcare facility counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	6	5	5
≥ 54	4	4	4
≥ 57	3	3	3
≥ 60	3	3	3
≥ 63	0	0	0
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-71: Residential healthcare facility counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	6	6	6
≥ 48	2	4	4
≥ 51	1	3	3
≥ 54	1	3	3
≥ 57	0	1	1
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-72: Residential healthcare facility counts, N65 metric

Metric Value, N65	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	6	6	6
≥ 25	6	5	6
≥ 50	5	5	5
≥ 100	3	3	3
≥ 200	3	3	3
≥ 500	0	0	0

Table 9-4-73: Residential healthcare facility counts, N60 metric

Metric Value, N60	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	4	6	6
≥ 25	2	3	3
≥ 50	1	1	1
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-74: Residential healthcare facility counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	11	10	10
≥ 50	6	5	6
≥ 55	4	3	4
≥ 60	3	3	3
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-75: Residential healthcare facility counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and residential healthcare facility count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	9	9	10
≥ 50	4	5	5
≥ 55	3	3	3
≥ 60	1	2	2
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-76: Religious building counts, L_{den} metric

Metric Value, dB L_{den}	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	65	51	55
≥ 50	24	17	19
≥ 55	6	5	5
≥ 60	3	3	3
≥ 65	1	1	1
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-77: Religious building counts, L_{night} metric

Metric Value, dB L_{night}	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 40	30	29	29
≥ 45	10	6	7
≥ 50	4	3	4
≥ 55	2	1	1
≥ 60	0	0	0
≥ 65	0	0	0
≥ 70	0	0	0

Table 9-4-78: Religious building counts, $L_{Aeq,16h}$ metric

Metric Value, dB $L_{Aeq,16h}$	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 51	9	6	8
≥ 54	5	4	5
≥ 57	3	3	3
≥ 60	3	2	2
≥ 63	1	0	1
≥ 66	0	0	0
≥ 69	0	0	0

Table 9-4-79: Religious building counts, $L_{Aeq,8h}$ metric

Metric Value, dB $L_{Aeq,8h}$	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	9	8	9
≥ 48	7	6	6
≥ 51	4	3	4
≥ 54	2	2	2

Metric Value, dB $L_{Aeq,8h}$	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 57	2	1	1
≥ 60	0	0	0
≥ 63	0	0	0

Table 9-4-80: Religious building counts, N65 metric

Metric Value, N65	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	13	13	13
≥ 25	12	10	10
≥ 50	8	7	7
≥ 100	3	3	3
≥ 200	3	3	3
≥ 500	0	0	0

Table 9-4-81: Religious building counts, N60 metric

Metric Value, N60	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 10	10	9	11
≥ 25	7	5	5
≥ 50	2	2	3
≥ 100	0	0	0
≥ 200	0	0	0
≥ 500	0	0	0

Table 9-4-82: Religious building counts, L_{day} metric

Metric Value, dB L_{day}	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	40	28	33
≥ 50	11	8	11
≥ 55	5	3	3
≥ 60	3	2	2
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Table 9-4-83: Religious building counts, $L_{evening}$ metric

Metric Value, dB $L_{evening}$	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 45	25	23	26

Metric Value, dB $L_{evening}$	Scenario and religious building count		
	Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
≥ 50	7	8	8
≥ 55	3	3	3
≥ 60	1	1	1
≥ 65	0	0	0
≥ 70	0	0	0
≥ 75	0	0	0

Comparisons with Noise Abatement Objective (NAO)

9-4.4.8 The 2022 NAO and the draft 2026 NAO both set out measurable criteria. The 2022 NAO used the following criteria:

- Number of people highly annoyed
- Number of people highly sleep disturbed
- Number of people exposed to at least 65 dB L_{den}
- Number of people exposed to at least 55 dB L_{night}

9-4.4.9 The draft 2026 NAO retains these metrics, and also includes:

- Area of 55 dB L_{den} contour
- Area of 50 dB L_{night} contour

9-4.4.10 These results based on the latest population dataset are all included in the relevant sections of this appendix.

9-4.4.11 The 2022 NAO includes targets with reference to the 2019 results, and the draft 2026 NAO includes targets with reference to the 2023 results.

9-4.4.12 The draft 2026 NAO notes that population growth should be considered for the purposes of measurement against the expected outcomes. Additionally, the 2022 NAO required that the measurable criteria were presented both in terms of the most recent population data available and the population in 2019. Therefore, in this section the population results are presented on the basis of the 2019 and 2023 population datasets, alongside the 2026 dataset for comparison.

Table 9-4-84: Comparisons with NAO

Metric	Scenario	Population Dataset		
		2019	2023	2026
Number of people highly annoyed	Current Receiving Environment	65,686	71,408	77,387
	2029 Permitted Operation	47,448	52,442	57,482
	2029 Proposed Operation	52,109	57,522	62,874
Number of people highly sleep disturbed	Current Receiving Environment	31,683	35,089	38,698
	2029 Permitted Operation	20,646	23,345	26,180
	2029 Proposed Operation	22,276	25,085	28,192
Number of people ≥ 65 dB L_{den}	Current Receiving Environment	322	337	310
	2029 Permitted Operation	227	236	215
	2029 Proposed Operation	271	280	265
Number of people ≥ 55 dB L_{night}	Current Receiving Environment	1,914	4,309	7,537
	2029 Permitted Operation	1,332	2,768	3,454
	2029 Proposed Operation	1,428	3,067	3,819

Other Metrics

9-4.4.13 For the metrics which do not have contour outputs, i.e. number of people highly annoyed, number of people highly sleep disturbed, number of additional awakenings, hourly noise levels and noise levels of individual flights, the results are presented in this section.

Number of People Highly Annoyed

9-4.4.14 Using the formula presented in the EU Commission Directive 2020/367[1], the number of people highly annoyed by aircraft noise has been estimated based on the L_{den} external noise levels and a 2026 population dataset.

Table 9-4-85: Number of people highly annoyed

Scenario	Number of people highly annoyed	
	Excluding Consented Developments	Including Consented Developments
Current Receiving Environment	77,387	81,850
2029 Permitted Operation	57,482	61,323
2029 Proposed Operation	62,874	66,841

[1] European Commission (2020). Commission Directive (EU) 2020/367 of 4 March 2020 amending Annex III to Directive 2002/49/EC of the European Parliament and of the Council as regards the establishment of assessment methods for harmful effects of environmental noise, [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020L0367&qid=1700656648516 [Checked 19/06/2026]

Number of People Highly Sleep Disturbed

9-4.4.15 Using the formula presented in the EU Commission Directive 2020/367[1], the number of people highly sleep disturbed by aircraft noise has been estimated based on the L_{night} external noise levels and a 2026 population dataset.

Table 9-4-86: Number of people highly sleep disturbed

Scenario	Number of people highly sleep disturbed	
	Excluding Consented Developments	Including Consented Developments
Current Receiving Environment	38,698	41,160
2029 Permitted Operation	26,180	28,370
2029 Proposed Operation	28,192	30,448

Number of Additional Awakenings

9-4.4.16 Using the formula presented in *WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep*, the number of additional awakenings due to aircraft noise has been estimated.

Table 9-4-87: Additional awakenings

Scenario	Estimated number of additional awakenings due to aircraft noise
Current Receiving Environment	65,466
2029 Permitted Operation	41,190
2029 Proposed Operation	44,920

Hourly Noise Levels

9-4.4.17 For each assessment scenario, the tables below present the hourly noise levels at each of the 18 representative location points for which the overall noise levels are presented in Chapter 9. All values are rounded to the nearest whole number.

Table 9-4-88: Hourly noise levels at representative locations (AR01 to AR10) – Current Receiving Environment

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR01	AR02	AR03	AR04	AR05	AR06	AR07	AR08	AR09	AR10
00:00-00:59	37	40	35	37	43	49	49	59	45	50
01:00-01:59	32	35	29	32	39	46	45	55	41	46
02:00-02:59	36	37	32	33	35	41	40	51	41	45
03:00-03:59	32	33	30	31	36	43	41	52	38	43
04:00-04:59	35	37	33	34	41	48	46	57	43	48
05:00-05:59	41	43	39	38	41	49	44	57	48	52
06:00-06:59	47	49	45	44	47	53	50	60	53	57
07:00-07:59	57	57	48	44	47	55	51	63	54	58
08:00-08:59	56	56	47	43	47	55	50	63	53	57
09:00-09:59	55	57	47	43	47	54	50	63	53	57
10:00-10:59	55	56	46	43	46	54	50	62	53	57
11:00-11:59	56	57	47	44	47	55	51	63	54	59
12:00-12:59	56	57	48	44	47	55	51	63	54	59
13:00-13:59	56	57	48	44	48	55	51	63	55	59
14:00-14:59	56	56	47	44	47	55	50	63	54	58

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR01	AR02	AR03	AR04	AR05	AR06	AR07	AR08	AR09	AR10
15:00-15:59	56	57	47	44	47	55	51	62	54	59
16:00-16:59	56	56	47	44	47	55	51	62	54	58
17:00-17:59	56	56	47	44	47	55	50	62	54	58
18:00-18:59	55	55	46	43	47	54	50	62	53	57
19:00-19:59	55	55	46	43	46	54	49	61	53	57
20:00-20:59	54	54	45	42	46	53	48	61	52	56
21:00-21:59	53	54	44	41	45	53	48	61	51	55
22:00-22:59	51	52	43	40	44	52	46	61	49	54
23:00-23:59	40	42	37	38	44	51	50	59	46	51

Table 9-4-89: Hourly noise levels at representative locations (AR11 to AR20) – Current Receiving Environment

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR11	AR12	AR13	AR14	AR15	AR16	AR17	AR18	AR19	AR20
00:00-00:59	43	61	51	35	45	34	52	35	39	35
01:00-01:59	37	57	45	29	41	28	48	30	34	29
02:00-02:59	40	54	48	31	36	28	45	31	39	31
03:00-03:59	37	54	43	28	38	27	45	29	32	27
04:00-04:59	41	61	47	26	44	32	52	34	34	26
05:00-05:59	49	62	57	39	48	44	54	42	40	38
06:00-06:59	55	66	62	46	53	49	59	47	46	46
07:00-07:59	50	53	63	49	45	43	45	47	61	51
08:00-08:59	49	51	61	47	43	40	43	45	60	49
09:00-09:59	49	50	61	47	42	39	42	46	60	49
10:00-10:59	48	50	61	47	42	39	42	45	59	49
11:00-11:59	50	51	62	48	42	39	43	47	60	51
12:00-12:59	50	51	62	48	42	39	43	47	60	50
13:00-13:59	50	51	62	48	42	39	43	47	61	50
14:00-14:59	50	51	61	47	43	40	43	47	60	49
15:00-15:59	50	51	62	47	42	39	43	47	60	49
16:00-16:59	50	51	62	47	42	39	42	46	60	49
17:00-17:59	50	51	62	47	42	39	43	46	60	49
18:00-18:59	49	51	61	46	43	40	43	46	59	47
19:00-19:59	49	50	60	46	42	40	42	45	58	48
20:00-20:59	47	50	59	45	42	39	42	44	58	47
21:00-21:59	47	54	59	44	43	38	46	43	57	45
22:00-22:59	45	54	57	43	42	37	46	41	55	44
23:00-23:59	45	62	53	38	47	38	53	37	42	37

Table 9-4-90: Hourly noise levels at representative locations (AR01 to AR10) – 2029 Permitted Operation

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR01	AR02	AR03	AR04	AR05	AR06	AR07	AR08	AR09	AR10
00:00-00:59	36	39	33	37	43	50	49	59	44	50
01:00-01:59	33	34	30	31	38	44	44	54	38	44
02:00-02:59	37	38	35	35	36	40	39	47	39	42
03:00-03:59	37	37	34	33	38	44	44	54	39	44
04:00-04:59	37	38	34	35	41	49	45	59	45	50
05:00-05:59	38	40	35	36	40	49	43	59	46	50
06:00-06:59	56	56	46	41	44	51	47	58	51	55
07:00-07:59	58	58	48	43	46	54	49	61	53	57
08:00-08:59	55	55	45	41	45	54	48	63	51	56
09:00-09:59	55	56	47	42	45	53	48	62	51	56
10:00-10:59	54	54	44	40	44	52	47	60	50	54
11:00-11:59	55	56	46	41	45	53	48	62	51	56
12:00-12:59	52	52	42	39	44	53	47	62	50	55
13:00-13:59	55	54	45	41	45	54	48	62	51	56
14:00-14:59	53	53	43	39	43	52	46	61	49	54
15:00-15:59	57	57	47	42	45	54	49	62	52	57
16:00-16:59	55	55	45	41	44	52	47	60	51	55
17:00-17:59	55	55	45	41	44	53	47	61	51	55
18:00-18:59	55	55	45	42	45	54	48	63	52	56
19:00-19:59	56	55	45	41	45	53	48	62	51	56
20:00-20:59	55	55	45	41	45	53	48	62	51	55
21:00-21:59	55	54	45	41	44	51	47	60	50	54
22:00-22:59	52	53	44	41	45	53	47	62	50	54
23:00-23:59	50	49	39	38	43	51	48	60	47	52

Table 9-4-91: Hourly noise levels at representative locations (AR11 to AR20) – 2029 Permitted Operation

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR11	AR12	AR13	AR14	AR15	AR16	AR17	AR18	AR19	AR20
00:00-00:59	41	60	49	35	44	33	51	39	38	34
01:00-01:59	37	54	40	23	37	22	45	34	32	19
02:00-02:59	40	52	46	37	38	34	45	35	39	36
03:00-03:59	40	55	45	25	37	23	45	36	36	21
04:00-04:59	42	60	49	24	45	35	51	40	35	22
05:00-05:59	47	60	54	32	46	42	52	41	35	32
06:00-06:59	47	52	61	48	42	40	44	46	60	50
07:00-07:59	50	54	63	49	44	42	46	48	62	50
08:00-08:59	47	52	61	47	43	40	44	46	59	49
09:00-09:59	48	53	61	48	42	39	45	47	59	51
10:00-10:59	46	51	60	46	40	37	43	45	58	49

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR11	AR12	AR13	AR14	AR15	AR16	AR17	AR18	AR19	AR20
11:00-11:59	47	53	62	48	41	37	44	47	60	53
12:00-12:59	44	51	58	45	42	39	43	45	57	49
13:00-13:59	46	52	60	48	42	38	45	46	60	50
14:00-14:59	45	50	58	45	41	39	43	44	57	48
15:00-15:59	48	54	62	49	42	39	45	48	61	53
16:00-16:59	47	52	61	47	41	38	44	46	59	50
17:00-17:59	47	52	61	47	42	40	44	46	59	51
18:00-18:59	47	52	61	46	42	39	45	47	59	47
19:00-19:59	47	52	61	47	44	42	45	47	60	50
20:00-20:59	47	52	60	46	42	39	44	46	59	46
21:00-21:59	46	51	60	45	40	37	43	45	59	44
22:00-22:59	45	50	57	44	40	36	43	45	57	43
23:00-23:59	41	48	55	38	36	31	40	42	54	36

Table 9-4-92: Hourly noise levels at representative locations (AR01 to AR10) – 2029 Proposed Operation

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR01	AR02	AR03	AR04	AR05	AR06	AR07	AR08	AR09	AR10
00:00-00:59	36	39	33	37	43	50	49	59	44	50
01:00-01:59	33	34	30	31	38	44	44	54	38	44
02:00-02:59	37	38	35	35	36	40	39	47	39	42
03:00-03:59	37	37	34	33	38	44	44	54	39	44
04:00-04:59	37	38	34	35	41	50	45	60	45	50
05:00-05:59	38	40	35	36	40	50	43	60	46	51
06:00-06:59	56	56	46	42	45	52	48	59	51	55
07:00-07:59	58	58	48	44	47	54	50	62	53	57
08:00-08:59	56	56	46	42	46	55	49	64	52	57
09:00-09:59	56	57	47	43	46	54	49	63	52	57
10:00-10:59	55	55	45	41	45	53	48	62	51	55
11:00-11:59	55	56	46	41	45	53	48	62	51	56
12:00-12:59	53	53	43	40	45	54	48	63	51	56
13:00-13:59	55	55	45	42	46	54	49	63	52	57
14:00-14:59	54	54	44	40	44	53	47	62	50	55
15:00-15:59	58	58	48	43	46	54	50	62	53	58
16:00-16:59	55	55	45	41	44	53	48	61	51	56
17:00-17:59	55	55	45	41	45	53	48	61	51	55
18:00-18:59	56	55	46	42	46	54	48	63	52	56
19:00-19:59	56	56	46	42	45	53	48	62	52	56
20:00-20:59	55	55	45	42	45	53	48	62	51	55
21:00-21:59	55	54	45	41	44	52	47	60	50	55
22:00-22:59	53	54	45	42	45	54	48	63	51	55

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR01	AR02	AR03	AR04	AR05	AR06	AR07	AR08	AR09	AR10
23:00-23:59	50	50	40	39	43	52	49	61	48	53

Table 9-4-93: Hourly noise levels at representative locations (AR11 to AR20) – 2029 Proposed Operation

Hour	Noise Level at Location, $L_{Aeq,1h}$									
	AR11	AR12	AR13	AR14	AR15	AR16	AR17	AR18	AR19	AR20
00:00-00:59	41	60	49	35	44	33	51	39	38	34
01:00-01:59	37	54	40	23	37	22	45	34	32	19
02:00-02:59	40	52	46	37	38	34	45	35	39	36
03:00-03:59	40	55	45	25	37	23	45	36	36	21
04:00-04:59	42	60	49	24	45	35	51	40	35	22
05:00-05:59	47	61	54	32	47	42	53	42	35	32
06:00-06:59	48	52	61	48	43	41	45	47	61	51
07:00-07:59	50	54	63	49	45	43	46	49	62	52
08:00-08:59	48	53	62	47	43	40	45	47	60	49
09:00-09:59	49	53	62	48	43	40	45	48	60	51
10:00-10:59	47	52	60	47	41	37	44	46	59	50
11:00-11:59	47	53	62	48	41	37	45	47	60	53
12:00-12:59	45	52	59	47	43	40	44	46	58	51
13:00-13:59	47	53	61	49	42	39	45	47	60	51
14:00-14:59	46	51	59	46	42	40	44	45	58	49
15:00-15:59	50	56	64	50	43	40	47	49	62	55
16:00-16:59	47	52	61	47	41	38	44	46	60	51
17:00-17:59	47	52	61	47	42	40	44	46	60	51
18:00-18:59	48	52	61	46	42	39	45	47	60	47
19:00-19:59	48	53	62	48	44	42	45	47	60	51
20:00-20:59	47	52	60	46	42	39	44	46	59	46
21:00-21:59	46	51	60	45	40	37	43	45	59	44
22:00-22:59	46	50	57	44	40	37	44	46	58	43
23:00-23:59	42	48	56	38	37	31	41	43	55	37

Noise Levels of Individual Events

9-4.4.18 For each assessment scenario, the tables below present the L_{Amax} noise levels which occur at least once per night at each of the 18 representative location points for which the overall noise levels are presented in Chapter 9.

Table 9-4-96: L_{Amax} noise levels at representative locations

Ref. No	Location	Highest L_{Amax} Noise Level (dB) Exceeded Once Per Night		
		Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
AR01	Tyrellstown, Toberburr	61	70	70
AR02	Ridgewood	61	70	70

Ref. No	Location	Highest L_{Amax} Noise Level (dB) Exceeded Once Per Night		
		Current Receiving Environment	2029 Permitted Operation	2029 Proposed Operation
AR03	Swords	57	59	59
AR04	Malahide Castle	56	56	56
AR05	Portmarnock N	65	64	64
AR06	Portmarnock S	69	69	69
AR07	Malahide S	76	75	75
AR08	St Doolaghs	79	80	80
AR09	Darndale Park	69	68	68
AR10	The Baskins	74	74	74
AR11	Mayeston Hall	67	66	66
AR12	Kilshane Cross	87	86	86
AR13	St Margret's	77	78	78
AR14	Ashbourne	62	62	62
AR15	Dunboyne	68	67	67
AR16	Ongar	67	60	60
AR17	Mount Garrett	73	73	73
AR18	Beaumont	60	59	59
AR19	Kilcoskan	61	77	77
AR20	Ratoath	63	67	67