



# Dublin Airport

## Quarterly Noise and Flight Track Monitoring Report

January – March (Q1) 2025

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Revision 1 (fixing calculation error on page 16)



- This report presents data and information from Dublin Airport's Noise Monitoring Terminals (NMTs) and flight track monitoring system.
- The publication of this quarterly report is a requirement under Condition 10 of the North Runway's planning permission.
- The report is split into three parts:
  - Part 1: Noise Monitoring – Permanent monitors
  - Part 2: Noise Monitoring – Temporary monitors
  - Part 3: Flight Track Monitoring
- Noise data is presented in this report in five different metrics - Lden, Lnight, Leq16h, Lmax and SEL.
- The reporting of environmental noise from transport systems – airports, road and rail - is regulated by the EU Environmental Noise Directive (END).
- The END refers to the Lden and Lnight metrics to assess noise impact and to measure longer term improvements and goals.
- These two metrics are also used by the World Health Organization (WHO).
- Lmax and SEL are single event metrics and are not generally used on their own to assess noise impact by authorities. By including the number or frequency of events, they can provide a different way of representing the noise situation.
- This report demonstrates good correlation between the noise measurements obtained from NMTs and the modelled noise contours - this provides confidence in the accuracy of the contours. Noise contours cover the entire study area whereas noise monitors only report noise at the actual monitoring locations.



# Part 1: Noise Monitoring Data Permanent NMT

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<b>15</b>	NMT – Q1 2025 Lmax and SEL Percentages (3 months)	<p>Measured Single Event data at each NMT:</p> <ul style="list-style-type: none"> <li>• The distribution (%) of events over the quarter in each 5-decibel Lmax band (e.g. Lmax 60 - 65 dBA) and each SEL band (e.g. SEL 75 - 80 dBA).</li> </ul>
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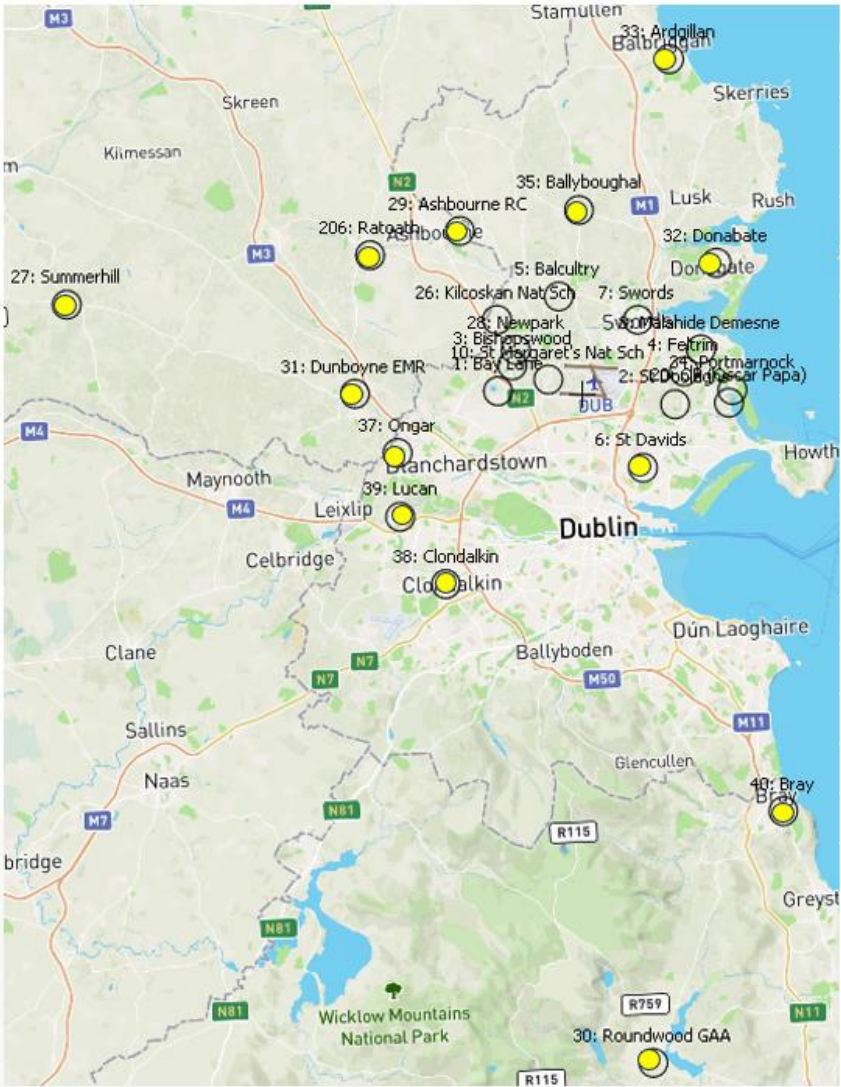
Term	Definition
<b>Aircraft Noise</b>	The noise generated by aircraft operating to or from Dublin Airport. For our noise monitors, this excludes aircraft not travelling to or from Dublin Airport and noise from local activity such as road traffic, wind, birds, dogs and community activity. (These other noise sources are included in the measured Total Noise.)
<b>(Correlated) Aircraft Noise Event</b>	This is a noise event that is matched to an aircraft flight near the location of the NMT and the time of the noise event. Only correlated aircraft noise events are used to calculate the measured aircraft noise (e.g. Lden, Lnight, Leq16) at the NMT location.
<b>Downtime (minutes)</b>	The number of minutes during the period that each monitor was not operational.
<b>Lden</b>	Lden is the day-evening-night level. It is a descriptor of noise level based on energy equivalent noise level (Leq) over a whole day or longer, with a penalty of 5 dBA for evening noise (19:00-23:00h or 7-11pm) and a penalty of 10 dBA for night-time noise (23:00-7:00h or 11pm-7am). The 5-decibel penalty means that an evening flight is treated as the equivalent of three daytime flights. The 10-decibel penalty means that a night flight is the equivalent of 10 daytime flights.
<b>Leq</b>	Leq is the Equivalent Continuous Sound Level and is the average sound level, over the given period, that has the same total energy as the actual time-varying noise.
<b>Leq16(hr)</b>	Leq16h is the Leq over the 16-hour day-time period (7am-11pm). The Summer Leq16hr covers the 92 days from mid-June to mid-September and, at Dublin airport, is used for assessing the Residential Noise Insulation Scheme.
<b>Leq8(hr)</b>	Leq8h is the Leq over the 8-hour night-time period (11pm-7am). The Summer Leq16hr covers the 92 days from mid-June to mid-September. Leq8h and Lnight cover the same period, so monthly and quarterly values are identical. If the summer period is busier, the Summer Leq8h would be higher than the Annual Lnight.
<b>Lmax</b>	Lmax is the maximum instantaneous noise level recorded at an NMT during a noise event. Leq1sec (approx. Lmax) is displayed at each NMT on the Dublin Airport WebTrak site however, it also <u>includes</u> non-aircraft noise.
<b>Lnight</b>	Lnight is the night-time (11pm-7am) Leq average noise indicator. Like Lden, in this document, Lnight is reported monthly, quarterly and annually.
<b>Measured noise levels</b>	This is the assessment of the noise level at an NMT derived from data from the NMT. Each measured noise level is only at the NMT point location.
<b>Modelled noise levels</b>	This is calculated using computer software which takes into account all Dublin Airport flight operational activity. It calculates the noise levels at thousands of points across the study area and is used to produce Noise Contours. The Modelled noise level can also be calculated at each NMT point location.
(Notes: Comparing Measured and Modelled Noise Levels)	Measured noise levels at each NMT location should be the same, or close to, the Modelled noise levels. Measured data may miss some less noisy aircraft noise events, especially if the NMT is far from the airport (the aircraft is higher) or if the aircraft track is far from the NMT. Modelled data includes all aircraft activity in the entire study area. This means that Measured data should be equal to, or slightly lower than, the Modelled data. Good agreement between the Measured and Modelled data gives confidence that the Modelled Noise Contours provide good information on actual noise levels, including at locations that do not have an NMT.



Term	Definition
<b>NMT</b>	NMT means Noise Monitoring Terminal. They are generally located in community areas. An NMT includes a high-quality, calibrated microphone and provides continuous noise level data at the location of the NMT.
<b>Noise Contours</b>	Contours are lines that join points of the same modelled noise level covering a study area. All noise contours are modelled. Each year Dublin Airport publishes Annual Lden and Lnight contours and Summer Leq16h and Leq8h contours.
<b>Noise Event</b>	A noise event is detected at an NMT location when the noise level rises above and then falls below a pre-set threshold level. This can be caused by many different sources including aircraft, vehicles on a road, dogs barking, wind, sirens etc.
<b>Number Above</b>	Number Above is a single event metric unlike Lden or Lnight which are time-averaged noise metrics. N60 is the number of (aircraft noise) events with $L_{max} \geq 60$ dBA. N(SEL)70 is the number of (aircraft noise) events with $SEL \geq 70$ dBA. Note that N60 value includes the events in N65, N70 and higher.
<b>SEL</b>	SEL or Sound Exposure Level represents the total noise energy contained in a noise event, as if the same noise energy were compressed into a single second. For a short event (like a single dog bark) the SEL is approximately the same value as the $L_{max}$ . For an aircraft noise event, usually 10 to 30 seconds, the SEL value is typically about 10 decibels higher than the $L_{max}$ . The SEL values of the Correlated Aircraft Noise Events are added up and used to calculate average noise level metrics over longer periods, including annual or monthly Lden & Lnight, or monthly or summer Leq16 & Leq8.
<b>Single Event noise metrics</b>	Including $L_{max}$ and SEL, these measure the noise of individual events. Along with the (daily or hourly) number of events at each noise level, these metrics provide a different perspective attempting to quantify the various experiences of individuals near flight paths.
<b>Time-Averaged noise levels</b>	Including Annual Lden and Lnight and Summer Leq16/8h, averaged noise levels allow the comparison of different locations around an airport, (and also other airports) where aircraft types, power settings, overflight frequency, operational time of day, and tracks heights vary. The EU and WHO uses Lden and Lnight to assess the total impact on communities for road, rail and air transport noise.
<b>Total Noise</b>	Total Noise is a measure of noise from all noise sources (including aircraft and non-aircraft activity) during the period. This means that Aircraft Noise cannot exceed Total Noise.
<b>YTD</b>	Year to date

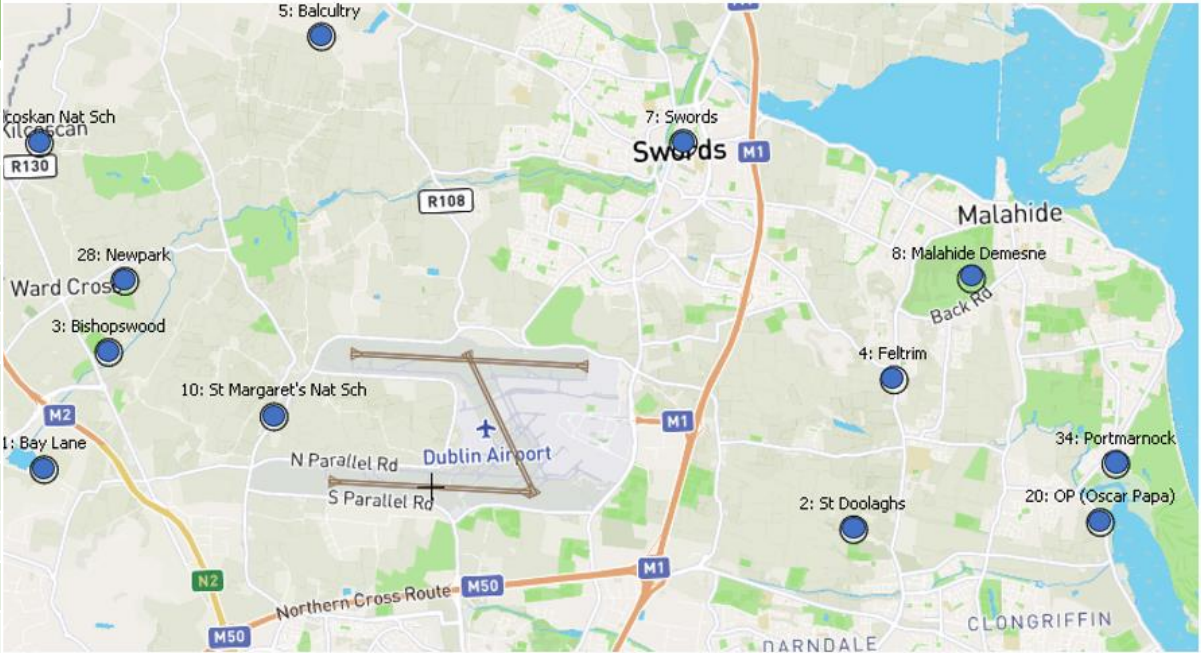


# Permanent Noise Monitoring Terminal (NMT) Locations Q1 2025



Yellow circle = Permanent NMTs located further out from Dublin Airport

#	NMT Name	Since
1	Bay Lane	2015
2	St. Doolaghs	2015
3	Bishopswood	2015
4	Feltrim	2015
5	Balcultry	2015
6	St.Davids	2015
7	Swords	07/2022
8	Malahide	07/2022
10	St.Margarets NS	07/2022
20	Coast Rd (OP)	2015
26	Kilcaskan NS	12/2022
27	Summerhill	09/2023
28	Newpark	09/2023
29	Ashbourne	09/2023
30	Roundwood	09/2023
31	Dunboyne	09/2023
32	Donabate	09/2023
33	Ardgillan	01/2024
34	Portmarnock	06/2024
35	Ballyboughal	06/2024
37	Ongar	08/2024
38	Clondalkin	08/2024
39	Lucan	08/2024
40	Bray	08/2024
206	Ratoath	03/2024

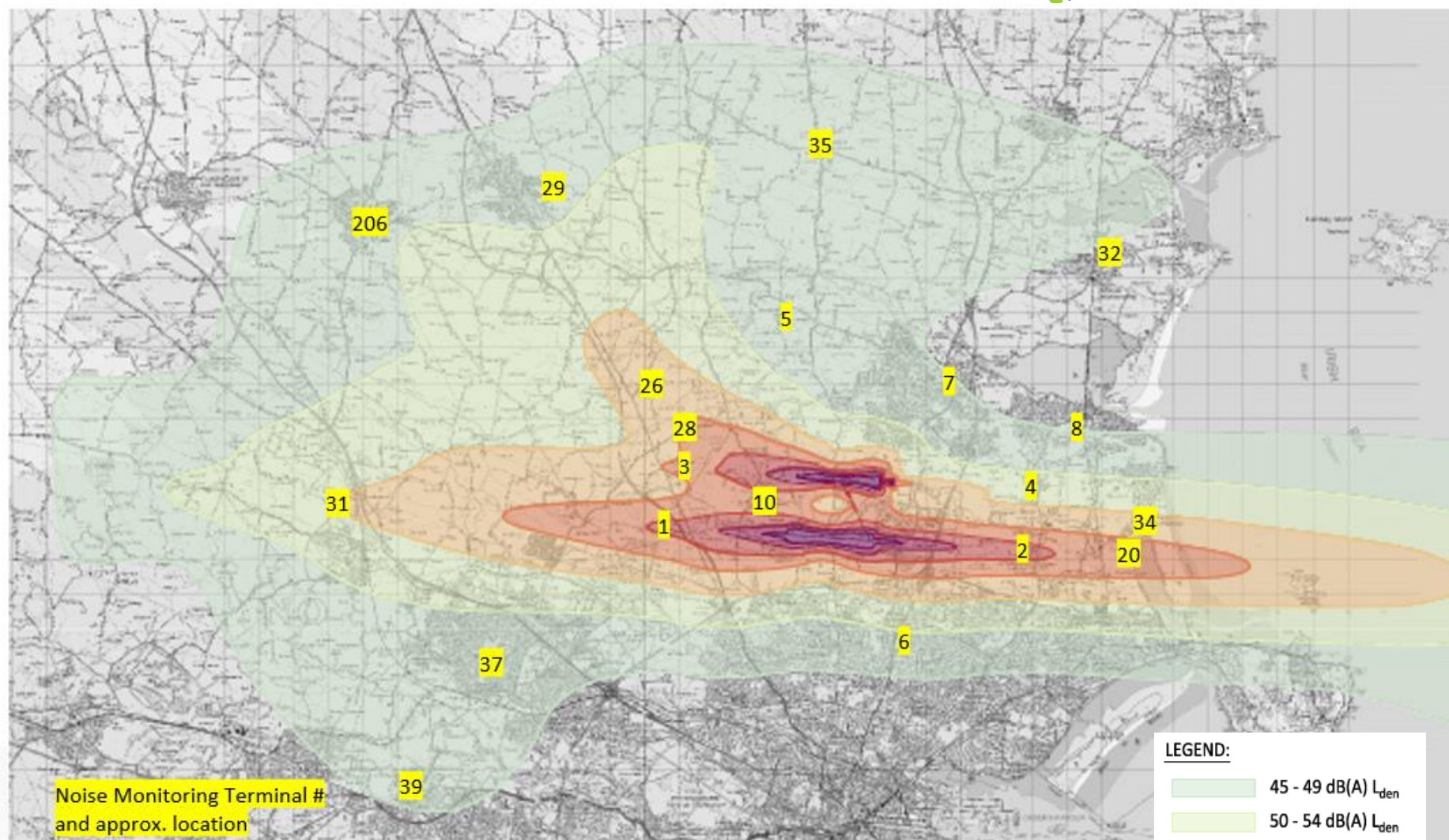


Blue circle = Permanent NMTs located near Dublin Airport



# Modelled Lden Noise Contour Levels at Permanent NMT Locations

#	NMT Name	Lden 2023
1	Bay Lane	65
2	St. Doolaghs	65
3	Bishopswood	60
4	Feltrim	54
5	Balcultry	49
6	St.Davids	44
7	Swords	45
8	Malahide	46
10	St.Margarets NS	63
20	Coast Rd (OP)	63
26	Kilcoskan NS	58
27	Summerhill	38
28	Newpark	60
29	Ashbourne	49
30	Roundwood	36
31	Dunboyne	54
32	Donabate	45
33	Ardgillan	33
34	Portmarnock	54
35	Ballyboughal	47
37	Ongar	49
38	Clondalkin	
39	Lucan	46
40	Bray	
206	Ratoath	47



## Map of 2023 Lden Annual Noise contours

3 NMT (27, 30, 33, 38, 40) are located outside this map's boundaries

Including Permanent NMT installations



# NMT – Operational Downtime and Number of Correlated Aircraft Noise Events

NMT	Location	January		February		March		Q1 2025
		Downtime (mins)	# Aircraft Events	Downtime (mins)	# Aircraft Events	Downtime (mins)	# Aircraft Events	# Aircraft Events
1	Bay Lane	67	994	4	1538	65	1280	3812
2	St. Doolaghs	1366	7749	3	7423	64	9128	24300
3	Bishopswood	17	3967	8	4897	72	5667	14531
4	Feltrim	912	979	3	2088	137	2045	5112
5	Balcultry	123	11	2	59	130	24	94
6	St.Davids	3	28	4	136	61	95	259
7	Swords	17	27	16	20	220	38	85
8	Malahide	17	96	66	53	17	95	244
10	St.Margarets NS	18	5105	16	3076	17	4128	12309
20	Coast Rd (OP)	60	7891	0	6746	58	8640	23277
26	Kilcoskan NS	30	5203	0	2590	59	3895	11688
27	Summerhill	3364	5	16	33	17	38	76
28	Newpark	77	5216	76	3539	17	4432	13187
29	Ashbourne	190	365	32	210	17	252	827
30	Roundwood	17	0	15	0	17	0	0
31	Dunboyne	19	338	17	732	17	660	1730
32	Donabate	76	7	15	12	49	13	32
33	Ardgillan	27	6	15	4	17	6	16
34	Portmarnock	1064	1512	18	2327	45	2916	6755
35	Ballyboughal	191	102	62	55	69	64	221
37	Ongar	67	52	61	34	99	62	148
38	Clondalkin	66	3	63	6	80	8	17
39	Lucan	63	8	15	5	17	13	26
40	Bray	68	6	61	5	68	12	23
206	Ratoath	110	1067	16	487	17	987	2541

Including Permanent NMT installations only



# NMT – Q1 2025 Monthly and Quarterly Lden, Lnight and Leq16hr

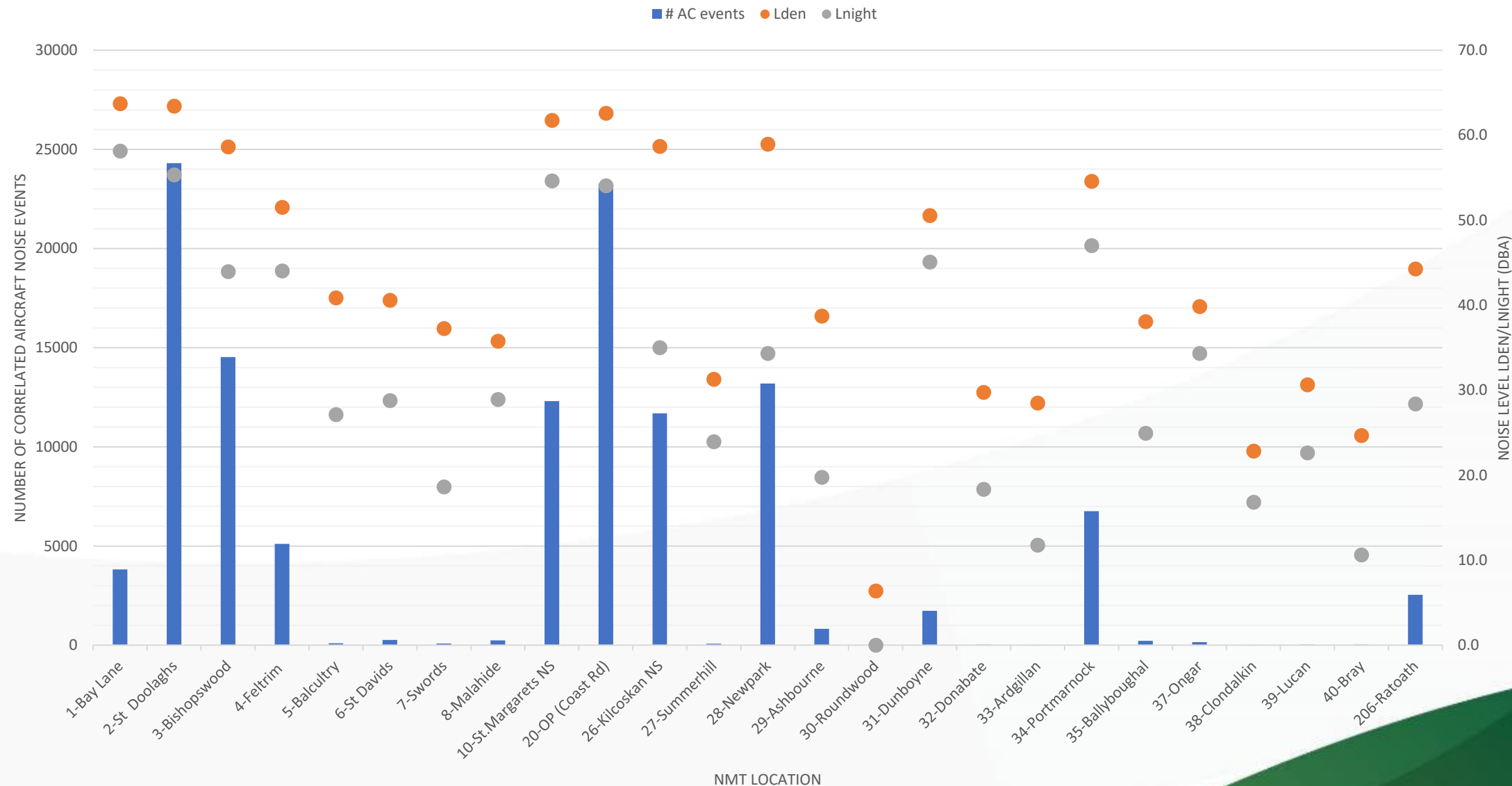
NMT	Location	# Correlated Aircraft Noise Events				Lden (dBA)				Lnight (=Leq 8h) (dBA)				Leq16h (dBA)			
		Jan	Feb	Mar	Q1	Jan	Feb	Mar	Q1	Jan	Feb	Mar	Q1	Jan	Feb	Mar	Q1
1	Bay Lane	994	1538	1280	3812	62.1	65.3	63.3	63.7	56.7	59.6	57.8	58.2	45.8	53.7	49.1	50.6
2	St. Doolaghs	7749	7423	9128	24300	63.4	63.2	63.6	63.4	55.5	55.1	55.4	55.4	60.1	60.5	61.0	60.5
3	Bishopswood	3967	4897	5667	14531	56.6	59.6	59.2	58.6	42.7	43.1	45.5	44.0	56.7	59.7	59.3	58.7
4	Feltrim	979	2088	2045	5112	51.3	52.4	50.9	51.5	45.0	43.3	43.6	44.0	45.3	50.5	47.7	48.3
5	Balcultry	11	59	24	94	36.4	44.2	38.7	40.9	28.9	23.4	27.2	27.1	34.1	45.4	37.9	41.4
6	St.Davids	28	136	95	259	34.9	42.6	41.4	40.6	24.2	29.7	30.4	28.8	34.4	43.6	40.7	40.8
7	Swords	27	20	38	85	36.4	34.4	39.4	37.3	15.9	15.6	21.5	18.6	37.3	35.8	39.6	37.9
8	Malahide	96	53	95	244	36.2	33.8	36.6	35.8	29.5	23.7	30.6	28.9	29.9	33.0	29.3	31.0
10	St.Margarets NS	5105	3076	4128	12309	62.6	60.5	61.7	61.8	55.4	53.4	54.8	54.6	59.0	56.6	57.5	57.9
20	Coast Rd (OP)	7891	6746	8640	23277	62.9	62.2	62.6	62.6	54.5	53.4	54.1	54.1	60.5	60.1	60.2	60.3
26	Kilcoskan NS	5203	2590	3895	11688	59.8	57.2	58.6	58.7	36.9	31.9	34.8	35.0	60.5	58.0	59.3	59.4
27	Summerhill	5	33	38	76	24.9	33.5	32.0	31.3	0.0	26.6	25.0	24.0	22.5	29.6	28.5	27.7
28	Newpark	5216	3539	4432	13187	60.0	57.3	59.0	59.0	36.7	26.7	34.5	34.3	60.7	58.0	59.7	59.6
29	Ashbourne	365	210	252	827	39.7	38.6	37.6	38.7	19.5	22.9	9.6	19.8	40.5	39.2	38.2	39.4
30	Roundwood	0	0	0	0	6.4	6.4	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	Dunboyne	338	732	660	1730	48.1	52.0	50.9	50.6	42.7	46.4	45.5	45.1	30.5	37.3	35.6	35.2
32	Donabate	7	12	13	32	27.8	28.8	31.6	29.8	17.9	0.0	21.4	18.4	27.7	30.3	29.7	29.3
33	Ardgillan	6	4	6	16	29.2	30.4	23.6	28.5	13.1	8.8	12.2	11.8	30.6	27.3	24.1	28.1
34	Portmarnock	1512	2327	2916	6755	53.3	55.0	55.3	54.6	46.2	47.5	47.3	47.0	49.2	51.8	52.9	51.6
35	Ballyboughal	102	55	64	221	38.8	36.4	38.5	38.1	22.4	21.2	27.9	24.9	40.1	37.5	37.7	38.6
37	Ongar	52	34	62	148	40.0	39.8	39.7	39.9	34.6	34.2	34.2	34.4	24.7	28.3	28.6	27.5
38	Clondalkin	3	6	8	17	12.5	26.1	22.3	22.9	0.0	20.6	15.6	16.8	13.3	16.5	18.5	16.6
39	Lucan	8	5	13	26	28.1	27.1	33.6	30.6	22.3	21.3	23.8	22.6	19.2	19.5	28.5	24.8
40	Bray	6	5	12	23	23.2	22.2	26.9	24.7	9.8	14.1	0.0	10.6	21.2	20.0	28.4	24.9
206	Ratoath	1067	487	987	2541	44.5	43.2	44.9	44.3	17.9	31.8	27.7	28.4	45.5	43.1	45.7	45.0



# NMT – Q1 2025 Aircraft Noise Event and Measured Lden/ Lnight



Q1 2025 Aircraft Noise Events and Noise Levels (Lden/Lnight)





2023, 2024 and Quarterly 2025 (YTD) Measured Lden, Night & Leq16hr



NMT	Location	Lden (dBA) [Modelled Contour and Measured Noise]								Lnight (=Leq 8h) (dBA) [Modelled Contour and Measured]								Leq16h (dBA) [Measured]					
		'23 Cont	'23 NMT	'24 NMT	Q1 2025	Q2 2025	Q3 2025	Q4 2025	2025	'23 Cont	'23 NMT	'24 NMT	Q1 2025	Q2 2025	Q3 2025	Q4 2025	2025	'24 NMT	Q1 2025	Q2 2025	Q3 2025	Q4 2025	2025
1	Bay Lane	65	64.3	63.4	63.7					58	56.8	57.8	58.2					51.6	50.6				
2	St. Doolaghs	65	64.5	64.3	63.4					57	56.9	56.5	55.4					61.0	60.5				
3	Bishopswood	60	57.5	58.4	58.6					49	46.1	45.1	44.0					58.4	58.7				
4	Feltrim	54	51.1	52.4	51.5					46	43.7	45.3	44.0					48.5	48.3				
5	Balcultry	49	46.6	44.1	40.9					39	18.8	37.2	27.1					37.8	41.4				
6	St.Davids	44	38.5	42.8	40.6					36	25.0	34.8	28.8					39.3	40.8				
7	Swords	45	44.7	38.7	37.3					37	17.7	26.8	18.6					37.2	37.9				
8	Malahide	46	38.4	38.9	35.8					38	26.2	32.0	28.9					32.6	31.0				
10	St.Margarets	63	63.5	63.4	61.8					55	56.5	56.1	54.6					59.6	57.9				
20	Coast Rd (OP)	63	62.5	62.6	62.6					55	54.9	54.5	54.1					59.6	60.3				
26	Kilcoskan NS	58	59.1	60.4	58.7					40	35.8	36.0	35.0					61.1	59.4				
27	Summerhill	38	31.7	33.8	31.3					31	24.9	23.3	24.0					33.5	27.7				
28	Newpark	60	61.9	61.3	59.0					45	34.5	36.7	34.3					61.9	59.6				
29	Ashbourne	49	45.9	39.7	38.7					39	23.9	23.4	19.8					40.4	39.4				
30	Roundwood	36	12.8	17.7	6.4					28	0.0	0.0	0.0					19.2	0.0				
31	Dunboyne	54	50.5	50.4	50.6					47	43.0	44.9	45.1					38.3	35.2				
32	Donabate	45	0.0	32.7	29.8					37	0.0	21.6	18.4					31.1	29.3				
33	Ardgillan	33	26.5	30.1	28.5					24	19.3	20.9	11.8					27.8	28.1				
34	Portmarnock	54		54.8	54.6					49		46.9	47.0					52.1	51.6				
35	Ballyboughal	47		38.3	38.1							24.1	24.9					38.7	38.6				
37	Ongar	49			39.9					41			34.4						27.5				
38	Clondalkin				22.9								16.8						16.6				
39	Lucan	46			30.6								22.6						24.8				
40	Bray				24.7								10.6						24.9				
206	Ratoath	47			44.3								28.4						45.0				



# Total Noise versus Aircraft Noise Q3 and Q4 2024, Q1 2025

NMT	Location	Lden Q3 2024			Lden Q4 2024			Lden Q1 2025		
		Total Noise (dBA)	Aircraft Noise (dBA)	# Aircraft Noise Events	Total Noise (dBA)	Aircraft Noise (dBA)	# Aircraft Noise Events	Total Noise (dBA)	Aircraft Noise (dBA)	# Aircraft Noise Events
1	Bay Lane	64.6	63.3	4703	66.1	62.8	3377	68.7	63.7	3817
2	St. Doolaghs	65.3	64.7	33442	65.5	64.0	25115	65.0	63.4	24307
3	Bishopswood	63.4	58.5	18407	65.0	58.4	14878	64.8	58.6	14535
4	Feltrim	60.4	52.4	4003	66.5	53.0	4035	66.2	51.5	5115
5	Balcultry	57.3	44.0	105	63.6	44.9	75	63.2	40.9	99
6	St.Davids	64.0	39.8	256	64.5	44.4	216	64.2	40.6	283
7	Swords	63.0	40.5	131	69.8	35.7	74	68.6	37.3	98
8	Malahide	59.8	39.7	285	61.9	36.0	221	63.9	35.8	254
10	St.Margarets NS	66.5	63.7	20643	66.9	62.7	15528	67.0	61.8	12310
20	Coast Rd (OP)	65.4	62.9	12906 (37d)	69.2	63.2	23236	68.3	62.6	23282
26	Kilcoskan NS	62.8	61.0	21092	63.7	59.9	15218	66.6	58.7	11690
27	Summerhill	56.5	31.8	95	58.0	31.9	82	61.2	31.3	106
28	Newpark	63.4	62.1	20949	65.3	60.3	15713	67.2	59.0	13189
29	Ashbourne	54.6	40.3	870	61.8	39.5	872	62.7	38.7	827
30	Roundwood	56.4	20.8	6	64.0	6.4	0	57.6	6.4	0
31	Dunboyne	59.0	50.7	1917	63.0	50.2	1445	61.1	50.6	1733
32	Donabate	54.6	35.1	46	57.9	31.2	32	58.5	29.8	34
33	Ardgillan	53.9	30.4	29	56.4	28.5	31	58.1	28.5	38
34	Portmarnock	59.1	54.5	7131	60.3	54.6	6543	60.2	54.6	6758
35	Ballyboughal	60.9	38.4	277	62.4	38.0	224	64.0	38.1	224
37	Ongar				62.4	41.0	247	65.3	39.9	201
38	Clondalkin				62.0	39.1	866	65.8	22.9	859
39	Lucan				56.1	34.5	180	57.4	30.6	308
40	Bray				60.3	30.9	42	59.3	24.7	108
206	Ratoath	55.9	48.0	5975	59.6	46.3	3635	60.1	44.3	2541

- **Total Noise** includes all noise sources detected at the NMT.
- **Aircraft Noise** only includes noise events that are correlated with the flight radar and time of aircraft operational events – i.e. arrivals and departures at Dublin Airport.



# Q1 2025 Lmax and SEL Number Above (NA) data (Daily Average)



NMT	Location	Average Number of Aircraft Noise Events per DAY Above Lmax (dBA) [e.g. N60 = Number of events above Lmax 60dBA]						# Aircraft N Events / DAY	Average Number of Aircraft Noise Events per DAY Above SEL [e.g. N(SEL)70 = Number of events above SEL 70dBA]						# Aircraft N Events
		N60	N65	N70	N75	N80	N85	(Av day Q1)	N(SEL)70	N(SEL)75	N(SEL)80	N(SEL)85	N(SEL)90	N(SEL)95	(Total in Q1)
1	Bay Lane	42.4	42.4	41.1	31.6	10.7	1.0	42.4	42.4	42.2	39.4	29.9	4.3	0.6	3812
2	St. Doolaghs	270.0	269.8	249.5	114.8	3.4	0.1	270.0	270.0	268.2	244.1	76.9	2.6	0.1	24300
3	Bishopswood	161.5	161.5	129.8	68.1	4.2	0.1	161.5	161.5	159.2	123.0	53.0	2.8	0.2	14531
4	Feltrim	56.9	46.5	12.8	3.6	0.3		56.9	56.7	41.4	11.0	1.9	0.2		5112
5	Balcultry	1.0	1.0	0.8	0.7	0.4	0.1	1.0	1.0	1.0	0.8	0.7	0.3	0.0	94
6	St.Davids	2.9	2.9	1.9	0.6	0.1	0.0	2.9	2.9	2.8	1.7	0.6	0.1		259
7	Swords	0.9	0.9	0.6	0.3	0.1	0.0	0.9	0.9	0.8	0.6	0.4	0.1		85
8	Malahide	1.9	0.9	0.1	0.0			2.7	1.9	0.8	0.2	0.0			244
10	St.Margarets NS	136.5	130.7	124.1	70.2	6.5	0.1	136.8	135.5	130.5	116.4	57.9	3.6	0.0	12309
20	Coast Rd (OP)	258.6	258.6	240.5	44.0	1.5	0.1	258.6	258.6	258.6	243.3	62.9	1.3	0.1	23277
26	Kilcoskan NS	129.9	126.6	116.8	64.1	5.6	0.1	129.9	129.5	126.9	119.3	68.3	7.5	0.1	11688
27	Summerhill	0.8	0.6	0.2	0.0	0.0		0.8	0.8	0.4	0.1	0.0			76
28	Newpark	146.6	145.8	115.1	67.9	8.0	0.4	146.6	146.6	133.0	112.2	73.3	6.8	0.2	13187
29	Ashbourne	9.2	8.7	1.6	0.1	0.0		9.2	9.2	5.6	1.1	0.1	0.0		827
30	Roundwood	0						0							0
31	Dunboyne	19.2	15.6	2.2	0.1			19.2	19.0	13.9	2.3	0.0			1730
32	Donabate	0.4	0.3	0.1	0.0	0.0		0.4	0.3	0.2	0.1	0.0	0.0		32
33	Ardgillan	0.2	0.1	0.1	0.0	0.0		0.2	0.1	0.1	0.1	0.0			16
34	Portmarnock	75.1	70.5	44.4	3.4	0.1	0.0	75.1	75.0	71.0	47.7	3.9	0.1	0.0	6755
35	Ballyboughal	2.5	2.5	2.5	0.4	0.0		2.5	2.5	2.5	1.6	0.3	0.0		221
37	Ongar	1.6	0.8	0.1	0.0			1.6	1.6	1.3	0.3				148
38	Clondalkin	0.1	0.0					0.2	0.1	0.0					17
39	Lucan	0.3	0.1	0.0	0.0			0.3	0.3	0.1	0.0	0.0			26
40	Bray	0.3	0.1	0.0				0.3	0.2	0.2	0.0	0.0			23
206	Ratoath	28.3	18.9	3.3	0.6	0.1		28.3	27.0	19.3	3.8	0.5	0.0		2541

This data shows Lmax and SEL distributions of correlated aircraft noise events each day averaged over Q1 2025. For example, N60 = number of daily events over Lmax 60 dBA.



# Q1 2025 Lmax and SEL Percentages in 5-decibel bands (3 months)



NMT	Location	Percentage of Aircraft Noise Events in each Lmax Range (dBA)						# Aircraft N Events /DAY	Percentage of Aircraft Noise Events in each SEL Range (dBA)						# Aircraft N Events
		60-64.9	65-69.9	70-74.9	75-79.9	80-84.9	85-89.9	(Av day Q1)	70-74.9	75-79.9	80-84.9	85-89.9	90-94.9	95-99.9	(Total in Q1)
1	Bay Lane		3%	22%	49%	23%	2%	42	1%	7%	22%	61%	9%	1%	3812
2	St. Doolaghs	0%	8%	50%	41%	1%	0%	270	1%	9%	62%	28%	1%	0%	24300
3	Bishopswood		20%	38%	40%	3%	0%	162	1%	22%	43%	31%	2%	0%	14531
4	Feltrim	18%	59%	16%	6%	1%		57	27%	53%	16%	3%	0%		5112
5	Balcultry	2%	20%	14%	21%	36%	5%	1	6%	17%	12%	39%	23%	2%	94
6	St.Davids	1%	32%	46%	17%	3%	1%	3	4%	39%	36%	17%	5%		259
7	Swords	8%	25%	31%	24%	11%	2%	1	14%	19%	22%	34%	8%		85
8	Malahide	36%	31%	3%	0%			3	39%	23%	4%	2%			244
10	St.Margarets NS	4%	5%	39%	47%	5%	0%	137	4%	10%	43%	40%	3%	0%	12309
20	Coast Rd (OP)		7%	76%	16%	1%	0%	259		6%	70%	24%	0%	0%	23277
26	Kilcoskan NS	3%	8%	41%	45%	4%	0%	130	2%	6%	39%	47%	6%	0%	11688
27	Summerhill	24%	57%	14%	3%	1%		1	39%	42%	8%	1%			76
28	Newpark	1%	21%	32%	41%	5%	0%	147	9%	14%	27%	45%	5%	0%	13187
29	Ashbourne	5%	78%	16%	1%	0%		9	39%	49%	11%	1%	0%		827
30	Roundwood							0							0
31	Dunboyne	19%	70%	11%	0%			19	27%	60%	12%	0%			1730
32	Donabate	6%	59%	25%	6%	3%		0	31%	31%	22%	9%	3%		32
33	Ardgillan	25%	25%	31%	13%	6%		0	25%	19%	19%	19%			16
34	Portmarnock	6%	35%	55%	4%	0%	0%	75	5%	31%	58%	5%	0%	0%	6755
35	Ballyboughal			83%	15%	1%		2		35%	54%	10%	1%		221
37	Ongar	46%	45%	3%	1%			2	16%	61%	19%				148
38	Clondalkin	59%	12%					0	47%	24%					17
39	Lucan	73%	15%	4%	8%			0	50%	38%		8%			26
40	Bray	61%	35%	4%				0	26%	48%	9%	9%			23
206	Ratoath	33%	55%	10%	2%	0%		28	27%	55%	12%	2%	0%		2541



# Q1 2025 Lmax data (Day, Evening & Night averages over the 3 months)



NMT	Location	Average Number of Day time Events over each Lmax Level (Day Period is 12 hours, 7am to 7pm)						Average Number of Evening time Events over each Lmax Level (Evening Period is 4 hrs, 7pm to 11pm)						Average Number of Night time Events over each Lmax Level (Night Period is 8 hours 11pm to 7am)					
		N60	N65	N70	N75	N80	N85	N60	N65	N70	N75	N80	N85	N60	N65	N70	N75	N80	N85
1	Bay Lane	6.0	6.0	5.4	3.1	0.9	0.1	5.7	5.7	5.6	5.2	2.5	0.3	30.7	30.7	30.0	23.3	7.4	0.6
2	St. Doolaghs	190.1	190.0	174.6	77.3	2.9	0.1	48.1	48.0	44.6	21.1	0.1	0.0	31.8	31.8	30.3	16.4	0.3	0.0
3	Bishopswood	131.7	131.7	107.9	56.0	3.6	0.1	23.1	23.1	19.5	11.8	0.6	0.0	6.8	6.8	2.4	0.4	0.0	0.0
4	Feltrim	42.6	34.8	9.2	2.1	0.2	0.0	6.8	5.6	1.6	0.5	0.1	0.0	7.5	6.1	2.1	0.9	0.0	0.0
5	Balcultry	0.8	0.8	0.7	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
6	St.Davids	2.5	2.5	1.7	0.6	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0
7	Swords	0.8	0.7	0.5	0.3	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
8	Malahide	1.2	0.7	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.6	0.2	0.0	0.0	0.0	0.0
10	St.Margarets NS	91.1	91.1	90.8	50.3	5.4	0.1	18.6	18.6	15.9	7.3	0.2	0.0	26.8	21.1	17.4	12.5	0.9	0.0
20	Coast Rd (OP)	182.7	182.7	169.3	31.2	1.2	0.1	46.0	46.0	43.5	6.9	0.1	0.0	29.9	29.9	27.7	5.9	0.2	0.0
26	Kilcoskan NS	110.6	107.7	99.9	54.9	5.4	0.1	18.6	18.3	16.7	9.1	0.2	0.0	0.7	0.6	0.2	0.1	0.0	0.0
27	Summerhill	0.4	0.4	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0
28	Newpark	124.6	124.1	98.8	59.8	7.5	0.4	21.1	21.1	16.2	8.0	0.5	0.0	0.8	0.6	0.2	0.1	0.0	0.0
29	Ashbourne	7.6	7.4	1.5	0.1	0.0	0.0	1.5	1.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
30	Roundwood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	Dunboyne	0.8	0.7	0.1	0.0	0.0	0.0	3.2	2.7	0.2	0.0	0.0	0.0	15.2	12.2	2.0	0.1	0.0	0.0
32	Donabate	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
33	Ardgillan	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	Portmarnock	47.5	47.5	35.1	3.3	0.1	0.0	10.6	8.9	3.9	0.1	0.0	0.0	17.0	14.0	5.4	0.1	0.0	0.0
35	Ballyboughal	2.3	2.3	2.3	0.4	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	Ongar	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	1.2	0.6	0.1	0.0	0.0	0.0
38	Clondalkin	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	Lucan	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
40	Bray	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
206	Ratoath	25.4	17.3	3.1	0.6	0.1	0.0	2.6	1.5	0.2	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0

This data shows Lmax events during day, evening and night periods, averaged over Q1 2025.  
For example, N60 = number of events over Lmax 60 dBA (in this case the figure is the daily average over the quarter.)

Revision 1 – Page had a calculation error that has been corrected.

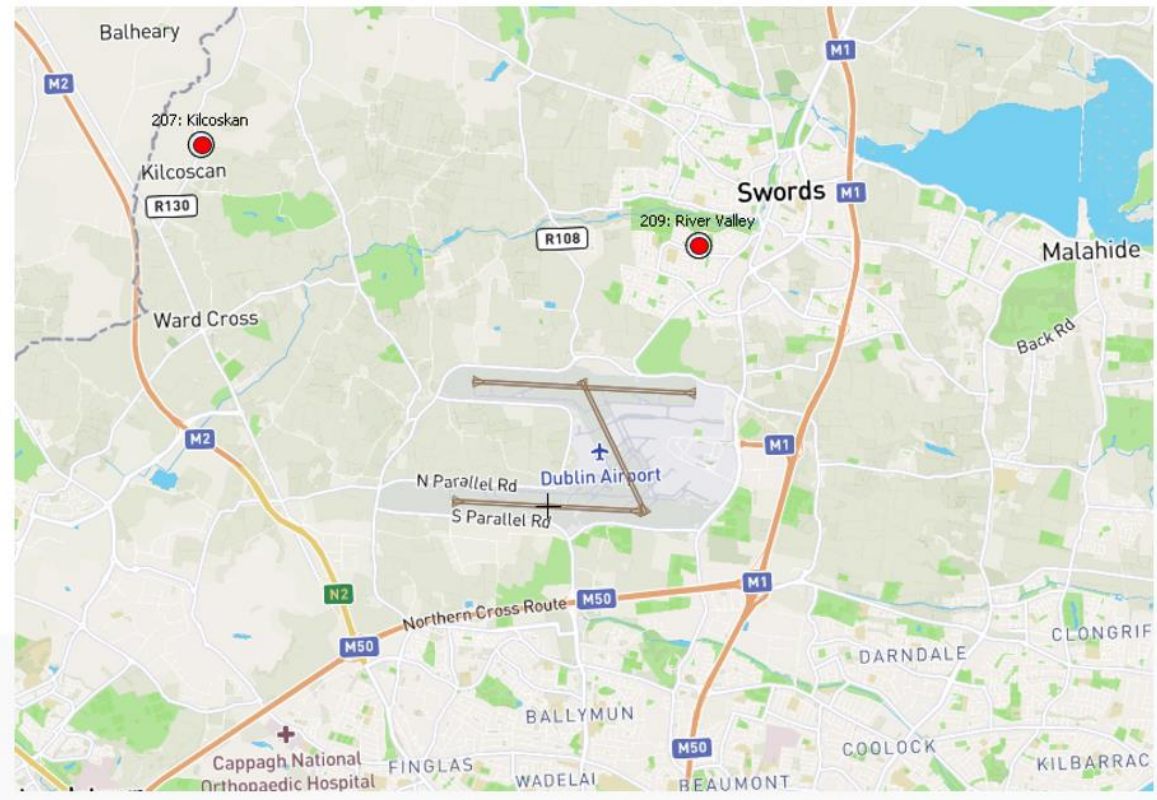


## Part 2: Noise Monitoring Data Temporary NMT





# Part 2: Portable Noise Monitoring Terminal (NMT) Locations Q1 2025



- Mobile Noise Monitoring Terminals (NMT) are installed at locations around Dublin Airport based on requests from the two community forums – St. Margaret's Community Liaison Group and Dublin Airport Environmental Working Group.
- Data from the NMT at Milhead and Boroimhe are reported in the Q2 2024 Noise and Flight Track Monitoring Report.

#	Mobile NMT	From	Until	Quarterly Report
204	Milhead	Oct 2023	Jun 2024	Q2 2024
205	Boroimhe	Mar 2024	July 2024	Q2 2024
207	Kilcoscan	Jul 2024		Q1 2025 (this report)
208	Lusk	Aug 2024	Sept 2024	Q3 2024
209	River Meade	Feb 2025		Q1 2025 (this report)



# Portable Temporary NMT - #207 Kilcoskan



		Kilcokan Aug 2024	Kilcoskan Sep 2024	Kilcoskan Oct 2024	Kilcoskan Nov 2024	Kilcoskan Dec 2024	Kilcoskan Jan 2025	Kilcoskan Feb 2025	Kilcoskan Mar 2025	Kilcoskan 8 Month Average
	Correlated Aircraft Noise Events (during the Month)	5259	3021	3493	2978	3238	3029	1619	2508	
NMT Noise Levels	Total Lden (dBA)	60.7	58.5	59.5	59.1	61.7	62.6	57.8	58.2	60.1
	Aircraft Lden (dBA)	57.6	55.1	56.0	55.3	56.3	55.6	52.8	54.5	55.6
	Aircraft Lnight (dBA)	35.4	24.9	37.4	23.3	27.4	34.3	27.8	32.8	32.8
	Aircraft Leq16h (dBA)	57.8	55.4	56.2	55.8	57.0	55.9	53.4	54.8	56.0
Daily Number of Aircraft Noise Events Above Lmax values	NA Lmax 60	170	101	113	100	104	98	58	81	
	NA Lmax 65	170	101	113	100	104	98	58	81	
	NA Lmax 70	163	96	109	96	101	95	56	79	
	NA Lmax 75	45	18	26	26	27	30	19	23	
	NA Lmax 80	1.0	0.2	0.5	0.7	0.7	0	1	1	
	NA Lmax 85	0.0	0.0	0.0	0.0	0.0	0	0	0	
Daily Number of Aircraft Noise Events Above SEL values	NA SEL 65	170	101	113	100	104	98	58	81	
	NA SEL 70	170	101	113	100	104	98	58	81	
	NA SEL 75	169	100	112	100	104	98	58	81	
	NA SEL 80	142	83	95	85	86	84	49	68	
	NA SEL 85	22	12	17	19	17	19	9	13	
	NA SEL 90	0.2	0.0	0.1	0.2	0.1	0	0	0	
	NA SEL 95	0.0	0.0	0.0	0.0	0.0	0	0	0	



# Portable Temporary NMT - #209 River Valley

		River Valley Feb 2025 (22d)	River Valley Mar 2025				1.7 Month Average
	Correlated Aircraft Noise Events (during the Month)	15	39				
NMT Noise Levels	Total Lden (dBA)	55.3	54.3				54.8
	Aircraft Lden (dBA)	34.7	37.4				36.5
	Aircraft Lnight (dBA)	18.3	0.0				14.7
	Aircraft Leq16h (dBA)	36.1	38.1				37.4
Daily Number of Aircraft Noise Events Above Lmax values	NA Lmax 60	0.6	1.2				
	NA Lmax 65	0.6	1.2				
	NA Lmax 70	0.4	0.8				
	NA Lmax 75	0.3	0.4				
	NA Lmax 80	0.1	0.2				
	NA Lmax 85	0.0	0.0				
Daily Number of Aircraft Noise Events Above SEL values	NA SEL 65	0.3	1.2				
	NA SEL 70	0.3	1.2				
	NA SEL 75	0.2	1.0				
	NA SEL 80	0.1	0.8				
	NA SEL 85	0.1	0.5				
	NA SEL 90	0.0	0.0				
	NA SEL 95	0.0	0.0				



## Part 3: Flight Track Monitoring

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Page	Page Heading	Page Content
21	Explanation of Terms	
22	Standard Instrument Departures (SID) North Runway	<ul style="list-style-type: none"><li>• AirNav Ireland maps displaying the departure SIDs from North Runway towards the West and the East.</li></ul>
23	Standard Instrument Departures (SID) South Runway	<ul style="list-style-type: none"><li>• AirNav Ireland maps displaying the departure SIDs from South Runway towards the West and the East.</li></ul>
24	Busy day Flight Tracks - Westerly and Easterly Operations	Examples of a typical 'busy day' flight pattern
25	Noise Contour Modelling (1) – Core Flight Tracks	Explanation of how noise contours are modelled using core flight tracks
26	Noise Contour Modelling (2) – Dispersed Flight Tracks	Explanation of how noise contours are modelled using dispersed flight tracks
27	Conclusion	



Term	Definition/ Explanation
<b>Arrival Tracks</b>	Arriving aircraft must fly in a straight line for at least the final 11km of their approach before landing on the runway. Aircraft approach the airport at a precise downward angle of 3 degrees, which means that they are at a height of 1,800ft when they join the final approach at the 11km point.
<b>Departure Tracks</b>	Departing jet aircraft are required to follow procedures defined by the SID and to stay within the Environmental Corridor, also called the Noise Preferential Route (NPR), below 3000ft for the South Runway and below 4000ft for the North Runway, unless directed by Air Traffic Control.
<b>Easterly vs Westerly Operations</b>	In general, aircraft land and take-off facing into the wind. If the wind is easterly (blowing from the east), aircraft land from the west and take-off towards the east. If the wind is westerly (blowing from the west), aircraft land from the east (over the Irish Sea) and take-off towards the west. A moderate cross-wind component can be tolerated, but a strong north or south wind will require the use of the Crosswind Runway.
<b>Standard Instrument Departure (SID)</b>	Depending on the departure runway and final destination, departing aircraft follow routes called Standard Instrument Departures (SID). SIDs allow aircraft to safely depart an airspace following pre-defined routes. (See Pages 20 and 21)
<b>Flight Track</b>	A flight track is the actual path flown by an aircraft (as opposed to a route or SID which indicate where an aircraft should go.) Flight track monitoring is based on flight radar data that is incorporated into the Noise and Flight Track Monitoring System.
<b>Noise Modelling</b>	A computer program is used to model airport operations and calculate the noise contours. Input data include all aircraft operations, aircraft types, runway use, time of day and flight tracks.
<b>Modelled Flight Track</b>	Arrival noise is dominated by the straight final approach which is relatively easy to model for the noise contour calculations. Departing aircraft generally follow the SID
<b>Track Dispersion</b>	In practice there is a spread or dispersion of actual tracks flown to either side of a main central track. This is modelled using a central flight track and secondary (dispersed) flight tracks to either side and the operations area divided between these tracks using a normal distribution.

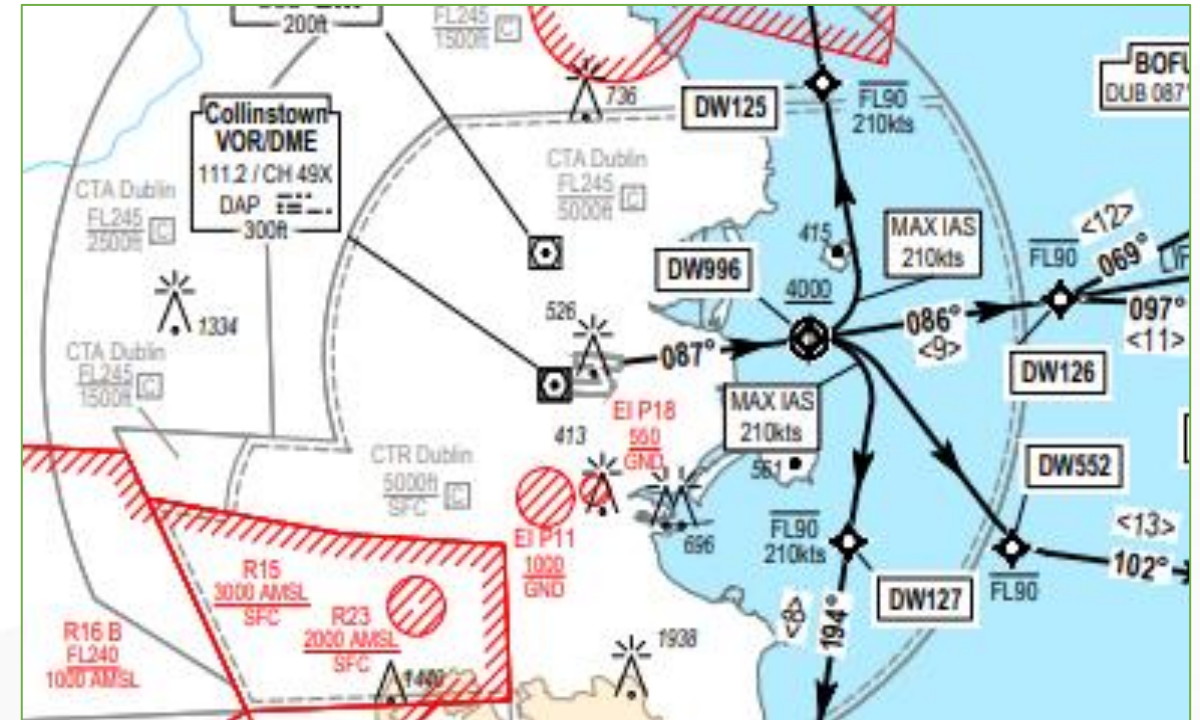


# Standard Instrument Departures (SID) North Runway

- Jet aircraft departures are required to follow these Standard Instrument Departures (SID).
- SID's are developed taking into account various safety, operational and environmental considerations amongst others.



*SID for North Runway (28R) departures to the west (westerly operations in westerly winds)*



*SID for North Runway (10L) departures to the east (easterly operations in easterly winds)*

*Note: This is only used during periods when the South Runway is closed.*

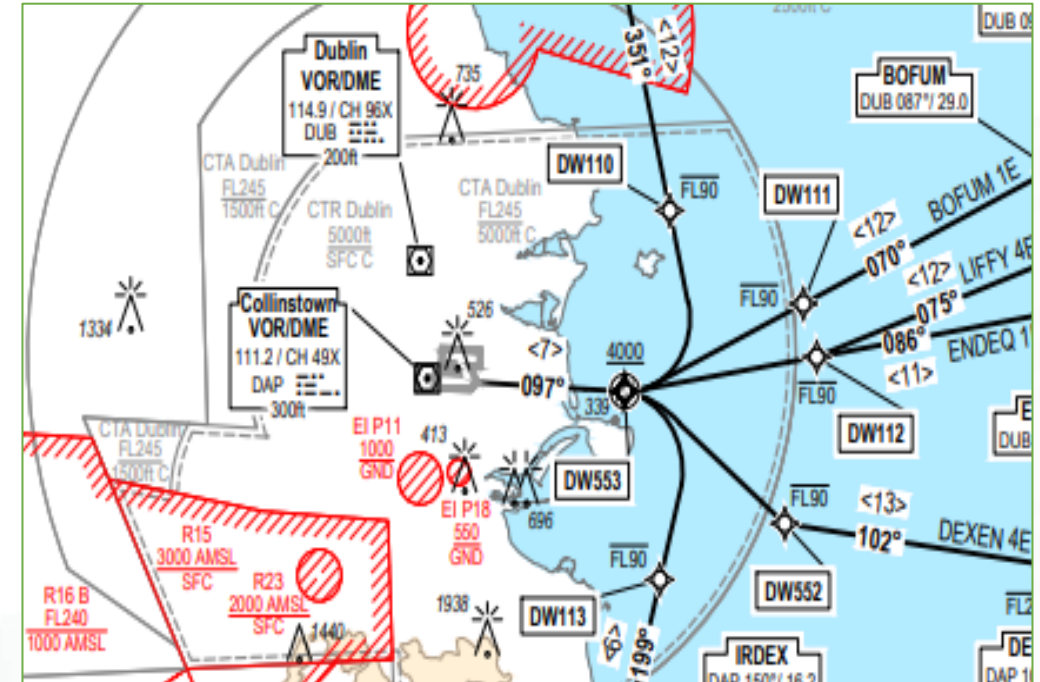


# Standard Instrument Departures (SID) South Runway

- Jet aircraft departures are required to follow Standard Instrument Departures (SID)



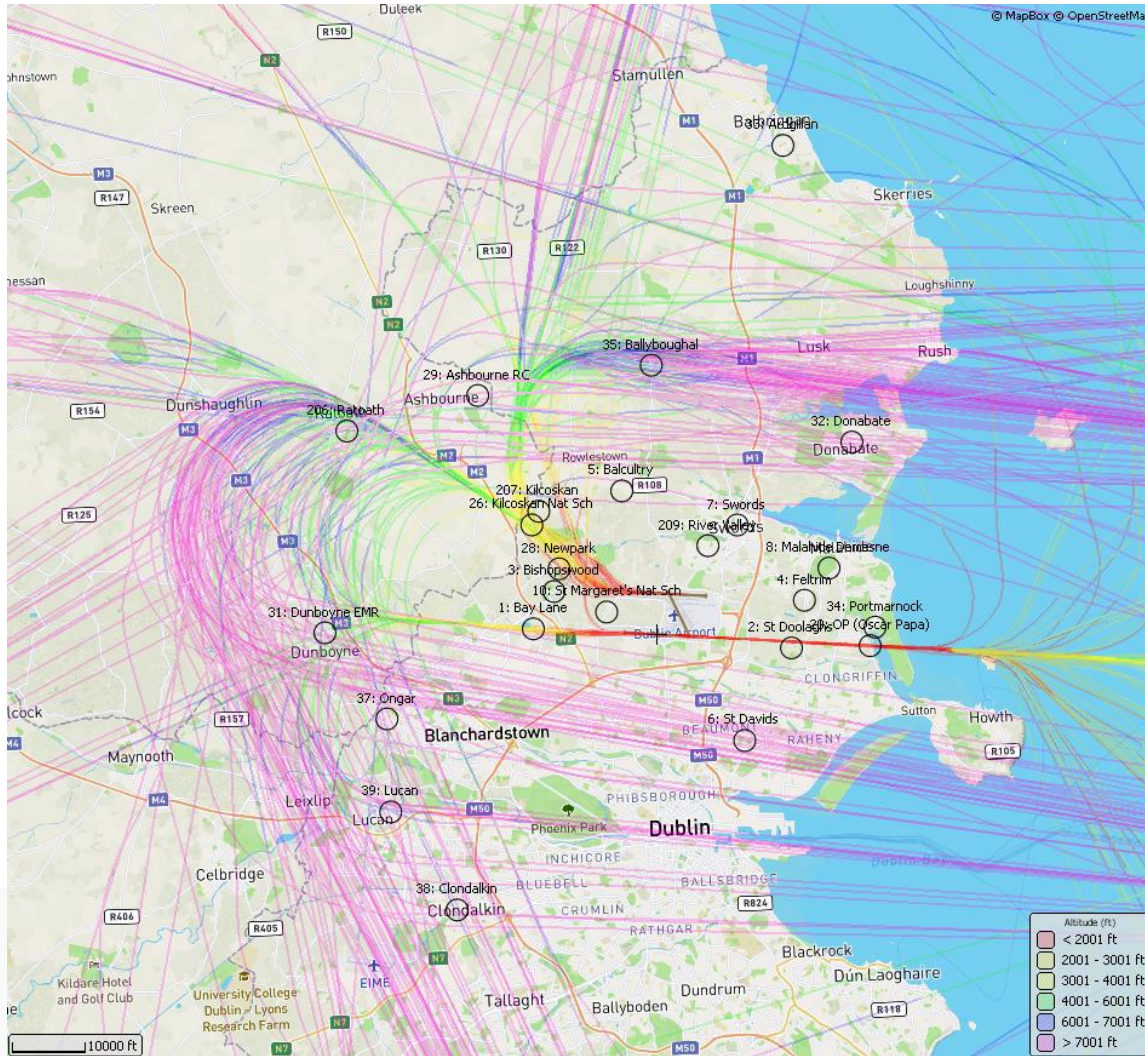
*SID for South Runway (28L) Departures to the west (Westerly operations in westerly winds)*



*SID for South Runway (10R) Departures to the east (Easterly operations in easterly winds)*

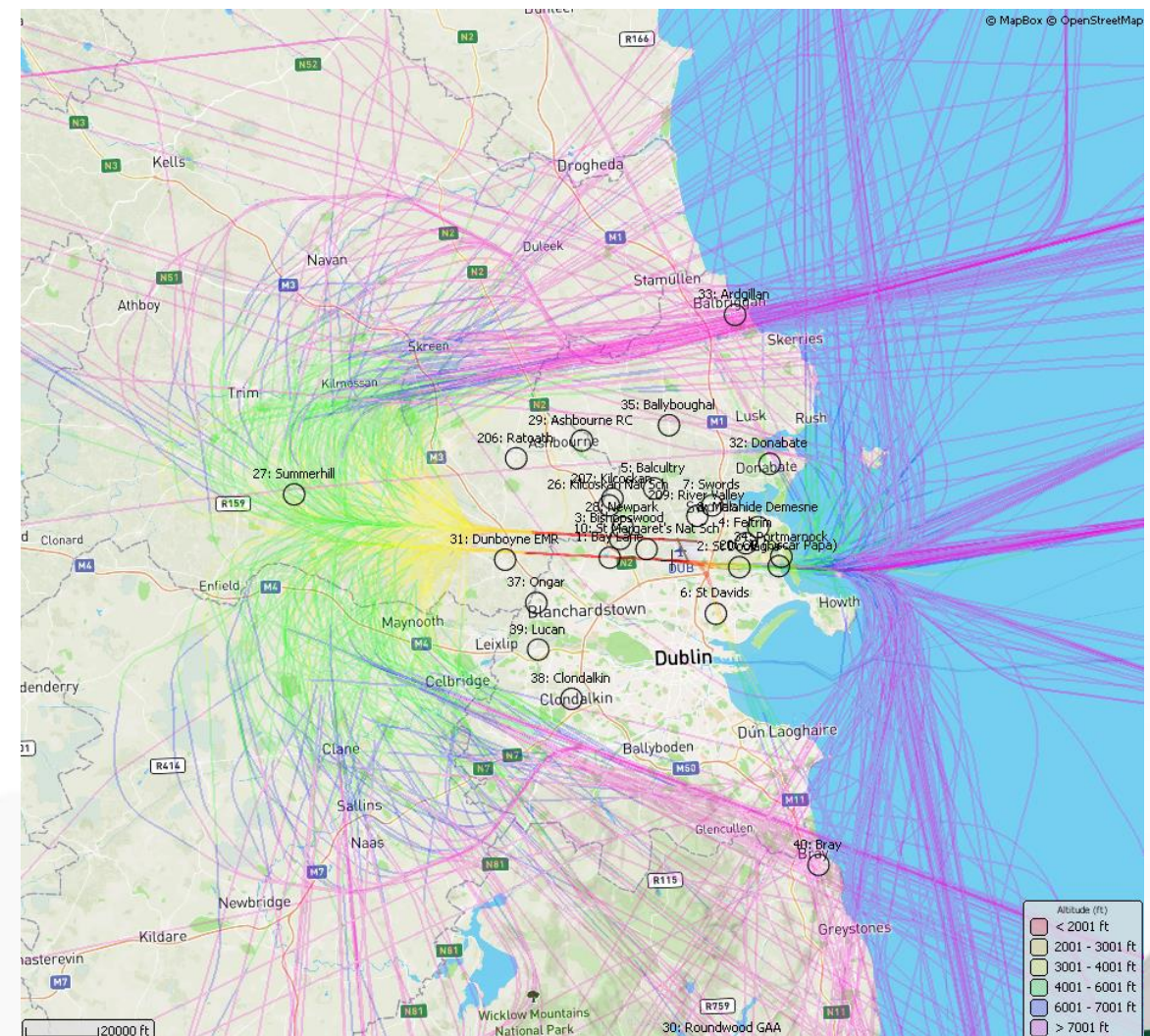


# Busy Day Flight Tracks



## Operations on 23 March 2025

- 642 movements, westerly conditions
- Colours indicate aircraft height



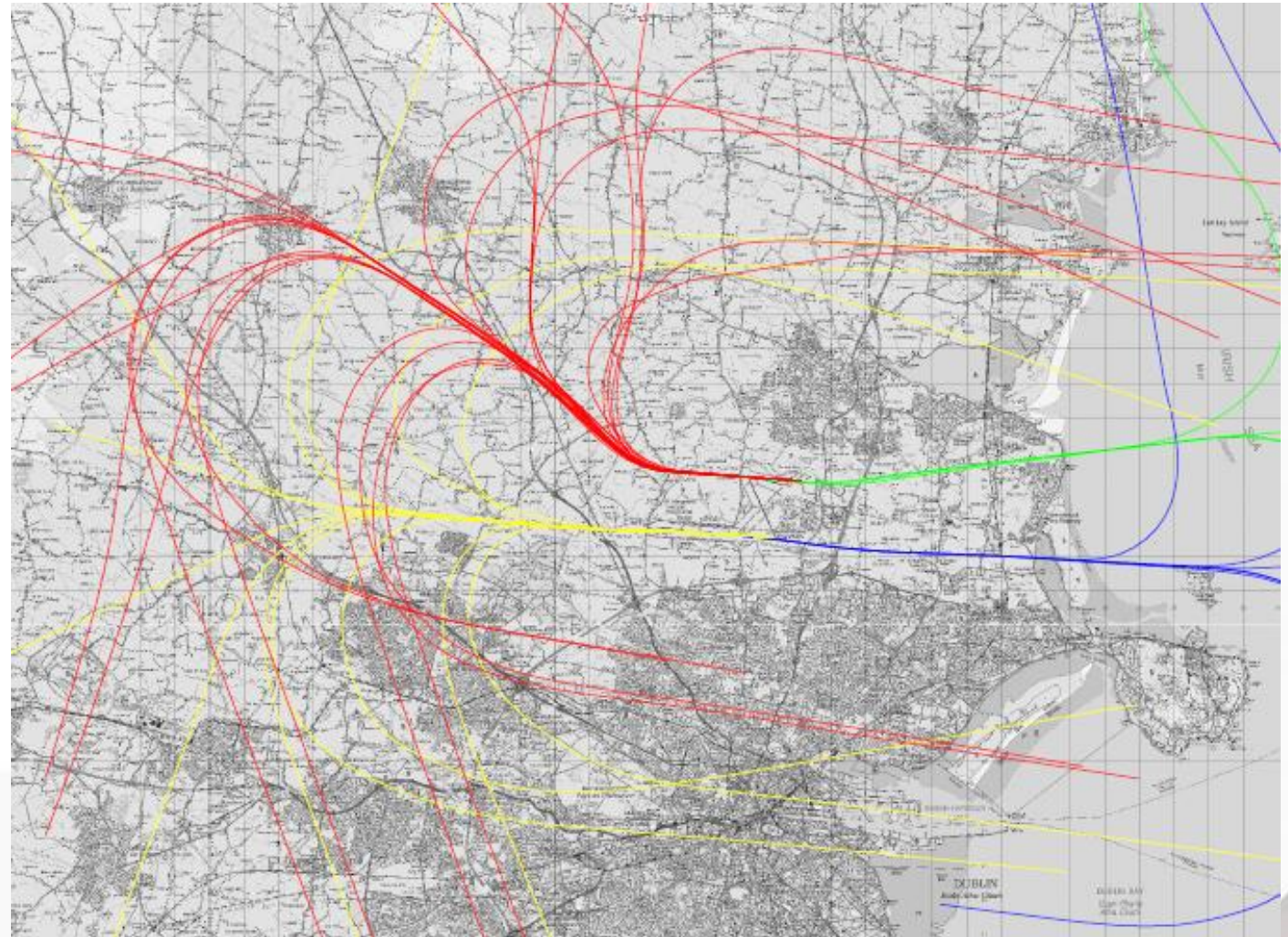
## Operations on 7 February 2025

- 654 movements, easterly conditions
- Colours indicate aircraft height



Noise contours are calculated by a computer model based on input of the aircraft operations at the airport. This process includes certain steps including:

- Flight track data is extracted from the airport's Noise and Flight Track Monitoring system.
- Typical flight tracks are identified for each of the runways (as depicted here)
- Dispersed tracks are then created either side of the central lines to reflect actual operations (as depicted in the next page)

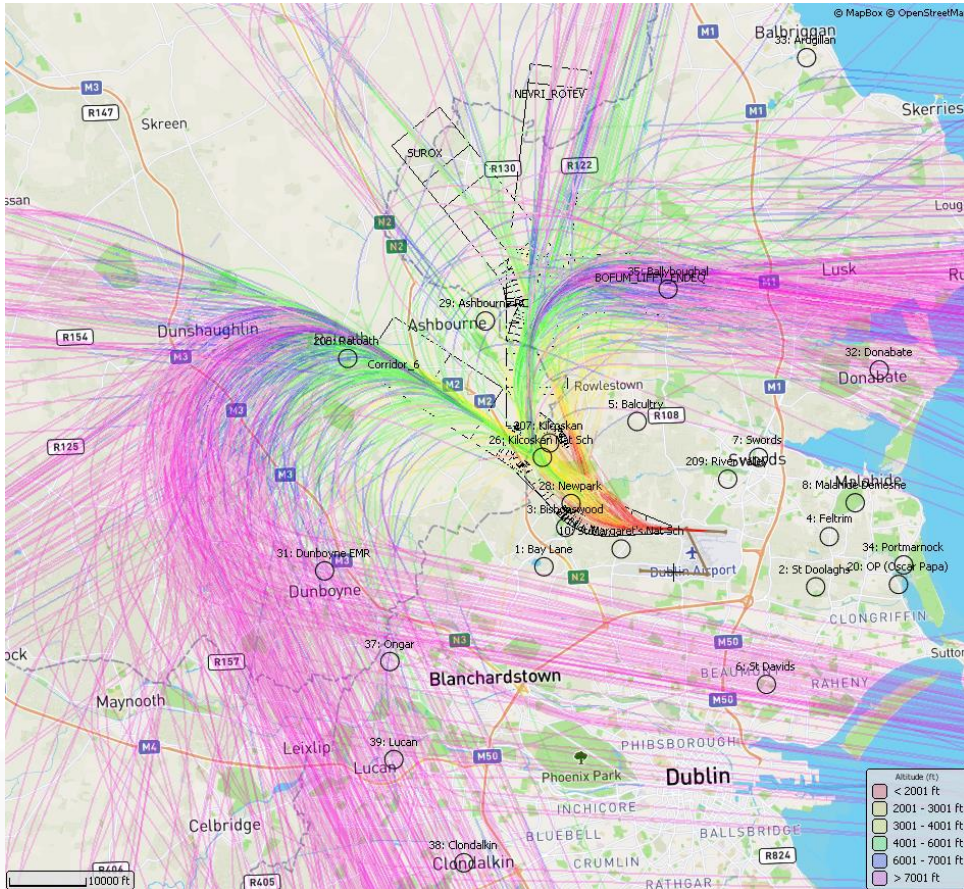


Main departure flight paths in calculation model for the 2 main runways – easterly and westerly departures

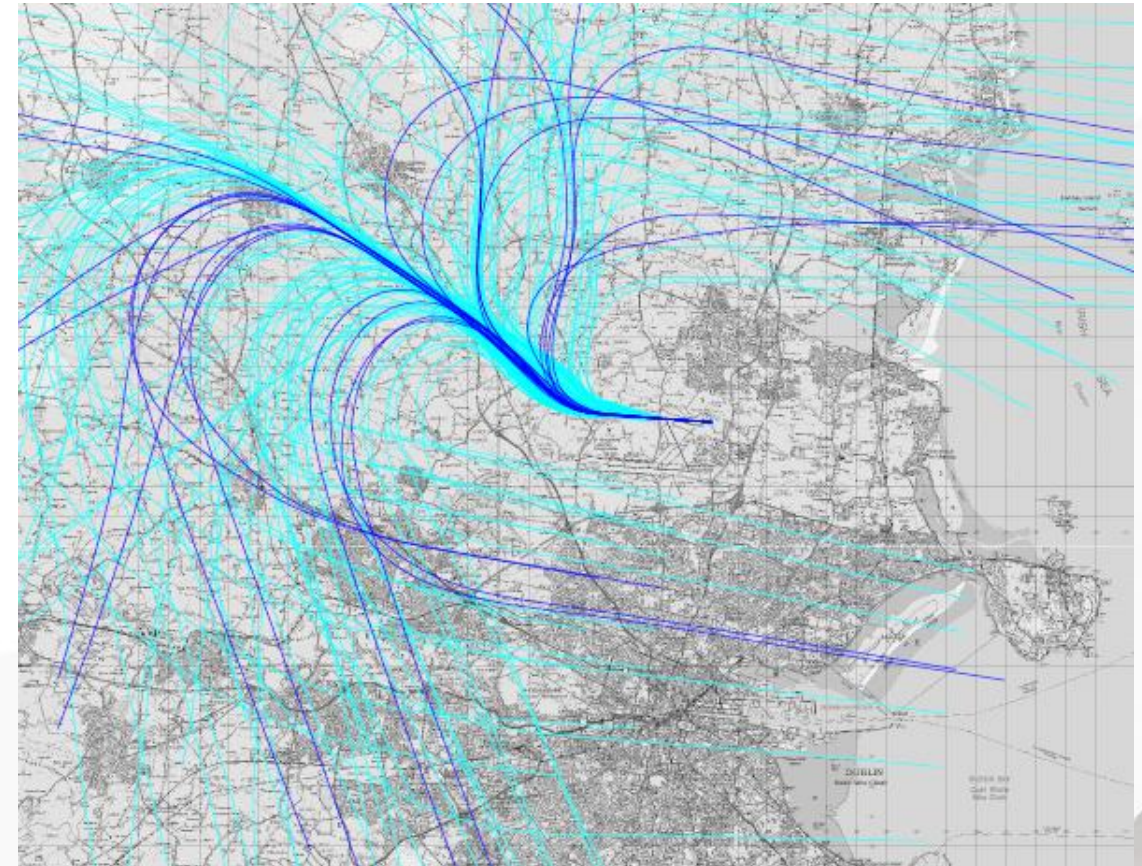


## Noise Contour Modelling (2) – Dispersed Flight Tracks

In practice, the spread or scatter of actual flight tracks is modelled by creating dispersed tracks either side of the central or main track as shown.



**Actual (Monitored) Flight Paths:**  
North Runway (28R) – westerly departures  
10-23 March 2025



**Modelled Departure Flight Paths:**  
North Runway (28R) – westerly operations  
Dark blue = centreline flight paths  
Light blue = dispersion flight paths



## Noise Monitoring

- Dublin Airport had a network of 25 permanent and 2 mobile Noise Monitoring Terminals (NMT) covering the entire Q1 2025 period, at locations ranging from less than 1 km to over 30 km from the runways.
- NMT locations are selected across a wide area to cover the region including the nearest, most-impacted residences, heavily populated areas and less-impacted, further-out locations.
- Measured aircraft noise data is presented in both time-averaged and single-event noise metrics.
- Monthly data is provided for the mobile NMTs at Kilcoskan (8 months) and at River Valley (1.7 months).

## Flight Track Monitoring

- Flight track data is used to positively identify aircraft noise from the NMT data and filter out non-aircraft noise.
- Monitored flight tracks are also used to ensure that the operations in the noise contour model are representative of actual airport activity.
- Airline track adherence is reported in Dublin Airport's monthly operations reports.

## Noise Contour Validation

- There is good correlation between the Measured and Modelled aircraft noise levels.
- This demonstrates that the noise modelling is sufficiently representative of the totality of aircraft operations at Dublin Airport and thus that the Modelled noise levels accurately represent community noise exposure levels.
- This means that the contours can be used to assess the noise at locations which do not have an NMT in the immediate vicinity.
- In general, noise impact assessment and mitigations at the airport including Noise Insulation and Dwelling Purchase Schemes are based on the modelled noise contours, so the Noise and Flight Track Monitoring, presented herein, provides support to the assessment and mitigation work at the airport.



# End

**For further information, please visit  
our website:**

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