

## **Dublin Airport Update**

October 9, 2024



### <u>Agenda</u>

**Dublin Airport Environmental Working Group - 09 October 2024** 

### 17.00 at Radisson Blu Hotel, Dublin Airport

- 1. Apologies
- 2. Minutes of Previous Meeting
- 3. Matters Arising
- 4. Dublin Airport Update
- 5. Air Quality
- 6. Water Quality
- 7. Noise and Flight Track Monitoring
- 8. Fingal County Council Planning Applications
- 9. Members Update
- 10. AOB

### **Dublin Airport Update**

- Earlier this year, Dublin Airport conducted a Community Survey of areas in Fingal to assess sentiment towards the airport, understanding of airport community initiatives and other areas of interest
- Dublin Airport wants to maintain and further develop the positive areas identified by the recent survey and feedback from other channels.
- Recent initiatives:
- **Community Newsletter:** refreshed version launched August 2024 and distributed widely. Distribution included the St. Margaret's and Coolquay area. Future versions will reference work of CLG and DAEWG.
- Website Overhaul: full review underway of 'Noise' 'Community Engagement' 'Air Quality' sections of website development of new material and new portals to provide much more accessible information on insulation eligibility for example.
- **Noise Reports:** big focus on getting noise and operations data out into the public domain Q1 Noise Monitoring Report now published with Q2 report coming soon. May and June monthly reports also published recently. July and August reports will be published this month.



#### Welcome!

Welcome to the first edition of the revamped Dublin Airport News. This newsletter began in 2004 and was published until disrupted by the events of 2020.

Dublin Airport is proud to be at the heart of the Fingal community as an employer, supporter of local businesses, and a gateway to the world. Listening to our passengers and community is important to excelled, with over 95% of passengers getting through security screening in under 20 minutes in May, June and July, and we're on track for the same in August. We were also pleased to announce a new solar farm on the grounds of Dublin Airport which will generate more than 10% of our electricity needs.

mitigation to eligible homes

Outside the airport campus, the first round of the 2024 The reintroduction of this newsletter is just one steps Dublin Airport Community Fund has just concluded. We are happy to announce support for over 50 local projects, with close to £250,000 in funding. We also continue to monitor for noise impeats and to offer we can be appresent to a step and the s

role as an economic driver and jobs provider is we

recognised, with 85% of those surveyed agreeing.

The survey also highlighted areas for improveme

increased public transport options to and from the

irport, and improvements in noise reduction

including enhanced engagement and communication

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### **Community Fund**



#### **Community Fund Review**

- A full review was completed of the Community Fund including criteria, processes, documentation, applicant requirements etc.
- Strong preference expressed by survey respondents, CLG and community fund recipients, that Funds need to be distributed amongst those communities most impacted by noise.
- The review process confirmed that the existing eligibility areas are sufficient.
- There will be some updated processes implemented:
  - strong emphasis placed on ensuring appropriate supporting documentation such as quotes, and proof of location are provided with the application
  - more spot checks conducted for adherence to the terms and conditions once funding allocated – this will include how Dublin Airport's funding was acknowledged
  - application forms will be updated, and an online version will be made available

#### 2024

- Round 14 Over €250,000 awarded to over 50 projects across the eligible areas in the community including clubs and schools.
- Round 15 Opened for applications for six-week period for applications until Friday, October 25.







- The 28-acre site is located close to the south runway and visible from the R102.
- Over 11,000 solar panels have been installed to date by Enerpower, one of Ireland's leading providers of renewable energy solutions, with a total of 15,000 overall installed in September. With plan to become operational by end of this month.



### Follow up actions

No	Issue	daa response
1.	XO advised that the contour reflects the usages of the runway annually and the use of the runway in April was during the storm conditions. XO advised he will revert with further details.	XO confirmed that the contour shape is determined by the noise concentrated by the aircraft movements on that flightpath and as per the monthly reports for May /June, there was only one movement on the crosswind's runway.
2.	AK advised that an issue has been noted with offsite pollution entering the Cuckoo Stream which has been reported to FCC, Uisce Eireann and an update will be provided at the next meeting.	AK to advise as part of the Environmental updates
3.	PF queried the works near the road at Dardistown. AF will revert with further information on the infrastructure works taking place.	AK to advise as part of the Environmental updates
4.	Members discussed the location of the air monitoring and AK advised that a map will be included for the next meeting.	Included as part of the Environmental update.
5.	GS queried if the height of the monitors impacts the results. AK to revert.	AK to advise as part of the Environmental update.
6.	AK has followed with Dublin Port and UCC regarding their air quality programme and suitability for Dublin Airport and the appropriate suppliers and expects to revert with proposed locations for the next meeting.	AK to advise as part of the Environmental update.
7.	JH requested further information on the attenuation tanks at Dublin Airport. AF advised she will revert.	AK to advise as part of the Environmental update.
8.	XO advised the earth berm feasibility study is progressing, and the report will be provided for the next meeting in October.	IC to update on the report as part of the Noise update

#### Surface Water Monitoring - Dublin Airport (June - September 2024)

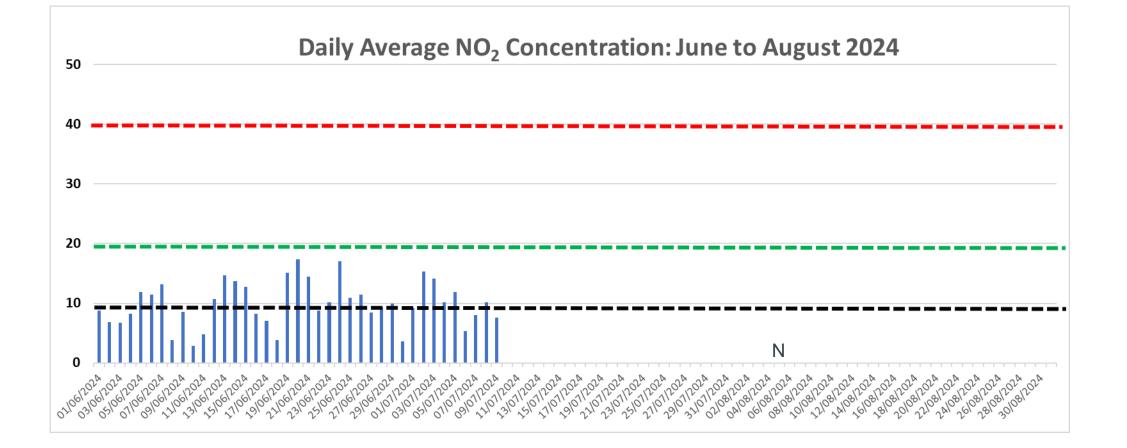


S	ample lo	cations -	- enterina	g daa lands									
		C1– Cuckoo Stream			C4- Cuckoo Stream			S1 – Santry Stream"			M1– Mayne Stream"		
	Mosth	BOD mg/L	COD mg/L	Annonia as N ng/L	BOD mg/L	COD mg/L	Annon ia as N ng/L	BOD mg/L	COD mg/L	Annonia as N ng/L	BOD mg/L	COD mg/L	Annonia as N ng/L
	June	1	13	0.1	1689	5285	54.45	-	-	-	-	-	-
	July	2.6	13	0.1	543	2865	57.35	-	-	-	-	-	-
	August	1.2	21	0.07	167	877					No sample - dry		
100	eptember	45	141	0.03	32	692	25.05	-	-	-	-	-	-

Sample lo											_		
	K2 – Kealys Stream			NRML 7 – Forrest			W1 – Wad Stream'				NRML 1 – Ward Stream"		
Month	BOD mg/L	COD mg/L	Annonia as N ng/L	BOD ■g/L	COD mg/L	Annon ia as N ng/L	BOD mg/L	COD mg/L	Ammonia as N mg/L	BOD mg/L	COD mg/L	Annonia as N ng/L	
June	6.3	16	2.71	0.6	19	0.02	-	-	-	-	-	-	
July	2	22	0.49	2.2	20	1.93	-	-	-	-	-	-	
August	2.3	23	0.42	2	8	0.02	No sa	mple - too l	low flow	<4	12	0.06	
September	1.3	<5	0.45	0.7	<5	0.05	_	-	-	-	-	-	

Sample lo			daa lands Stream"	M5- Ma	iyne Sti	ream""	S3 – Santry Stream				
Mosth	BOD mg/L	COD mg/L	Annosia as N ng/L	BOD mg/L	COD mg/L	Annon ia as N ng/L	BOD mg/L	COD mg/L	Annonia as N ng/L		
	1.3	20	0.12	1.2 1.3	10 20	0.04					
June	1	17	0.1	0.8	22 48	0.007	1.5	7	0.02		
	1	16	0.04	1.4	26 23	0.007					
July	0.9	15	0.01	1.2	20 16	0.03	No sample retrieved				
	1.6	14	0.03	1.3 1.2	29 24	0.05 0.03					
	0.9	<5	0.04	<10 1	34 20	0.03	No sample - dry				
August	<10	31	0.03	<4 <10	17 45	0.00					
September	33	87	0.01	<10 1.3	19 22	0.02					
	-	-	-	1.3 1.4	20	0.26	<10	41	0.1		
"quarterly s: "Twice mon "Tweckly sa	thly sample		I	1.4	27	0.43		1	<u> </u>		

• NO<sub>2</sub> average for June – August 2024: 10 μg/m<sup>3</sup>

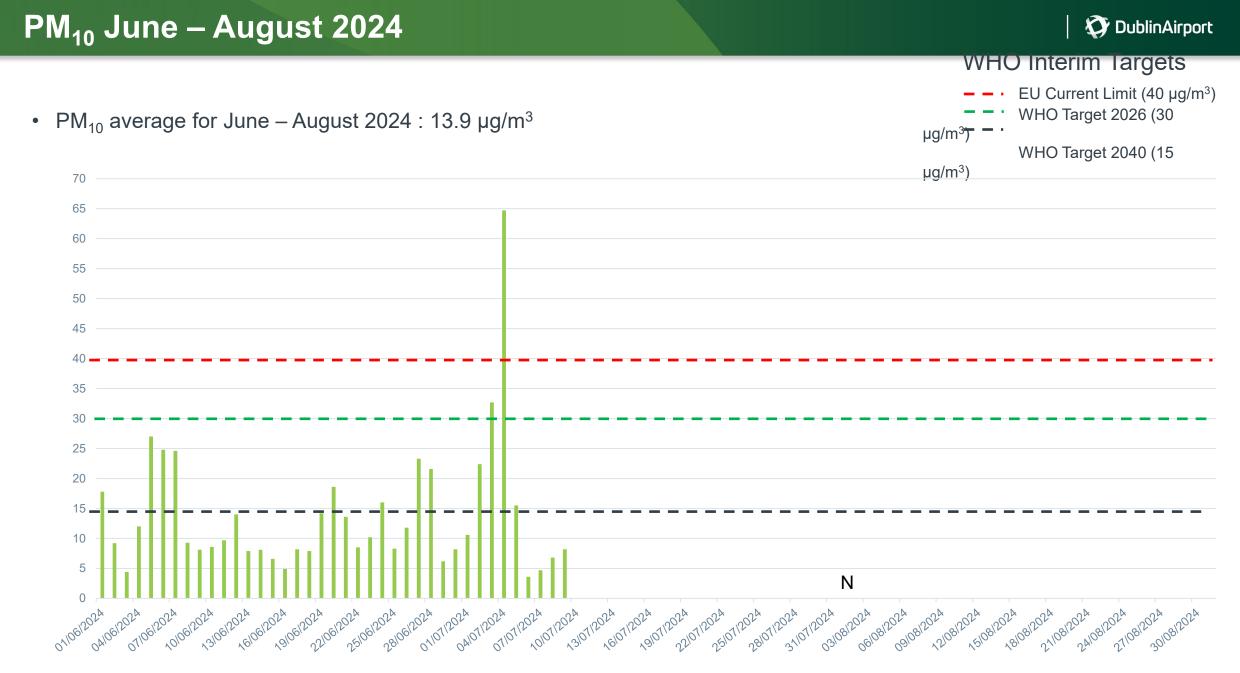


Document Classification: Class 1 - General

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#### WHO Interim largets

- – · EU Current Limit (40µg/m<sup>3</sup>)
  - WHO Target 2026 (20µg/m<sup>3</sup>)
- WHO Target 2040 (10µg/m<sup>3</sup>)



C = Calibration N = No Data



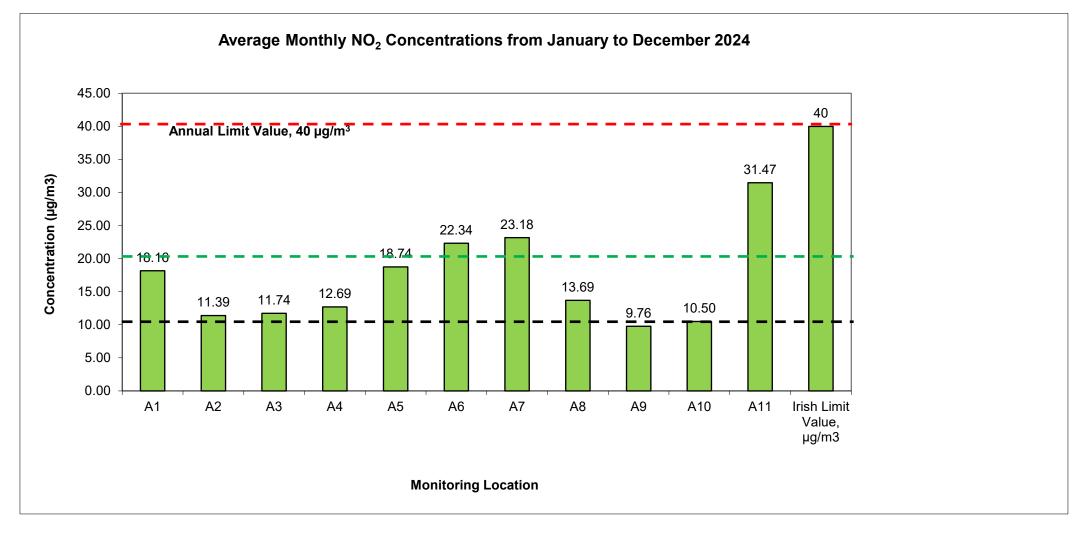
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Calibration



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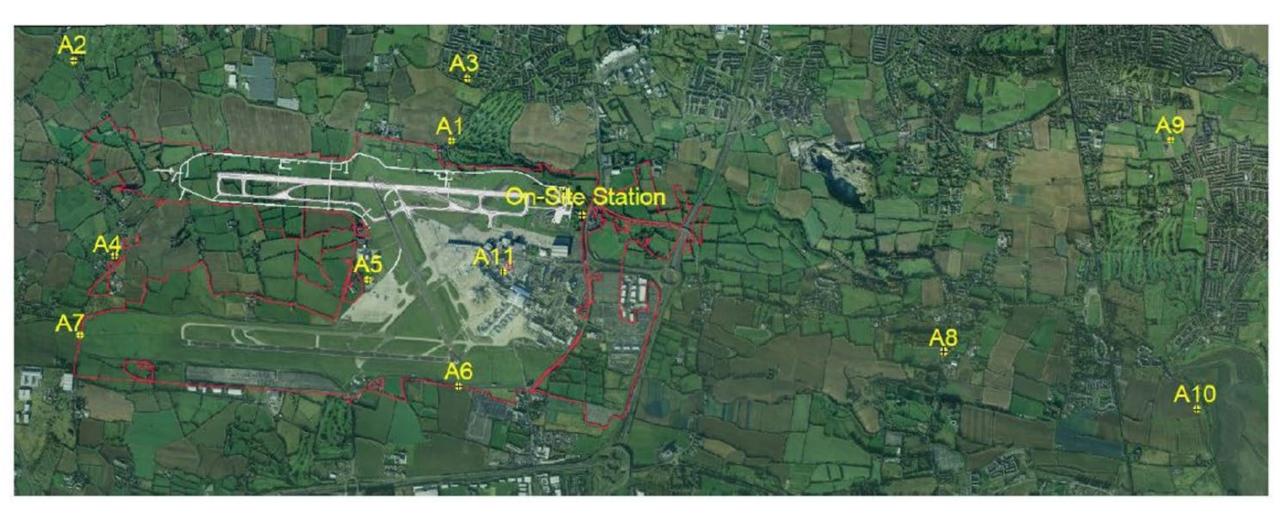


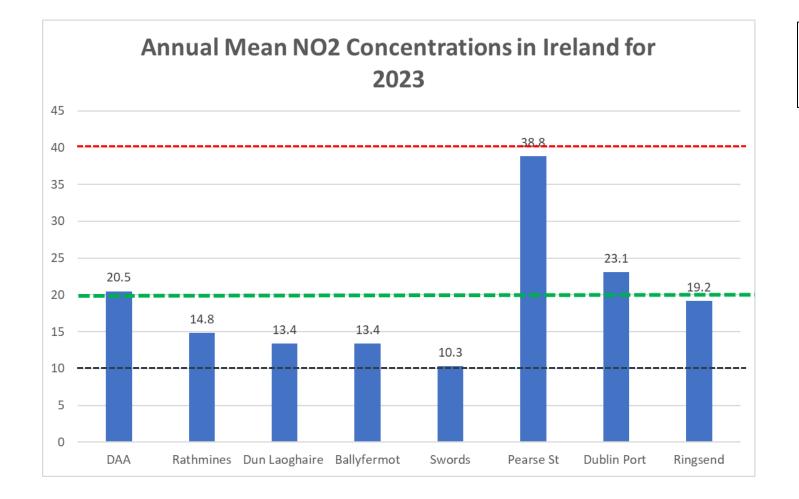
#### • Key Messages:

- Air pollution can be a major environmental risk to people's health, with approximately 1,600 premature deaths annually in Ireland due to poor air quality.
- Ireland's latest monitoring shows we are in compliance with current EU standards.
- Ireland is not on track to achieve its ambition, set out in the National Clean Air Strategy, to meet the health-based WHO air quality guideline limits in 2026. Achieving future targets will be very challenging.
- Main pollutants of concern are fine particulate matter (PM<sub>2.5</sub>) from solid fuel combustion and nitrogen dioxide (NO<sub>2</sub>) from vehicle emissions/traffic.

Pollutant	Averaging Time	Number of stations, parameter monitored 2023	Number of stations over IT 3 WHO limit (to be met by 2026)	WHO limit (to be	Number of stations over AQG WHO limit (to be met by 2040)
PM <sub>10</sub>	Annual	106	0	0	5
I IVI10	24 hour	100	1	4	10
DM	Annual	101	0	3	79
PM <sub>2.5</sub>	24 hour	101	9	26	80
NO	Annual	36	8	8	24
N0 <sub>2</sub>	24 hour		7	7	29



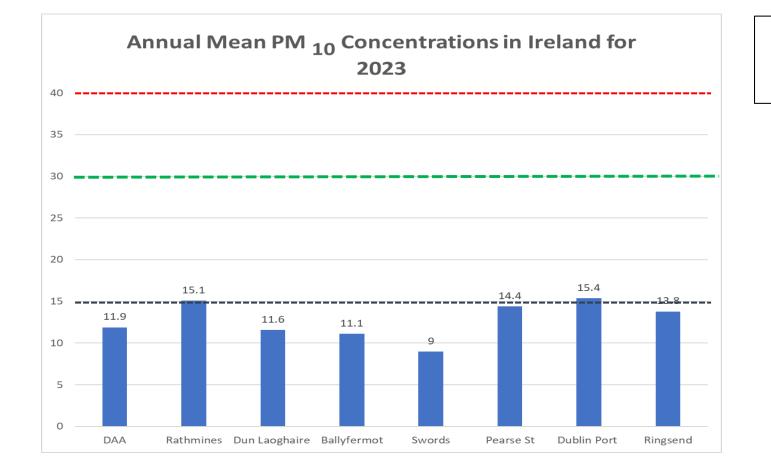




#### WHO Interim Targets

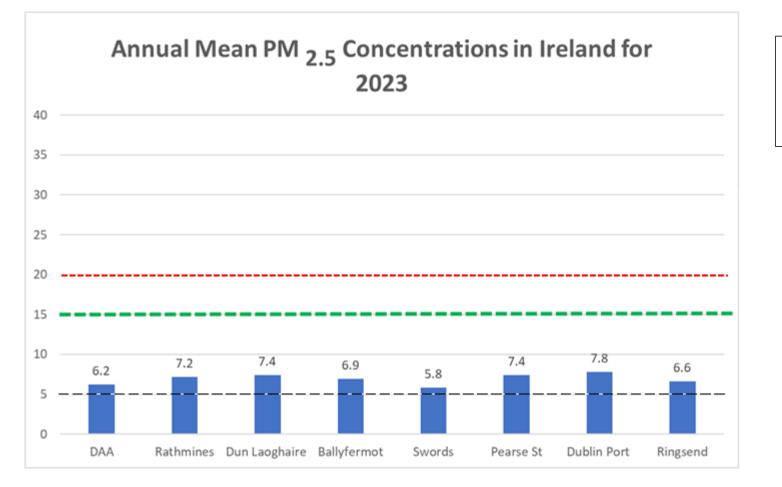
- EU Current Limit (40μg/m<sup>3</sup>)
- WHO Target 2026 (20μg/m<sup>3</sup>)
- - WHO Target 2040 (10μg/m<sup>3</sup>)





### WHO Interim Targets

- - EU Current Limit ( $40 \,\mu g/m^3$ )
- WHO Target 2026 (30 μg/m<sup>3</sup>)
- --- WHO Target 2040 (15 μg/m<sup>3</sup>)



#### WHO Interim Targets

- – · EU Current Limit (20 μg/m<sup>3</sup>)
- WHO Target 2026 (15 μg/m<sup>3</sup>)
- • WHO Target 2040 (5 μg/m<sup>3</sup>)

## Dublin Airport Environmental Working Group DAEWG Noise Update

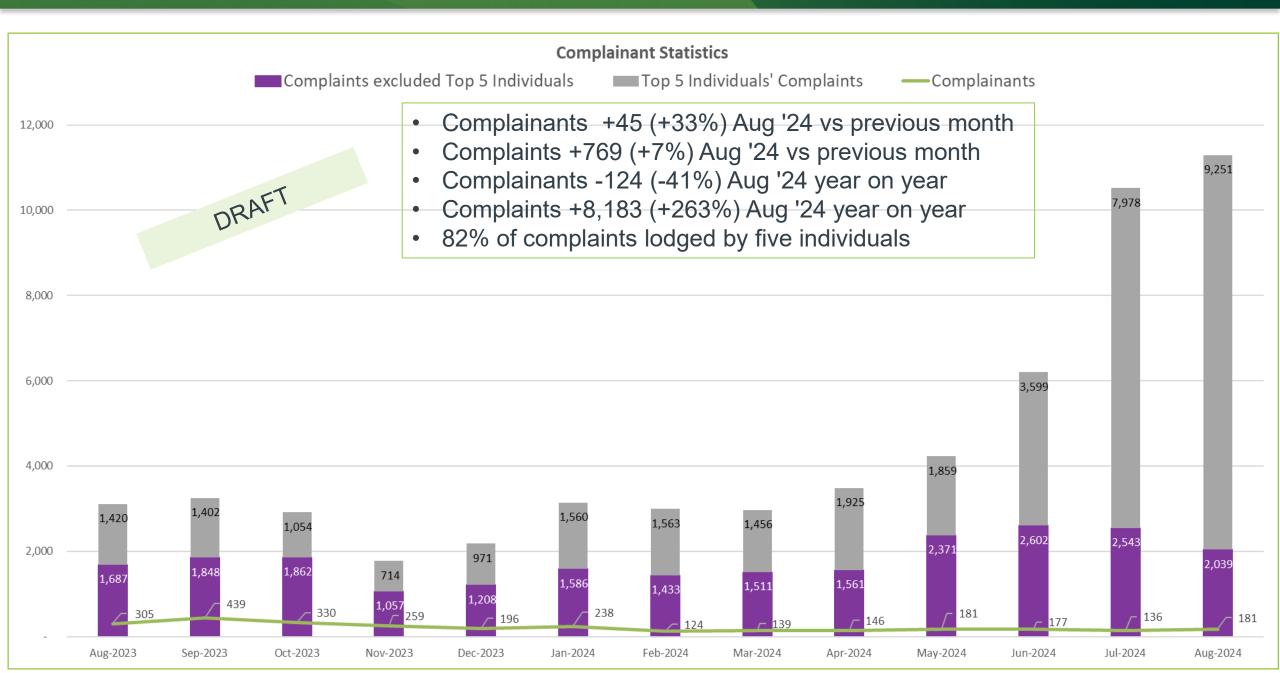
9 October 2024





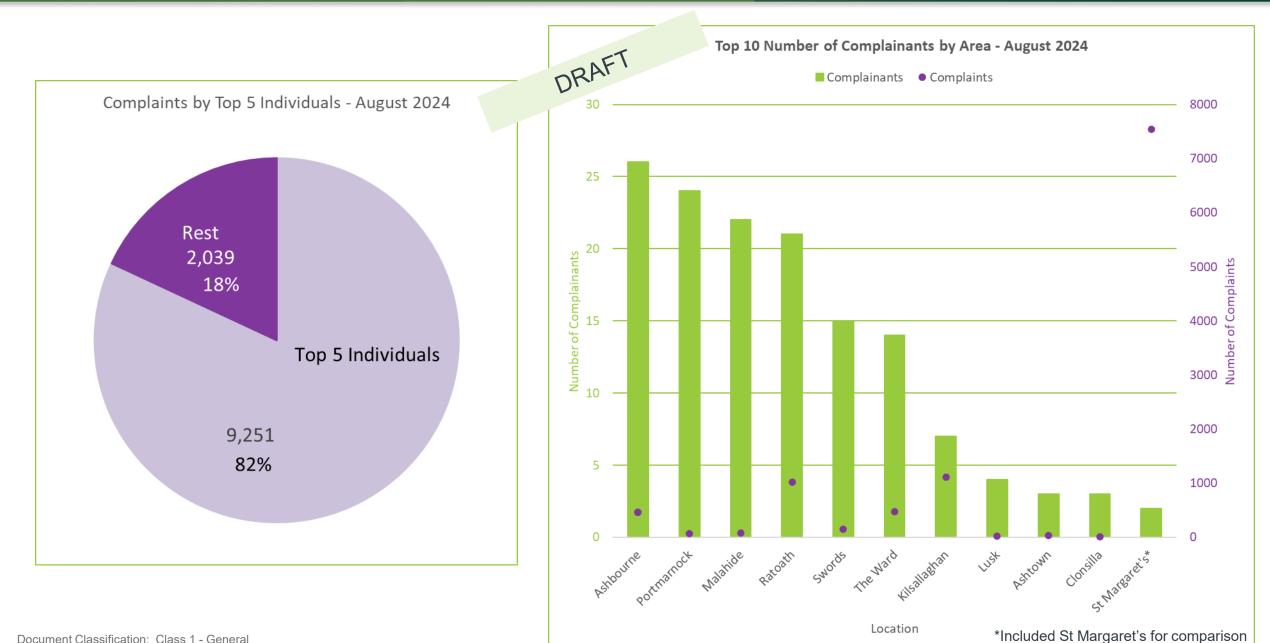
- 1. Draft August Monthly Report update
  - Noise Complaints
  - SIDs, NPR's and Track Adherence
- 2. Draft Q2 Noise and Flight Tracks Monitoring Report extracts Explanatory notes
  - Noise Monitoring, Noise Modelling (Contours)
  - Average (Lden/Lnight) and Single Event Metrics (Lmax/SEL)
- 3. Four New Permanent Noise Monitors
- 4. New Layout of Noise Webpage
- 5. WebTrak NPR and Runway Closure Information Box
- 6. Maploom Graphical Contour Platform

### **Noise Complaints - Complainant Statistics**



### Noise Complaints - Complainant Statistics

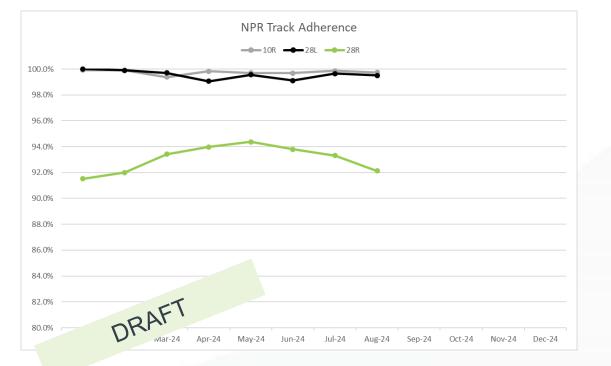




### Departure Track Adherence (Monthly 2023 and 2024 YTD)

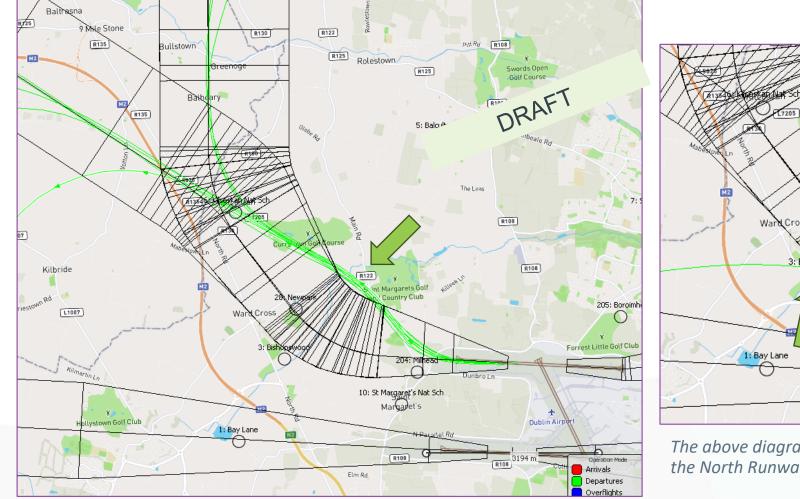


- Track Adherence refers to jet aircraft departures that remain within the NPR up to the minimum height.
- Both runways are displaying a high level of track adherence (over 90% for North Runway westerly and South Runway – westerly and easterly - is close to 100%).
- Further work is underway on improving track adherence which will include the implementation of a tool which can be used by AirNav Ireland and airlines to track and manage deviations and conduct detailed investigations into individual deviations.
- Note: North Runway easterly and Cross Runway operations are too seldom used to report.
- daa has conducted a review of the Track Adherence monitoring process. 2023 data was displaying a lower level of track adherence than what was actually occurring however, this has now been amended.

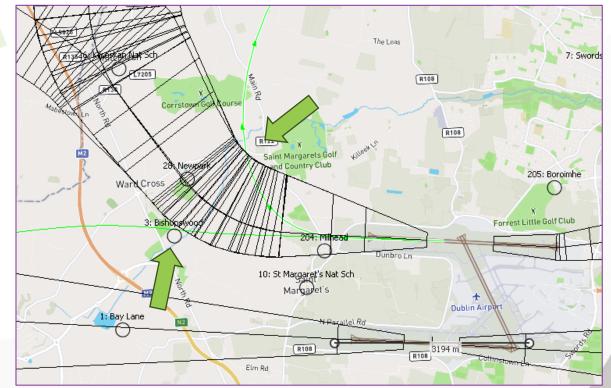


Departure Runway	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
10R (South Runway)	99.9%	99.9%	99.4%	99.8%	99.7%	99.7%	99.9%	99.7%				
28L (South Runway)	100.0%	99.9%	99.7%	99.1%	99.6%	99.1%	99.7%	99.5%				
28R (North Runway)	91.5%	92.0%	93.4%	94.0%	94.4%	93.8%	93.3%	92.1%				
Total Airport (2024)	93.9%	94.0%	96.5%	95.9%	96.8%	95.1%	95.4%	93.6%				
Total Airport (2023)	77.1%	82.4%	96.7%	96.9%	97.4%	97.8%	94.4%	93.6%	95.4%	95.4%	91.8%	92.7%





The above diagram displays a number flights which exited the North Runway NPR and then re-entered the NPR. This is a known issue for a small percentage of aircraft and Dublin Airport is working with the airlines and the aircraft manufacturer on resolving it.



The above diagram displays two different departing flights which exited the North Runway NPR before they would have reached 4,000 ft altitude.





## Dublin Airport Quarterly Noise and Flight Track Monitoring Report

April - June (Q2) 2024



- This report presents data from Dublin Airport's Noise and Flight Track Monitoring System.
- The publication of this quarterly report is a requirement under Condition 10 of N h 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.
- 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 Organisation (WHO).
- The Summer Leq16h is used at Dublin Airport for the Noise Insulation and Voluntary Dwelling Purchase Schemes and is widely used in the UK.
- 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 at different levels, they provide a different way of representing the noise
  situation.
- This report demonstrates good correlation between the noise measurements obtained from Noise Monitoring Terminals
  and the modelled noise contours. This should provide 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.
- Flight track monitoring data is used to separate aircraft noise events from non-aircraft (community) noise at the NMT.
- Modelling for the noise contour calculations also relies on the flight track monitoring.



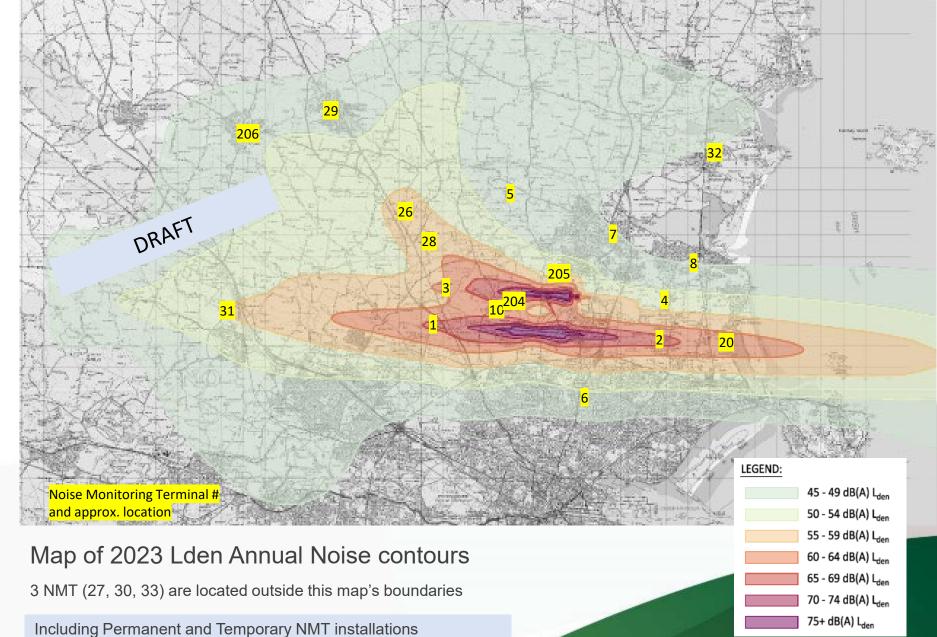
## Part 1: Noise Monitoring Data Permanent NMT

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### **Modelled Lden Noise Contour Levels at 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
204	Milhead (Temp)	67
205	Boroimhe (Temp)	54
206	Ratoath	47



### NMT – Q2 2024 Aircraft Noise Events and Measured Lden/ Lnight



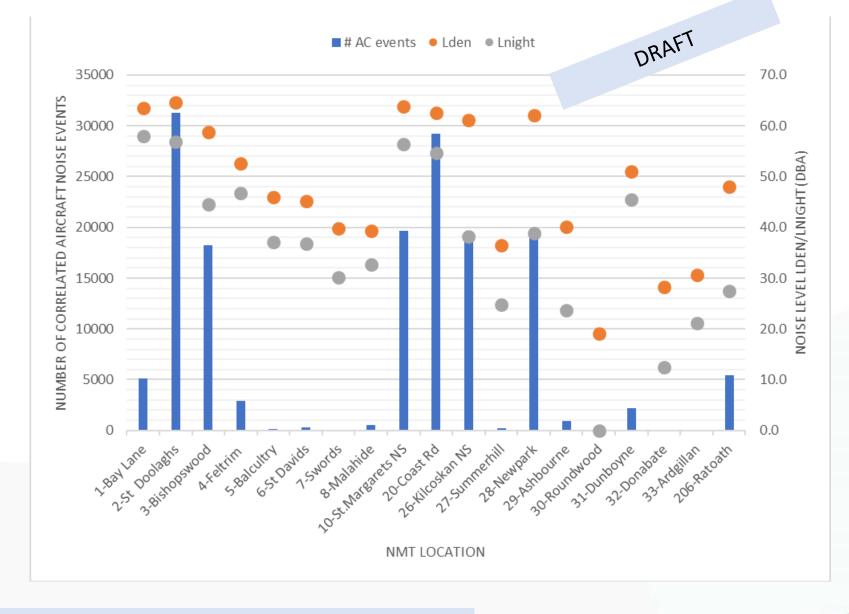
Chart Notes:

Base (x-axis) shows the location of the NMT

Blue Bar shows the number of correlated aircraft noise events.

Orange Dot shows Lden at each monitor.

Grey Dot shows Lnight at each monitor.



#### Including Permanent NMT installations only



## Part 2: Noise Monitoring Data Temporary NMT

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### **Portable Temporary NMT**

- Portable NMT are installed at locations around Dublin Airport usually based on requests from the two community forums CLG and DAEWG
- Locations can be seen on Page 7

#### <u>Milhead</u>

- An NMT was installed at Milhead for 9 months from October 2023 to June 2024.
- In 2023 the calculated noise contour Lden at this location was 67 dBA. The average Lden over the 9-month monitoring period was Lden 66.8 dBA.

#### <u>Boroimhe</u>

- An NMT was installed at Boroimhe for 5 months from February to July 2024.
- This location is just 1km north of the North Runway. The location is not typically subject to overflights.
- Residents have expressed concern over the noise from aircraft departing on this runway heading west. High engine power is required to accelerate an aircraft down
  the runway to achieve take-off speed. This is referred to as Start-of-Roll (SOR) noise. Unlike the noise from aircraft when taxiing on taxiways, SOR is included as
  part of the aircraft departure procedures. This means it is included in the aircraft noise modelling and the Annual and Summer noise contours.
- During its installation, the NMT 205 at Boroimhe collected Noise Event data, but there was a problem with the noise data management system linking the aircraft departure events with the measured Noise Events. This means that there have not been as many Correlated Aircraft Noise Events at NTM 205 as might have been expected. The Noise Team at Dublin Airport has been investigating this issue. The NMT system is designed and fine-tuned for capturing aircraft noise from overhead flight movements, and not necessarily for SOR noise. The radar track data that needs to be matched to measured noise events does not commence until the aircraft has left the ground, and this may be why a significant number of departures are not being correlated.
- It should also be noted that the measurement location was subject to the noise from a barking dog. This resulted in a Total noise level of Lden 58.7 dBA over the 5 months compared to a measured aircraft noise level of Lden 51.5 dBA.
- While it could be the case that a proportion of the aircraft departure events were missed for technical reasons, it could indicate that the aircraft noise levels were not as high as modelled due to effects such as the absorption of noise by the terrain between the North Runway and the monitor at Boroimhe.
- In 2023 the calculated noise contour Lden at this location was 54 dBA. The measured aircraft noise Lden over the 5-month monitoring period was Lden 51.5 dBA.





### **Portable Temporary NMT - #205 Boroimhe**

	NMT 204 Milhead	Mar 2024	Apr 2024	May 2024	June 2024	July 2024	5 Month Average
	Correlated Aircraft Noise Events	1427	1815	2833	3446	2185	
	Total Lden (dBA)	58.1	58.7	58.0	61.0	56.6	58.7 dBA
	Aircraft Lden (dBA)	48.3	50.3	51.0	54.6	50.8	51.5 dBA
Levels	Aircraft Lnight (dBA)	25.4	36.2	40.4	42.4	35.4	38.6 dBA
	Aircraft Leq16h (dBA)	48.3	49.7	50.3	52.9	50.6	50.6 dBA
	NA Lmax 60 (N60)	46	60	92	117	70	77
Daily	NA Lmax 65 (N65)	21	29	28	51	35	33
Number	NA Lmax 70 (N70)	10	13	9	21	13	13
Above Lmax	NA Lmax 75 (N75)	2.3	3.0	1.7	4.6	2.4	2.8
values	NA Lmax 80 (N80)	0.3	0.5	0.4	1.3	0.5	0.6
	NA Lmax 85 (N85)	0.1	0.1	0.1	0.2	0.2	0.1
							Aircraft/day
	NA SEL 65	46	60	91	116	70	77
	NA SEL 70	38	51	67	100	59	63
Daily	NA SEL 75	22	33	34	65	34	37
Number Above SEL	NA SEL 80	11	16	10	26	11	15
	NA SEL 85	2.1	2.7	1.3	4.1	1.5	2.3
	NA SEL 90	0.3	0.4	0.4	1.5	0.3	0.6
	NA SEL 95	0.1	0.1	0.4	0.4	0.1	0.2
							Aircraft/day

Notes:

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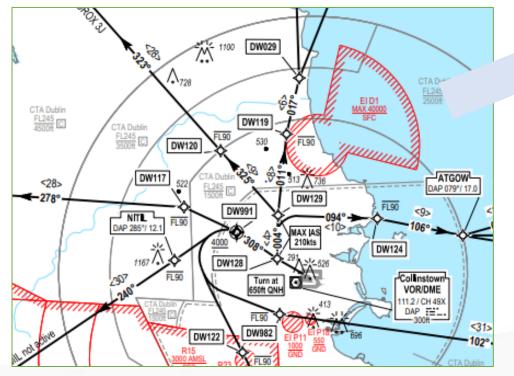
- A barking dog dominated the total noise level measured by the NMT including some interference with aircraft noise.

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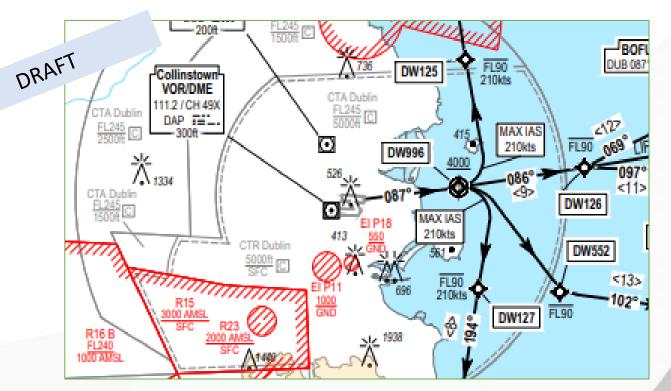
- The location is not overflown by aircraft but Start-of-Roll departure noise from aircraft on the North Runway is often audible.



- 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.



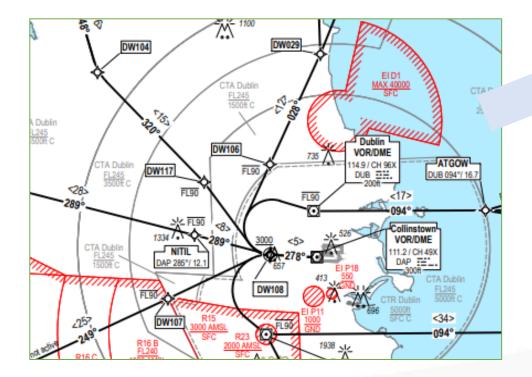
SID for North Runway (28R) departures to the west (westerly operations in westerly winds)



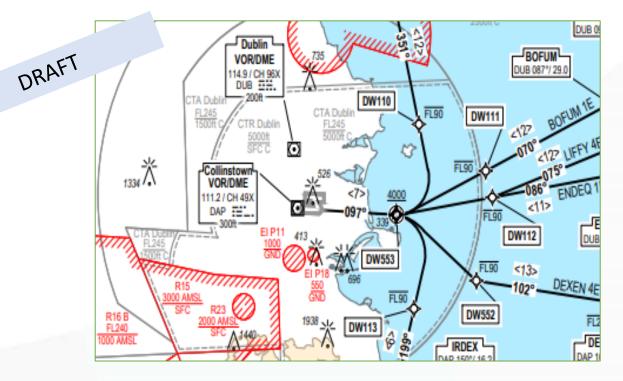
SID for North Runway (10L) departures to the east (easterly operations in easterly winds) Note: This is only used during periods when the South Runway is closed.



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



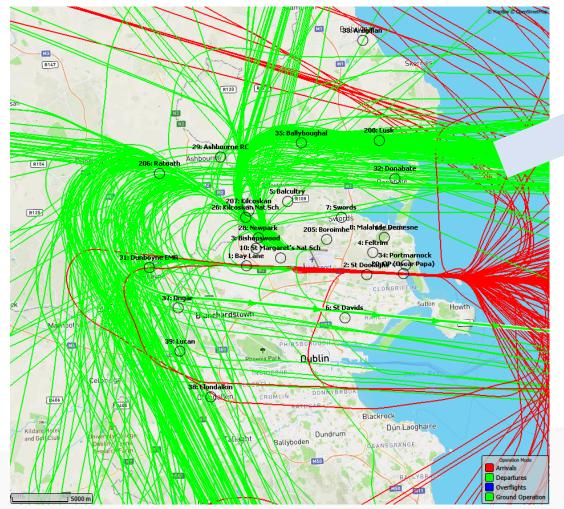
SID for South Runway (28L) Departures to the west (Westerly operations in westerly winds)



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

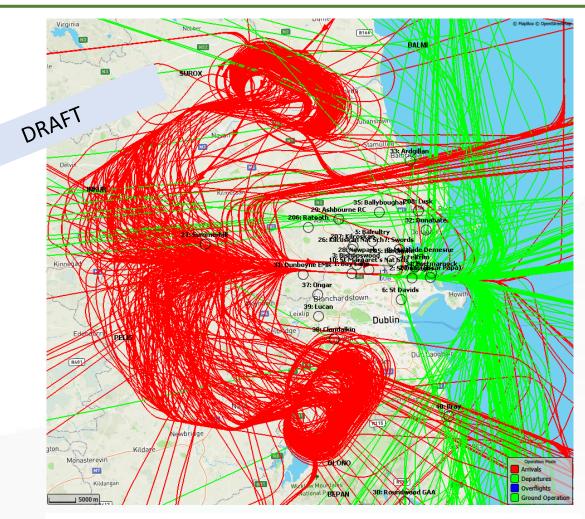
### **Busy Day Flight Tracks**





Operations on 30 May 2024

- 794 movements, westerly conditions
- Red = arrivals from the east
- Green = departures to the west

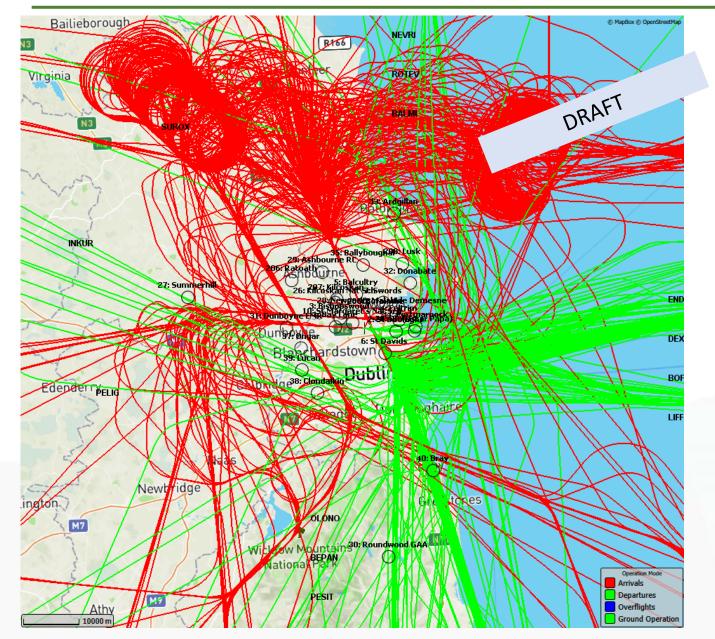


### Operations on 13 May 2024

- 694 movements, easterly conditions
- Single runway (SR) due to low visibility conditions

### **Cross Wind Day Flight Tracks**





Operations on 6 April 2024

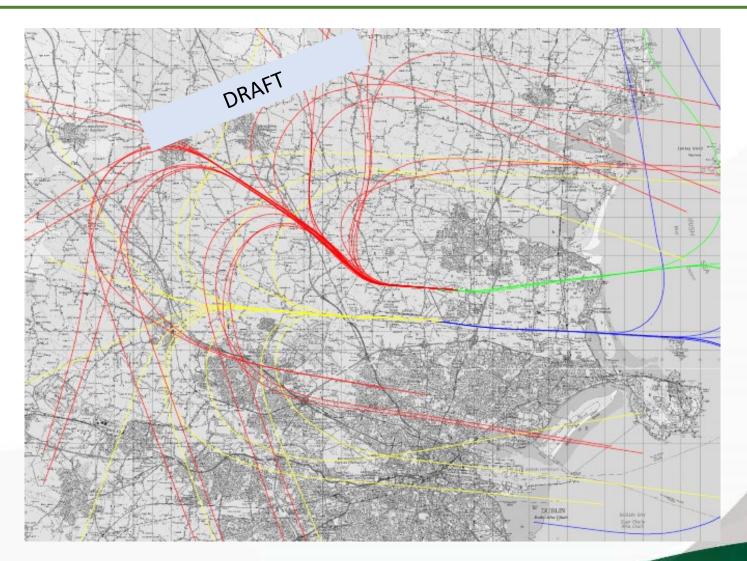
- 568 movements, southerly conditions
- Red = arrivals from the north (mostly)
- Green = departures to the south

Note that more holding patterns for arriving aircraft are required when only 1 runway is available.



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

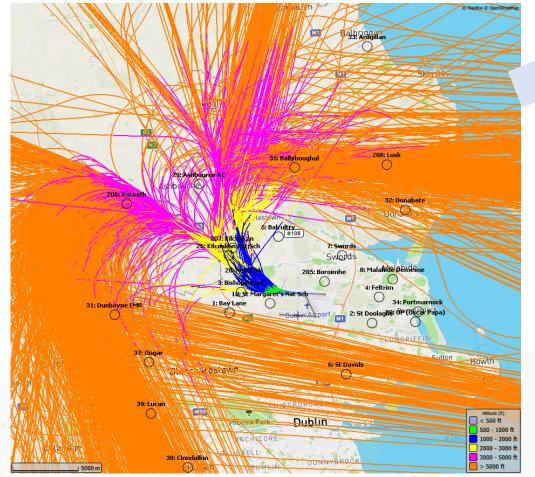
- Flight track data is extracted from the airport's Noise and Flight Track Monitoring system.
- Typical flight tracks are identified for each of the runways (as depicted here)
- Dispersed tracks are then created either side of the central lines to reflect actual operations (as depicted in the next page)



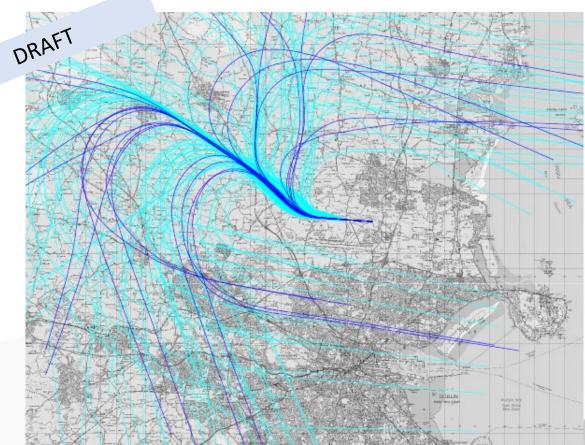
Main departure flight paths in calculation model for the 2 main runways – easterly and westerly departures



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 Tracks (with altitude): North Runway (28R) – westerly departures 1-14 May 2024



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

### Conclusion



**Noise Monitoring** 

- For the Q2 period, Dublin Airport had a network of 19 permanent and 2 mobile Noise Monitoring Terminals (NMT) 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.

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- Measured aircraft noise data is presented in both time-averaged and single-event noise metrics.
- Monthly data is provided for the 2 mobile NMT at Milhead and Boroimhe, in place for 9 and 5 months, respectively.

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

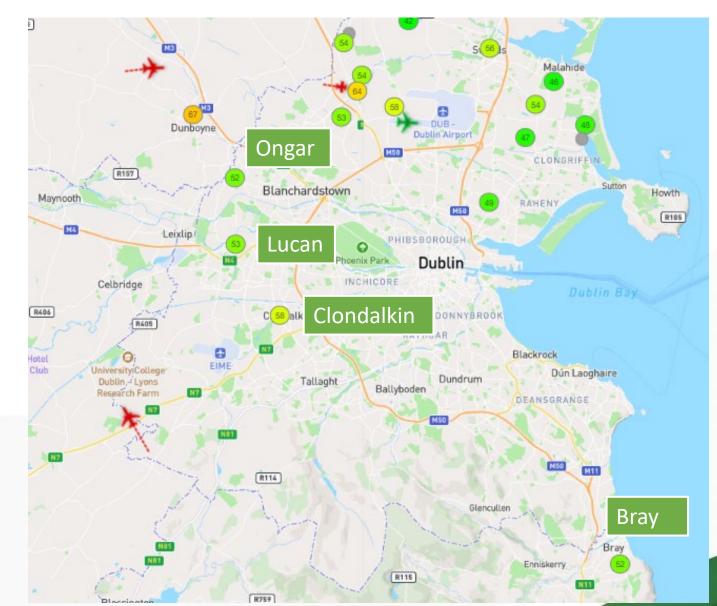
- There is good correlation between the Measured and Modelled aircraft noise levels.
- This demonstrates that the noise modelling is sufficiently representative of the totality of aircraft operations at Dublin Airport and thus that the Modelled noise levels mapped in the Noise Contours accurately represent community noise exposure levels.
- This mean 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.



## **Four New Permanent Noise Monitors**



#### Lucan, Ongar, Bray and Clondalkin

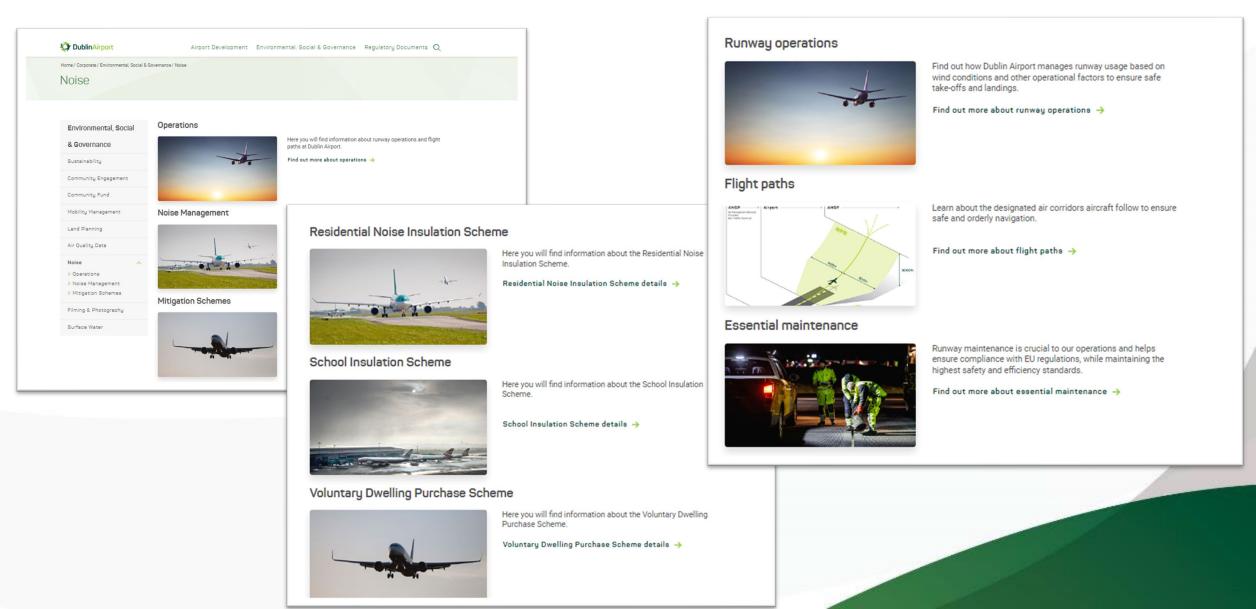




# New Noise Webpage Design



#### https://www.dublinairport.com/corporate/environmental-social-governance/noise

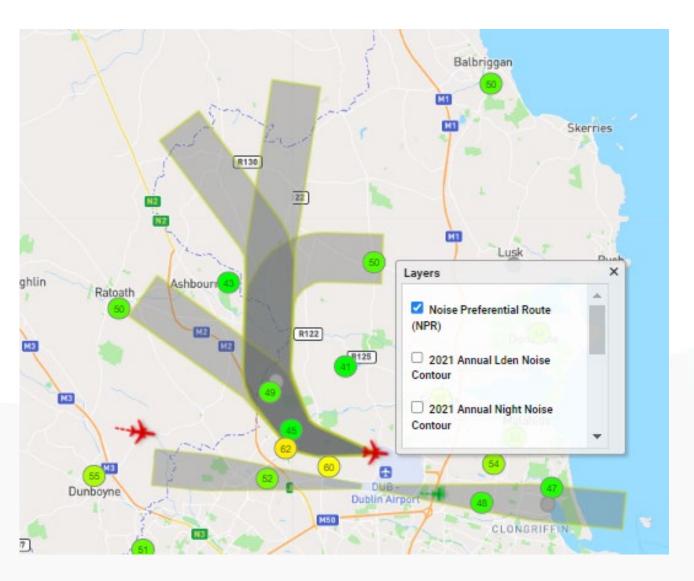


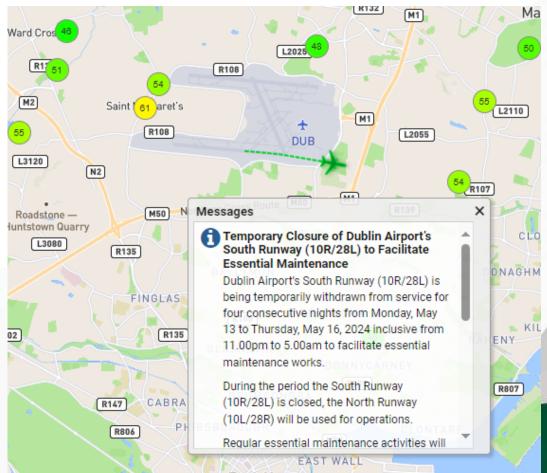


# WebTrak



### https://webtrak.emsbk.com/dub1







Maploom Graphical Contour Platform



### https://daa.maploom.com/eligibility



DublinAirport

X

To review the relevant noise contours that determine scheme eligibility please select the relevant contour filter below:

X Voluntary Dwelling Purchase Scheme

- X Residential Noise Insulation Scheme
- X School Insulation Scheme

