An Bord Pleanála

Inspector's Report

ABP-314485-22

Development	A proposed development comprising the taking of a 'Relevant Action' only within the meaning of Section 34C of the Planning and Development Act 2000, as amended, which relates to the night-time use of the runway system at Dublin Airport
Location	Dublin Airport, Co. Dublin
Planning Authority	Fingal County Council
Planning Authority Reg. Ref.	F20A/0668
Applicant(s)	Dublin Airport Authority (Daa) PLC
Type of Application	Permission
Planning Authority Decision	Grant
Type of Appeal	Third Party
Appellant(s)	1. Trevor Redmond 2. Niamh Maher 3. Sheelagh Morris and Others 4. Raymond and Carmel Fox

	5. Angela Lawton 6. Brian Murphy 7. Teresa Kavanagh 8. SMTW (St Margarets The Ward) Environmental DAC 9. St Margarets The Ward Residents Group (SMTWRG) 10. Adrienne McDonnell and Others 11. Noel and Breda Deegan and Others 12. Terence Murphy 13. Connor Kennedy 14. Friends of the Irish Environment
Prescribed Bodies	Meath County Council
Observer(s)	Appendix 1: List of Observers
Date of Site Inspection	16th of November 2023 & 14th of March 2024
Inspector	Karen Hamilton

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1.0 Background

1.1. Introduction

1.1.1. The applicant, Dublin Airport Authority (Daa), applied to Fingal County Council (the planning authority) on the 21st of September 2021 for the proposed development. The proposed development includes amendments to the current operation procedures at Dublin Airport, including the use of the North Runway (NR) for an additional two hours during the night 23:00 - 00:00 and 06:00 – 07:00 and the replacement of a restriction on the number of nighttime flights, with a Noise Quota Scheme (NQS).

1.1.2. The proposed development was submitted to the planning authority under Section 34C of the Planning and Development, Act, 2000 (as amended) (PDA) because it proposes changes to the operating restrictions at the airport. The PDA refers to these proposals as "Relevant Action (RA)". Any reference to RA relates specifically to the proposal submitted to the planning authority and this appeal currently before the Board. The decision of the planning authority has been informed by the Regulatory Decision (RD) a standalone process undertaken by Airport Noise Competent Authority (ANCA).

1.1.3. This proposal requires alterations to the original NR permission, granted by An Bord Pleanála, The Board, in 2007 (PL06F.217429 (F04A/1755)), specifically Conditions No. 3 (d) and No. 5 as detailed below.

Condition No 3 d) of the original NR permission states:

- *Runway 10L-28R shall not be used for take-off or landing between **2300 hours and 0700 hours,** except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.*

The RA proposes to replace Condition No 3 d) with the following:

- *Runway 10L-28R shall not be used for take-off or landing between **0000 hours and 0559 hours** except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical*

faults in air traffic control systems or declared emergencies at other airports or where Runway 10L-28R length is required for a specific aircraft type.'

Condition No 5 of the original NR permission states:

- *On completion of construction of the runway hereby permitted, the average number of night-time aircraft movements at the airport* ***shall not exceed 65/night*** *(between 2300 hours and 0700 hours) when measured over the 92-day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March, 2007.*

The RA proposes to replace Condition No 5 with the following:

- *A noise quota system is proposed for nighttime noise at the airport. The airport shall be subject to an annual noise quota of 7990 between the hours of 2330hrs and 0600hrs'*.

1.1.4. In addition to the proposed nighttime noise quota, the Relevant Action also proposes the following noise mitigation measures:

- A noise insulation grant scheme for eligible dwellings within specific night noise contours
- A detailed Noise Monitoring Framework to monitor the noise performance with results to be reported annually to the Aircraft Noise Competent Authority (ANCA), in compliance with the Aircraft Noise (Dublin Airport) Regulation Act 2019.

1.2. Legislation

1.2.1. The European Noise Directive (END) 2002/49/EC gives a common approach intended to avoid, prevent, or reduce the harmful effects of environmental noise. It requires member states to produce strategic noise maps for airports, consult the public and produce action plans for areas which experience high environmental noise levels. The Directive also provides guidance on the use of noise indicators and their application for assessing noise at airports.

1.2.2. The European Union (EU) Regulation 598/2014 relates to the establishment of rules and procedures regarding the introduction of noise-related operating restrictions at Union airports within a Balanced Approach. The Airport Noise (Dublin Airport)

Regulation Act 2019 transposes the requirements of the EU regulation 598/2014. This Act makes provision for the regulation of aircraft noise at Dublin Airport and any situation which may give rise to an aircraft noise problem. It amends the Planning and Development Act, 2000, including the insertion of sections 34B and 34C and sections 37R and 37S.

1.2.3. The Board can receive an appeal under Section 37R of the PDA, 2000 and is deemed the competent authority for an appeal against the Regulatory Decision and the Relevant Appeal. The Board in its consideration of the appeal currently before them, may accept or reject all or any part of either the:

- Relevant RD the subject of the appeal, or
- The RA which relates to such regulatory decision.

1.2.4. Both the Airport Noise Act, 2019 and Section 37R of the PDA, 2000 allow the Board to make alterations to the relevant Regulatory Decision, in so far as the appeal relates and adopt noise mitigation measures or operating restrictions (if any), or a combination thereof, which were not, during the process that gave rise to the relevant regulatory decision, the subject of previous consultation conducted by the competent authority pursuant to section 34B or 34C, as the case may be. There is a requirement that any alterations to the noise mitigation measures or operating restrictions, made by the Board, must be subject to a period of public consultation. This public consultation process is set out in the Airport Noise Act, 2019 and Section 37R of the PDA, 2000 and is for a minimum of 14 weeks.

1.3. Airport Noise Competent Authority (ANCA)

1.3.1. The Airport Noise (Dublin Airport) Regulation Act 2019, designated Fingal County Council (FCC) as the competent authority for the purpose of the Aircraft Noise Regulation. FCC are required to ensure the implementation of the Environmental Noise Directive (END) and the European Union (EU) Regulation 598/2014.

1.3.2. Airport Noise Competent Authority (ANCA) is a separate and independent Directorate within FCC who ensure the Balanced Approach is applied to any amendments to the operating restrictions at Dublin Airport. In the process of determining the RA, the planning authority consulted ANCA, to assess the impact of

additional noise from the amendments to the operating procedures at Dublin Airport. ANCA determined that the proposed Relevant Action would lead to a noise problem. Following this determination the Relevant Action was paused, and public consultation began on a draft Regulatory Decision.

1.3.3. The draft Regulatory Decision and related reports contain an assessment of the aircraft noise implications arising from Relevant Action. The draft Regulatory Decision proposed to direct the planning authority to impose two new operating restrictions and one new mitigation measure at Dublin Airport. ANCA in undertaking its assessment set a new noise abatement objective (NAO) for the airport, which seeks to limit and reduce the long-term adverse effects for aircraft noise on health and quality of life, particularly at night, as part of the sustainable development of Dublin Airport.

1.3.4. The draft Regulatory Decision was accompanied by the following documents[1]:

- ANCA Consultation Report June 2022
- Noise Abatement Objective Report for Dublin Airport
- Noise Abatement Objective for Dublin Airport
- Regulatory Decision
- RD Maps Map 3.1 & Detailed Map
- Regulatory Decision Report
- AA Determination
- AA Natura Impact Statement
- SEA Statement
- SEA Final Environmental Report
- Public Notice

1.3.5. The final Regulatory Decision (RD) was published on 20th of June 2022 by ANCA, following the public consultation, and further information furnished by the applicant (Daa), in accordance with Section 34C (12) of the Act of 2000. The Regulatory

[1] Application F20A/0668 | Fingal County Council (accessed 08.05.2024)

Decision (RD) requires the inclusion of three conditions in any planning permission that the planning authority may grant for the proposed development for reasons set out in the RD as summarised below:

- First Condition: Condition 5 of the North Runway Planning Permission shall be revoked and replaced with a Night-time Noise Quota Scheme as described in the First Condition.
- Second Condition: Condition 3(d) of the North Runway Planning Permission shall be revised to apply over the period 00:00 to 05:59 as set out in the Second Condition
- Third Condition: A Night-Time Residential Sound Insulation Grant Scheme shall be provided in line with Third Condition

1.4. Decision by Fingal County Council

1.4.1. Fingal County Council granted permission for the Relevant Action, following the assessment by ANCA in accordance with the Aircraft Noise (Dublin Airport) Regulations Act 2019 and Regulation (EU) No 598/2014. ANCA's Regulatory Decision proposed alterations to the applicant's Noise Quota Scheme (NQS) further detailed below.

1.4.2. The final decision on the 08th of August 2022, included five conditions. The first, plans and particulars, the second, compliance with the original NR permission (as amended) and third, fourth and fifth replicated those conditions detailed in the Regulatory Decision.

1.4.3. The Relevant Action has been appealed to the Board. The Aircraft Noise (Dublin Airport) Regulation Act 2019 designates the Board as the competent authority for the purpose of an appeal. The right of appeal to the Board against the Regulatory Decision also exists under this Aircraft Noise Act. In the interest of completeness, this appeal deals with both the decision of the planning authority (RA) and the assessment by ANCA (RD).

1.4.4. To assist the Board in their determination of this appeal, I have provided a background of the main issues addressed and considered throughout the process and in my assessment. This is not considered to be an exhaustive list and both my

planning assessment and Environmental Impact Assessment provide a greater, in-depth analysis of these issues.

1.5. Independent Expert Noise Consultant

1.5.1. The Board has engaged an Independent external noise consultant to assist with deciding on the appeal. Mr Dani Fiumicelli is a UK Acoustic expert with experience in assessing the impacts of airport noise. Mr Fiumicelli has provided the Board with two reports, which have accompanied this report. These are referred to in my report as the Vanguardia Report and Addendum Report. Following initial engagement with Mr Fiumicelli, the Board considered it necessary to request the applicant to submit additional information.

1.5.2. The first report, dated the 18th of April 2023, provides a review of the applicant's documents submitted with the initial Relevant Action, with a focus on specific issues raised by parties to the appeal and has regard to the additional information submitted to the Board. The report provides scientific evidence for using noise metrics, other than those used by the applicant and ANCA, to assess the impact of aircraft noise during the nigh time hours. In general, the noise consultant is broadly in agreement with the suite of conditions proposed by ANCA and the planning authority, subject to amendments. The amendments include an additional requirement for a cap on the limit of the total number of air traffic movements during the nighttime hours and an additional qualifying criterion for eligibility for the nighttime noise insulation scheme.

1.5.3. The second report, dated 14th of March 2024, is an Addendum Report. This Addendum Report, is supplementary to the first report, specifically addressing issues raised in the third-party submissions on the applicant's response to the Board's additional information as summarised below:

- Mode of Operation
- Baseline Years
- Noise Modelling
- Noise Insulation Scheme
- Noise Abatement Objective

- Cost Effectiveness Analysis

1.6. Additional Information

1.6.1. In consideration of the appeal, the Board requested additional information twice. The first request for additional information in April 2023 is summarised as follows:

- Impact of peak L_{Amax} noise levels from Air Traffic Movements (ATMs) on sleep
- Sensitivity testing of the population numbers covered by the noise contours predictions.
- Baseline years assumed in the assessment.

1.6.2. The applicant's submission included a response to the issues requested by the Board and significant alterations to the Environmental Impact Assessment considered by the planning authority and ANCA in their assessment of the original Relevant Action and the making of their decision. These significant alterations related to, in the most part, alterations to the flight patterns from the NR. The applicant's submission noted the initial application included predicted flight patterns although since the NR had subsequentially became operational, the actual flight paths could now be included in the noise modelling, and as such, amended the findings in the EIAR.

1.6.3. The applicant's submission to the Board was accompanied by the following documents:

- TPA Cover letter.
- CEA Noise Information Report
- Applicant Cover Letter
- Noise Modelling Figures & Noise Modelling Report
- EIAR Supplement including new air and ground noise modelling based on new flight patterns and alterations to the following EIAR chapters.

  Chpt 1: Introduction

  Chpt 7: Population and Human Health

  Chpt 11: Climate and Carbon

Chpt 13: Air Noise & Vibration

Chpt 14: Ground Noise & Vibration

Chpt 22: Future Development

- Appropriate Assessment Screening Addendum
- InterVistas Report: Dublin Airport Economic Impact of Operating Restrictions
- Mott MacDonald Report: Quantification of Impacts on Future Growth Addendum to the Analysis of June 2021.
- Independent Opinion- Dr Penzel
- RICONDO report: Cost Effectiveness Analysis Report

1.6.4. The applicant's response to the Board's first request for additional information was placed on public display for 5 weeks. Having regard to the significant amendments to the EIAR, this consultation process was open to the wider public.

1.6.5. The Board's second additional information request required the applicant to submit updated Eligibility Contour Maps reflecting any changes to the areas proposed for nighttime insulation having regard to the alterations in the flight patterns included in the supplementary EIAR. This information was placed on the Boards website[2] with associated letters circulated to observers inviting further comments.

1.7. Submissions

1.7.1. The following summary of the submissions received does not include those submitted to ANCA during their assessment.

- 259 submissions were received by FCC during the application stage;
- 78 observations were received by ABP in accordance with section 130 of the PDA, 2000;
- 323 observations were received following the publication/erection of new notices on the supplementary information;

[2] 314485 | An Bord Pleanála (pleanala.ie)

- 196 submissions were received in response to the section 131 notice issued on 12th March 2024.

1.8. Environmental Impact Assessment (EIA)

1.8.1. The original application in September 2021 to FCC was accompanied by an EIAR. This EIAR was subsequently amended twice. Following a request for FI from FCC an amended EIAR was submitted to FCC, this is referred to throughout my report as the Revised EIAR (September 2022). Following the Boards first request for additional information an amended to six chapters of the EIAR was submitted, this is referred to throughout my report as the Supplementary EIAR (September 2023).

1.9. Noise Quota Scheme (NQS)

1.9.1. Condition No 5 of the original NR permission (PL06F.217429, Reg Ref F04A/1755) restricts the number of aircraft movements on the NR so that they shall not exceed 65/night (between 2300 hours and 0700 hours) when measured over the 92-day (busy summer) modelling period. A Noise Quota Scheme (NQS) is proposed to replace the aircraft movement restriction of 65 fights per night during the busy 92-day average.

1.9.2. The NQS is a quota count system where each aircraft is allocated a quota count value based on how noisy the aircraft is. This quota count value is correlated with a noise level (EPN dB) ranking from the International Civil Aviation Organisation's (ICAOs) noise categorisation method. The quota count system originated to regulate night-time noise at Heathrow, Gatwick, and Stansted airports in the UK. It is used to incentivise the use of quieter aircraft to maximise the number of aircraft movements that can take place. The UK quota system operates in tandem with an aircraft movement limit.

1.9.3. The original Relevant Action submitted to the planning authority proposed a total noise quota budget of 7,990 which would only apply during the hours of 23:30 to 06:00 (i.e. equivalent to 6.5hrs). No restriction on the movement of aircraft would apply during the hours of 23:00 to 23:30 and 06:00 to 07:00. During ANCAs assessment they requested that the applicant resubmit a noise quota budget based on the full nighttime period (i.e. 23:00 to 07:00, equivalent to 8 hrs). The applicant

submitted a new noise quota budget of 16,260 to control the movement of aircraft during the 8hr period. ANCA and the planning authority included the applicant's Noise Quota budget of 16,260 in both final decisions for the Regulatory Decision and the Relevant Action.

1.9.4. The first report from the Board's noise consultant provides a background to the Noise Quota Scheme. The applicant's sole reliance on the quota count system has been raised as an issue of concern. The report notes the use of International Civil Aviation Organisation's (ICAOs) noise categorisation method, only to regulate noise, is not considered effective. This is because the ICAO ranking does not necessarily reflect how noisy aircraft will be at a specific airport because planes are not flown in a standardised manner. In addition, this report notes that the weighting system used allows a substantial number of aircraft within each QC band before the overall quota limit is breached.

1.9.5. In general, the Board's noise consultant is concerned that in the absence of an aircraft traffic movement limit, the proposed Noise Quota System would allow a substantial increase in the number of only marginally to moderately less noisy aircraft movements. An Additional Awakening Assessment has been submitted to the Board by the applicant in response to the Board's first additional information request. The Additional Awakening Assessment method indicates that sleep disturbance from aircraft movements at night are more sensitive to change due to the number of intermittent noise events (i.e. movement of individual aircraft assessed using the L_{Amax} noise metric) than is suggested in the assessment of those Highly Sleep Disturbed (i.e. movement of aircraft as an average across the night using the L_{night} noise metric). The report from the Board's noise consultant assessment concludes that the Relevant Action is likely to lead to an increase in additional awakenings based on the L_{Amax} of each aircraft movement and the increase in the number of aircraft movements proposed. The Board's noise consultant recommends additional operating restrictions in the form of a cap on aircraft movements, to supplement the NQS.

1.10. Air Traffic Movements

1.10.1. The Relevant Action includes an increase in the number of annual air traffic movements. The quantification of air traffic movements is addressed in the applicant's documentation in the following documents:

- Mott MacDonald Report[3]
- Environmental Impact Assessment Report

1.10.2. Table 13.1 of the Supplementary EIAR states that the permitted scenario for the assessment year 2025 includes 227,000 annual aircraft movements in the proposed scenario and the Relevant Action, proposes 240,000 annual aircraft movements. Therefore, the Relevant Action will increase the annual aircraft movements by 13,000. It is not proposed to increase after this initial increase.

1.10.3. The Mott MacDonald Report includes reference to 114 aircraft movements for the typical "92 busy day" nighttime (between 23:00 and 07:00 during the summer). Condition No 5 currently restricts the aircraft movement to 65 per night during the same busy period.

1.10.4. The applicant's breakdown of the NQS includes an estimation of the ratio of quota count to aircraft movements (QC/ATM). The initial proposed annual night quota for the 6.5hr night quota period (i.e. 7,990) derived a mid-value QC/ATM between 2018 and 2025 of 0.49 per aircraft movement. The updated annual night quota for the 8hr night quota period (i.e. 16,260) for the same time is 0.51. The Board's noise expert has equated the QC budget of 16,260 over the annual 365-day period as c. 87 aircraft movements per night. Under this quota scenario, I have calculated, there is a potential for 31,755-night flights.

1.11. Mode of Operation

1.11.1. The use of the runways is commonly referred to as a mode of operation. Condition No. 3 a)- c) of the NR permission (PL06F.217429, Reg Ref F04A/1755) details the required direction of the preferential use of the runways. This condition stems from the applicant's information provided in the EIS which accompanied the original NR

[3] Dublin Airport Operating Restrictions -Quantification of Impacts on Future Growth

proposal. This is known as Option 7B. This is a single mode of operation i.e. westerly single mode is for departures and arrivals to the west and vice versa for easterly mode. Dublin Airport operates approximately 75% westerly single mode and 25% easterly single mode due to the prevailing west to southwest winds. The reflects the preference for aircraft to take off and land into the wind. The applicant does not propose any amendments to the preferential use of the runway.

1.11.2. The mode of operation can also be referred to as segregated and mixed mode. This is different to any reference for the preferential use of each runway for the purpose of Condition No. 3. Mixed mode relates to the use of both runways for departures and arrivals i.e. departures on both the north runway and the south runway. Segregated mode relates to the use of only one runway for departures and arrival. Both segregated and mixed mode are still reliant on Condition No. 3 (i.e. the preferential use of each runway being determined by the wind direction).

1.11.3. The mode of operation has been referenced in a significant number of submissions, mainly in relation to the new flight paths for departures from the NR. The supplementary information includes information on these new flight paths which will divert north, off the north runway, earlier than previously indicated in the EIS with the original NR application. This is referred to as a 15-degree divergence throughout my report. The applicant has stated that this new turn north, is an airspace safety requirement and is reflected in the noise contour areas. My planning assessment and EIAR details the implication of this divergence and concludes that this does not reflect an alteration to the mode of operation of the runway.

1.12. Balanced Approach

1.12.1. The "Balanced Approach" stems from international guidance[4] for aircraft noise and consists of identifying the noise problem at the airport and the exploration of various measures to reduce noise. The end goal is to achieve the maximum environmental benefit, most cost-effective method, using objective and measurable criteria. The four elements of the Balanced Approach include:

[4] Guidance on the Balanced Approach to Aircraft Noise management: International Civil Aviation Organisation (ICAO) Doc 9829

1. Reduction of Noise at Source (Technology Standards)
2. Land-use Planning and Management
3. Noise Abatement Operational Procedures
4. Operating Restrictions.

1.12.2. Regulation (EU) No 598/2014 established the rules and procedures about the introduction of noise related operation at Union Airports within a "Balanced Approach". This regulation states that the introduction of operating procedures by Member States at Union airports on a case-by-case basis, whilst limiting capacity, can contribute to improving noise climate around airports. The Aircraft Noise (Dublin Airport) Regulations Act 2019 implements this regulation.

1.12.3. The Relevant Action was accompanied by a suite of documents relating to the operating proposal and the implementation of the Relevant Action. The RICONDO report[5] accompanied the original application and was updated as part of the further information to FCC and as part of the submission to the Boards additional information request. This report includes costings for the delivery of the Residential Sound Insulation Grant Scheme (RSIGS) and other operational requirements, such as the employment of an air traffic controller, required for the proposed Relevant Action. This is known as the Cost-Effective Analysis (CEA) of delivering a Balanced Approach and relates to the alteration to the operating restrictions at Dublin Airport. A range of options for the use of the runway and various insulation schemes have been included in the CEA.

1.12.4. ANCA undertook their own independent CEA of the applicant's proposal during their assessment and delivery of the Regulatory Decision.

1.13. Residential Sound Insulation Grant Scheme (RSIGS)

1.13.1. Condition No 7, 8 and 9 of the NR permission (PL06F.217429, Reg Ref F04A/1755) introduced the requirement for noise insulation at residential properties and schools in the vicinity of the airport based on the noise contour levels within 12 months of the opening of the runway as stated below. The Relevant Action does not propose to amend these conditions and includes an additional insulation scheme to mitigate

[5] North Runway, Regulation 598/2014 (Aircraft Noise Regulation) Cost Effective Analysis Updates

impacts from the noise generated additional nighttime flights. This is called the Residential Sound Insulation Grant Scheme (RSIGS)

1.13.2. The conditions of the Regulatory Decision and the Relevant Action require the delivery of noise insulation to bedrooms of dwellings located within the noise contours of 55 dB $L_{night.}$ The Regulatory Decision includes maps illustrating the areas within the Eligibility Contour Areas. These maps are required to be updated every two years beginning in 2027. Having regard to the amendments in the flight paths in the supplementary information to the Board, the Board requested the applicant to submit amended Eligibility Contour Maps. These were circulated to observers for comments.

1.13.3. The mitigation measures in the EIAR rely on a second criteria of insulation. This second criteria includes those exposed to a "very significant" rating arising from forecast noise levels of at least 50 dB L_{night} in the first full year when the Relevant Action comes into operation, with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year. These areas are included in the applicant's Eligibility contour maps although have not been explicitly referred to in the final decision of the Regulatory Decision or Relevant Action. This is discussed throughout the assessment.

1.13.4. The Board's noise expert has recommended alterations to the applicant's noise insulation scheme. This includes the explicit inclusion of areas within the noise levels of at least 50 dB L_{night} in the first full year when the Relevant Action comes into operation, with a change of at least +9 dB and a new criterion for persons living within the flight paths of aircraft with noise emissions greater than 80 dB $L_{Amax.}$

1.14. **Appropriate Assessment**

1.14.1. A Screening for Appropriate Assessment accompanied the original application. The screening report was updated with the applicant's response to the Boards additional information request. The Relevant Action has been screened for Appropriate Assessment by the planning authority. FCC did not consider that a stage 2 assessment was required. The screening for Appropriate Assessment below, concludes that a stage 2 assessment was not required. In coming to this conclusion, I had regard to the Board's Ecologist memo which has accompanied this report.

1.15. Timelines

The following timelines provide the Board with an overview of the involvement of the Planning Authority, ANCA and public consultation for both the Regulatory Decision and the Relevant Action:

Relevant Action

- Relevant Action lodged with the PA on the 18th of December 2020
- Further Information Request on the 19th of February 2021.
- Significant Additional Information received 13th of September 2021
- Chief Executive Order (Decision) on the 08th of August 2022.

Regulatory Decision

- ANCA[6] identified a noise problem on the 10th of February 2021 and notified the planning authority.
- Further Information Request by ANCA to the applicant on the 24th of February 2021.
- FI information submitted to ANCA on the 04th of June 2021
- Draft Regulatory Decision published on the 11th of November 2021
- Public Consultation on the Draft Regulatory Decision 11th of February 2021 until the 28th of February 2022.
- Regulatory Decision published by ANCA on the 20th of June 2022.

1.16. Conclusion and Glossary.

1.16.1. As stated above, this overview should assist the Boards understanding of the overarching issues which require a level of understanding from the outset. The glossary of terms is useful to understand acronyms repeated throughout the document. The report of the Board's noise expert includes an in-depth glossary on the technical terms used during the noise assessment.

[6] Ascertaining a Noise Problem at Dublin Airport: Recommendation report arising from planning application F20A/0668 for a Relevant Action; ANCA and FCC

Abbreviation	Meaning	Description
AA	Appropriate Assessment	Assessment under the Habitats Directive.
ANCA	Airport Noise Competent Authority	The competent authority for the purpose of aviation noise.
A-weighting	Average Sound Weighting	A frequency weighting that is applied to the electrical signal within a noise measuring instrument as a way of simulating the way the human ear responds to a range of acoustic frequencies.
BA	Balanced Approach	Balanced Approach' means the process developed by the International Civil Aviation Organization under which the range of available measures, namely the reduction of aircraft noise at source, land-use planning and management, noise abatement operational procedures and operating restrictions, is considered in a consistent way with a view to addressing the noise problem in the most cost-effective way on an airport-by-airport basis
Daa	Dublin Airport Authority	The applicant, airport authority for Dublin Airport
dB	Decibels	Units describing sound level or changes of sound level
EIAR	Environmental Impact Assessment Report	Assessment of the likely significant environmental effects of the RA.

END	Environmental Noise Directive	Directive 2002/49/EC relates to the assessment and management of environmental noise
FCC	Fingal County Council	The Planning Authority for the Dublin Airport site.
FI	Further Information	Additional Information the PA can request within statutory timescales.
IAA	Irish Aviation Authority	The national aviation regulator, responsible for safety, security and consumer protection functions.
HA	Highly Annoyed	Metric used to describe the number of people calculated to be Highly Annoyed by Aircraft Noise.
HSD	Highly Sleep Disturbed	Metric used to describe the number of people calculated to be Highly Sleep Disturbed by Aircraft Noise
ICAO	Irish Civil Aviation Organisation	A specialised agency of the United Nations to coordinate the principles and techniques of international air navigation and transport.
L_A	A-weighted sound level (dBA)	It is the adjustment applied to sound measurement to reflect how a noise is perceived by the human ear.
L_{Aeq}	A- weighted equivalent continuous sound level	Equivalent Continuous Sound Pressure Level using 'A' weighting.
$L_{Aeq, 16\text{-}hour}$	Equivalent sound level of aircraft noise in dBA for the	The equivalent continuous sound level in dB(A) that, over the period 07:00-23:00 hours, contains the same sound energy as

	16-hour annual day.	the actual fluctuating sound that occurred in that period
L_{den}	Day-evening-night level	A noise level based on an equivalent noise level (LAeq) over a whole day, but with a penalty of 10 dB(A) for night-time noise (23:00-07:00) and 5 dB(A) for evening noise (19:00-23:00), also known as the day evening night noise indicator
L_{night}	Night-time noise level	The night level is a noise indicator for sleep disturbance based upon annual average A-weighted long-term sound over the night period (23:00 – 07:00)
L_{Amax}	A-weighted, maximum, sound level	The maximum A-weighted sound level (in dBA) measured during an aircraft fly-by.
NAO	Noise Abatement Objective	A long-term management plan to reduce the effects of aircraft operations on communities in the vicinity of Dublin Airport. It seeks to reduce the number of people exposed to noise levels above set threshold levels within the timelines outlined.
NR	North Runway	The new runway opened along the north of Dublin Airport (10L/28R)
NQS	Noise Quota Scheme	Each aircraft type is classified and awarded a quota count (QC) value depending on the amount of noise it generated under controlled certification conditions
QC	Quota Count	Each aircraft type is classified and awarded a quota count (QC) value

		depending on the amount of noise it generated under controlled certification conditions.
RA	Relevant Action	The planning permission and the appeal for the purpose of a Section 34 application.
RD	Regulatory Decision	Decision by the ANCA under 34C(14)(a) of the Planning and Development Act 2000 (as amended) as to whether permission may be granted for a proposal which has possible noise problem
SR	South Runway	Original runway along the south of the site (10R/28L)
WHO	World Health Organization	A specialised agency of the United Nations responsible for international public health.

2.0 Site Location and Description

2.1.1. Dublin Airport is Ireland's premier international airport located on the east coast of Ireland. The airport is in Collinstown, c. 7 km north of Dublin City centre. The area between the city and the Airport is mostly developed. The area north of the Airport is partially rural and partially developed all the way to the conurbation of Swords which lies approximately 3km to the north. The airport is operated by the Dublin Airport Authority (Daa) and is within the administrative area of Fingal County Council.

2.1.2. In an easterly direction from the Airport there is mixture of farmland, commercial and rural housing, with scattered development all the way to the coast and the settlement of Portmarnock which lies approximately 5km from the Airport itself. West of the Airport is characterised by undeveloped land comprising mostly farmland and other forms of open space.

2.1.3. The Airport is accessed by the M1 motorway, which provides access to Dublin City and serves larger towns along the east coast including Drogheda, Dundalk and Northern Ireland. The M50 Dublin ring road connects with the M1, and from this there are road connections to the rest of Ireland.

2.1.4. Dublin Airport is currently served by two main runways, Runway 10R/28L or the South Runway (SR) which opened on 21st June 1989 and Runway 10L/28R or the North Runway (NR) which opened on 24th August 2022. There is also a further cross runway - Runway 16/34 which is used less frequently. The airport has two terminals which operate 24 hours a day, and for 364 days a year.

2.1.5. The development description notes the ongoing construction of the North Runway however a substantial period has lapsed between the lodging of the application and the Board's determination of the current application and this runway is operational since August 2022.

3.0 Proposed Development

3.1. Introduction

3.1.1. The proposed development involves the taking of a 'Relevant Action' only within the meaning of Section 34C of the Planning and Development Act 2000, as amended, at

Dublin Airport, Co. Dublin. The proposed Relevant Action relates to the night-time use of the runway system at Dublin Airport.

3.1.2. Section 34 C of the Act was introduced on foot of The Aircraft Noise (Dublin Airport) Regulations Act 2019 (Aircraft Noise Act) which implements EU Regulation 598/2014 on the establishment of rules and procedures regarding the introduction of noise related operation restrictions at EU airports.

3.1.3. The **Relevant Action** (RA) pursuant to Section 34C (1) (a) is to amend operating restrictions imposed by a previous permissions issued by the Board in 2007 under PL06F.217429 (F04A/1755). The conditions sought to be altered under the current application area:

- Condition no. 3(d)
- Condition No 5

3.1.4. The proposal also includes new noise mitigation measures.

3.2. Condition no. 3 (d)

3.2.1. Condition 3 of the permitted north runway is stated below:

On completion of construction of the runway hereby permitted, the runways at the airport shall be operated in accordance with the mode of operation – Option 7b – as detailed in the Environmental Impact Statement Addendum, Section 16 as received by the planning authority on the 9th day of August 2005 and shall provide that –

a) the parallel runways (10R-28L and 10L-28R) shall be used in preference to the cross runway, 16-34,

b) when winds are westerly, Runway 28L shall be preferred for arriving aircraft. Either Runway 28L or 28R shall be used for departing aircraft as determined by air traffic control,

c) when winds are easterly, either Runway 10L or 10R as determined by air traffic control shall be preferred for arriving aircraft. Runway 10R shall be preferred for departing aircraft, and

d) Runway 10L-28R shall not be used for take-off or landing between 2300 hours and 0700 hours,

except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.

Reason: In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Statement in the interest of the protection of the amenities of the surrounding area.

3.2.2. Permission is being sought to amend part 3 (d) of the condition only so that it reads (changes highlighted):

"*Runway 10L-28R shall not be used for take-off or landing between* ***0000 hours and 0559*** *hours except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports or* ***where Runway 10L-28R length is required for a specific aircraft type*****".**

3.2.3. The net effect of the proposed change, if permitted, would change the normal operating hours of the North Runway from the 07:00 to 23:00 (16 hours/day) to 06:00 to 00:00 (18 hours/day).

3.2.4. The Board should note that the wider parts of Condition 3 introduced the preferential runway use during daytime periods (0700 – 2300). This form of operating preference is known as 'Option 7b'. Option 7b is the name of the runway operating preference scenario aligned to Condition 3 as reported within the EIS and additional information as submitted to the Board on the original north runway application (PL06F.217429 (F04A/1755)).

3.2.5. No such operating restrictions existed at Dublin Airport prior to the North Runway permission (PL06F.217429 (F04A/1755). The airport is however restricted by virtue of a 'passenger cap' which restricts the airport to 32 million passengers per annum (mppa), (in addition to the night-time flight restrictions). This cap applies to the operations at the entire airport i.e., on all runways.

3.3. Condition No 5

3.3.1. Condition 5 of the permitted north runway is stated below:

> "*On completion of construction of the runway hereby permitted, the average number of night-time aircraft movements at the airport shall not exceed 65/night (between 2300 hours and 0700 hours) when measured over the 92-day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March 2007.*
>
> *Reason: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night-time use of the existing parallel runway*'.

3.3.2. Permission is being sought to amend the above condition 5 so that it reads:

> "*A noise quota system is proposed for night-time noise at the airport. The airport shall be subject to an annual noise quota of 7990 between the hours of 2330hrs and 0600hrs*".

3.3.3. The RA proposes to replace the flight restrictions with a noise quota scheme (NQS) to control noise during the nighttime hours. The NQS operates on a noise classification system of each aircraft, based on how noisy they are. The airport will operate the forecasting and scheduling at night within the annual noise budget allocation, rather than the number of flights per night.

3.4. Proposed mitigation measures

3.4.1. In addition to the proposed night-time noise quota, the Relevant Action also proposes the following **noise mitigation measures**:

- A noise insulation grant scheme for eligible dwellings within specific night noise contours 55 dB $L_{night.}$
- A detailed Noise Monitoring Framework to monitor the noise performance with results to be reported annually to the Aircraft Noise Competent Authority (ANCA), in compliance with the Aircraft Noise (Dublin Airport) Regulation Act 2019.

3.4.2. There are no physical works proposed as part of this application.

3.5. **Summary**

3.5.1. In summary the proposed Relevant Action (RA) as put forward by the applicant can be summarised as follows:

- To remove the numerical cap on the number of flights at the airport permitted between the hours of 23:00 and 07:00 and replace it with an annual night-time noise quota between 23:30 and 06:00 of 7,990.
- To allow flights to take off from and/or land from the North Runway for an additional 2 hours – 23:00 to 00:00 and 06:00 to 07:00.
- To use the north runway at night outside of the 'shoulder hours' in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems are declared emergencies at other airports or where Runway 10L-28R length (North Runway) is required for a specific type of aircraft.
- Increase in the number of aircraft movements (arrivals/ departures) at Dublin airport between 23:00 and 07:00 over that permitted by Condition No.5 of the North Runway permission (ABP ref. PL06F.217419). Whereby the 65 flights per night would be replaced on a noise quota of 7,990 between 23:00 to 06:00.
- Introduction of a nighttime residential insulation scheme as a mitigation measure.

3.5.2. While not expressly stated in the documentation submitted with the application or the supplementary information, the combination of Condition 3 d) and Condition No 5 currently restricts any nighttime use on the NR, because condition 3 d) restricts take-off or landing between 2300 hours and 0700 hours, only on the NR and Condition No 5 restricts night flights for both the NR and SR. The primary effect of these proposals would be to allow Dublin airport to operate more than the 65 aircraft movements per 8-hour night (i.e., 23:00-06:59) as is currently provided for in the north runway permission and aircraft movements within 23:30-05:59 would be limited by an annual noise quota scheme of 7,990. The noise quota was recalculated from a 6.5hr period to an 8hr period during the consideration of the application and the final decision of the Regulatory Decision. The final Relevant Action included a noise

quota allowance of 16,260 between the hours of 23:30 and 06:00. This quota is allowance for aircraft on both runways.

3.5.3. The proposed Relevant Action does not seek any amendment of conditions of the North Runway Planning Permission governing the general operation of the runway system (i.e., conditions which are not specific to night-time use, namely conditions no. 3 (a), 3(b), 3(c) and 4 of the North Runway Planning Permission) or any amendment of permitted annual passenger capacity of the Terminals at Dublin Airport.

3.5.4. The planning application was accompanied by, *inter alia*:

- Plans and Particulars
- Environmental Impact Assessment Report.
- Appropriate Assessment Screening
- ANCA documentation for the Regulatory Decision.
- InterVISTAS report: Dublin Airport Economic Impact of Operating Restrictions
- Mott MacDonald Report: Dublin Airport Operating Restrictions, Quantification of Impacts on Future Growth.
- RICONDO Report: Cost Effectiveness Analysis Report
- Dublin Airport: Developing a Proposed Night Quota System.

4.0 Aircraft Noise Competent Authority (ANCA) Decision

4.1. Introduction

4.1.1. The Aircraft Noise Competent Authority (ANCA) are designated under Section 34C of the Planning and Development Act, 2000, as the competent authority in relation to any noise problem that would arise from the taking of Relevant Action.

4.1.2. Following the submission of the application to the planning authority in December 2020, the application was referred to ANCA as required under Section 34C of the PDA, 2000 as amended. ANCA in assessing the application identified a Noise

Problem (Section 9(2) of the Aircraft Noise (Dublin Airport) Regulation Act 2019)[7] because there was:

- An increase in aircraft activity at night,
- Some people will experience an elevated level of night-time noise exposure for the first time.
- The EIAR which accompanied the application indicates the Relevant Action will give rise to significant adverse night-time noise effects and mitigation in the form of night-time noise insulation is proposed.

4.1.3. This determination triggered ANCA to proceed and apply the "Balanced Approach" (BA) which is a provision under Section 34C of the Planning and Development Act 2000, as amended, and requires an assessment of the applicants new operating proposals. This determination by ANCA paused the determination of the Relevant Action ((RA) planning application).

4.2. Public Consultation

4.2.1. In November 2021 ANCA commenced a public consultation focused on the:

- Noise Abatement Objective (NAO),
- Draft Regulatory Decision (DRD) and related report,
- Draft Environmental Report for the purpose of Strategic Environmental Assessment (SEA), and
- Natura Impact Assessment (NIS) for the purpose of Appropriate Assessment (AA).

4.2.2. The public consultation was 14 weeks (November 2021 until February 2022) undertaken in accordance with the Aircraft Noise (Dublin Airport) Regulation Act 2019 (the Act of 2019) and Section 34C of the Planning and Development Act 2000 (as amended), (the Act of 2000).

4.2.3. Both the NAO and the DRD were the subject of Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA). Following the public consultation process,

[7] Ascertaining a Noise Problem at Dublin Airport: Recommendation report arising from planning application F20A/0668, (ANCA, 10th of February 2021)

ANCA made a Regulatory Decision (RD) to be incorporated into any decision by the PA (the RA/appeal currently before the Board).

4.3. Third Party Submissions

4.3.1. A significant number of third-party submissions (1,408) were made to ANCA during the public consultation process on the Regulatory Decision. These were mainly from residents and residents' associations within the vicinity of Dublin Airport. The issues raised relate to, in the most part, the increased movement of aircraft at night and the impact on residential amenity.

4.4. Further Information Request

During the consideration of the Regulatory Decision, ANCA requested the applicant to submit additional information, as summarised below:

1. Revisions to the noise quota system,
2. Additional technical information on the scenarios, results, and details on how the noise modelling was undertaken and a summary of the forecasts.
3. Revised EU Regulation 598/2014 Assessment
4. Additional electronic copes of information.

On foot of the FI ANCA issued a Regulatory Decision (RD). The RD includes alternative operating restrictions and alternative noise mitigation measures to that sought by Daa. These include alterations to the noise quota and mitigation measures which are given affect by the amendment of Condition 3(d), replacement of Condition 5 of the relevant permission and the introduction of a noise insulation grant scheme.

4.5. Noise Abatement Objective

4.5.1. ANCA developed a Noise Abatement Objective (NAO) under the Airport Act, 2019 and Section 34C of the PDA, which includes targets for the reduction of noise from Dublin Airport. Having regard to the NAO, ANCA undertook a Draft Regulatory Decision (DRD) which proposed noise mitigation measures and operating restrictions necessary to achieve the NAO. The Noise Abatement Objective (NAO) seeks to "*Limit and reduce the long-term adverse effects of aircraft noise on health*

and quality of life, particularly at night, as part of the sustainable development of Dublin Airport.". The NAO sets four outcomes which are required to be complies with respect to addressing the harmful effects of aircraft noise. The NAO night-time priority value of 55 dB L_{night} is used to assess the number of people who may experience adverse changes in nighttime noise exposure.

4.6. Regulatory Decision

4.6.1. The Regulatory Decision sets out the noise mitigation measures and operating restrictions that ANCA proposes to direct the planning authority to include in the decision to grant permission pursuant to F20A/0668. The RD included three conditions which were integrated into the RA, final grant of permission by the PA.

1. **First Condition:** Condition 5 of the North Runway Planning Permission shall be revoked and replaced with a Night-time Noise Quota Scheme as described in the First Condition.

Condition No 5 to be revoked:

On completion of construction of the runway hereby permitted, the average number of night-time aircraft movements at the airport shall not exceed 65/night (between 2300 hours and 0700 hours) when measured over the 92-day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March, 2007.

Reason: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night-time use of the existing parallel runway'.

Condition No 5 is replaced so that it reads:

A noise quota system is proposed for night-time noise at the airport. The airport shall be subject to an annual noise quota of 7990 between the hours of 2330hrs and 0600hrs.

2. **Second Condition:** Condition 3(d) of the North Runway Planning Permission shall be revised to apply over the period 00:00 to 05:59 as set out in the Second Condition.

Condition No 3 d) to be revoked:

On completion of construction of the runway hereby permitted, the runways at the airport shall be operated in accordance with the mode of operation – Option 7b – as detailed in the Environmental Impact Statement Addendum, Section 16 as received by the planning authority on the 9th day of August 2005 and shall provide that –

*a) Runway 10L-28R shall not be used for take-off or landing between **2300 hours and 0700 hours,** except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.*

Reason: In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Statement in the interest of the protection of the amenities of the surrounding area.

Condition No 3 d) is replaced so it reads:

Runway 10L-28R shall not be used for take-off or landing between 0000 hours and 0559 hours except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports or where Runway 10L-28R length is required for a specific aircraft type.

3. **Third Condition:** A Night-Time Residential Sound Insulation Grant Scheme shall be provided in line with Third Condition

4.6.2. Figure 3.1 of the Regulatory Decision includes Eligibility Maps illustrating all areas included within the Residential Sound Insulation Grant Scheme (RSIGS).

4.6.3. A right to appeal to An Bord Pleanála against the Regulatory Decision exists under section 37 of the Act of 2000 as read with section 37R and Part 2, Section 10 of the Aircraft Noise (Dublin Airport) Regulation Act 2019 (the Act of 2019).

5.0 Planning Authority (PA) Decision

5.1. Decision

The planning authority granted permission subject to 5 no conditions as summarised below:

1. Compliance with the submitted plans and particulars and the ANCA Regulatory Decision on the 20th of June 2022.
2. Compliance with the terms and conditions of ABP PL06.217429 (F04A/1755) as extended and the amending permission ABP 305298-19 (F19A/0023) except for those changes permitted under this proposal.
3. The existing operating restrictions in Condition No 5 on the North Runway relating to night-time movements shall be revoked and replaced with the annual noise quota scheme operating restriction as follows:

   The airport shall be subject to a Noise Quota Scheme (NQS) with an annual limit of 16,260 between 23:00 and 06:59 (inclusive, local time) with noise-related limits on the aircraft permitted to operate at night. The NQS shall be applied as detailed below. (These are detailed in the final CE order).

   Part 1: Definitions

   Part 2: Noise Quota Scheme terms and conditions

   Part 3: Noise Quota Scheme Reporting Requirements

   Part 4: Noise Performance Reporting

   Reason: To limit the impact of aircraft noise at Dublin Airport on sleep disturbance in the interest of residential amenity and to ensure the effective implementation of the Noise Abatement Objective for the Dublin Airport by means of a noise-related limit on aircraft operations.
4. The existing operation restrictions imposed by Condition 3 (d) and the exceptions at the at the end of condition 3 of the North Parallel Runway shall be amended to read:

   Runway 10L/28R shall not be used for take-off or landing between 00:00 and 05:59 (inclusive, local time) except in case of safety,

maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports or where Runway 10L/28L length is required for a specific aircraft type.

Reason: To permit the operation of the runways in a manner which reduces the impacts of aircraft night-time noise, whilst providing certainty to communities as to how they will be affected by nighttime operations from the North Runway, while also providing continuity with the day-time operating pattern set down by conditions 3 (a) – (c) of the North Runway Planning Permission.

5. A voluntary residential sound insulation grant scheme (RSIGS) for residential dwellings shall be provided. Initial eligibility shall apply to those dwelling located in the Initial Eligibility Contour Area (Figure 3.1- Regulatory Decision, 3rd condition RSIGS) as those dwelling situated in the 55 dB L_{night} contour being eligible.

    Part 1: Definitions

    Part 2: Purpose of the Scheme

    Part 3: Eligibility

    Part 4: Procedure

Reason: To mitigate the impact of aircraft night-time noise as a result of the use of the Airports runways.

5.2. Planning Authority Reports

5.2.1. Planning Reports

The Relevant Action was submitted to the planning authority (PA) on the 18th of December 2020, paused for ANCA to undertake the Regulatory Decision, with a final decision made on the 08th of August 2022. The planning authority granted permission for the Relevant Action, on foot of the decision of the Regulatory Decision by ANCA. The planning authority decision was also informed by the submission of further information, requested on the 19th of February 2021, as summarised below:

1. Revisions to the EIAR
2. Revision to the Appropriate Assessment (AA) Screening
3. Response on other specific queries, i.e. topographical errors.

The details of the further information are lengthy and the information in relation to the Environmental Impact Assessment Report (EIAR) and Appropriate Assessment (AA) screening report have been summarised in each of the sections of my report.

In relation to the other specific queries, the applicant submitted the following:

- Correction of topographical errors, i.e. to amend an incorrect planning application number.
- Amend a few incorrect cross-references to other sections of chapters.

Following the submission of FI, the planning report was amended to include a further consideration of the EIAR and the AA (in association with an external consultancy).

The primary issues addressed in the planner's assessment included the following:

- National and regional planning policy,

The NPF, NDP and RSES all support mitigation of the effects of aviation including noise ether through the balanced approach or the promotion of clean and healthy environments and proactive measures to avoid, mitigate and minimise noise.

- Fingal Development Plan 2017-2023,

The proposal is in accordance with the zoning objective on the site, "DA" Dublin Airport, and other polices of the development plan which support the growth of the airport and the ICAO approach to the balanced approach.

Having regard to the EIAR findings, (undertaken by independent planning consultants) the planners report notes some concerns the proposed RA would not align to several objectives in the Fingal Development Plan 2017-2023. These impact the impact on residential amenity (i.e. potential significant impact of HA). It is stated that ANCA has determined that the balanced approach in the form of the RD

addresses and supersedes concerns regarding consistency with the Policy Provisions requiring the balanced approach[8].

- Dublin Airport Local Area Plan 2020-2026,

The strategic aims and relevant objectives of the LAP have been noted. The LAP provides support for the Relevant Action. There are concerns with regard the absence of information in the EIAR and consistency with Objective CA01.

- Noise Impact Assessment,

The objectives of the Noise Action Plan (NAP) for Dublin Airport 2019-2023 are noted in the Environmental Health Officer report. The EHO notes no reference to the WHO Guidelines in the Noise Action Plan. Consideration of the noise impacts is addressed in the EIAR.

- Rationale for making the application,

Reference is provided to the planning history for the NR (F04A/1755 (PL06F.217429). Supplementary provisions in Section 34C of the PDA, 2000, as amended facilitate the making of an application for Relevant Action. The applicant's proposal relating to the amendments of the operating procedures are considered applicable under Section 34C.

- Rationale for the proposed Relevant Action,

The EIAR includes a rational for the need for the project. The applicants rational for the Relevant Action, needed to offset the effect of the Covid 19 restrictions is noted and the applicant is considered to have provided a clear reasoning in the EIAR.

- Integration with and impact on the amenity of the area,

Variation No 1 of the development plan, includes updated airport noise zones. These noise zones reflect knowledge of the impact of aviation noise on affected communities. As part of FI the applicant was requested to confirm compliance with the noise zones.

- Transportation considerations,

[8] Section 7.2.2 Consistency with Spatial Policy; Record of Chief Executives Order (Planning Reference F20A/0668).

The proposal will generate additional trips, to and from the airport at night. The Transport Planning Section have accepted the information in the TTA.

- Water, wastewater, and surface water considerations,

Chapter 12 of the EIAR deals with water and wastewater. Irish Water have no objection to the proposal.

The planner's assessment included reference to the third-party submissions, the Environmental Health Officer Report, and the Noise Abatement Objective (NAO) by ANCA and it was concluded that subject to inclusion of mitigation measures and additional restrictions recommended by the ANCA, the proposed development would be acceptable.

5.2.2. Airport Noise Competent Authority (ANCA) Reports

The report of the planning authority provides reference to ANCA's Regulatory Decision. The planning authority was required under Section 34C of the PDA 2000, as amended, to incorporate the Regulatory Decision in their decision on the application.

5.2.3. Other Technical Reports

Environmental Health Officer (EHO): The comments are summarised below:

- Concern is raised in relation to the increase in the number of persons highly annoyed between the permitted scenario and the proposed scenario.
- The Daa have modelled the night- time insulation programme on the 55 dB L_{night} which leaves a significant amount of people exposed. The WHO guidelines recommend 40 dB as a recommendation for exposed night-time levels.
- Small increase in noise arises at already noisy locations will have a significant impact.
- The removal of the operating restrictions will have a negative impact on a large percentage of the population.

Transport Section: No objection subject to conditions.

Parks and Green Infrastructure Division: No objection to the proposal.

Conservation Officer: No objection to the proposal.

Water Services Engineering Section: No objection subject to conditions.

Environment Section (Waste Enforcement & Regulation): No objection to the proposal.

5.3. Prescribed Bodies

5.3.1. Irish Water (IW): No objection subject to conditions.

5.3.2. Health and Safety Authority (HSA): No objection to the proposal.

5.3.3. Health Service Executive (HSE) (Environmental Health Section (EHS)):

The comments on initial application are summarised below:

- There should be no significant changes in the impact of air quality between the permitted scenario and the proposed Relevant Action and the EIAR shows the residual effects as not significant.
- The EHS is satisfied the proposal will not have a significant effect on the water environment.
- The EIAR notes the number of people significantly affected (highly annoyed) by aircraft noise will reduce from the 2018 baseline scenario to the 2022 scenario (41%) and further to the 2025 scenario. This is welcome although there remains a high level (281) exposed to airline noise above the WHO recommendations for 40 dB L_{night}. This is associated with adverse health effects.
- The EHS is satisfied that no dwelling will exceed noise levels more than 97 dB L_{Cmax} at least once per day.
- Section 13.5.2 of the EIAR outlines those specific interventions recommended in the WHO guidance. These include the noise zones, RSIS (insulating dwellings exposed to 63 dB $L_{Aeq, 16hr}$ or greater), School Insulation Scheme and dwelling purchase scheme (5 dwellings were within the contours eligible for this scheme although Daa extended to include a further 33 dwellings).
- Noise mitigation measures are welcome.

- Section 14.3.4 of the EIAR refers to ground noise levels of 50 dB L_{den} it is recommended that noise levels during the night are reduced below 40 dB $L_{night.}$
- It is noted that there remains a significant number of people exposed to 50 dB L_{den} or above in the 2023 scenario.
- EHS have only addressed the worst-case scenario in the EIAR. Apron 5H (separate planning permission (ABP 312476-22 (F20A/055)) to the northeast of the site for the replacement of the aircraft stands) is included in the scenario for 2025. This states there will be an increase in persons exposed to at least a high level of ground noise (up from 6 to 35).
- The EHS considers the WHO levels of 50 dB L_{den} to 45 dB $L_{night.}$ should be used when assessing the eligibility for the sound insulation scheme.

The comments of the EHS following the submission of additional information are summarised below:

- If the PA are permitting an increase in the hours of operation, they must ensure all who are significantly impacted have the opportunity of mitigation.
- All efforts must be made to protect as many as possible from adverse health effects including reducing aircraft noise levels to below 45dB L_{den}, and for noise exposure levels to below 40 dB L_{night}.
- The WHO Environmental Noise Guidelines of 45 dB L_{night} should be used for the ground noise assessment.

5.3.4. Health Service Executive (HSE) (HSE-East): The comments submitted on the original application, are summarised below:

- A background on the impact of sleep disturbance has been included.
- The current WHO recommendation is to reduce noise levels to below 45 dB L_{den} from 55 dB L_{den} for the hours between 0700 and 2300 and to reduce below 40 dB L_{night} from 40 dB – 45 dB L_{night} for nighttime hours between 2300 and 0700.
- The WHO guidelines of 45 dB and 40 dB should have been used for ground noise assessments.

- The use of the annual noise quota will increase the number of flights during the night-time hours.

5.3.5. Meath County Council: The comments submitted are summarised below:

- The most significant noise related impact will be between the hrs of 2300-2330 and 0600-0700.
- Chapter 13 of the EIAR states that there will be no significant residual noise and vibration effects between the permitted and proposed scenarios.
- The sensitivity of existing residents has been assessed as high which the impact of the Proposed RA is assessed as medium.
- It is not clear if any area in County Meath is eligible for the Noise Insulation Grant Scheme.
- The Council have not been able to ascertain from the documentation the extent to which the night-time noise impacts will increase for residents.
- It is requested that any proposed changes arising from the Night Quota System will be managed and controlled so they don't exceed the noise experienced in 2018.
- It is requested that the monitoring of night-time noise is measurable, frequently monitored and adhered to.
- It is requested that FCC ensure the applicant adequately demonstrates all reasonable measures are included to reduce any significant adverse effects from a noise increase.

5.3.6. South Dublin County Council (SDCC): A response from the Environmental Health section of SDCC was received as summarised below:

- There are concerns with the night-time noise levels.
- The council has received complaints from residents in the past.
- The WHO guidelines of 45 dB L_{den} and 40 dB L_{night} should have been used for ground noise assessments.
- All efforts should be made to protect as many people as possible from adverse health effects associated with aircraft noise.

5.3.7. Transport Infrastructure Ireland (TII): No objection to the proposal. Comments on the application are summarised below:

- The council should have regard to Chapter 3 of the DoELG Spatial Planning and National Roads Guidance.
- The proposal shall be undertaken in accordance with the original transport assessments which accompanied ABP PL06F.217429 (F04A/1755).

5.3.8. Irish Aviation Authority (IAA): A letter of support for the proposal was submitted.

5.3.9. IBEC: The comments submitted are summarised below:

- The proposal is supported.
- The current restrictions in condition No 3 and 5 are not compatible with the EMRA RPO 8.17 (regional support for the growth of Dublin Airport) as it is an unnecessary constraint on the airport.
- It is agreed with the Daa expert that there would be a cumulative loss of 4.4m passenger journeys over a period of 2025 as a direct consequence of the implementation of the existing planning conditions.

5.3.10. An Taisce:

The comments on the initial application are summarised below:

- The proposal would have a serious significant impact on the health and well-being of people living in the area.
- The proposal would allow an unlimited number of air traffic movements along the North Runway at any time of the day or night.
- The overnight noise metric result is not included in the non-technical report of the EIAR. The EIAR uses two noise metrics, and the nighttime metric is clearly more useful in describing the impact on sleep. It is stated 111,756 people would be significantly adversely impacted.
- There are serious medical impacts from airport noise.
- The airports GHG emissions will increase by 5.5 % by year 2025.
- The impact on the climate is incompatible with Irelands obligations under the Paris Agreement.

- The EIAR does not adequately describe the direct and indirect significant effects from the proposal.

The comments following the submission of additional information to the planning authority are summarised below:

- The submitted EIAR is insufficient to comply with the requirements of EIAR Directive (2014/52/EU). The non- CO_2 emissions from plans have not been assessed and have a significant radiative forcing impact on the climate.
- The proposal for night-time flights has a greater climate impact than flights during the day (a link to a research paper is attached to the submission).

5.4. Third Party Observations

Observations received on foot of initial application to FCC.

5.4.1. A total of 259 third party observations were received by FCC on foot of the initial planning application. A significant number of these are from individuals, residents' associations, family groups, community groups and public representatives in the vicinity of the airport. The submissions raise concern with the potential for an adverse impact from night-time flights, the resulting noise pollution and consider it will negatively affect the quality of life and well-being of residents.

5.4.2. The issues raised in the submissions are also covered within the grounds of appeal to the Board under the current appeal. The issues can be collectively summarised under the headings below:

- Consultation and examination of planning documentation
- Need for the Relevant Action
- Flight Paths
- Noise and Health Concerns
- Noise Insulation Scheme
- Climate Change
- Environmental Impact Assessment
- Appropriate Assessment

- Decision Making and Legislation

5.4.3. A significant number of observations were also received from airlines, business and tourism organisations, and individuals, in support of the proposed Relevant Action as summarised below:

- The lack of flights at night has a negative impact on revenues and investment.
- The proposal will lead to improvements in noise due to more modern and quieter aircraft.
- The take-off climb gradient profiles will help reduce the noise footprint on the surface.

Observations received on foot of significant additional information received.

5.4.4. 54 no. submissions and observations were received in respect of the significant additional information received. These submissions mainly reiterated the issues raised in the initial RA and express support or opposition for the proposal.

6.0 Planning History and current applications

There is extensive planning history relating to Dublin Airport, I have only listed the history which I consider relevant to the assessment of the proposed development:

6.1. Current Applications

6.1.1. Reg Ref F23A/0781

Planning application submitted to Fingal County Council on the 15th of December 2023 for infrastructure works to increase the capacity of the airport from the permitted 32mppa to 40mppa. The proposal includes an increase in capacity at the airports, existing north and south apron, a new apron 7, airfield drainage project, ground transport centre, works to the Long-Term Car Park (red) and staff Car Park (north) and junction improvements.

This application is currently on further information (16th of February 2024) from the planning authority. The EIAR includes the Relevant Action (referred to as the North Runway Relevant Action (NRRA)) for contrast purposes only. The applicant states that the infrastructure project is not reliant on the Relevant Action which is currently before the Board.

At the time of writing this report the planning authority had requested additional information[9] and no decision had been made on this application.

6.1.2. **ABP 317828-23 (F23A/0301)**

Permission REFUSED by FCC and the proposal is on appeal currently before the Board for the (1) the reconfiguration and expansion of the 2-storey US Customs and Border protection (CBP) pre-clearance facility and (2) the partial demolition, refurbishment and upgrade of the 2-storey former flight catering building, to become the South Apron Support Centre (SASC), which, together with its external hardstanding area to the north-west of the SASC, is to be used initially as a temporary construction compound for the proposed works to the CBP facility and then for continued use as an airport operational building for airside support/operations.

At the time of writing this report the Board had not made a decision on this appeal[10].

6.2. **Previous Applications**

6.2.1. **ABP 316138-23 (Reg Ref F22A/0460)**

6.2.2. Permission GRANTED for the construction of a subterranean underpass of runway 16/34 (crosswind) and all associated and ancillary works. The planning application is accompanied by an EIAR and an NIS.

6.2.3. **ABP 312476-22 (F20A/055)**

Permission GRANTED for an expansion of the north apron at Dublin Airport to replace aircraft stands, works to the fence, infrastructure, mast lights etc. The Board permitted the removal of a financial contribution on appeal from the applicant.

6.2.4. **ABP 305298-19 (F19A/0023)**

Permission GRANTED to amend the North Runway as previously permitted under PL06F.217429 (F04A/1755) to include works to the runway, minor amendments such as addition/ relocation of cabins and 6 no. elevated Earthworks Landscape Area (ELAs), blast pads etc.

6.2.5. **PL06F.220670 (F06A/1248)**

[9] Planning Portal (agileapplications.ie) (26th of May 2024)
[10] 317828 | An Bord Pleanála (pleanala.ie) (26th of May 2024)

A split decision issued on appeal in 2007. Permission was GRANTED for phase 1 of the new passenger terminal and permission REFUSED for phase 2 of the passenger terminal. 30 conditions were attached to the grant of permission for Phase 1 of the passenger terminal.

- Condition 3: The combined capacity of Terminal 2 as permitted with Terminal 1 shall not exceed 32 million passengers per annum unless otherwise authorised by a further grant of planning permission.

  Reason: Having regard to the policies and objectives of the Dublin Airport Local Area Plan and capacity constraints (transportation) at the eastern campus

6.2.6. **PL06F.217429 (F04A/1755)**

Permission granted for 10-year permission for the new North Runway (10L/28R) subject to 31 no conditions **(**as extended by FCC F04A/1755/E1 for 5 years until 28th of August 2022) of which the following conditions relate to this current application before the Board:

- C3: Operation of the runway and restriction of take-off and landing during the night.
- C5: Restriction of average number of night-time aircraft movements at the airport to 65/night when measured over a 92-day modelling.
- C6: Scheme implemented for the voluntary noise insulation of schools and pre-registered schools predicted to fall within the contour of 60 dB $L_{Aeq\ 16hours.}$ minimum noise levels inside not to exceed 45 dB $L_{Aeq\ 8hours.}$
- C7: Voluntary noise insulation scheme for all existing dwellings which fall within the contour of 63 dB $L_{Aeq\ 16hours}$ within 12 months of the planned opening of the runway.
- C9: Voluntary noise insulation scheme for all predicted dwellings.
- C10: Noise and flight track monitoring.

7.0 **Policy Context**

7.1. **Legislation**

European Legislation

The European Union (EU) main role regarding airport noise is to apply International Civil Aviation Organization (ICAO) rules through EU legislation.

7.1.1. European Communities (Relating to the Assessment and Management of Environmental Noise) (Directive 2002/49/EC).

- Described as the Environmental Noise Directive (END)
- Use of Strategic Noise Mapping and Action Plans
- Assessment methods for estimating harmful effects and reduce environmental noise where necessary and where exposure levels can induce harmful effects on human health.
- Definition of night-time noise indicators and use of L_{night} to assess sleep disturbance.
- The Environmental Noise Regulations 2006 which came into force on the 03/04/06 give effect in Ireland to the Directive.

7.1.2. EU Regulation 598/2014

- Established rules and procedures with regard the introduction of noise-related operating restrictions at Union airports within a “balanced approach”.

National Legislation

7.1.3. European Communities (Air Navigation and Transport Rules and Procedures for Noise Related Operating Restrictions at Airports) Regulations 2003

- Implementation of Directive 2002/30/EC under S.I. No. 645/2003
- Irish Aviation Authority shall be the Competent Authority to ensure the airport authorities adopt a balanced approach to any operating procedures at Dublin Airport.

7.1.4. The Aircraft Noise (Dublin Airport) Regulations Act 2019 (Aircraft Noise Act)

- Implements EU Regulation 598/2014 on the establishment of rules and procedures about the introduction of noise related operation restrictions at EU airports.
- The Aircraft Noise Act amends the Planning and Development Act (PDA) 2000, as amended, by inserting a range of new sections in Part 3, which deals with the control of development.
- These sections, in Part 3 of the Act, introduce a range of new measures for planning applications at Dublin Airport that may necessitate noise-related actions or that may require a new operating restriction.
- Established ANCA as the competent authority for the purpose of adopting a balanced approach in dealing with any noise problems.

7.1.5. The Planning and Development Act, 2000, as amended.

- The Planning and Development Act, 2000, was amended to include relevant sections from the Aircraft Noise (Dublin Airport) Regulations Act 2019 (Aircraft Noise Act).
- Section 34B includes supplementary provisions relating to proposed development at Dublin Airport and requires the planning authority to consult with the competent authority (ANCA) on receipt of an application.
- Section 34C includes supplementary provisions relating to operating restriction included in planning permission. Where a noise problem has been identified by the competent authority (ANCA) they are required to apply the balanced approach and undertake a Regulatory Decision.
- Section 37R relates to an appeal against the decision of the planning authority under Section 34 that incorporates the Regulatory Decision of the competent authority. This section of the Act includes those procedures required by the Board where it proposes alterations to the Regulatory Decision and/or operating procedure and noise mitigation measures at the Airport.
- Section 37S relates to an appeal against the decision of the planning authority where they decide to refuse the application concerned.

7.2. National Policy

7.2.1. A National Aviation Policy for Ireland 2015 (NAP).

- Implementation of the a “balanced approach” to noise management at Irelands Airports in accordance with Regulation (EC) No.598.
- Deals with the introduction of noise-related operating restrictions.
- Initially Irish Aviation Authority (IAA) became the competent authority for the purpose of adopting a balanced approach in dealing with any noise problems.

7.2.2. Project Ireland 2040- National Planning Framework (NPF).

- **National Strategic Outcome 6:** Support the additional runway which has been granted permission, enhance access and careful land-use management to focus on the current and future needs of airports.
- **NPO 65:** Promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans.

7.2.3. Climate Action Plan 2024 (CAP 2024)

The following information in the CAP 2024 relates specifically to the aviation sector.

- Section 5.6.2: Accelerate the future energy system.
  - Deploying sustainable biofuels, in line with EU Regulations, in hard-to-abate transport sectors, such as domestic aviation.
- Section 11.2.1.1: Emissions Trading System
  - Updates to the Emissions Trading System (EU ETS) in 2023 to reduce aviation emissions.
- Section 15.2.5.4 Maritime and Aviation Sectors
- The European Green Deal aims to achieved net zero emissions by 2050 and reflect the global long-term aspirational goal (LTAG).

- Due to inherent cross-border and international nature of aviation emissions, efforts to reduce aviation emissions are best undertaken within the international framework.
- The ReFuelEU Aviation Regulation will mandate reductions in emissions from fuels.
- The Department of Transport is establishing a Task Force around experts in relation to Sustainable Aviation Fuel (SAF) to ensure Ireland can meet it regulatory obligations to decarbonise the aviation. This will also look at non-Co_2 climate impacts of aviation.

7.3. **Eastern and Midlands Regional Authority – Regional Spatial and Economic Strategy (EMRA-RSES) (2019)**

The RSES states that the airport is a key national asset for economic success for Ireland due to links to global connectivity.

- **RPO 7.8** Supports mitigation of the effects of aviation including noise through promotion of clean and healthy environments and proactive measures to avoid, mitigate and minimise noise.
- **RPO 8.17** supports the National Aviation Policy for Ireland and the growth of movements and passengers at Dublin Airport to include its status as a secondary hub airport. Support the provision of a second runway, improved terminal facilities and other infrastructure.
- **RPO 8.19** states that spatial planning policies in the vicinity of the airport shall protect the operation of Dublin Airport in respect to its growth and the safe navigation of aircraft from non-compatible land uses. Policies shall recognise and reflect the airport noise zones associated with Dublin Airport. Within the Inner Airport Noise Zone, provision of new residential and/or other noise sensitive development shall be actively resisted. Within the Outer Noise Zone, provision of new residential and/or other noise sensitive development shall be strictly controlled and require appropriate levels of noise insulation in all cases.

7.4. **Fingal County Development Plan 2023-2029**

The Fingal County Development Plan 2023-2029 was adopted after the PA decision and came into effect on the 05th of April 2023.

The Relevant Action was determined under the Fingal Development Plan 2017-2023. Variation No 1 of the 2017 development plan included an additional requirement for development in airport noise zones and noise exposure levels. The noise exposure levels in Table 7.2 of the development plan have been replicated in Table 8.1 of the 2023-2029 development plan, with the same noise exposure levels. I have assessed the policies and objectives of both development plans and I find no significant differences in the airport policy with regard the overall development and noise requirements at the airport and within the designated noise zones.

The applicant's supplementary EIAR (September 2023) notes the policies and objectives contained in the recently adopted development plan (2023-2029) are largely consistent with the previous development plan. The current development plan introduced the requirement for the Balanced Approach (Objective DAO13) not previously included in the development plan.

7.4.1. Zoning

The site is located on lands designated as "DA": Dublin Airport, where it is an objective to

- *"Ensure the efficient and effective operation and development of the airport in accordance with an approved Local Area Plan*"

Vision for Dublin Airport:

- Facilitate air transport infrastructure and airport related activity/uses only (i.e., those uses that need to be located at or near the airport).
- All development within the Airport Area should be of a high standard reflecting the status of an international airport and its role as a gateway to the country and region.
- Minor extensions or alterations to existing properties located within the Airport Area which are not essential to the operational efficiency and amenity of the

airport may be permitted, where it can be demonstrated that these works will not result in material intensification of land use.

7.4.2. Chapter 8: Dublin Airport

Objective DAO1 – Safeguarding Dublin Airport

- Facilitate the operation and future development of Dublin Airport, in line with Government policy and the Dublin Airport Local Area Plan 2020, or any subsequent LAP or extension of same, recognising its role in the provision of air transport, both passenger and freight.

Objective DAO2 – Safeguarding the Current and Future Requirements of Dublin Airport

- Safeguard the current and future operational, safety, technical and developmental requirements of Dublin Airport and provide for its ongoing development in accordance with the Dublin Airport Local Area Plan 2020, or any subsequent LAP or extension of same, having regard to both the environmental impact on local communities and the economic impact on businesses within the area.

Objective DAO4 – Aviation Infrastructure and Facilities

- Ensure that the required infrastructure and facilities are provided at Dublin Airport so that the aviation sector can develop further and operate to its maximum sustainable potential, whilst taking into account the impact on local residential areas, and any negative impact such proposed developments may have on the sustainability of similar existing developments in the surrounding area, and the impact on the environment, including the climate.

Policy DAP4 – Transitioning to a Low Carbon Economy

- Ensure that all developments comply with the Climate Action Objectives and the Circular Economy and Waste Management Objectives in the Dublin Airport Local Area Plan 2020, or any subsequent LAP or extension of same.

Table 8.1 (of the development plan): Aircraft Noise Zones

Zone	Identification of Potential Noise Exposure during Airport Operations	Objective*
D	≥50 and <54 dB $L_{aeq,16hr}$ and ≥ 40 and <48 dB L_{night}	• Identify noise sensitive developments potentially affected by nighttime arise. • Promote appropriate land use management close to flight paths. • Application not normally refused on noise grounds although the applicant to demonstrate good acoustic design**
C	≥54 and <63 dB $L_{aeq,16hr}$ and ≥ 48 and <55 dB L_{night}	• Manage noise sensitive design. • Noise assessment to be provided to ensure good acoustic design incorporated to meet the relevant internal standards. • External amenity areas assessment *** • May require noise insulation
B	≥54 and <63 dB $L_{aeq,16hr}$ and >55 dB L_{night}	• Development is less suitable than noise zone C. • Noise assessment to be provided to ensure good acoustic design incorporated to meet the relevant internal standards. • Noise levels in external spaces should be designed to ensure lowest practicable noise levels.
A	≥63 dB $L_{aeq,16hr}$ and/or >55 dB L_{night}	• To resist all new residential development

Notes	*As summarised from Table 8.1 of the development plan **Good Acoustic Design" means following the principles of assessment and Design as described in ProPG: Planning & Noise – New Residential Development, May 2017 *** Internal and External Amenity and the design of noise insulation measures should follow the guidance provided in British Standard BS 8233:2014 "Guidance on sound insulations and noise reducing of buildings"

Policy DAP5 – Noise

- Support the actions contained within the Noise Action Plan for Dublin Airport 2019–23, or any subsequent plan or extension of same

Policy DAP6 – Health of Residents and Aviation Noise

- Protect the health of residents affected by aviation noise, particularly night-time noise.

Objective DAO11 – Requirement for Noise Insulation

- Strictly control inappropriate development and require noise insulation where appropriate in accordance with Table 8.1 above within Noise Zone B and Noise Zone C and where necessary in Assessment Zone D, and actively resist new provision for residential development and other noise sensitive uses within Noise Zone A, as shown on the Development Plan maps, while recognising the housing needs of established families farming in the zone. To accept that time based operational restrictions on usage of the runways are not unreasonable to minimise the adverse impact of noise on existing housing within the inner and outer noise zone.

Objective DAO12 – Noise Zones and New Housing for Farming Families

- Notwithstanding Objective DAO11, apply the provisions with regard to New Housing for Farming Families only, as set out in Chapter 3 Sustainable Placemaking and Quality Homes, within the Inner Noise Zone subject to the following restrictions:

- Under no circumstances shall any dwelling be permitted within the predicted 69 dB $L_{Aeq\ 16\ hours}$ noise contour,
- Comprehensive noise insulation shall be required for any house permitted under this objective,
- Any planning application shall be accompanied by a noise assessment report produced by a specialist in noise assessment which shall specify all proposed noise mitigation measures together with a declaration of acceptance of the applicant with regard to the result of the noise assessment report.

Objective DAO13 – Aircraft Operations and Noise

- Ensure that aircraft-related development and operation procedures proposed and existing at the Airport consider the requirements of the Aircraft Noise Regulations, the Noise Abatement Objective (NAO) for Dublin Airport, the Noise Action Plan, Health Issues and all measures necessary to mitigate against the potential negative impact of noise from aircraft operations (such as engine testing, taxiing, taking off and landing), on existing established residential communities, while not placing unreasonable, but allowing reasonable restrictions on airport development to prevent detrimental effects on local communities, taking into account the EU Regulation 598/2014 (or any future superseding EU regulation applicable) having regard to the 'Balanced Approach' and the involvement of communities in ensuring a collaborative approach to mitigating against noise pollution

Objective DAO15 – Ongoing Review of Operation of Noise Zones

- Review the operation of the Noise Zones on an ongoing basis in line with the most up to date legislative frameworks in the area, the ongoing programme of noise monitoring in the vicinity of the Airport flight paths, and the availability of improved noise forecasts.

Objective DAO16 – Introduction of a Noise Quota System

- To encourage and promote the introduction of a noise quota system at Dublin Airport to encourage Airlines to use quieter aircraft so as to prevent and

reduce, where necessary, on a prioritised basis the effects due to long term exposure to aircraft noise.

Objective DAO17 – Crosswind Runway

- Restrict the Crosswind Runway to essential occasional use on completion of the second east-west runway. 'Essential' use shall be interpreted as use when required by international regulations for safety reasons.

Policy DAP7 – Align with Local Area Plan Objectives

- Ensure that all development within the Dublin Airport Local Area Plan lands will comply with the following Objectives of the Dublin Airport Local Area Plan, 2020, or any subsequent plan or extension of same.

7.4.3. Appendix 10

- List of Townlands of which Airport Noise Zone D applies.

7.4.4. Dublin Airport Local Area Plan, 2020 (LAP 11.A)

Policy DAP1

- Continue to support Dublin Airport as a key national asset to Ireland's economic success by ensuring that all future development complies with the strategic aims and objectives contained within the Dublin Airport Local Area Plan, 2020 or any subsequent LAP or extension of same

7.4.5. Dublin Airport Central Masterplan (MP 11.A)

- Continue to implement the masterplans.

7.4.6. Transport

Policy CSP29 – Promote and Facilitate MetroLink

- Promote and facilitate the development of MetroLink, connecting Swords to the Airport and on to the City Centre

Objective CSO43 – Swords – Dublin Airport

- Support Swords-Dublin Airport as a key location for airport related economic development and employment provision linked to the protection and enhancement of access to Dublin Airport lands including the delivery of MetroLink

Policy CMP27 – Dublin Airport, Transportation, Surface Access and Freight

- Support the continued protection of the core transport function of Dublin Airport including measures to enhance surface access, public transport connections and strategic freight movements.

Objective CMO34 – Dublin Airport and MetroLink

- Promote and facilitate the development of MetroLink, connecting Swords to the Airport and on to the City Centre

7.4.7. Rural Housing within the Airport Noise Zone

Objective SPQHO82 – Rural Settlement Strategy and Airport Noise Zone A

Apply the provisions of the Rural Settlement Strategy, only with regard to 'New Housing for Farming Families' as set out within this Chapter, within the Airport Noise Zone A, and subject to the following restrictions:

- Under no circumstances shall any dwelling be permitted within the predicted 69dB $L_{Aeq\ 16}$ hours noise contour.
- Comprehensive noise insulation shall be required for any house permitted under this objective.
- Any planning application shall be accompanied by a noise assessment report produced by an independent specialist in noise assessment which shall specify all proposed noise mitigation measures together with a declaration of acceptance of the applicant with regard to the result of the noise acceptance report.

7.5. Dublin Airport Local Area Plan (2020)

Many of the policies and objectives in the LAP are integrated into the Fingal County Development Plan. Policies and reference to the airport of note, not referred to in the development plan include:

- OBJECTIVE RW01: Facilitate runway operations in line with the requirements of the Aircraft Noise (Dublin Airport) Regulation Act 2019
- OBJECTIVE ET01: Engine testing activities should include noise impact assessment and noise mitigation measures to ameliorate noise.

Section 9.1: Noise; Mitigation and control of noise under the following:

- The Reduction of Noise at Source (ICAO Noise Standards)
- The ICAO 'Balanced Approach' to noise management;
- EU Regulation 598/14, which enshrines the 'balanced approach' into EU Law;
- The Aircraft Noise (Dublin Airport) Regulation Act 2019

Figure 9.1: Dublin Airport Noise Zones 2019

7.6. Fingal County Council Climate Action Plan 2024-2029

- (Published 11th of March 2024)
- The plan includes a background on aviation emissions and states that Dublin Airport monitors and reports on its carbon footprint and includes an approach decarbonise the airport.
- Aviation emissions are a matter for European and National Aviation Policy.
- FCC supports the reduction of emissions though the delivery of sustainable transport options.

7.7. Relevant Noise Plans

7.7.1. Noise Action Plan for Dublin Airport 2019-2023

- Prepared by Fingal County Council
- Includes the results of Round 3 Strategic mapping (2016) for Dublin Airport. This strategic mapping estimates the number of people exposed to noise. A comparison of the results of round 1 (2006) and round 2 (2011) are also included.

Section 5.3 Noise Abatement measures:

These noise mitigation operational procedures are updated by IAA where necessary;

- Noise Preferential Runway Usage: Aircraft must use the preferred runway under specific conditions and time of day/night. These are selected for noise abatement purposes, the intent being to utilise whenever possible the

runways which enable aircraft to avoid noise-sensitive areas during the initial departure and final approach phases of flight;

- Noise Preferential Routes (NPRs) and Track Keeping: NPRs are used to minimise disruption by routing aircraft away from built-up areas, where possible. Daa has regular meetings with the IAA to continuously review the track-keeping of aircraft in the vicinity of Dublin Airport. If a complaint is made to Dublin Airport the flight track is reviewed to assess whether the aircraft was off-track. 99% of aircraft using Dublin Airport adhere to the established routings;
- Environmental Noise Corridors which aircraft must adhere to on arrival and departure to minimise noise impact. These corridors apply to the majority of aircraft that use the airport;
- Continuous Decent Approach (CDA): The airport operates a Continuous Decent Approach (CDA) which reduces the noise experienced on the ground by reducing the overall thrust required during the initial descent and keeping aircraft at higher altitudes for longer;
- Noise Abatement Departure Procedures (NADP): Specific rules on how aircraft should perform take-off climbs to ensure that noise is minimised. Dublin Airport requires compliance with a take-off climb profile, which is based on noise abatement departure climb guidance contained in an ICAO document (Doc 8168 Vol 1); Rules on the use of reverse thrust: Reverse thrust is used to aid the deceleration of aircraft on landing through the use of the aircraft's engines. This should not be used at night, unless required for safety reasons;
- Engine Ground Running: Engine testing is only permitted at certain times to minimise ground noise. Engine testing is restricted between 2000-0700hrs for all aircraft types with only the smaller aircraft being able to undertake engine testing between 0700- 0900hrs; and
- Limitations on the use of the Cross-wind Runway.

7.7.2. **Dublin Agglomeration Environmental Noise Action Plan 2018-2023**

- Prepared by South Dublin County Council in conjunction with Dublin City Council, Fingal County Council and Dún Laoghaire- Rathdown County Council.
- Noise Action Plan for the Dublin Agglomeration undertaken every 5 years.
- Section 4.4.6 deals with Dublin Airport and includes information on the work the airport undertakes to monitor aircraft noise levels.
- Noise Maps are completed by Dublin Airport Authority and available on their web page with the mapping for Round 4 included 2016 and 2021.

7.8. **Natural Heritage Designations**

The following SAC sites are located within the vicinity of the site and/or flight paths.

- Malahide Estuary SAC (site code 000205): c. 4km to the northeast
- Baldoyle Bay SAC (site code 000199): c. 6.5km to the east/ southeast.
- Rogerstown Estuary SAC (site code: 000208): c. 8km to the northeast
- North Dublin Bay SAC (site code: 000206): c. 8km to the southeast
- South Dublin Bay SAC (Site code: 000210): c. 10km to the south
- Ireland's Eye SAC (Site code: 002193): c. 11km to the east
- Rockabill to Dalkey Island SAC (Site code:003000): c. 10.7km to the east
- Howth Head SAC (Site code: 000202): c. 11.5km southeast
- Lambay Island SAC (Site Code: 000204): c. 14.8km to the northeast
- Rye Water Valley/Carton SAC (Site Code 001398): c. 17.3km to the southwest

The following SPA sites and candidate SAC site are located within the vicinity of the site and/or flight paths:

- Malahide Estuary SPA (site code 004025): c. 4km to the northeast
- Baldoyle Bay SPA (site code 004016): c. 6.5km to the southeast

- North-West Irish Sea Candidate cSPA (site code 004236): c. 7km to the east
- South Dublin Bay and River Tolka Estuary SPA (site Code: 004024): c. 8km to the south
- Rogerstown Estuary SPA (site code 004015): c. 8.3km northeast
- North Bull Island SPA (Site code: 004006): c. 8.2km southeast
- Ireland's Eye SPA (site code: 004117): c. 11.3km southeast
- Howth Head Coast SPA (Site code: 004113): c. 13km southeast
- Lambay Island SPA (Site Code: 004069): c. 15km northeast
- Skerries Islands SPA (Site code: 004122): c. 18km northeast
- Rockabill SPA (Site Code: 004014): c. 19km northeast
- Dalkey Islands SPA (Site code: 004172): c. 20km south

8.0 The Appeal

8.1. Grounds of Appeal

14 no third-party appeals were received. The appellants mostly comprise of residents and residents' associations from areas around the airport and an environmental group associated with the area around the airport. Submissions were accompanied by a range of documentation including health reports and historic documentation. A national environmental group also submitted an appeal.

An independent noise report accompanied an appeal submission from a resident[11] in the vicinity of the airport.

The issues raised are similar throughout the appeals and have therefore been summarised under common themes below:

8.1.1. Planning History and alteration of conditions

[11] Adrienne Mc Donnell and others; Report from Searson Associates

- The Daa have failed in their application to justify the need for dual departures on the runway between 06:00–08:00. This contradicts Condition 3(b) and 3(c) and changes the preferential use of the runway.
- The proposal conflicts with the advice of Mr Rupert Thornely-Taylor, the Board's Noise Consultant during the Oral Hearing in 2007, that "no departures on runway 10L shall take place at any time".
- Based on the Daa forecasts and their logic for switching between segregated mode and mixed mode, there is no justification for mixed mode during the night-time period.
- ABP imposed restrictions regarding noise mitigation/night flights in its decision on the original permission for the north runway (ABP PL06F.217429). Nothing has changed since then that would justify changing these conditions.
- Conditions no.7 (Voluntary Noise Insulation for existing dwellings) and no.9 (Voluntary Buy-out scheme for residents) of the original NR permission are not part of the RA. Due to the changes proposed in the Relevant Action these insulation schemes should be re-evaluated. These conditions are intrinsically linked to alterations proposed to condition No 3(d) and No 5.
- Condition 9 of the original permission (2007) needs to be revised to take the needs of those adversely affected into account. Voluntary purchase scheme now needs to be revised given the proposed change in the number of dwellings predicted to fall into the contour of 69 dB $L_{Aeq\ 16}$.
- There is clear evidence from the Daa own forecasts that in their busiest time of the day between 06:00-08:00 the only net gain of changing Conditions 3(d) and 5 is the gain of an additional 2 flights.

8.1.2. <u>Aircraft Noise Competent Authority (ANCA) decision</u>

- There are serious deficiencies with ANCA's Regulatory Decision and the Daa revised application.
- ANCAs role as the competent authority is questioned. It is not considered they are independent for the purpose of decision making on the Airport.

- ANCA in their RD have permitted a noise quota count of 16,260. There are currently 100 flights per night on the south runway. A true figure for the number of flights expected per night is needed.
- ANCA have previously outlined that a single runway could be used for the night-time period to handle demand up to 2032 (160 movements). This is far beyond the 2025 limit of the current planning application and shows clearly that dual runway operation is not needed during the night-time period.

8.1.3. Public Consultation

- Lack of meaningful public consultation.
- Failure by the Daa to hold a public consultation is in breach of the North Runway's planning permission conditions.
- ANCA also failed to engage fully in the consultation process which is a breach of condition No.28 of original NR permission.

8.1.4. Climate Change

Specific details raised with regard Climate Change are listed in the EIAR. In general, the following concerns are raised:

- The full scale of the impact of CHG gas emissions has not been adequality assessed.
- The PA has not undertaken a full environmental assessment and is a breach of S15 of the Climate Action and Low Carbon Development Act (as amended).
- ANCA fail to take into account carbon emissions costs for the increase in aircraft movements that is facilitated by their decision.
- The RA is contrary to ANCA's SEA.
- The non-CO^2 effects of aviation are greater than those CO^2 effects and should have been included in the EIAR.
- Targets set in the EU Action Plan "Towards a zero pollution for air, water and soil" adopted in May 2021, have been ignored.

- The EIAR failed to take account of the latest national inventory emissions dataset, an increase of passengers beyond 32 mmpa and an increase in the movement of aircraft. The EIAR has failed to assess the true significant effects which are 'major adverse' as per the IEMA guidelines.
- Due to the number of ATMs proposed GHG emissions will rise between 8.5 – 10%.

8.1.5. Noise Quota Scheme and Forecasting

- The Daa are trying to suggest that the noise situation in 2018 was 'acceptable', when the data from the three rounds of the Environmental Noise Directive (END) clearly shows escalating noise. The noise data used in the Dublin Airport Noise Action Plan 2019-2023 is based on noise data from 2016.
- ABP need to engage with independent noise consultants and complete field measurements.
- 511,000 people will be exposed to daytime noise levels > 45dB L_{den} and 268,000 people exposed to night-time noise >40dB L_{night} in 2025 because of the 'RD or the RA".
- The revised noise statistics for 2025 "Proposed" versus the "Original" 2025 RA reveal that the Daa predictions are worse now with the revised EIAR than the original EIAR submitted to the planning authority in December 2020. The differences and reasons for these changes in noise levels are not explained by the Daa or ANCA.
- It is noted that an AQC (aircraft quota count) of 0 is given to aircraft below 81 dB therefore there is no limit on the number of movements of these type of aircraft types.
- 79,405 people will be Highly Annoyed (HA) and 37,080 will be Highly Sleep Disturbed (HSD) in 2025 – no explanation as to how these figures were derived in the analysis undertaken in the EIAR.
- The application does not consider medium to long term forecasts and the impacts of this proposal.

- No interrogation of the Daa flight schedules was carried out by ANCA. Noisier aircraft have been allowed utilise the runways at night.
- No mention of ProPG Guidelines or use of L_{Amax} in application and the EIAR only uses noise metrics which average the sound.
- 68% of movements detected at NMT1 (noise monitoring terminal 1 - 6.5km from start of south runway) had a L_{Amax} > 75 dB, 26% > 78 dB and 5% > 81 dB based on data supplied in noise reports for the June-Dec 2019 period.
- Having regard to Daa's forecast there will only be 2 extra flights between 06:00-08:00 and 4 between 22:00-24:00. This does not seem a substantial increase due to the impact of the night noise on new population.
- The Daa have not approached any residents to set up noise monitoring for compliance with Conditions No 7 and No 9.
- Daa should be fined for breaching annual noise limits.

Fleet Mix

- As fleet replacement didn't work in the past, why do ANCA solely rely on fleet replacement to Chapter 14 levels to reduce noise if movement levels are to increase?
- Newer aircraft still create equivalent noise – e.g., the new Ryanair aircraft type B38M creates equivalent noise disturbance as to its predecessor, the B738.

8.1.6. Independent Noise Assessments

- The independent noise assessments refer to the noise metrics used in the application and the high levels of noise at properties, not currently recorded by Daa.
- Noise levels of up to 100 dB are recorded at houses close to the runway for up to 16 hrs per day.
- An independent noise consultant points out that the use of Sound Exposure Level (SEL) metric is the most valid and realistic measurement.
- Independent noise measurement commissioned by appellants along the Kilreesk Lane area of St. Margaret's show results of SELs of between

78dB(A) to 91dB(A) recorded indoors during daytime and 69 dB(A) measured inside at night (01:31am). The Daa only uses computer generated readings for this area.

- An independent noise assessment submitted by an appellant, recorded measurements both inside the dwelling (bedroom with window ajar) and outside (at the patio) the dwelling. The overall A-weighted in-bedroom level is considered too high and requires attention (i.e.; 1-hour $L_{A,eq}$ 34 dB (A)) was recorded where the background level is L_{AF90} 23 dB (A)).

8.1.7. Use of 2019 as a baseline year

- ANCA have used 2019 as the reference baseline year to compare future noise years against. But this was a year beyond the three Rounds of the END that showed spiralling noise levels and a year in which the Daa unlawfully handled 32.9m passengers, 0.9m beyond the terminal 32mmpa cap.
- It is very evident that the sizes of the contours have grown from Round 1 of the Environmental Noise Directive (END). The contours did decline in size for Round 2 in 2011 due to the downturn in flights from the financial crisis.
- The Daa and ANCA have both acknowledged that a noise problem existed in the three rounds of the END, yet incredibly choose 2019 as the baseline reference year. Regarding the baseline used by ANCA for the NAO - 2019 was the worst year on record for noise levels and was the year in which the Daa breached the 32m passenger cap and illegally handled 32.9m passengers. 2018 was the worst year on record for noise levels where the 32m passenger cap was not breached.
- The selection of 2019 or 2018 as the baseline for noise comparison does not meet the requirements of Directive 2002/49/EC as required by the Aircraft Noise (Dublin Airport) Regulation Act 2019 because it is not representative of the current situation.
- 2018 has been selected by the Daa as their baseline year in which to compare the future scenarios against. 2018 had a high usage of the crosswind runways, therefore any other year which recorded numbers lower than 2018 would be incorrectly portrayed in a positive light.

- ANCA's SEA report references the EU Commission Action Plan document: 'Towards a Zero Pollution for Air, Water and Soil' which has a target to reduce the number of people chronically disturbed by transport noise by 30% from a 2017 baseline, however ANCA use a baseline year of 2019 instead of 2017.

8.1.8. Airport usage

- Concerns expressed regarding the actual mppa that Daa consider viable for the future – 32mmpa cap currently, however Daa had previously applied for 40mppa which was subsequently withdrawn.
- The Mott MacDonald report shows that the Daa can achieve 42m passengers in 2040 whilst keeping restrictions, providing proof that the objectives of the National Aviation Policy (2015) can be achieved whilst protecting the health of residents. Retaining the operating restrictions does not hinder growth.
- There is no need for the RA to increase capacity at the airport.

8.1.9. Airport Policy

- The Relevant Action proposal undermines Objective DA07 of the Fingal Development Plan.
- The RA undermines and is not consistent with the Airport Noise Zones in the development plan.

8.1.10. EIAR

- The Revised EIAR submitted to FCC, states under Section 13.3.12 that 'SEL' (Sound Energy Level or Single Event Level) and 'LAmax' have been presented in the application which is factually incorrect and a serious deficiency of the application. WHO Community Noise Guidelines (CNG) 1999 state that where the noise is principally composed of a small number of discrete events, the additional use of L_{Amax} or SEL is recommended to assess the exact impact of noise during single events from aircraft movements.
- The EIAR submitted by the applicant does not include medium- and long-term effects arising from noise and is deficient in content. Focus on 32mppa to 2025, even though Daa lodged a planning application with ANCA in 2019 to

increase passenger numbers from 32-35m but subsequently withdrew it due to Covid.

- The number of bird strikes involving aircraft reported should also be assessed. No Data was produced nor mitigation measures for increased movements and new take-off and landing corridors for North Runway were put forward by the applicant.
- No actual assessment of the cumulative impact of the development with the Greater Dublin Drainage Project in particular the waste recovery facility (WRF) and biogas storage tanks that make up the part of this project (current case ABP 312131) was carried out by the applicant. The current south runway flight paths fly directly over this proposed waste recovery facility. This could result in the risk of major accident.

8.1.11. Insulation Schemes

- Insulation Scheme proposed by ANCA insulates less houses than in the planning application by the Daa. Many houses in Coolquay, The Ward, St Margarets and Kileek Lane have been removed from eligibility for insulation.
- In their draft decision, ANCA did not use the criteria 2 specification from the Daa in their cost-effectiveness analysis. They only used criteria 1 i.e >55dB L_{night}.
- Daa in their pre-planning meetings on the proposal included all dwellings >55dB L_{night} in 2025 for criteria 1 and all dwellings >50dB L_{night} with a 9dB increase in 2022 Proposed compared with 2025 Permitted for criteria 2. The DAA compared a +9dB change in 2022 with 2018 which allowed for more dwellings to be insulated. The Daa were intending to insulate 54 dwellings under criteria 2 but ANCA have reduced this to 30.
- Insulation Scheme only applies to the cohort deemed ‘very significantly’ affected. No mitigation for ‘moderately’ or ‘significantly’ affected dwellings.
- ANCA are persisting with only insulating dwellings that are ‘very significantly’ affected by noise. This is against the advice of the HSE in their submission to ANCA.

- The proposal conflicts with Fingal Development Plan as not all houses in Noise Zone B are being offered insulation.
- Day time insulation scheme was modelled with straight out routes illustrated in the original NR EIS and not with divergent routes, which go directly north of the NR, now proposed. Dwellings have been excluded from the insulation scheme as a result and therefore subjected to harmful levels of noise.
- ProPG (Planning & Noise guidance, England) and WHO NNG Guidelines state an internal noise level of no more than 10-15 events > 45dB L_{Amax}. Based on N60 contours, 18,959 dwellings >= 10 events and 5,282 dwellings >=25 events for 2025 Proposed scenario. Mitigation for these dwellings is not considered. The cost-effectiveness analysis does not consider these large number of dwellings and so the application of the Balanced Approach is flawed.
- The Development Plan Zones take account of the fact that the areas in Zone B will experience noise >55dB L_{night} during certain periods of the year. The requirement for anyone building in Zone B is that “Appropriate well-designed noise insulation measures must be incorporated into the development in order to meet relevant internal noise guidelines”. The noise insulation scheme proposed by ANCA conflicts with the Fingal Development Plan and many dwellings from Zone B will be omitted from the insulation scheme, thus not meeting the relevant internal noise guidelines.
- The number of people highly annoyed in 2022 would be 69,428 and the number exposed to >65 dB L_{den} would be 227 assuming the Daa’s Relevant Action application was granted.
- ANCA’s Regulatory Decision will lead to fewer houses being insulated under criteria 2 for night-time insulation. How do ANCA believe that their changes to the insulation scheme is better than the Daa’s proposal?
- A higher number of houses were identified by the applicant for insulation scheme at pre-application stage than were determined required at planning application stage by ANCA.

8.1.12. Flight Paths

- The “Standard Instrument Departure” (SID) chart for category C & D jet engines used on the North Runway opened in August 2022.
- As indicated by IAA the flight paths are totally at variance from the planning approved at Reg. Ref. F04A/1755, different to those presented for consultation in 2016 and now different from those presented in the “Relevant Action” Reg Ref F20A/0668.
- The current insulation programme for the North Runway which Daa say is complete and is in compliance with Planning Reg Ref F04A/1755 is totally incorrect as the wrong set of flight paths have been used and people that were previously excluded in the Noise Insulation Programme are now being exposed to higher noise than previously modelled due to the change in flight paths.
- The Daa is not adhering to ABP’s imposed Condition no. 5 of the North Runway original 2007 permission as it currently is not limiting night-time flights to less than 65 across the entire airport.
- Animals along the flight paths will be impacted. Some residents have pigeons, and the proposal will have a devastating effect.
- The PA, in their assessment of the RA, are incorrect as the proposal will alter the flight paths from those submitted under the original planning permission F04A/1755 and therefore a whole different area and population base are now affected by the new proposals.

8.1.13. Impact on Health

- Health Report compiled by a leading specialist Professor Münzel, on behalf of the applicant, on aircraft noise and their effects on the cardiovascular system concludes that the night-time period from 23:00-07:00 should be protected and that the effects of the Relevant Action will lead to a significant deterioration in the health of the population affected.
- ANCA failed to engage medical expertise in their decision-making process.

- Based on noise report conducted on properties already insulated by the Daa it is shown that occupants of these properties are still at noise exposure levels that are a serious risk to their health.
- 79,405 people will be left Highly Annoyed and 37,080 will be left Highly Sleep Disturbed. ANCA have failed in their draft decision to account for the health costs associated with the DAA's proposal.
- Even though a review of the EIAR (carried out on behalf of the PA by BSM) potentially significant adverse and residual environmental impacts on human health and wellbeing because of noise, on amenity and local communities as a result of noise was identified – no independent assessment from a medical health expert was required by the PA.
- ANCA have not explored relocation options or taken on board the residual health effects and costs associated with their decision. Finance for a relocation scheme could be raised through a 'polluter pays' principle charged on air travellers.
- The only deviation of ANCAs decision from the Daa submission is the choice of an 8-hour Quota Count System instead of a 6.5 hour. The Quota Count System (16,260 count value) proposed does not have an associated movement limit which is the norm in the UK.
- The reports on cost effectiveness submitted by the DAA exclude quantification of costs associated with the adverse health effects inflicted on residents despite being requested by ANCA.
- ANCA looked at a comparison of scenario P02 with P11. Scenario P11 (South Runway for all night-time flights and leaving Condition 3(d) in place) shows less night-time impact than P02 (equivalent of the proposed Relevant Action) and has lower numbers of HSD and HA. Including P02 and excluding P11 is not a Balanced Approach.
- The HSE submission and the Environmental Health Section submission both raise the impact of the additional nighttime flights on the quality of life of the residents.

8.1.14. Appropriate Assessment

Applicant's AA Screening Report:

- The screening report incorrectly states that the proposals can have no effects on SACs. Malahide SAC will be directly overflown by the planes to operate a divergent route for Easterly departures on the North Runway in mixed-mode operation. This divergent route has no planning permission and was never proposed in the original planning in 2004-2007 under Option 7b. It is a failure of the screening process to even acknowledge this potential to affect a SAC and as a minimum, appropriate assessment is warranted.
- Easterly departures on the South Runway do not fly directly over Howth Head Coast SPA but are in very close proximity to it and the flight paths could impact the SPA.
- No mention of screening for effects on the SACs and SPAs along the Irish coast potentially affected by the proposed night-time operations.
- The Relevant Action screening report is deficient and not fit for purpose.

ANCA's Final AA Natura Impact Statement:

- The impacts of intermittent noise on bird populations needs to be assessed.
- Section 3.27, states that aircraft produce sound less than 65dB L_{Amax} below 3000ft when descending – contradicted by measurements at the noise monitoring sites around Dublin Airport.
- The noise monitor at the coast road, NMT 20, close to Baldoyle SPA and SAC needs to be considered – in 2019 over 60% of movements are greater than 72dB L_{Amax} and over 10% greater than 75dB L_{Amax}.

AA and North Runway:

- No AA was carried out for the North Runway development (none under planning application F04A/1755, ABP PL06F.217429 or planning extension under F04A/1755/E1.)
- Effects only seem to deal with disturbance recognised as "flushing" when birds move or fly because of disturbance. There is no assessment whatsoever of the effects of noise increases on the stress behaviours of birds.

8.2. **Applicant Response**

8.2.1. The applicant's agent has responded to specific issues raised in submissions by the appellants. A response to the Saint Margarets The Ward Residents Group appeal covers many of the themes raised throughout the remaining appeals and the applicant refers to this submission in most of the responses, in addition to other issues.

8.2.2. Response to Saint Margrets The Ward Residents Group

This is the largest response to third party submissions by the applicant's agent. It encompasses most of the themes raised throughout many of the third-party submissions. The applicant refers to this response in each of the responses and expands on issues where it is considered necessary.

- A background to the RA is provided.
- A background to the EIAR documents is provided, it is not considered the RA is a project for the purposes of EIAR and an EIAR has been undertaken out of an abundance of caution.
- Detailed response to both the HSE and Environmental Health Officer submissions.
    - The use of the WHO guidance for aviation noise is not possible and the NAO clearly sets out targets to limit and reduce effects.
    - The WHO guidelines are intended to be used by Policy makers.
- The noise emitted from aircraft has decreased and not increased since 2003.
- The noise modelling in the EIAR assumes both parallel runways will be used for departures between 2025- 2035 between 06.00- 08.00 hrs, in response to the requests from Irish Aviation Authority (IAA) Air Navigation Service Provider (ANSP).
- Policies of the development plan promote the move towards the balanced approach and the NQS.
- The contours consider the aircraft movement, and the noise insulation scheme are applicable for those within the relevant noise contour areas.

- The proposed RA is considered valid and is not misleading.
- The dataset in the EIAR indicates more dwellings in the 40- 51 dB contour bands but fewer for those in the higher band.
- A Community Liaison Group (CLG) set up by the applicant includes representation from the appellant.
- The EIAR includes assessment years up to 2035.
- The ATMs will remain the same under the worst-case scenario (236,000 per annum).
- The most recent baseline data available to the applicants when submitting the RA was from 2018, therefore this is used as the baseline year.
- Since the publication of the EIAR some of the information for the CHG emissions has been updated, although at the time of the application the guidance used was correct. The CHG emissions scenario has been updated to reflect the updated guidance and there is no significant change to the outcome.
- There will be a decrease in CHG emissions from aviation between 2022-2035.
- There is no proposal to remove the passenger cap of 32 mmpa.
- Non- Co^2 emissions are not accounted for in Irelands CHG emission targets.
- The preferential use of the runways is not in conflict with the original NR permission and the proposal will comply with Option 7b as submitted in the EIAR. The proposed scenario remains consistent with condition 3c.
- The removal of all night flights is considered the least cost-effective measure to meet the NAO.
- Assessment of the fleet mix was undertaken between Sept 2020 and June 2021 where many of the aircraft where being changed/ reintroduced.
- Issues with ANCA RD have been raised and these have been dealt with throughout the submissions including the cost benefit analysis.
- There will be no project splitting.

- The screening report considers nighttime operations and the literature review submitted clearly indicates no significant adverse effects on any European Sites. All potential impacts have been fully assessed.
- ANCA have not set internal event L_{Amax} targets for the RSIGS scheme.
- The expert submission is acknowledged, and the noise insulation scheme is reiterated.
- The guidance in the ProPG is for new dwellings not existing dwellings.
- The QC system has been adopted at several airports in the UK and validated by UK CAA.
- The Dublin NQS is based on a target QC/ATM calculated at the mid-point between 2018 and 2025 and incentives airlines fleet renewal process.
- The CEA prepared indicates that controls on night flights are not required and would not be consistent with the EU598.
- In response to the HSE submission, the applicant notes the guidance in the WHO Guidance.
- The metrics used to assess the impact of noise allow the applicants to measure how the RA can meet the NAO.

8.2.3. Response to Shelia Hand and others

- Background to the ANCA process and the NAO is provided.
- The PA have assessed the information in the EIAR and do not consider the specific short-, medium- and long-term health-based outcomes would be unacceptable having regard to the mitigation measures.
- The health impacts have been adequately addressed in the application.
- The WHO guidelines do not specifically state no impacts under 40 dB.
- The NAO has been developed to limit and reduce effects over the coming decade.
- Condition No 9 of the original NR permission is being implemented by the Daa.

- The noise contours do not illustrate the maximum levels, they are average L_{night}. L_{Amax} contours are presented in the revised EIAR.
- The overall package of measures will ensure that noise effects of the RA will not exceed levels in 2018 and 2019.

8.2.4. Response to SMTW Environmental

- These issues are addressed under the Daa response to Saint Margarets The Ward Residents Group

8.2.5. Response to Adrienne Mc Donnell and others

- Contour maps allow for the combined effects of operations for both runways in the daytime and night-time.
- Condition No 9 of the original NR permission addresses the buyout scheme.
- Anderson Acoustics have responded to noise reports submitted with appeals.
- The biennial review of the scheme allows for continuous buy in from residents.
- The impacts on sleep have been addressed in the application.
- Daa have not disregarded human health and well-being to deliver a balance approach as there are now mitigations, safeguards and monitoring integrated.

8.2.6. Response to Angela Lawton

- The cost benefit analysis of the proposal has been undertaken in line with the balanced approach for the NAO.
- The EU Regulation 598/2014 cost-effective analysis (CEA) is incorporated the Aircraft Noise (Dublin Airport) Regulation Act 2019.
- A carbon and climate analysis were undertaken for the RA and integrated into Chapter 11. This analysis concludes that the CHG emissions associated with the RA do not represent >1 % of the projected National Emissions Inventory for either of the assessment years and is of minor significance. Aircraft will become more fuel efficient over time.
- The NQS, first introduced into the UK, allows a greater number of quieter aircraft.

- Early morning flights are required for Dublin, due to its geographical location and connection throughout Europe.
- 2019 saw the demand for night flights up to 113 on a busy summer night.
- There is no change proposed for the preferential use of the runway.
- Chapter 7 of the EIAR indicates that the impact on residential amenities has been adequately assessed.
- The WHO guidelines are values for guidance rather than restrictions on exposure.

8.2.7. Response to Brian Murphy

- Issues relating to enforcement action are a matter for FCC.
- The relevant ANCA documents and RA are fully complaint with multi-government strategic objectives.

8.2.8. Response to Conor Kennedy

- The typographical errors and incorrect cross references have been amended and do not impact the overall development description of assessment of impacts.
- Heathrow operates a NQS such as the RA and is limited to 5,800-night flights per year.
- The original conditions imposed by ABP (3(d) and 5 of PL06F.217429 did not have due regard for Dublin's ability to meet the foreseeable need for aviation travel.
- The applicant's proposed NQS is the most cost-effective method of achieving the NAO.
- Health related concerns raised in third party submissions are acknowledged and it is considered condition No 5 and the inclusion of mitigation measures addresses these concerns.

8.2.9. Response to Friends of the Irish Environment

- The applicant has had full regard to the impact of the CHG emissions and the non- CO^2 effects of the changed flight patterns, as per Chpt 11 of the EIAR.

8.2.10. Response to Niamh Maher

- Enforcement issues are not a matter for ABP.
- The impact on health and sleep disturbance have been addressed in the EIAR.
- The functions of the NAO are to reduce the number of people exposed to levels above a certain threshold.
- The planning authority have assessed the RA and the RD against the impact of health and other related impacts and appropriate conditions included to limit and mitigate aircraft nighttime noise insofar as possible.

8.2.11. Response to Raymond and Carmel Fox

- Health impacts of aircraft noise from the proposed development have been adequately considered and assessed.
- Scientific literature review has been undertaken as part of the EIAR (Chpt 7).
- The proposed development and conditions imposed comply with Section 34C (1) (a) of the Act.
- The buyout scheme was conditioned as part of the original application and remains.

8.2.12. Response to Sheelagh Morris and others

- The application is valid.
- The applicant is not breaching or cherry picking any nighttime restrictions.
- The average number of flights during a busy night is summer in 2019 was 113/night.
- A noise insulation scheme and monitoring framework are included in the application.
- There is a voluntary buyout scheme and a noise insulation scheme.
- The noise grant scheme will be reviewed every 2 years commencing in 2027.
- The noise insulation scheme will be reviewed every 2 years starting in 2024.

8.2.13. Response to Terence Murphy

- A response to the health impacts has been addressed and the PA have considered this thoroughly.
- The use of a noise quote is appropriate as a cost-effective means to manage and limit aircraft noise impacts.
- The demand for night shoulder hours is due to Dublin's geographical location for travel to European hubs etc.

8.2.14. Response to Teresa Kavanagh

- Some typos have been noted and are not considered grounds for invalidating the application.
- The concerns in relation to the noise quota are noted. There is a restriction on noisy aircraft at night with a QC of 4.0 on take-off and 2.0 on landing at night.
- An assessment of the impact on aircraft emissions is included in Chapter 11.
- The WHO guidelines criteria have been used to assess the number of people highly annoyed and highly sleep disturbed.
- The SEA of the NAO and RD concludes there would be no significant adverse environmental effects.

8.2.15. Response to Trevour Redmond

- There are unsubstantiated claims in relation to the applicant.

8.3. Planning Authority (PA) Response

8.3.1. The PA response notes that there is no new information in the appeal submissions which would benefit from further comments. In the event the appeal is successful, provision should be made for applying a financial contribution in accordance with the Council's Section 48 Development Contribution Scheme.

8.4. Aircraft Noise Competent Authority (ANCA) response

8.4.1. ANCA responded to both the grounds of appeal and a specific stand-alone submission to the T Redmond appeal. Both appeals were accompanied by the following documents:

- Noise Abatement Objective (NAO)
- Noise Abatement Objective Report
- ANCA Regulatory Decision (RD)
- ANCA Regulatory Decision Report
- ANCA Noise Abatement Objective and Regulatory Decision relating to Aircraft Noise Management at Dublin Airport: Strategic environmental Assessment (SEA) and final report.
- ANCA public consultation report

8.4.2. The ANCA response to the grounds of appeal are summarised below:

Background

- The function of the ANCA is explained.
- A background to the application is included.
- The Balance Approach applied by ANCA is designed to address aircraft noise problems at individual airports in an environmentally sensitive and economically responsible way.
- A further breakdown of the requirements of the Balanced approach is provided.

Consideration of issues raised by the grounds of appeal:

8.4.3. ANCA state that the following issues raised by in the grounds of appeal have already been addressed in Section 3.2 and 3.3 of the ANCA consultation Report (2022)

1. Method of the Noise assessment is addressed in Section 3.2
2. Property purchase/insulation schemes is addressed in Section 3.3.3
3. Health and impact of aircraft noise is raised in Section 3.2
4. Implementation and Monitoring of the Regulatory Decision is addressed in Section 3.2 of the ANCA consultation report.
5. Noise Quota Scheme issues are addressed in Section 3.3.2
6. The reasons for replacing and amended conditions No 3 d) and 5 are set in Chapter 14 of the Regulatory Decision

7. Use of 2019 as the baseline year for implementation of the NAO is addressed in Section 3.2
8. Consultation of Draft Documents and details of all consultations are detailed throughout the ANCA document.
9. Flight paths in Section 3.3.1
10. Insulation Scheme issues are addressed in Section 3.3.

8.4.4. ANCA have also considered other issues raised by the appeallants as indicated below:

1. Since the opening of the runway, the noise is different to that modelled.
    - ANCA made the NAO and RD on the 20th of June 2022
    - The NR commenced operation on the 24th of August 2022.
    - All assessment work by the ANCA was based on the noise modelling information in the application prior to the north runway operation.
    - A review of the noise modelling concludes that the assumptions are based on the modelling at the time and strongly recommends the applicant revalidate modelling following commitment of the north runway.
    - Through annual compliance reporting required under the Act, 2019 it will be possible to identify if the airport is meeting the NAO and ANCA can impose further noise mitigating measures and operating restrictions if required to meet the NAO.
2. Different flight paths may mean different noise insulation eligibility.
    - The RSIGS scheme is configured so that those not eligible for insulation on the date of the RD may become eligible following the review.
    - The review of the eligibility every 2 years will commence on the 31st of March 2027.
    - All dwellings situated in the 55 dB L_{night} contours will become eligible following review.

- Similar mechanisms for noise insulation are required under Condition No 10 of the north runway permission.

3. Scientific basis of statement of little/no nighttime effects on birds

    - The assessment of effects on birds was carried out in the NIS of the ANCA consultation document.
    - This concludes that birds are unlikely to be disturbed by aircraft at night than during the day.

4. Use of the term “significant”

    - The use of the term significant is different when discussed in the EIAR (significant effects) or the RD (people significantly affected).
    - The RD identified thresholds for “People significantly affected” and quantifies harmful effects.
    - The EIAR reports on the significant effects of the aircraft noise.
    - A significant change for the purpose of EIAR can still be below the thresholds for people affected as set out in the NAO.

8.4.5. The ANCA was required to ensure than any RD is no more restrictive than necessary to achieve the NAO which is directed at limiting and reducing the number of people significantly affected by noise.

8.5. **Observations**

8.5.1. 78 no. observations have been received on the appeal. Many of the observers are residents in the vicinity of the site and public representatives who support the grounds of appeal submitted against the decision to grant by the planning authority. The issues raised by the observers generally reiterate those issues raised in the grounds of appeal.

8.5.2. Observations have also been received from business in support of the grant by the planning authority.

8.5.3. The Minister of State for Community Development and Charities, a MEP and Councillor from the area who have made observations on behalf of the public, as included in Appendix 1 of this report.

8.5.4. The issues raised in the observations have been summarised into common themes below.

8.5.5. Impact on Residential Amenity

- Vibrations and noise disturbance
- The insulation scheme is not fully compensated, it is only a grant towards works.
- All residents affected by the impacts of noise should be included in the insulation scheme.
- There are 350 properties which fall within the 63 dB category it is not clear of there are grant for all these homes.

8.5.6. Health implications

- The proposal does not comply with the WHO nighttime noise guidance.
- Additional noise from the aircraft has an adverse impact on the health of those residents.
- The EIAR does not fully address the severe health impacts on residents in the vicinity.
- Conditions No 6 and 7 should be in place before the NR is operational.
- The vulnerable persons will be affected greater.
- Nighttime should include 8 hrs and not 6 hours as proposed.
- From the proposal 79,405 people will be HA and 37,080 will be HSD in 2025
- There has been 110 dB noise level recorded at a school site which is very distressing for vulnerable children.

8.5.7. Climate

- Nighttime movement have an enhanced impact on the atmospheres.

8.5.8. ANCA Decision

- The increased noise quota granted by ANCA should be explained.
- The DAA request equates to 31,885 night-flights per year (87 flights per night)

- Additional mitigation measures should be considered to limit any impact.
- The Noise Quota should include a phased reduction in the total permitted quota.
- The ANCA decision changed the noise contour levels therefore there are different houses within different contours now.

8.5.9. Flight paths

- Divergence paths are dramatically different to those permitted by the NR.
- One of the flight paths is directly over a playschool, which was previously informed by Daa that it would not be disrupted (photograph submitted).
- The 2007 permission includes a summary of the basic flight paths for westerly departures from the NR.

8.5.10. Comparisons to other UK operators

- The applicant's proposal should be assessed against the operation of other airports.
- The noise insulation scheme should be comparable to other similar airports.

8.5.11. Economic Benefits of the decision

- The PA applied the balanced approach.
- The current operating constraints are not ideal.
- There has been a substantial improvement of aircraft noise performance over the past 15 years.
- Air Lingus is currently investing in new technology aircraft.
- The Airbus 320 NEO noise footprint is a 50% reduction in comparison to its predecessor.
- The use of the Balanced approach is incorporated into European Directive (EC) 2002/30.

8.6. Further Responses

There were 5 no responses from 3rd party appellants received in relation to recirculated information. The issues raised have been grouped into common themes and summarised below:

8.6.1. Emissions

- The impact of aircraft emissions cannot be ignored.
- FCC Climate Action Objectives do not address the emissions form aircraft or APU activity.
- Scope 3 emissions which include LTO (landing of aircraft) has not been addressed and will certainly increase with the use of the NR.

8.6.2. Noise

- The noise at the dwellings close to the airport will be dangerously high.
- The noise insulation scheme cannot compensate for the loss of sleep.
- The current night restrictions are included to protect the residential amenity.
- Real time noise contours movements need to be fully assessed.
- Noise levels should not exceed 45 dB L_{Amax} more than 10 times per day in bedrooms.

8.6.3. ATMs

- There were 113-night flights in 2019.
- The proposed increase relates to an increase in freight carriers.
- There is no clarity on the number of ATMs currently being operated on runway 10R-28L.
- The restriction on flights has been dismissed by the applicant.
- The NQS should have a movement restriction like the UK airports.

8.6.4. Original Runway application

- The conditions are not fit for purpose and a new EIAR and AA should be undertaken for the NR.

8.6.5. Proposed RA/RD.

- The NAO does not provide for a balanced approach.
- Stakeholders have not been considered in the decision making.
- School and preschools are subject to extremely high levels of noise not predicted in the Daa modelling.

9.0 Additional Information Request (1)

9.1. Introduction

9.1.1. The Board retained an independent noise consultant to provide expert advice on matters relating to noise impact. Mr Dani Fiumicelli is a UK Acoustic expert with experience in assessing the impacts of airport noise. His independent report is attached to and complements my report. Following consultation with this noise consultant, the Board decided to request additional information from the applicant on the 27th of April 2023. The request for additional information has been listed below.

9.1.2. **Item 1**

Impact of Peak L_{Amax} Noise Levels from Air Traffic Movements (ATMs) on Sleep

9.1.3. The assessment in the EIAR of the effects of noise from ATMs at night (2300 to 0700 hrs) is based on energy averaging noise metrics over relatively long periods e.g., 8 hrs, correlated with the percentage of the exposed population likely to self-report being highly sleep disturbed (%HSD), assessed with a standardised scale based on the guidance in the World Health Organisation's (WHO) Environmental Noise Guidelines 2018. (WHO ENG 2018)

9.1.4. However, aircraft noise is not experienced in an "average" fashion. It consists of periods of comparative quiet when there are no aircraft flying near or over a receptor interspersed with relatively short periods of noise when an aircraft approaches a receptor, builds to a peak at its closest approach and then decays as the aircraft moves away from a receptor.

9.1.5. The EIAR includes information on peak L_{Amax} noise levels from ATMs and the number of these events at night in terms of the N60, N65[12] noise contours for the 92-day summer average of ATMs and airport modes, and the N60 metric and L_{Amax}[13] for the single modes of airport operation. But these data are presented for information purposes only and there is no analysis of the effect of peak L_{Amax} noise levels from ATMs on additional awakenings at night regarding the baseline and consented scenarios.

9.1.6. An Bord Pleanála request the applicant to assess the probability of additional awakening due to the peak $L_{A,s,Max}$ of ATMs at night between 2300 and 0700hrs for the 92 day summer average of ATMs and airport modes, and for the single modes of airport operation and for the likelihood of additional awakenings for the overall annual average number of ATMs at night, based on the approach described in the review supporting the WHO ENG 2018 (*Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and the Effects on Sleep – International Journal of Environmental Research and Public Health*).

9.1.7. The Scenarios tested should include baseline conditions and the future operation of the airport proposed under the current application.

9.1.8. **Item 2**

Sensitivity Testing of the Population Numbers Covered by the Noise Contour Predictions

9.1.9. The noise contour and population exposed data presented in the EIAR of predictions of future scenarios is based on assumptions on the number of ATMs and the fleet mix at the airport. Despite best endeavours to be precise, such assumptions are estimates based on forward projections that will inevitably introduce a degree of uncertainty into the prediction of future noise.

9.1.10. To better understand what the consequences of uncertainty in the input data might be, or at least the associated trends with such uncertainty on the area covered, and

[12] [12] N60 and N65 are metrics that indicate how many times in a night a peak noise level of 60 of 65 dBA L,s,max will be exceeded externally at a receptor. These values are equivalent to internal levels in bedroom with windows partially open for ventilation similar to the guideline value of Lmax 45 dBA which the WHO Community Noise Guidelines recommends should not be exceed more than 10 to 15 times a night in a bedroom.

[13] The maximum instantaneous A-weighted sound level during a measurement period e.g., single ATM approach towards, closest point to and movement away from a receptor

the population affected by the noise contours presented in the EIAR. An Bord Pleanála request the applicant to present further analysis by sensitivity testing of:

(a) the noise contours,

(b) the area covered, and

(c) crucially the number and type of sensitive receptors affected when assessed using the significance criteria in the EIAR, based on the assumption of +/- 1 dBA change in the predicted noise levels (crudely equivalent to an approximately 25% change in the noise contours or all things being equal the number of ATMs used to calculate the noise contours).

9.1.11. **Item 3**

Baseline years assumed in the assessment.

9.1.12. The EIAR states in relation to the choice of year 2018 as a baseline against which to compare future scenario, that;

"Since the North Runway Planning Permission was granted, there has been rapid growth in passenger numbers, and the current runway infrastructure was already at capacity at peak times in 2018 and 2019."

And,

"The year 2018 was chosen as it was the most recent year with full activity data available when this Relevant Action assessment process commenced. It is also the first year of the 2018-2023 Dublin Airport Noise Action Plan."

9.1.13. Based on the above it is presumed the annual and 92-day summer period numbers of ATMs were lower prior to 2018.

9.1.14. Consequently, An Bord Pleanála requests that the applicant comments on why:

a) the baseline figures for 2019 were not used for the purposes of analysis.

b) When prior to 2018 were the annual and 92-day summer period numbers of ATMs last more than 25% below those in 2018; and

c) If the numbers of ATMs were last more than 25% below those in 2018 after the Northern runway came into use, what would be the difference in terms of

the number of dwellings and persons likely to experience an increase in L_{night} to over 50 dBA and 55 dBA compared to the numbers presented in the EIAR.

9.2. Applicant Response

9.2.1. Introduction

9.2.2. The applicant submitted a response to the FI request on the 14th of September 2023. An Bord Pleanála assessed the information submitted. The Board determined that the information contained new issues and significant alterations to the EIAR. These updates are summarised below:

- The NR has become operational since the RA was permitted.
- The actual flights paths on the NR are known whereas previously route assumptions where only considered. These flightpaths are different to those previously modelled.
- The pre covid recovery will be quicker than previously expected with the original forecasts expecting passenger numbers reaching 2025 without the RA, earlier than expected.
- The NR is currently operational; therefore, the assessment years are 2025 and 2035.
- There will be earlier fleet modernisation than previously expected.
- Updates to references in environmental baseline, legislation, policy, and guidance.

9.2.3. The applicant's submission was accompanied with the following documentation:

- Cover letters from applicant and the applicant's agent.
- CEA Noise Information Report
  - Breakdown of the noise modelling scenarios for 2025 including the % of people within the 55 db L_{night} and L_{den} contour areas which would be Highly Annoyed (HA)/ Highly Sleep Disturbed (HSD) with and without the Sound Insulation Scheme (SIS).
- Noise Modelling Report and associated contour maps:

- New forecast noise contours sensitivity maps illustrating both permitted and proposed scenarios for 2025 and 2035 including a variation of -1dB (A) and +1dB (A).
- Detailed response to the Board's FI request including the impact of L_{Amax} noise levels of air traffic movements (ATMs) on sleep (additional awakenings), analysis of the noise contours maps and clarification of the use of baseline year.

- Environmental Impact Assessment Report (EIAR) Supplement
  - Amendments to Chapters 01, 07, 11, 13, 14 and 22
  - Appendices with AA screening and Cumulative addendum, background for the noise modelling figures and results.
- Appropriate Assessment Screening Addendum Report
- Dublin Airport Economic Impact of Operations Addendum
  - Update of the InterVISTAS Report (2021) to reflect the economic projections with the new revised air traffic forecasts.
- Quantification of Impact on Future Growth (Daa operations report).
  - Update of the same report undertaken by Mott Macdonald (June 2021) to reflect the new information on schedule and traffic forecasts.
- Independent Opinion
  - Opinion from Dr Penzel, noise expert, to state that there is no conclusive research on the appropriateness of using the probability of an additional awakening assessment to assess the effects of peak noise of the ATMs.
- Cost Effectiveness Analysis (CEA) Report
  - Update to the RICONDO report (July 2021) to include an analysis of the people HA and HSD, in comparison to the 2018 baseline year and the implications for the Noise Abatement Objective.
  - Reassessment of the balanced approach and cost effectiveness of providing the insulation scheme having regard to the proposed Relevant Action.

- CEA Noise Information Report (flight movement scenarios)

9.2.4. New Noise modelling scenarios have been submitted with the applicant's FI as summarised below:

- The noise modelling for the initial application proposed scenarios for 2022, 2025 and 2035. As the NR is operational i.e., from August 2022, the years 2025 and 2035 are now included in the noise modelling and 2022 has been removed.
- Condition No. 5 was not applicable in 2022 as the NR only became operational halfway through the year (i.e., 92-day period not applicable), therefore IAA did not consider the reduced capacity for operation applicable.
- The scenarios submitted assume that 2025 was the first year of the highest use of the runway system (i.e., 32 million passengers per annum (mmpa)).
- Noise modelling scenarios have used the actual flightpaths from the NR as this has been operational. These have differed from the assumed flight paths in the previous modelling/ assessment in the EIAR.
- Updated Air Traffic data is based on routes and radar data and there is information available from the Noise and Track Keeping System.
- It is considered that the fleet will be modernised earlier than previously expected which will reduce the noise levels form the ATMs within the future modelling scenarios.

9.2.5. In general, the information presented in the noise modelling and findings are summarised below:

- Passenger numbers to 32mmpa are more likely to be achieved by 2024 rather than initially expected (2026).
- New Noise contours have been provided based on 12 different scenarios (i.e. scenarios have been summarised below in Section 9.2.10)
- $L_{Aeq,1h}$ and L_{Amax} (from individual aircraft events) have been excluded.
- The updated modelling allowed for recent noise levels recorded, routes and radar data, by aircraft type and modelled track.

- A reduction of 21 dB has been assumed for assessing the impacts of the noise from aircraft movements on the internal noise levels of dwellings.

9.2.6. The applicant's response to the each of the Board's requests is summarised below:

9.2.7. **Item No 1**

Impact of Peak L_{Amax} Noise Levels from Air Traffic Movements (ATMs) on Sleep

9.2.8. New noise modelling scenarios (detailed above) have been submitted to assess the impact of peak L_{Amax} noise levels from the Air Traffic Movements (ATMs). This information is presented within the Noise Modelling Report and associated contour maps and replicated in the supplementary EIAR and Appendix 13 (same modelling scenarios).

9.2.9. The applicant has submitted an "Awakening Assessment" as part of the Noise Modelling Report (BAP, 2023) as summarised below:

- In the first instance, it is not considered that "additional awakenings" are a good indicator of sleep disturbance.
- The WHO Guidelines 2018 assess the effects of noise at night using L_{night} metric.
- A noise modelling assessment for $L_{AS,max}$ from individual aircraft events has been submitted.
- The baseline years 2018, 2025 (permitted & proposed) and 2035 (permitted and proposed) were assessed.
- The nightly additional awakenings results have been presented for the following scenarios:
  - Annual average,
  - Summer average,
  - Annual – Single Mode (easterly & westerly),
  - Summer- Single Mode (easterly & westerly),

- The overall conclusion states that annual nightly additional awakenings are less from the baseline year of 2018 in all permitted and proposed scenarios in 2025 and 2035.
- The average summer nightly additional awakenings are initially less in the proposed scenario in 2025 than the permitted scenario and then more in the proposed in 2035 than the permitted scenario.
- The average annual additional awakening from nightly movements from the eastern operations are expected to be higher than the average split of eastern/western operations and is greater in the proposed scenario in both 2025 and 2035 than the permitted scenario.
- The average annual additional awakening from nightly movements from the western operations are expected to be lower than the average split of eastern/western operations and is greater in the proposed scenario in both 2025 and 2035 than the permitted scenario.
- The average summer nightly additional awakening from nightly movements from easterly operations will be more under the proposed and then the permitted scenario in both 2025 and 2035.
- In all scenarios (i.e., annual single and summer single) the nightly additional awakenings were lower in the permitted scenario and greater in the proposed scenario apart from the summer average in 2025 (slightly higher for the permitted) and annual/ summer single, westerly operations.
- Considering the population size the chance of an additional awakening is low (just under 3%).
- An Independent Opinion state that the use of “additional awakening” is not necessarily a useful approach to measuring the significance of sleep disturbance. The awakenings have different impacts at difference stages of “night sleep”.

9.2.10. **Item No 2**

Sensitivity Testing of the Population Numbers Covered by the Noise Contour Predictions

9.2.11. The applicant was required to submit further analysis of sensitivity testing of:

(a) the noise contours,

(b) the area covered, and

(c) crucially the number and type of sensitive receptors affected when assessed using the significance criteria in the EIAR, based on the assumption of +/- 1 dBA change in the predicted noise levels (crudely equivalent to an approximately 25% change in the area of the noise contours or all things being equal the number of ATMs used to calculate the noise contours).

9.2.12. The following scenarios where assessed and associated noise maps, areas covered, and analysis was provided for assessment years 2025 and 2035:

- Proposed L_{den} + 1 dB
- Permitted L_{den} + 1 dB
- Proposed L_{night} + 1 dB
- Permitted L_{night} + 1 dB
- Proposed L_{den} – 1 dB
- Permitted L_{den} – 1 dB
- Proposed L_{night} - 1 dB
- Permitted L_{night} - 1 dB

9.2.13. The Noise Modelling Report (BAP, 2023) includes an analysis of the noise modelling presented. Scenarios presented are restricted due to the limit on passenger numbers and do not take into consideration the use of any sound insulation schemes.

9.2.14. The analysis of the above figures i.e., noise outputs for 2023 & 2035, is included and replicated in the EIAR Supplement (Chapter 13 Appendix 13B). In summary the results indicate that in all the sensitivity testing, the size of the area, the number of dwellings, and the scale of the population (including consented development) will be larger in the proposed scenario when compared to the permitted scenario as summarised below:

<u>Assessment Year 2025</u>

- For 2025 L_{den} the area, dwellings, and population (including consented developments) within the 55(+1 dB) contour area will be greater for the proposed scenario.
- For 2025 there will be one additional non-residential property (place of worship) within threshold for medium absolute effect.
- For 2025 L_{night} the area, dwellings, and population (including consented developments) within the 55(+1 dB) will be greater for the proposed scenario, although less in some contours below 55 dB (i.e., noiser operation at night)
- For 2025 Lden the area, dwellings, and population (including consented developments) within the 55 (- 1 dB) will be greater for the proposed scenario.
- For 2025 Lnight the area, dwellings, and population (including consented developments) within the 55 (- 1 dB) will be greater for the proposed scenario.
- Two additional non-residential properties will be located within the area above the threshold for medium absolute effect.

Assessment year 2035

- For 2035 Lden the area, dwellings, and population (including consented developments) within and above the 55(+1 dB) will be greater for the proposed scenario.
- Two additional non-residential properties will be located within the area above the threshold for medium absolute effect.
- For 2035 L_{night} the area, dwellings, and population (including consented developments) within the 55(+1 dB), and all contours, will be greater for the proposed scenario.
- For 2035 Lden the area, dwellings, and population (including consented developments) within and above the 55(-1 dB) will be greater for the proposed scenario.
- For 2035 L_{night} the area, dwellings, and population (including consented developments) within and above the 55 (-1 dB), and all contours, will be greater for the proposed scenario.

Number of people with significant effect

The applicant's summary includes an overview of the no. of people with significant effect L_{den} and L_{night} only for the proposed scenarios. The conclusions indicate a decrease in those significantly affected in both L_{den} and L_{night} between 2025 and 2035 for all scenarios i.e., +/-1 dB.

9.2.15. **Item No 3**

Baseline years assumed in the assessment.

9.2.16. The applicant's response states the following:

a) In response to query why 2019 was not used for baseline figures, the applicant notes that both 2018 and 2019 were included in the EIAR to describe past activity although not used as part of the analysis.

b) Table 41 states that 2014 was the last year in which the numbers of ATMs (for annual and 92-day summer period) where last at least 25% below the 2018 figures for ATM's.

c) Three scenarios have been presented to understand the difference in the number of persons and dwellings likely to experience an increase in L_{night} to over 50 dB and 55 dB if numbers were last more than 25% below those in 2018 after the Northern runway came into use. These scenarios are below and for both 2025 and 2035:

- The permitted scenario.
- The proposed scenario.
- Proposed reduced scenario.

All scenarios consider the fleet mix remains constant and that the dwelling and population remain constant. The variables include the noise contours.

- Table 42 includes the number of dwellings located within the different contours areas under those three scenarios listed above, for both 2025 and 2035 assessment years. The results indicate an increase in dwellings located within the 55 dB contour area, in both the proposed and permitted scenarios for 2025 and 2035 for both (not for the proposed reduced).

- Table 43 indicates the same pattern for exposed population at night by scenario and contours as above.
- The applicant notes the greater number of movements in the proposed scenario is due to the differing distribution of dwellings in the areas overflown by aircraft.

9.3. Public Consultation

9.3.1. The Board advertised the applicant's response on the 10th of November 2023 and the submission, and all associated documentation was placed public display for a period of 5 weeks. The documentation was available for inspection at Fingal County Council offices, An Bord Pleanála offices and to view on An Bord Pleanála website[14]

9.4. Prescribed bodies

9.4.1. Meath County Council (MCC)

Meath County Council agreed, at a Council Meeting, to submit letters from three elected members to the Board, Cllr Alan Tobin, Cllr Gillian Toole, and Cllr Joe Bonner. These submissions have been summarised below.

Cllr Alan Tobin

- Daa have ignored several conditions of the original NR permission from 2007.
- The North Runway Technical Group believe the operation of the runway can operate at maximum capacity within the granted noise zones (report attached as Appendix B) and there is no technical reason why they should not comply with the noise footprint of the 2005 EIS.
- Daa are not in compliance with Condition No 1, die to the new flight paths and non-compliance with the original flight paths, therefore a retention of flight paths is required by the applicant.
- There is loss of amenity and sleep for those along the flight paths from noise pollution.

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- There is a reduction in the property values of dwellings subject to aircraft noise.
- Existing runway capacity is not being used. With proper management such as that at Gatwick, daytime departures could be increased. Dublin Airport does not have enough Air traffic controllers to increase departures on both runways.
- IAA states that they have no input into the planning approvals, only the flight paths.
- Residents in the vicinity depend on the accuracy of the flight paths when deciding to buy, build, remodel or extend their homes.
- If ABP grant permission, it will result in the establishment of new flight paths which were not previously granted.
- The Daa insists that flight paths have nothing to do with planning permission although by accepting the new flight paths ABP will allow more population to be affected by adverse noise impacts.

The submission also includes a number of appendices which are detailed below:

- Appendix A- Graphical analysis of north runway flight path history.
- Appendix B- North Runway Technical Group Proposal (and email to Dublin Airport Authority).
- Appendix C- Daa publishing the 2016 Public Consultation (background of the public consultation held by Fingal County Council and ANCA)
- Appendix D- Fingal Strategic Development (background on the development allowed within the vicinity of the airport and the airport noise zones).

<u>Cllr Gillian Toole</u>

- 30,000 people are suffering from overflying which should be restricted to those flight paths as per condition No 1 of the NR 2007 permission.
- There is no safety or technical reason why Daa are not complying with the 2005 EIS which was submitted with the original NR application.
- FCC should not have permitted the RA before the NR had opened.

- The applicants FI submission was 500 pages and the public only had 5 weeks to make submissions.
- The grant of permission will be accidental retention because of the permission for the new flight paths.
- The AirNav[15] reason for changing flight paths is vague.
- Maps submitted of overlap of the legal noise boundary and the new noise contour maps.
- IAA does not involve itself within planning.
- The new incline of the flight path is at low altitude and higher climb power than previously permitted.
- Public consultation is invalid as different areas are now overflown and there are different areas of the population affected.
- The submission is accompanied by maps prepared by the objectors relating to the new noise contours, variation of different flight paths referred to in both the public consultation and planning states and forecasting aps from the applicants EIAR submission in September 2023 (L_{day} permitted and proposed scenario in 2035).

Cllr Joe Bonner

- The communities want an Oral Hearing.
- Daa are ignoring the communities.
- The noise and air pollution are not acceptable and having a negative impact on the sleep of those in the vicinity of the airport.
- The proposal seeks to retain unauthorised flight paths.
- The public are anxious about the expansion of the airport and associated capacity.
- Those within the unauthorised flight paths have no insulation scheme.

[15] AirNav: Air traffic management services and newly formed (2023) air aviation service within IAA.

- The Cllr received information on a private survey undertaken by a resident in the vicinity of the airport which states that; out of a survey of 250 people within the vicinity of the airport 232 wanted to be kept up to date on noise issues, 2% reported a little increase in impact from noise, 13% a moderate amount, 46 % a significant amount and 33% unbearable impact.

9.5. Airport Noise Competent Authority (ANCA)

The ANCA submission provides a background to the Regulatory Decision, notes the Noise Abatement Objective as a framework for the management of aircraft to limit and reduce the long-term effects of aircraft noise on health and quality of life, particularly at night, summarises the relationship between the RD and the NAO and provides an overview of the data submitted by the applicant as significant further information.

ANCA comments on the significant information are summarised as follows:

- ANCA carried out an assessment of the aircraft noise as required by the EU Directive 2002/49/EC (END Regulations and ENR Regulations 2018).
- The Regulatory Decision was based on an analysis of aircraft activity at Dublin Airport up to 2019 and forecasts out to 2040.
- The NAO analysis was based on uncertainties in the forecasting and the NAO established specific and timebound improvements to be delivered on noise outcomes (balance between fleet modernisation and any rebound in aviation activities).

ANCA comments on the changes identified in the significant information:

- ANCA have not provided a technical assessment of the impact of any of the changes in the new information submitted by the applicant.
- Since the RD, new departure routes from the north runway have been implemented and adjusted, which have some deviation from the assumed routes with the RA.
- The latest forecast incorporates changes from the forecasts in the RA.

- Aviation will be progressed faster than anticipated with more flights and more efficient aircraft.
- 737max aircraft types are currently in operation and included in the updated forecast with a large deployment now and future years, not previously included in the application.
- There are increased proportions of Generation Zero (GO) aircraft (oldest and noisiest aircraft in operation) in the updated forecast which increased percentages for this type aircraft in the applicant's fleet forecast in 2025 and 2035, with no narrative on the implications.
- The updated forecast includes a greater number of night-time flights than were forecast in the original application.

- The operation of the airport's runway at night as modelled in the updated information is different to the original forecast within the RA. This will have a consequential impact on the pattern of night-time noise exposure that originally assessed by ANCA in making the regulatory decision.
- Due to the differences in the updated forecast and fleet changes, the configuration of the NQS and the insulation scheme eligibility as provided by ANCA Regulatory Decision may no longer be appropriate.
- The cost effectiveness analysis (CEA) carried out by ANCA used the June 2021 forecast by Daa to determine the cost of Condition 3d and 5 restrictions. The new CEA may demonstrate different costs of these restrictions due to updated forecasts.

9.6. Fingal County Council (FCC)

The submission from the planning authority (FCC) notes the applicant's submission to the FI request. It is stated that the additional information submitted appears to be beyond the information requested by the Board. No detailed technical analysis has been provided by FCC. The submission is summarised as follows:

Response to Item 1

- The outcome of the additional awakening assessment has not been used to inform the determination of the significant effects in the EIAR. The applicant's

submitted documentation been supported by figures such as the spatial data on the distribution of dwellings impacted by additional awakenings.

Response to Item 2

- Based on the information in the Noise Modelling Report, the same 1 dB (+ or -) adjustment has been applied for both the proposed and permitted scenarios. For item 2 c) situations have not been considered whereby the adjustment has been made one of the scenarios compared (permitted and proposed). The Board should satisfy themselves that the applicant has adequately responded to this request.
- The outcome of the sensitivity test has not been used to inform the outcome of the appraisal of significant effects in Chapter 13 of the EIAR “Air Noise & Vibration”.

Response to Item 3

- The response is discussed in the Noise Modelling Report. A clear response does not appear to have been submitted.
- The analysis shows that the annual 92-day summer period the ATMs where 25% last below those in 2018 in 2014. This point is considered redundant considering the comments below.
- Analysis for 3 c) considers a “proposed reduced scenario” which is the proposed scenario with several movements factored down, so they are 25% last below 2018, whilst keeping the fleet mix constant. This is reported to result in a similar number of movements to the permitted scenario but retains the use of the NR for part of the night. The Board should satisfy itself that this adequately responds to the request.

Material presented in addition to the FI request.

North Runway Flight Paths

- The actual flight paths of the NR have been recorded and used in the assessment. It is considered the change in input would influence the shape of the noise contours generated and associated assessments.

- Figures presented for L_{den} and L_{night} are included in the scenarios. Analysis of the difference from previous flight path scenarios has not been provided.
- Direct comparison of the presented noise contours against the noise zone policy contours as per the Dublin Airport Local Area Plan 2020 and the Fingal County Development Plan is not possible based on the format of information presented. For the permitted and proposed scenarios there may be potential for the exceedance of contours in limited areas.

Updated air traffic forecast data

- The updated information confirms that the RA does not seek any amendment of permitted annual passenger numbers. The original forecast saw passenger numbers reaching 32 mmpa by 2025 without the RA.
- Chpt 13 now states that for the proposed scenario, the 32 mmpa cap is predicted to be reached in 2024 and that in 2026 the cap will also be reached in the permitted scenario. There is confusion as a letter from the applicant's agent has stated that the original forecasts show 32 mmpa being reached by 2025 without the RA.
- The 2025 and 2035 assessment years have been retained for the noise and vibration assessments. The activity in 2024 being like that in 2025 is cited as the reason for not adopting the 2024 assessment year. Analysis supporting this approach has not been provided as part of the noise assessment.

Earlier fleet modernisation

- Updated air traffic forecasts have been used which reflect earlier fleet modernisation and recent levels of activity at the NR since it became operational.
- Although it is reported that fleet renewal plans for airline at Dublin Airport were considered when preparing future forecast scenarios, it is unclear the level of influence Daa specific incentives/ restrictions may have on fleet assumptions and whether associated influences are different between the permitted and proposed scenarios.
- Updated air traffic forecast and assumptions surrounding fleet modernisation as an input have a material influence on the noise assessment.

North Runway Operational in August 2022

- Noise modelling has been informed and updated based on the changes in distribution of aircraft since the NR became operational, they changes influence the noise outputs and associated assessments.

Other points identified on review.

- Mode of operation of airfield as discussed in Chpt 13 and 14 assumes segregated mode, between 06:00 and 08:00 it states "*reverts the change made in 2021 EIAR"* this will have an influence on the noise model outputs and associated assessments. Preferential runway uses at night with activity on the NR limited to 2hrs Is presented as a mitigation measures/ control.
- Details on the methodology employed for modelling of ground noise are relatively scant within Chpt 14.
- The assessment of ground noise does not appear to consider the influence of L_{AFmax} noise events.

Conclusion

- FCC note several substantial changes to operational and data inputs as previously presented in the application.
- The changes submitted materially change the associated noise and vibration assessments and the determination of significance.
- These changes shall require commensurate assessment and consideration by ABP in its capacity as a competent authority for EIAR and AA.

9.7. Third Party Submissions

9.7.1. A total of 323 no observations have been received on the further information. Included within this count is the prescribed bodies listed above.

9.7.2. The majority of observations are mostly from residents who live within the vicinity of the site from both Fingal and Meath County. Some community groups, resident associations and environmental organisations have submitted observations on behalf of their members. Many these observations have been accompanied by the same technical appendices and expert opinions and have been summarised below.

Results of community surveys have also been summarised and submitted. Significant numbers of submissions request an oral hearing on the RA.

9.7.3. Many of the submissions have reiterated issues raised in previous submissions to both the RA issued by Fingal County Council and the appeal. The issues summarised below includes concerns with the new information, in addition to some previously raised concerns, where I consider it relevant.

9.7.4. Submissions have been received from elected members, TDs and MEPs.

- A joint submission has been received from Cllr Helen Meyer and Darren O' Rourke TD, Cllr Dean Mulligan and Clare Daly MEP, and Cllr Ann Garves and Cllr Louise O Reilly TD on behalf of residents impacted by the RA.
- Submissions have been received from Cllr John Walsh, Cllr, Ian Carey, Cllr Brian Mc Donagh and Darren Smith TD.
- A combined submission has been submitted by Cllr Daragh Bulter and others (Cllr Brian Dennehy, Cllr Adrian Henchy, Cllr Tom Kitt, Cllr Howard Mahony, Cllr Brigid Manton, Cllr Eoghan O Brien, Cllr JK Onwumereh).
- Elected member submissions have been submitted by Meath CoCo, on behalf of some members, and are summarised above.

9.7.5. There is a significant number of cross cutting themes throughout the submissions. The issues raised under each theme have been summarised below.

9.7.6. **Procedural Issues**

- The application should be deemed invalid due to the deficiencies in the information.
- FCC and ANCA should not have granted permission due to the lack of AA and the Board should now refuse permission.
- The information presented in the RA papers and consultation is inadequate for most residents to understand the potential impact.
- An elected member states they are not part of the decision-making process.

- The governance of analysis into the decision making has not been fit for purpose and the Board is the first independent body involved. ANCA take noise modelling directly from Daa. ANCA and FCC are not independent.
- The newspaper notice does not state that there are any changes to the flight paths and does not alert the public to any major changes in the flight paths. 1,382 observations were submitted to the RD, these people also would have made submissions to the RA.
- The further information submission needs to be fully verified by An Bord Pleanála.
- Objective DA09 of the Airport LAP requires the involvement of communities with the approach to noise mitigation levels.

9.7.7. **Unauthorised development**

- The applicant has already breached the 32 mppa in 2019 therefore a remedial AA and EIAR was required.
- Flight paths are not in accordance with the permission granted.
- Daa are constantly breaching the 65 ATM movement per night.
- The flight movements start as early as 5am and go right through the day.
- The development plan has based its noise zones on the permitted flight paths.
- The inner and outer public safety zones (PSZ) in the development plan are based on the originally permitted flight paths (attached to an Appendix of submission)
- Flight paths cannot be changed without planning consent and variation of the development plan.
- New developments have been permitted which would have been previously restricted by the flight path boundary set out in the development plans for both Meath and Fingal.
- The planning legislation does not allow for substitute consent on unauthorised development that would require an EIAR and AA screening.

- Planning policies of the development plan apply in this instance, *inter alia,* Section 3.5.15.6: housing in airport noise zones, Objective SPQH082: Rural settlement Strategy and Airport Noise Zone A, Policy DAP4: Transitioning to a Low Carbon Economy
- The Inspectors Report and recommendation for refusal on the original NR application are considered relevant in adjudicating on the current application.
- Winter 2023 slots and future Summer 2024 slot decisions are relevant evidence that should be considered by the Inspector as part of the operating restrictions. The IAA and slot co-ordination committee have failed to comply with the planning conditions.
- Condition No 10 has not been complied with, therefore the proposal cannot be assessed in relation to the impacts of aircraft noise, mitigation, and compliance with the NAO.
- The information in relation to the water and air emissions are not on the Daa web site and therefore they are in breach of conditions No 21 and 22.
- There is significant planning history and current ongoing applications at the airport site which need to be considered when determining the current application.
- FCC are failing to follow up on unauthorised actions at the airport.
- The use of the NR has breached condition No 5 and exceeded 65 aircraft movements and a retention application is required. Section 34 of the Act precludes the planning authority from granting permission for an unauthorised development where either an EIAR or AA was caried out.
- Noise complaints with the DAA are not being addressed.

9.7.8. **Noise Insulation Scheme**

- The scheme proposed is not sufficient to address significant noise reduction and the use of professional installers is not available.

- Permissions were granted for houses by FCC based on the noise contours in the development plan maps. No noise insulation measures were required at the time these applications were granted.
- The insulation scheme is yet to prove useful.
- The home buyout (market value plus 30%) scheme from the original NR permission, for those in the direct flight paths is not reflected noise insulation scheme presented with the Relevant Action .
- The agreed insulation scheme allows eligibility into the scheme to be reviewed every 2 years commencing in 2027. This is too long for someone to wait if they are affected by noise levels.
- The noise insulation scheme should include woks to reduce the noise limit internally and the Daa should have to pay for all works to achieve this limit.
- There is no evidence to suggest that the noise insulation scheme is efficient in mitigating against noise pollution.
- There are inaccurate noise readings linked to the insulation scheme. Levels of between 60-63 dB are included in the DAA information when in fact levels more than 70 dB are being recorded at the same locations.
- The insulation scheme proposed by ANCA insulates less houses than the planning application submitted by Daa.
- The works proposed for the noise insulation scheme are not adequate to mitigate adverse impacts.
- Daa are not engaging with the local community on the insulation scheme.

9.7.9. **Awakening Report**

- The applicant's awakening report does not provide a sufficient analysis of the impact on those dwellings affected.
- The awakening report anticipates a significant increase by the year 2035 if the RA is implemented.
- A report by Daa (dated 2018 as submitted by appellant) includes an analysis of the L_{Amax} and SEL with arrivals modelled using Runway 10L and departures

using Runway 28L. The most common aircraft were used in the analysis and noise levels of between 0 to 100 dB (A) where recorded between 0.5km to 4.0km.

- The AA report uses the same population area as the supplementary EIAR study area. The new flight paths are distributed in a different pattern, therefore the link between the AA report and EIAR findings is unclear.
- The AA report concludes there will be significant additional awakenings by the year 2035.
- The level of awakenings and their health implications has not been assessed. The scientific evidence submitted with the FI does not conclude no impact.
- The applicants own independent analysis notes the lack of sufficient context in measuring awakening which should not be used as defence in allowing early morning flights.
- Other European airports (e.g., Heathrow) show transparency when advertising the probability of additional awakenings in the more significant affected areas.
- The report submitted by the applicant (Dr Penzel) affirms that early morning noise is much more disruptive of sleep than late evening noise because the sleep is in a lighter part of the cycle.
- The Mott MacDonald report (Submitted by the applicant on the scheduling and forecasting analysis at the airport) indicates the primary growth in night flights is cargo, louder and noiser aircraft. Cargo flights are generally accommodated in Shannon.

9.7.10. **Fleet Renewal**

- The fleet modernisation has been presented in the Mott MacDonald report and is stated to be a key difference in terms of reduced noise levels emanating from aircraft compared to the 2021 EIAR. No new evidence has been submitted to support this claim.

9.7.11. **Noise Quota**

- A submission has been submitted from an Airline company supporting the implementation of the NQS. They have a strong interest on the creation of a night-time regulatory regime with clear rights and a Balanced Approach. Daa recent economic report notes that the gross value-added contribution of the airport to the Irish Economy is significant.
- Many standard aircraft (e.g., 737-800's) would only get a quota of 0.25 while others (e.g., 737-Max-8s) would only have a quota of 0.125 (i.e. slightly noisy aircraft can move more freely as they can use a lower classification value, therefore the airport can schedule more aircraft for a lower quota).
- ANCA increased the Noise quota without any consideration to the impact on the population.
- Best practice at many airports includes both a noise quota and an aircraft movement cap. Examples of specific airport operations are referenced in appeals.
- The noise quota above 16,000 exceeds all the London airports combined.
- There has been no comparison to any of the European Airports and the noise quota used.
- All aircraft is loud, just different degrees of loudness.
- Night flights are defined by the EU as those between 23:00 and 07:00.
- Whilst it is acknowledged the noise of aircraft is getting quieter than predecessors it is generally EPNL dB 93-94 dB with a noise quota of 2 (i.e. the standard aircraft still emit high levels of noise even those with a relatively low classification).
- UK airports and Schiphol has a noise quota and a restriction on aircraft movements (e.g. breakdown provided for in William Dempsey submission).

9.7.12. **Independent Noise Expert Analysis**

- Independent noise assessments (Wave Dynamics) and associated report have accompanied four submissions. The results of these noise assessments have been attached with other submissions. Recordings and noise

assessments are included and relate to properties to the north and northwest of the north runway and Dunboyne. The noise measurements change between properties.

- Two other independent noise assessments have accompanied the appellants submissions, one of which deals with the RFI information submitted to the Board, as summarised below in relation to the EIAR submissions.
- The majority of the noise monitoring and recorded within the independent noise assessments conclude that the properties are experiencing noise levels which would be expected within the Airport Noise Zones although are currently outside these zones.
- In all instances the acoustic reports assessed the L_{Amax} of the common aircraft using the NR (2018 data).
- Unattended noise measurement equipment was left on site for c. 3 months (June to September 2023) Dublin airports busiest period. Attended noise monitoring results were recorded for SEL levels (23rd and 14th of September during daytime). Results are summarised below:
    - Residents in the vicinity of the airport site are now within the noise contours of the NR and noise levels are above 59 dB $L_{Aeq,16hrs.}$ The recorded noise levels are not reflected in the submitted noise contour maps by the applicant.
    - The calculated SEL at a property to the north of the NR for 2023 is 62 dB (A), similar to the recorded $L_{Aeq,16hrs.}$
    - At one location night flights were recorded after midnight with c. 21 events recorded at 75 L_{AFmax} between 00:53 and 04:42 on the 20th of July 2023.
    - Other night flight and noise recordings have been tabulated and included within a submission for a dwelling in Malahide.
    - An increase of c. 9- 13 dB has been recorded at external amenity spaces because of the flight paths off the NR. These external recordings exceeded industry criteria (e.g. ProPG 2017 and BS8233).

- The applicants SEL noise contour maps for three common aircraft type illustrate levels above 80 dB (A) at residents not currently within the average noise contours submitted by the DAA for a 92-day average at night.

9.7.13. **Appropriate Assessment**

- The applicant's screening report is not robust.
- The AA screening report states that it is impossible to know the location of every area of functionally linked habitat. In this instance the Habitats Directive required a precautionary approach and the need for a stage 2 assessment.
- The carbon impacts and global warming impacts on non-species related SACs (e.g., Baldoyle Bay SAC) has not been included.
- There is no assessment of wetland and water birds which are of conservation interest in Baldoyle Bay SPA
- There is no raw data on any of the bird surveys submitted with the application.
- The limited assessments undertaken in the AA Screening are not definitive or scientific.
- No impacts of increased levels of CECs, Nitrogen, PFAS (de-icing/firefighting foam) due to pollution runoff has been provided for those SACs hydrologically linked to the airport.
- The increase in night flights will mean more airplanes need to be de-iced and therefore will result in more PFAS contamination.
- The new flight paths will impact several nesting Red Kites (IUCN red list threatened species).
- A scientific information has been appended with one submission[16]:
  - Note from English Nature on the "Disturbance effects of aircraft on birds" (produced by Allan Drewitt, Bird Unit, 02nd August 1999).
  - A paper from the Institute for Ornithological Research, Helgoland Ornithological Station entitled "What effect do airplanes have on birds?"

[16] Wild Ireland Defence CLG.

- Long -term effects of noise pollution on the avian dawn chorus: a natural experiment facilitated by the closure of an international airport (Lena de Framond and Henrik Brumm, May 2022)
- Contrail minimization through altitude diversions: A feasibility study leveraging global data.

9.7.14. **Impact on Residential Amenity/ Health**

- Many new residents under the unauthorised flight paths are now experiencing high blood pressure, stress, and anxiety.
- Childrens growth is being impacted by the increased number of flights early in the morning and late at night.
- The opening of the NR has contributed to negative health benefits for residents within the new flight paths.
- Some children with learning difficulties under the flight paths are more susceptible to the night flights and impacts on health.
- The aircraft noise impacts can lead to cardiovascular disease and stroke.
- The noise impact from the flights will have a negative impact on residential amenities and therefore on the land use zonings, to improve residential amenity.
- The dumping of fuel (i.e. fuel released over the sea before an emergency landing) impacts the enjoyment of amenity space.
- Windows of dwellings under the flight paths cannot be opened during the summer.
- The noise impact on the residents in the vicinity of the site is a residual impact and cannot be mitigated.
- A scientific paper prepares by one of the medical directors in St Vincent's Hospital accompanied an appeal from St Margarets The Ward Residential Group is attached. This paper states:
    - The Relevant Action is likely to harm health, especially in terms of sleep quality.

- There is a link between insufficient sleep and an increased risk of chronic conditions, stress and overall health and wellbeing.
- Single noise events have a more profound effect on sleep.
- A background on an American Academy of Sleep Medicine (AASM) study indicate that the impact of sleep disturbance during the non-rapid eye movement (NREM) stages are arousals and the awakening during these stages have been assessed.
- Dr Penzel assessment (submitted with the applicant's documentation) of the probability of additional awakening is at variance with the WHO guidelines and the impact of additional awakening has been identified as a critical health outcome measure.
- With a 10 dB increase in L_{night} there is statistically significant probability of being sleep disturbed by noise from aircraft.
- The data on the additional awakening should be mapped with a clear description of the area with greater than 1 additional awakening per night at a minimum as per the STRAIN dataset (study on the impact of nocturnal aircraft noise on sleep using a field study in Germany).
- The applicant's analysis assumed that the sample population is uniformly healthy which is not the case normally.
- The applicant's study clearly states that the perception of the study participants in relation to air traffic, is a significant factor in reporting of disturbance (i.e. individualised perception of impact).
- The peak time in the morning is the most disruptive. Individuals near airports have a higher intensity of impact from aviation noise at the end of their sleep cycle.
- The errors in flight paths for the NR have likely contributed to the negative framing of proposed changes by residents and their perception of disturbance and negative consequences on health and sleep.

9.7.15. **Environmental Impact Assessment**

- The use of an Annual Noise Quota (ANQ) cannot be used as a mitigation measure to replace the limit of 65 flights per night.
- The number of ATMs has increased in 2025 in the supplementary EIAR (236k in 2021 EIAR and 240k in 2023 EIAR).
- There is no value for the health benefits in the EIAR. The DALY Calculation[17] gives a value for Highly Sleep Disturbed (HSD) and Highly Annoyed (HA) and should be used in the EIAR to assess the impact on health.
- The EIAR does not fully assess the scale of the mitigation measures required to reduce the impact on the significant and profound effects.
- The amended application does not provide sufficient information to undertake a full assessment on the impact of human health.
- The Supplementary EIAR indicates that night flights will have increased in 2035 by 9 times from those forecasts in the Revised 2021 EIAR.
- The EIAR fails to integrate the impacts of awakenings from the noise events at night.
- The application materially contravenes the Fingal County Development Plan 2023-2029.
- The applicant has breached planning condition 5 of the original NR permission in relation to the flight paths/ tracks as assessed in the original EIS.
- The strategy used in the updated EIAR is that the population affected (HA/HSD) will now be redistributed (i.e. a different section of the population will be affected by the change in flight patterns).
- The amendments between the permitted EIAR and the supplementary EIAR are significant.
- The EPA will not get involved with any complaints as they say they have no remit in aviation noise or fuel particle controls.

[17] SMTW Environmental DAC submission considers the DALY Calculation (Defra, 2014) is more relevant to assess the impact of sleep disturbance.

- An independent review of the Supplementary EIAR by an acoustics firm (SUONO) notes the following:
    - The noise expert comments from the original application and the Boards decision to grant permission would now be altered because of the RA. The largest aircraft can now use the NR at any time during the night because of the stipulation in the RA stating the following *"or where Runway 10L-28R length is required for a specific aircraft type".*
    - The information submitted with the applicant's awakening scheme is insufficient to ensure that the noise insulation scheme coverage will be effective nor does the information submitted provide sufficient information to compare the noise contours against the local Airport Noise Zones.
    - This submission has referred to standards/ criteria[18] which have been used to assess the impact of the proposed third run away at Heathrow Airport. This method is considered more appropriate.
    - The awakening study would benefit from the inclusion of figures showing SEL and L_{Amax} contours for the NR.
    - The EIAR should consider the use of 2022 as using baseline years analysis rather than only relying on 2018.
    - The applicant's impact criteria for residential receptors appear to underestimate the effects in several areas e.g., Table 13.2.
    - The 777X (aircraft) is expected to account for 630 movements in 2035 in both evening and night (c. 1.3- 1.75% of the scheduled forecasting flights). This a materially larger aircraft to the rest of the fleet. The information in the EIAR suggests that there are greater noise savings for the 777X in the modern fleet than would be expected (i.e., when compared to other similar sized aircraft e.g. A330neo). The noise contours should reflect a more conservative noise saving for the 777X.

[18] Significant Observed Adverse Effect Level (SOAEL)

- No additional noise measurements have been undertaken in 2022 or 2023. The EIAR uses data form a noise measurement campaign in 2016, these are considered out of date.
- Measurement locations used for noise data do not appear to reflect the specific areas at night which would most likely be affected.
- No effort has been made to translate the noise data collected from the noise monitoring stations and compare this data with the noise contours.
- The noise modelling presented by the applicant appears is now based on the live radar information, which is considered more appropriate than using predicted scenarios.
- It is not clear if a noise assessment of the actual flight paths contained in the EIAR has been undertaken.
- The Airport Noise Zones (associated insulation schemes) are no longer comparable with the noise contours submitted. The 55 dB L_{night} contour is now outside the Red Zone (development restricted) and the 48 dB L_{night} falls outside the green zone (sensitive development management and noise insulation incorporated) as designated in the FCC development plan.
- The new noise contours are substantially different to the 2007 permission.
- It is not clear form the information submitted which properties will receive noise insulation and are currently part of the permitted scheme (RSIS).
- It is not clear from the information submitted in the EIAR if the threshold to qualify for insulation (SSIS) (i.e. insulation conditioned in the original NR) can be achieved (L_{Aeq}, 30minutes).
- The insulation scheme should be expanded to cover the L_{den} metric to ensure all significant effects area covered throughout the 24-hr period.
- There needs to be more information in the EIAR to indicate which properties have qualified for the noise insulation scheme. Maps need to be updated to clearly show the properties who qualify for noise insulation.

- The residual effects cannot be considered unless there is an understanding of the c. 9,000 people who will experience adverse effects (Table 13.52).
- The application cannot be considered to be compliant with the NAO. The airport noise is above significant effect thresholds which extend beyond the Airport Noise Zones. It is noted that the latest ANCA report notes that the NAO was not achieved in 2022.
- The Noise Quota is best supplemented by a movement cap as per Stansted, Gatwick, and Heathrow.
- There may be benefits to revert the NQ to the 6.5 hr period with a movement cap on aircraft in the shoulder hours (23:30 to 00:00 and 06:00 to 07:00).

9.7.16. **Climate Change**

- The impact of climate change and increased air traffic has not been mentioned or assessed in the EIAR.
- A recent report from SEAI notes an increase in emissions in 2023 from aviation (using the use of Jet Kerosene)[19].
- The absence of any assessment of the impact on climate is a significant error.
- Directive 2014/52/EU requires the long-term effects are to be included and requires a description of significant effects on the climate.
- The Board should get their own independent assessment of the climate information submitted with the RA.
- There are also Non Co_2 effects from the RA on climate change.

9.7.17. **Noise modelling forecasts**

- Real live data would have been available to the applicants on September 15th from the 92-day modelling over the summer period. This should have been submitted to the Board instead of forecasting.

[19] Energy-in-Ireland-2023.pdf (seai.ie)

- The permitted scenarios in the noise modelling are incorrect and based on the wrong flight paths.
- The rationale for not using the 2019 as a baseline year and other questions are not sufficiently addressed in the response.
- No new noise monitors have been placed under the new flight paths.
- The goals of COP2 need to be at the forefront of government and planning policy.
- The estimated population catchment within the noise contours area is now different from the original 2004 EIAR because the flight paths have changed, and the sensitivity testing cannot provide an accurate and realistic estimate of noise impact of the scenarios tested.
- There is no clarification why 2019 was not used as a baseline year for the purpose of analysis even though the Board asked this question requested the applicant to address this issue.
- These applicants' climate forecasts are evidently unreliable, misleading, and inadequate to support the changes proposed in the RA.
- The modelled approach in the applicant climate change assessment is heavily reliant on the redistribution of noise between day and night which is at odds with the WHO Guidelines of 2018 and the END (Environmental Noise Directive).
- The two aircraft movement restrictions (ATM movement and time) are the only protection for residents for noise at night.
- The use of a noise quota is not sufficient to restrict the limit of movement on the loudest aircraft. In theory the noisest aircraft which would wake all of Dublin would get the same 16 points as an old heavy 747 coming into land. (i.e. the number of aircraft allowed to fly within the remit of the noise quota allowance would generate a significant amount of noise)
- The noise modelling in the applicants' assessments have not been independently validated as reliable and no assessment has been undertaken to check accuracy and completeness.

- The choice of metrics only averages the sound and has the effect of supporting an increase of the number of people exposed to harmful levels of noise.
- The definition of L_{den} is different in the WHO guidelines and the END (averaged over 365 days per year). This impacts the number of people who are affected by HSD and HA.
- All the guidelines encourage the use of different metrics to supplement the standard noise metrics particularly where the noise source only operates for a small proportion of the time.
- L_{Amax} is a commonly used metric, combined with aircraft movements, to set a limit for additional awakenings during the hours of night.
- Chpt 13 of the updated EIAR notes that based on the average 365-day version of L_{den} the number of people HA will have reduced by 50% between 2018 and 2025. The information on ANCA website also supports this general reduction which indicates the noise abatement objectives for 2050 have already been met. The scale of decrease in HA/HSD to 2035 compared to 2018 would be met in 2 years, based on the model results, therefore the reduction of people HA would have been occurred without the RA in place anyway.
- It is difficult for residents to understand the impact of maximum noise levels from aircraft at night, how different this is to current levels experienced at properties in the vicinity. It is difficult for people to into context the changes and sensitives that will arise as a result of the proposal in terms of noise.
- The ground noise impact would be increased by allowing a greater movement of aircraft. Ground noise has not been detailed in the L_{den}. L_{night} or assessed in the application.
- The averaging of sound levels over an 8hr period condensed into two hours is unacceptable.
- External dB levels of 80-90 L_{Afmax} and L_{AsMAX} and SEL are a normal occurrence and beyond the levels permitted.

- Only one portable noise monitor was used to collect data along the NR even though it has been operational.
- The noise modelling techniques are being used by Daa as support for the additional passenger numbers.
- The NR is used 30 % of the time and the SR used 70% of the time but both are modelled that they are used 100% of the time. These results effectively dilute the measurement of noise.
- Daa should be required to provide L_{max} calculations for projection models for various aircraft used in forecast projections.
- There is no L_{Amax} for any westerly departures and no understanding of the impact of the noisiest aircraft and those within the flight paths to the north of the NR.
- Reverse thrust should not be permitted at night unless for safety reasons.

9.7.18. **Noise Zones**

- There appear to be now three rural villages (Coolquay, Kinsealy and Rivermeade) located either partly or completely within the Airport Noise Zones, as a result of the change to the flight paths proposed.
- Noise Zones A, B and C in the development plan take account of the planning permission granted for the original NR and run in a straight out east-west direction. The new flights paths do not follow the original NR flight paths and may not take account these noise zones.
- The noise contours submitted by the applicant now follow a different pattern and covers villages Coolquay and Rivermeade.
- The RA is a contravention of the development plan.

9.7.19. **Flight paths**

- Conditions 6, 7 and 9 of the original permission are based on Option 7B forecast contours and conditions. For departures category C & D aircraft (based on the noise of the aircraft on approach. C is a standard airliner and D

is a larger airliner) are modelled as flying straight for 5 nautical miles before turning.

- The new 30- degree deviation off the NR is because Daa are unwilling to request that AirNav Ireland redesign the missed approach (approach of flights if they miss an arrival) from the SR (i.e. an air traffic control measure which affects the mode of operation on the runways).
- The IAA was consulted during the NR application and no comments were made on the proposed flight paths.
- A new Noise Abatement Departure Procedure (NADP) could solve the issues with the height of aircraft taking off (i.e. if it the ascent changes, the noise emitted from the aircraft may be reduced over properties along the flight paths). The NADP includes noise abatements measures for the operation at Dublin Airport, this could be included as an additional noise abatement measure.
- There are schools now impacted by the new flights, including Kilcoskan National School.
- Many houses have been purchased in recent years with an understanding that they are not within the flight paths. These dwellings now find themselves within the flight paths off the NR.
- The alterations to the flight paths have not been subject to public consultation and therefore a clear breach of the Aarhus Convention.
- The alterations to the flight paths have been raised at the Transport Committee in the Dail and on the floor of the Dail.
- Instead of using the permitted flight path (straight out for 5 nautical miles or at an altitude of 3,000 ft before diverging), planes are taking a 75 degree turn at the end of the NR (at several hundred feet) before flying north.
- Flight paths do not follow the same departure heights as permitted.
- The now adjusted Standard Instrument Departure (SID) off the NR means that the noise impacts are considerably different at dwellings to the north of the NR, which have not been previously impacted.

- A power point presentation style handout has been submitted with some appeals. The presentation details the current parallel runway operations (i.e., departures from 28R and arrival on 28L), the problems with the approach divergence and landing and missed turn allowance at present. A solution going forward is to ensure that the NR is not solely used for departures.
- The Noise Abatement Departure Procedure 1 (NADP1) (climb continuous to 3,000ft) results in the least amount of noise and used across Europe.
- The Daa LiveTrack data illustrates that aircraft are being confined within the flight path contours.
- South based flights should depart from the SR.
- The houses now under the flight paths now experience a loss of property value.
- Daa state that the SR cannot be used/ or south turning departures along the NR cannot be used because of military airports in the vicinity (Baldonnell Aiport). The North Runway Technical Group (a group of appellants with aviation expertise) consider that the flight paths could change to 28L (NR), and a missed approach would not impact the military airspace. This proposal is publicly advertised on www.dublin-north-runway.com.
- The original flight paths appear to have been proposed to avoid arrivals over a large population in Portmarnock. Now there is a greater population affected by the alterations in the NR flight paths (over 30,000) over Meath.
- A revised permission cannot be submitted to rectify the change in flight paths.
- The IAA were consulted as part of the original applicant and fully aware of the flight paths in 2007.
- Queries why the SR cannot be used for some of the departures.
- Fingal CoCo mentioned that the RA only related to the noise quota and no other conditions. It is difficult to see how the proposal now submitted does not relate to other conditions of the original permission such as the flight paths.

- The flight paths affect residents in Meath although very little public consultation occurred in Meath. The RA should have been submitted to Meath CoCo. Up to 85% of the changed flight paths are now in Meath.
- It is considered that IAA and AirNav would have stated their preferential SIDs before the commencement of the NR and there should be no need for this to be amended once the NR became operational. These should have been considered in the planning permission.
- Corrstown Golf Course is now under the flight path and the enjoyment of this hobby has now been removed.
- There are already flights scheduled in for early mornings (04:55am) for 2024.
- There should be a 70% daytime operations take-off rule for the NR so that the SR is used for take-off also.
- The proposed mode of use of the runways has change from segregated (2021) to semi-mixed mode (both parallel runways used for departures) in the revised EIAR and now back to segregated mode (2023 EIAR). The semi-mixed mode allows for a greater use of the SR and NR for departures, so it is now assumed that the moved back to segregated mode is to give favourable noise results.

9.7.20. **Cost Benefit Analysis**

- The RICONDO report (Cost Effectiveness Analysis Report submitted by the applicant) indicates that there will be an increase in HSD and HA as a result of the Relevant Action. It is the responsibility of ANCA under the NAO to regulate the night SEL and L_{AFmax} and L_{ASmax} to those populations that could be affected in terms of HSD and HA.
- The human cost of implementing the nighttime noise quota has not been considered in the cost benefit analysis.
- An example of how a correct Balanced Approach has been implemented at Schipol Airport, Amsterdam. Schipol airport uses a baseline of movement caps on the number of aircraft numbers and nighttime movements for its NAO rather than only relying on a NQS allowance.

- The “Forecast without new measures (FWNM)” is a scenario used in the applicants CEA and is a baseline scenario against which all cost and noise impacts are assessed against. The applicants FWNM is required to include developments already in the pipeline developments, as per the EU598/2014 legislation. This has not been included.
- The RD needs to be revisited having regard to the information contained in the supplementary EIAR (September 2023).
- The new CEA analysis is missing an assessment from other scenarios undertaken by ANCA (Revised Table 4.2 does not include P11, P12, P13) and cannot be considered a full and complete analysis.

9.7.21. **Support for the Relevant Action**

- Dubin Chamber of Commerce has submitted a letter of support for the RA. It is considered the NQS would allow for more effective control of noise compared to a blanket movement limit, which does not differentiate between quieter and noisier operations.
- The Irish Tourism Industry Confederation (ITIC) expresses support for the current RA. The extension of air travel for additional hours will enable the use of the airport as strategic infrastructure.
- Ibec supports the RA and considered the planning conditions 3 (d) and 5 are incompatible with the Eastern and Midlands Regional Authority’s Regional Planning Objective 8.17 which provide support for the growth of Ireland’s Aviation Sector.
- Freight Transport Association Ireland consider the assigning of a noise quota allows the appropriate allocation of a noise limit for aircraft.
- A national logistics firm (DHL) has submitted a letter of support to the RA and state that air cargo flying at night is essential to support business in Ireland.

9.7.22. **Noise Abatement Objective**

- The use of the baseline year for the NAO (2019) does not align with the EU Action Plan (Towards a Zero Pollution for Air, Water and Soil) as the targets for zero pollution where set in 2021.
- Considering the new population that could be exposed to noise levels in excess of exposed to > 55 dB L_{night} the Board has the powers to amend the NAO.
- There are many dwellings (e.g., beside Portmarnock Dart Station) which are within the 55 dB contours and outside the insulation scheme (NAO).
- ANCA have stated that the SIDs has been introduced in Feb 2023. ANCA fail to note there where already residents outside the 55 dB L_{night} contours areas should have declared a “noise problem”.
- The Board should provide a monitoring and assessment criteria for local communities.
- ANCA used 2019 as the baseline year for the NAO although Daa used 2018. ANCA did not use 2018 as it wouldn’t satisfy a reduction of 30% for the NAO objectives.
- The NAO could not have been achieved if 2018 was used as the baseline year.
- The information in the supplementary EIAR would fail to achieve the NAO for the 55 dB L_{night} limit when permitted developments and land zoned for development are included.
- ABP have the powers under the Aircraft Noise (Dublin Airport) Regulations Act 2019 to modify the NAO. This should be modified to use the 2016 baseline.

9.7.23. **AA Screening**

- There is no reference in the AA screening, for the potential impacts which could arise on the European Sites where the noise limit exceeds60 dB in the nighttime period.
- The impact on the red kite has not been included.

9.7.24. **Other**

- Ireland is required to comply with EU law in relation to the single market and competition law which also applies to the air transport sector. By potentially breaching planning and environmental regulations the Daa is potentially seeking to disapply rules that other EU member airports must comply with.
- DAA have received substantial state funding and need to comply with EU law.
- Insufficient time was given by the Board for the public to review highly technical documents and only the minimum of 5 weeks was granted.
- The Board is requested to revisit holding an Oral Hearing as there was insufficient time to make a submission to the FI.
- The impact on air quality/pollution has not been addressed.
- Schools are not impacted by the change in flight paths.
- Various technical reports on Aviation Health and Noise, some from the EU, UK and America, have accompanied some of the appeals (i.e St Margarets The Ward).
- Animal behaviours in farms within the vicinity of the airport have been affected, particularly by low flying aircraft.
- A well-designed earth berm extending 1km from the eastern end of the NR will materially reduce both air and noise pollutions.
- The impact on the attendant grounds of protected structures, ACA's and those areas with important landscapes has not been fully considered.
- Information has been submitted on the investigation into Public Safety Zones in Irelands three airports. This information includes guidance on permitted development within the proposed public safety zones.
- Aviation reports from IAA, Commission for Aviation Regulation etc accompanied an appeal from Saint Margarets The Ward, as summarised below:
    - Decision on Summer 2023 Coordination Parameters at Dublin Airport (Commission for Aviation Regulation)

- IAA Final Decision on Winter 2023 Coordination Parameters at Dublin Airport
- IAA Final Decision on Summer 2024 Coordination Parameters at Dublin Airport.

10.0 Additional Information Request (2)

10.1. Introduction

10.1.1. Following third party submissions on foot of the additional information above, the Board requested that the applicant submitted enhanced insulation maps. The maps were necessary to ensure clarity in the assessment of the Noise Abatement Objective, the Regulatory Decision and the supplementary EIAR for the Relevant Action. The request is detailed below:

The Board received additional information from the Dublin Airport Authority (Daa) on the 14th of September 2023. This additional information includes noise contour maps which amend the terms of the Third Condition of the Regulatory Decision in relation to Figure 3.1 - Residential Sound Insulation Grant Scheme (RSIGS) and the "Initial Eligibility Contour Areas".

In accordance with section 132 of the Planning and Development Act, 2000 (as amended), you are required to submitted, on or before 04th of March 2024, the following information:

> Maps at a relevant scale, which will allow the Board to undertake an assessment of any comparison with Eligibility Contour Area maps in Fig 3.1 and Maps 1-23 of the Regulatory Decision, and the noise contours now proposed.
>
> Maps shall be provided at a scale of 1: 50,000 for Fig 3.1 and 1: 10,000 for Maps 1-23, or scale otherwise agreed with the Board. The revised maps shall clearly illustrate all authorised habitable dwellings within the 55 dB L_{night} and 63 L_{den} contour for the year 2025.

10.2. Applicant's submission

10.2.1. The applicant responded to the further information request on the 14th of March 2024. The submission included:

- Overview Maps illustrating the comparison between the Eligibility Contours in the initial Regulatory Decision 3rd condition and the amended Eligibility Contours having regard to the alteration in the noise contours with the supplementary EIAR.
- Maps illustrating the alterations in the Eligibility contours and highlighting the properties mitigated under the insulation scheme to date and the developments insulated by planning conditions.
- The maps illustrate the 55 dB L_{night} and 63 dB L_{den} for the year 2025 in the proposed scenario.
- Aerial Maps including the above information.
- Cover letter to describe the background for the FI request and the changes in the contour maps.

10.2.2. The cover letter provides a breakdown of the amendments in the Eligibility Contours between the Regulatory Decision and the Eligibility Contours for those dwellings based on the new contour maps. The applicant has stated that the change in contours is based on the change to a mixed mode of the runways, more departures from the NR, and the airspace safety requirements set down by the International Civil Aviation Authority (ICAO) and enforced by the Irish Aviation Authority (IAA). The aircraft safety requirements means that departures off the North runway turn slightly (at least 15 degrees) north once airborne and clear of the runway end, earlier than previously modelled.

10.2.3. The main changes include:

- Increase in the overall area of the eligibility contour increased from 28.5 km^2 for the contour based on the December 2021 submission, to 29.9 km^2 for the contour based on the September 2023 submission (5%).
- Main alteration of the eligibility contours to the north-west of the NR;
- Slight increase in area to the east of the SR and south-west of the NR;

- Decrease in eligibility area to the west of the SR and the initial flight path areas to the NR.
- Slight decrease in the eligibility of the areas directly east of the NR.

10.2.4. The maps include an illustration of the 55 dB L_{night} and 63 dB L_{den} as requested in the FI. The 55 dB L_{night} is the same as contours on Fig 13C.10 of the supplementary EIAR. The 63 dB L_{den} had not initially been included on those contours and this has been generated using the information from Fig 13C.09.

10.2.5. **Public Consultation**

10.2.6. In compliance with Section 131 of the Planning and Development Act, 2000 (as amended) the applicant's submission was circulated to the parties of the appeal on the 12th of March 2024. The parties were notified of a link to the applicant's submission on the Board's website. Submissions or observations were invited on or before the 02nd of April 2024.

10.3. **Prescribed Bodies**

10.3.1. Fingal County Council (Planning Authority)

The planning authority have reviewed the applicant's submission and without undertaking any detailed technical assessment or analysis thereof, make the following comments:

- The absence of uninsulated dwellings within the eligibility contours is noted.
- Reference in the submission of effective land use zoning measures is noted.
- Whilst recognising the use of different metrics, it is noted that the noise contours now presented may not align with the Noise Zones A-D in the development plan. The Board is requested to consider this observation in the determination and potential wider implications for the operation of land use policy.

10.3.2. Aircraft Noise Competent Authority (ANCA)

ANCA's submission refers to the previous correspondence submitted to the Board on the 12th of March 2024 and the 13th of December 2023 and includes additional

observations on the information submitted to the Board on March 2024 as summarised below:

- The NAO for Dublin Airport identifies two priority noise exposure levels at 55 dB L_{night} and 65 dB L_{den}. There is a home insulation scheme already available for the dwellings located within 65 dB L_{den} exposure level.
- The eligibility maps submitted to the Board do not appear to clearly identify uninsulated dwellings within the eligibility contours.
- ANCA note that it may not be possible, from the map details provided, to determine whether buildings shown “are authorised habitable dwellings” or buildings such as other uses.
- The difference between the contour shapes around the NR, between June 2022 and September 2023 are noted.
- The primary policy of the ICAO on aircraft noise is the Balanced Approach to Aircraft Noise Management. Land-use planning and management is one of the four pillars of the balanced approach. The information submitted by the applicant on the 04th of March 2024 referenced this issue but did not contain details to demonstrate the impact of the proposed development with the Airport Noise Zones of the Fingal Development Plan 2023-2029.

10.4. Third Party Submissions

10.4.1. 196 no submissions were received in response to the S131 notice issued on the 12th of March 2024. Many submissions have reiterated issues raised previously which was not included in the information placed on public display. To prevent repetition, I have not summarised these issues as they have been addressed previously.

10.4.2. Submissions from residents’ associations have been accompanied by letters from members of the public (who have not previously made submissions) to state that they are now within the contour areas which will be eligible for nighttime insulation- i.e., will be affected by the RA. They did not initially consider they were affected by this proposal.

10.4.3. Many of the submissions raise the same issues, therefore I have summarised these under common themes below:

10.4.4. **Public Notices**

- The public who live within the new noise contours were never consulted. The Board did not adequately advertise the new information submitted by the applicant and the public were not properly consulted.
- Many people who live within the noise contours were only informed when they attended a public meeting.
- People within the noise contours have not been given the opportunity to make submissions.
- The applicant's response should have been considered significant and readvertised.

10.4.5. **Noise Contour Maps**

- There are more than 200 dwellings now located within the contours greater than 55 dB L_{night} or greater than 50 dB L_{night} contour with +9 dB increase, the areas eligible for nighttime mitigation insulation.
- There is an extra 7km^2 of land now located within the eligibility contour area to the northwest of the NR, which requires a greater amount of noise mitigation.
- The newly defined noise contours now include a very significant number of dwellings.
- The Daa noise contours are not accurate, the applicants are trying to manipulate the contours to obtain permission.
- The local community has registered noise contours, that are more geographically expansive than the Daa predicted contours.
- The only solution is for the airport to operate in compliance with the NR original permission in 2007.
- The contours maps do not include how they were modelled or what environmental effects where assumed (i.e., wind). They need to be rerun with the prevailing winds included.
- Neither the Daa, their agents or ANCA have modelled the noise contours for the insulation scheme correctly.

- The noise contours at Malahide are not adequately represented.
- The new 63 dB L_{den} contour maps include areas which require noise insulation under the original conditions of the NR permission. There are dwellings recently constructed which are now located within these contours and have not been insulated.
- Kilcoskan National School cannot use their yard during the day as the children cannot hear each other due to aircraft noise overhead.
- Independent acoustic recordings caried out on behalf of 3rd parties conclude on noise events are occurring which are much greater than the noise contours submitted by the applicant indicate.
- There is a change of +9 dB between the noise levels stipulated in 2007 EIS and the applications RFI at locations to the NR along the new flight paths.
- There is now a larger area to the northwest of the NR within the 57 and 63 dB $L_{Aeq, 16hr}$ when comparing the 2007 EIS with the RFI (Sept 2023).

10.4.6. **Rationale for new flight paths**

- The proposed flight paths are the fourth set of flight path routes adopted by the Daa since 2005.
- There is no safety, regulatory or technical reason that prevents Daa from complying with the original noise footprint in the 2005 EIS.
- The rationale for developing the new flight paths is incorrect.
- Irish Aviation Authority (IAA) have stated they have only been given one set of flight procedures to approve (i.e. the applicant has not provided IAA a range of options to assess other appropriate flights patterns)
- The IAA have not approved the runway operations now proposed.
- The amended eligibility maps, which include those areas eligible for nighttime noise insulation, have been overlaid on the noise zones and there is an area in noise zone B (i.e. Noise Zones in the development plan) which is in the noise contours of 55 dB L_{night}. (i.e. the eligibility maps do not comply with the Noise Zones).

10.4.7. **EIAR**

- An assessment of the significance of impact of the effects on those people living within the noise contours has not been undertaken in the EIAR.
- The EIAR is not in keeping with the EIAR Directive.
- The most recent contour maps, submitted with the applicant's supplementary information, include a greater number of people than the original maps submitted to the planning authority under the original EIAR.
- The environmental impact of no flights on the NR should have been included in the EIAR.
- ANCA should undertake an independent noise assessment of the new supplementary EIAR.
- OPR guidance on EIAR stress that the competent authority carrying out an EIA need to fully understand the significant effects likely on the environment. The change in flight paths from the 2007 permission has not been properly assessed and contravenes the OPR guidance.
- The year for 2022 should be included as the year for a "very significant" comparison for those HA and HSD.
- There are two geographical areas within the eligibility contours where detailed maps have not been included. Maps of 19 (Coolquay Village) no 20, no 21 (Rivermeade village) and no. 25 are not included in the eligibility for noise mitigation measures. The Board cannot assess the impact on these areas.

10.4.8. **Regulatory Decision and NAO**

- The TPA submission on behalf of the applicant refers to the RD although does not address the NAO. The proposal does not meet the NAO objectives in 2025.
- ANCA have not addressed the issue of insulation or noise mapping effectively.

10.4.9. **Airport Noise Zones**

- The noise zones in the FCC development plan now need to be revised. The location of dwellings within Noise Zone A and B and the associated contour areas 55 dB / 63 dB, will result in the residents of these dwellings experiencing adverse human health.
- The Noise Zones do not reflect the actual noise modelling at the airport.
- The lands around the airport have been undeveloped for years because of the airport zones. The flight paths have now changed, and dwellings will be affected by noise, not previously within the airport noise zones.
- Third party submissions illustrate actual contours (not part of the applicant's submission) for Summer 2023 63 dB $L_{Aeq,16hr}$ indicate that the Daa are not in compliance with Zone A.

10.4.10. **Insulation Scheme**

- The insulation scheme is not fit for purpose and will not protect against the noise at night.
- Measurements of noise taken in bedrooms of housing already insulated indicate that the noise levels exceed the recommendations in the Fingal development plan and are not sufficient to protect human health.
- Recently insulated houses do not include any difference in the sound levels within the house and the insulation scheme is not working.
- There are no specific details as to what criteria was used to analysis any impact on those persons located within the new areas in the eligibility contours.
- There are properties around Portmarnock train station which are eligible for insulation (i.e., granted after December 2019) but are not included in the insulation scheme.

10.4.11. **Best Practice**

- Many airports do not allow night flights or air cargo to use the runways at night.

10.4.12. **Use of the runways**

- The contour maps and plans do not illustrate the preferential use of the north runway (i.e. from 06:00 to 08:00). The proposal includes the use of both runways, this should be clear on the maps submitted.
- The use of the NR for westerly landings is questionable. There is no indication when they may be used (i.e., only when the SR can't be used and not included in the night insulation contour areas).
- The applicant's illustrations for the preferential use of the runway (Option 7b) appear to indicate an equal use of both SR and NR for departures although this is not the case.
- Whilst the applicants noise modelling results states that 70% of the take offs are to the west, from living beside the airport it is evident 80% of the take offs are to the west.
- It is requested that ABP ensure the 70/30% use of the runways can be ensured without compromising aircraft safety.
- The applicant proposed a segregating mode on the NR between 06:00 to 08:00. If the Board determines that Option 7b can be amended allow a change in mode of the operation, then it should be clear in the conditions of any grant of permission and specifically exclude the use of mixed mode.

10.4.13. **Number of passengers**

- The transfer of passengers when on the runway (i.e. not leaving the airplanes) has been discounted from the 32 mmpa. Therefore, the applicant has already exceeded the permitted cap.

10.4.14. **Independent Noise Study**

- An independent noise assessment is being undertaken by a local community and will be completed by the 30th of April 2024.
- The Independent Noise Assessment will be carried out at the nearest noise monitoring station to Ballyboughal.

- It is requested that ABP allow the findings of this assessment to be submitted.
- This will provide more information given the absence of the Daa actual data and findings.

10.4.15. **Independent Acoustic submission**

- An independent acoustic assessment by Searson Associates carried out between 11th and 22nd of Jule 2023, concluded that dwellings were subject to increased noise, particularly at night. Recordings of > 70 L_{AFmax} are included.
- These areas are not included in the insulation scheme or ANCAs contour areas for >55 dB L_{night}.

10.4.16. **Independent Planning Submission**

- The Relevant Action permission does not apply for a change in flight paths on which the original EIAR was based.
- There is a significant number of houses both within the rural area of Fingal and Meath now significantly affected.
- Maps of 19 (Coolquay Village) no 20, no 21 (Rivermeade village) and no. 25 on the newly submitted eligibility maps are not included in the detailed mapping eligibility for noise mitigation measures.
- Rivermeade and Coolquay are located within the area designated as Airport Zone C. These areas have lower aircraft noise than noise zones A and B although are now experiencing higher aircraft noise because of the Relevant Action.
- The noise mitigation measures are relevant for noise zones A and B, rather than noise zone C.

11.0 **Oral Hearing Request**

11.1.1. An Oral Hearing Request was submitted by the following:

1. Terrence Murphy
2. Noel and Breda Deegan

3. Adrienne Mc Donnell
4. Saint Margarets The Ward Residents Group
5. SWTW Environmental DAC
6. Brian Murphy
7. Sheelagh Morris and others
8. Trevor Redmond

11.1.2. The issues raised in the above submissions are summarised as follows:

- Planning history and alteration of conditions
- Aircraft Noise Competent Authority (ANCA) decisions
- Public Consultation
- Climate Change
- Noise Impacts
- Use of 2019 as a baseline year
- Airport usage
- Airport Policy
- SEA
- EIAR information
- New Flight Paths
- Insulation Scheme are not appropriate/ should be expanded.
- Impact on Health
- Appropriate Assessment

11.1.3. Section 134 of the PDA, 2000, as amended, provides that, the Board may, in its absolute discretion, hold an oral hearing on an appeal. A substantial amount of information accompanied the application. In addition, the Board sought additional information, as detailed above in Section 7.0. This information was deemed significant and was subject to public consultation.

11.1.4. The Board determined that having regard to the issues raised in the third-party submissions and the plans and documentation, there was sufficient information available to assess the proposed development. In this instance, it was decided there was no requirement to hold an oral hearing, therefore the request for an oral hearing was refused.

12.0 **Assessment**

The main issues relevant to the grounds of appeal regarding both the Relevant Action ((RA) the appeal) and Regulatory Decision (RD), are considered below. Due to the complexity and technicality of the issues to be addressed I have included an introduction which sets out the format of my report. Many of the issues addressed in the planning assessment are also raised in the Environmental Impact Assessment and whilst there may be some repetition to ensure clarity, many cross references have been included throughout both assessments.

The Board requested the applicant submit additional information on two separate occasions. An Independent Noise Expert, Mr Dani Fiumicelli, has been engaged to assist the Board in assessing the RD and the RA. A report was received from the noise consultant following the submission of the first additional information submitted to the Board and a supplementary report on foot of submissions received by the Board. The initial report is referred to as the Vanguardia Report throughout the assessment and the EIAR, where relevant. The report was updated following a request by the Board for following the second request for additional information. This report is referred to as the Vanguardia Addendum Report.

The main issues addressed are summarised as follows:

- Introduction
- Aircraft Noise Competent Authority (ANCA) procedures
- Condition No. 3 (Hours of operation)
- Condition No 5 (Noise Quota Scheme)
- Mitigation Measures (Insulation Schemes)
- Noise Mapping, Guidance, Zones, Contours and Modelling Results

- Impact on Residential Amenities
- Passenger Capacity at Dublin Airport
- Submissions from Fingal County Council (FCC) and Aircraft Noise Competent Authority (ANCA)
- Submissions from other Prescribed Bodies

12.1. Introduction

Background

12.1.1. Dublin Airport is currently served by two main runways, Runway 10R/28L or the South Runway (SR) which opened on 21st June 1989 and Runway 10L/28R or the North Runway (NR) which opened on 24th August 2022. There is also a further cross runway - Runway 16/34 which is used less frequently. The airport has two terminals which operate 24 hours a day, and for 364 days a year.

12.1.2. The North Runway was permitted by the Board (PL06F.217429 (F04A/1755) in August 2007 for a period of 10 years and extended by FCC F04A/1755/E1 for 5 years until 28th of August 2022. The NR permission was granted subject to 31 conditions including Conditions No 3 and No 5 which include operating restrictions on the aircraft movements. This runway became operational in August 2022. The SR can be used all the time whereas the NR is restricted from use during the nighttime hours.

12.1.3. The Aircraft Noise (Dublin Airport) Regulations Act 2019 (Aircraft Noise Act) has been implemented since the permission for the NR. This Act, known as the Airport Noise Act, implements EU Regulation 598/2014 on the establishment of rules and procedures regarding the introduction of noise related operation restrictions at EU airports. Section 34B to 34C and 37R and 37S of The Planning and Development Act, 2000 (as amended) implement the requirements of the Aircraft Noise Act. The Aircraft Noise Competent Authority (ANCA) are designated as the competent authority for aircraft noise under the Noise Act. The Board is the competent authority for the purpose of this appeal, Relevant Action (RA).

12.1.4. The proposed development comprises the taking of a ‘Relevant Action (RA)’ only within the meaning of Section 34C of the Planning and Development Act 2000 (as

amended), at Dublin Airport, Co. Dublin. The Relevant Action (RA) pursuant to Section 34C (1) (a) is to amend operating restrictions imposed by previous permissions as being alterations to PL06F.217429 (F04A/1755) and those nighttime restrictions. The RA relates to the night-time use of the runway system at Dublin Airport and proposes to amend conditions No 3 a) and 5 of the original NR permission. A change to Condition No 3 d) allows an extension of the permissible hours of operation for the runways and Condition No 5 replaces of the restriction on flights at night on the NR with the use of a Noise Quota System (NQS) for both runways (NR & SR).

12.1.5. ANCA determined that the RA would lead to a noise problem, therefore a Regulatory Decision (RD) was required. This Board in their consideration of this appeal may decide on any RD which was considered during the process. The Aircraft Noise Act and the relevant sections of the PDA ,2000, as amended, permit third parties to appeal both the Regulatory Decision (RD) and the Relevant Action (RA). Whilst the process for both is separate, the issues considered in the determination of both the RD and RA are the same for the purpose of this assessment.

Structure of Assessment

12.1.6. The following planning assessment has been structured to provide a detailed analysis of the Regulatory Decision (RD), address the grounds of appeal specific to this issue, ANCA's involvement and assessment, and then proceeds to address the specifics of the RA. The proposed amendments for Condition 3 d) and No 5 have been broadly addressed prior to an in-depth technical assessment of the noise modelling, to provide the Board with an understanding of the requirements of the RA.

12.1.7. As stated above, many of the topics will overlap with the EIAR although the assessment and conclusions remain the same. All assessments relate to issues raised in both the RD and RA unless explicitly stated.

12.2. Aircraft Noise Competent Authority (ANCA) Procedure.

12.2.1. Introduction

12.2.2. ANCA involvement with the application is described in detail above. In general terms, the Aircraft Noise Act, 2019 introduced ANCA as the competent authority for the

purpose of Aircraft Noise Regulation. The role of ANCA is, where a noise problem at the airport has been identified, to ensure that a noise abatement objective (NAO) is defined and measures available to reduce the noise are identified, selected, and implemented following stakeholder consultation.

12.2.3. **Noise Abatement Objective (NAO)**

12.2.4. When ANCA first determines that a noise problem would arise from the taking of RA, they are required, under the Airport Noise Act, to define a Noise Abatement Objective (NAO).

12.2.5. The NAO set for the airport seeks to “Limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, particularly at night, as part of the sustainable development of Dublin Airport”. The NAO sets outcomes necessary to limit the harmful effects on aircraft noise and is the relevant policy for the decision making in relation to the aircraft noise management at Dublin Airport.

12.2.6. The NAO expected outcomes are that the number of people highly sleep disturbed and highly annoyed shall reduce so that:

- The number of people highly sleep disturbed (HSD) and highly annoyed (HA) in 2030 shall reduce by 30% compared to 2019;
- The number of people HSD and HA in 2035 shall reduce by 40% compared to 2019;
- The number of people HSD and HA in 2040 shall reduce by 50% compared to 2019 and;
- The number of people exposed to aircraft noise above 55 dB L_{night} and 65 dB L_{den} shall be reduced compared to 2019.

12.2.7. The monitoring of the NAO is included in Part 4- Noise Performance Reporting of the First Condition of the Regulatory Decision. The Daa is required to monitor and report on the effects of the aircraft noise as measurable under Directive 2002/49/EC. ANCA is responsible for monitoring compliance with any noise mitigation measures and operating restrictions.

12.2.8. **Balanced Approach**

12.2.9. Following the identification of the noise related action or Noise Abatement Objective, Part 2 of the Aircraft Noise Act, 2019, states that ANCA is responsible for determining and applying a "Balanced Approach" addressing any noise issue identified. The "Balanced Approach" stems from international guidance[20] for aircraft noise and consists of identifying the noise problem at the airport and the exploration of various measures to reduce noise. The end goal is to achieve the maximum environmental benefit, most cost-effective method, using objective and measurable criteria. The four elements of the Balanced Approach include:

1. Reduction of Noise at Source (Technology Standards)
2. Land-use Planning and Management
3. Noise Abatement Operational Procedures
4. Operating Restrictions.

12.2.10. The use of the balanced approach ensures that a range of possible mitigation measures are considered in a consistent way and address noise impacts in the most cost-effective way. Objective DAO13 of the Fingal County Development Plan 2023-2029 (Aircraft Operations and Noise) requires the use of the balanced approach when assessing aircraft-related development and operation procedures proposed and existing at the Airport and the use of reasonable restrictions to prevent detrimental effects on local communities.

12.2.11. ANCA implemented these procedures through the following procedures:

1. Noise Abatement Objective (NAO)
2. Regulatory Decision (RD).

12.2.12. ANCA in its determination and RD considered a Cost Effectiveness Assessment (CEA) of a range of operating restrictions for runway use and mitigation measures to prevent a negative impact from the regulatory decision. The First Condition of the RD includes a Night -Time Noise Quota and associated aircraft type restriction which was considered a much more cost-effective means of managing and limiting aircraft

[20] Guidance on the Balanced Approach to Aircraft Noise management: International Civil Aviation Organisation (ICAO) Doc 9829

noise impacts in line with the NAO (i.e., night-time priority of 55 dB L_{night}) than other options considered. In its determination of the most cost-effective method to the NAO, ANCA had regard to the applicant's RICONDO report[21].

12.2.13. **Regulatory Decision (RD)**

12.2.14. The RD is the final document produced by ANCA which sets three conditions required to be included in any planning permission that the planning authority may grant. All the considerations for a balanced approach are detailed in the RD which was made by ANCA following extensive public consultation. The Draft RD was accompanied by an SEA and a Stage 2 Appropriate Assessment (AA).

The Three Conditions in the RD include:

1. Inclusion of a Noise Quota Scheme (NQS) with an annual limit of 16,260 between 23:00 and 06:59 with noise related limits on aircraft permitted to operate at night. In this scheme each aircraft is allocated a quota, based on noise emissions. The airport would include forecast scheduling based on the noise emissions of the aircraft.
2. Restriction on the use of North Runway 10L-28R for take-off or landing between 00:00 and 05:59 subject to other exceptions.
3. A voluntary residential sound insulation grant scheme (RSIGS) for residential dwellings as per the Initial Eligibility Contour Area- June 2022 (dwellings situated within the 55 dB L_{night} contour) and to be review every 2 years commencing 2027.

12.2.15. The Regulatory Decision was made during the planning authority consideration of the Relevant Action. The Planning Authority are required to include the recommendations of ANCA as the competent authority. These three conditions of the Regulatory Decision are included as conditions in the grant of permission for the RA.

12.2.16. The Airport Noise Act, 2019 allows the Board, in its determination of this Relevant Action, consider alterations to any noise mitigation measures or operating

[21] North Runway, Regulation 598/2014 (Aircraft Noise Regulation) Cost- Effectiveness Analysis Updates- Ricondo

restrictions included in both the Regulatory Decision and the Relevant Action. If the Board considers adopting noise mitigation measures or operating restrictions (if any), or a combination thereof, which were not, during the process that gave rise to the relevant regulatory decision, the subject of previous consultation conducted by the competent authority, they must undertake a further period of public consultation and engagement as prescribed in the Airport Noise Act and the PDA.

12.2.17. The Aircraft Noise Act allows for an appeal of both the RD and the RA. The Board in its consideration of the RA may accept or reject all or any part of either the:

- Relevant RD the subject of the appeal, or
- The RA which relates to such regulatory decision.

12.2.18. As stated previously, the RD and RA are interrelated, and the terms and conditions are the same. This planning assessment, Environmental Impact Assessment and Appropriate Assessment is relevant for both the RD and RA, unless explicitly stated otherwise.

12.2.1. **Alterations to the proposed to Regulatory Decision**

12.2.2. The Board, in their consideration of this appeal, requested additional information twice from the applicant. The first request relates to the impact of peak L_{Amax} noise levels from Air Traffic Movements (ATMs) on sleep, sensitivity testing of the population covered by the noise contour predictions and analysis of the baseline years assumed in the applicant's assessment. In response the applicant submitted new noise modelling and an amended supplementary EIAR which reflected the operational changes, such as new flight patterns and change in fleet mix, at the NR since its opening in August 2022. This additional information has importance in the assessment of the RD.

12.2.3. In general, the applicant's amended information included new flight paths and fleet mix, not previously considered during the RD or RA. New flight patterns include the divergence of departing aircraft off the NR, in a more north westerly pattern earlier than previously considered in the original application. Alterations to fleet mix and forecasting scheduling at the airport include, *inter alia*, the scheduling of cargo flights during the nighttime hours. These alterations, and new noise modelling, indicate new flight paths over a population previously not flown over, north of the North

Runway. The main change to the RD, issued by ANCA, from the applicant's supplementary information, would be the assessment of the eligibility of the noise insulation scheme and those newly impacted by new flight paths at night. To further assess this impact, an additional suite of maps was requested by the Board in the second request for additional information. All the additional information submitted to the Board has importance in the assessment of the RD.

12.2.4. The Board will note that the applicant's proposed changes in the response to the additional information request, would result in an amendment to the terms of the RD, should the Board accept the proposed changes contained in the supplementary information, due to the new flight paths, change in fleet mix and all other associated noise contours submitted. In addition to this, within my consideration of the RD and RA, issues have been raised with regard to the terms of the applicant's initial proposal and the impact on the population. I have recommended amendments to the RA, which would also alter the terms of the RD. These recommendations include the introduction of operating restrictions such as an aircraft movement limit, to restriction of the noise emitted from flights at night, and additional residential night insulation scheme to allow for future alterations to flight paths.

12.2.5. The basis for this conclusion relates, in the most part, to the movement of aircraft during the night and the impact this can have on sleep disturbance. This is discussed in detail throughout my assessment and in the EIAR and my conclusions are formulated with expert input from an independent acoustic consultant as presented in the Vanguardia Report.

12.2.6. There is no proposal before the Board to amend the terms of the Noise Abatement Objective and ANCA remain the competent authority is setting the limits and reduce the long-term adverse effects of aircraft noise on health and quality of life, particularly at night, as part of the sustainable development of Dublin Airport.

12.2.7. **Submissions on the Regulatory Decision**

12.2.8. Many of the appellants to FCC decision on the RA made similar submissions during the public consultation period for the RD and the issues raised are relevant to both processes. Submissions to both the initial RA and the additional information to the Board have raised concerns with the NAO and RD, *inter alia*, the use of the baseline

year in the NAO and the information contained in the EIAR. It is noted that the Board have the powers under the Aircraft Noise (Dublin Airport) Regulations Act 2019 to modify the NAO and the appellants suggest that it should use these powers to modify to use the 2016 baseline. These submissions also raise concerns that the information now within the EIAR will not allow the Relevant Action to comply with the NAO objectives.

12.2.9. ANCA response to the initial grounds of appeal notes that the balanced approach was applied and states that all the considerations for this balanced approach are detailed in the Regulatory Decision Report. On making this NAO and RD, ANCA state they had regard to many of the issues raised in the grounds of appeal. ANCA refer the Board to Section 3.2 of "*Submission and Observations Related to the NAO*" which formed part of ANCA consultation on the RD. The process undertaken by the ANCA, and the final RD have been raised as an issue in the grounds of appeal.

12.2.10. ANCA made a submission to the Board on the applicant's response to the supplementary information. They consider the new modelling; fleet mix and flight patterns would be considered to produce differences in the configuration of the NQS and the insulation scheme eligibility as provided in the ANCA regulatory decision. They consider the conclusion of the RD may no longer be appropriate.

12.2.11. The ANCA submission is addressed in detail below and highlighted in the Aircraft Noise and Vibration assessment in the EIAR. Third party submissions have also been highlighted in the planning assessment and the EIAR, regarding the NAO and the RD as there are cross cutting issues also addressed with the RA assessment.

12.2.12. **Cost Effective Analysis (CEA)**

Introduction

12.2.13. The Balanced Approach requires all available options to be evaluated to identify the most cost-effective measure or combination of measures to mitigate a specific noise problem. The understanding of the CEA allows the Board to determine if ANCA have appropriately applied the Balanced Approach in assessing the cost effectiveness of those mitigation measures put forward by the applicant to prevent a negative impact on the population from proposed development.

12.2.14. The Noise Abatement Objective and RD are informed by a Cost-Effective Analysis (CEA), presented by the applicant, and assessed by ANCA in the making of their final decision. The CEA of measures to mitigate a specific noise problem i.e. the use of the noise quota and nighttime flights, proposed in the RD allows ANCA to apply a balanced approach to the applicants' proposed changes to the operating procedures and associated mitigation measures.

12.2.15. The applicant's CEA is referred to as the RICONDO Report[22] was submitted with the original Relevant Action (Sept 2020), updated with the revised information to FCC (September 2021) and again with the supplementary information to the Board (Sept 2023).

Assessment of Scenarios

12.2.16. The CEA applies the balanced approach to evaluating the noise situation. The CEA assessed potential noise reduction measures, along with their cost effectiveness, to address the noise abatement issues and the objectives set by ANCA. The CEA investigated ten scenarios for the use of the runways to see if they are feasible measures to achieve the NAO. The scenarios are summarised below. The reference to Option 7b relates to the use of the runway as per Condition No 3 of the NR permission with westerly operation c. 70% of the time and easterly operations c. 30% of the time, as determined by the wind direction. The ten scenarios assessed are set out below:

1. Forecast without New Measures (FWNM): Option 7b between 0700 and 2259 and fully mixed mode between 2300 and 0659. This is a baseline scenario for which all other scenarios are assessed against and includes the removal of restrictions from conditions no 3 d) and No 5.
2. Scenario 2: Option 7b and South Runway only between 0000 and 0559
3. Scenario 3: Option 7b for 24 hrs.
4. Scenario 4: Option 7b and reverse Option 7b between 2300 and 0659
5. Scenario 5: Option 7b and Alternate Option 7b and Reverse Option 7b between 2300 and 0659

[22] North Runway, Regulation 598/2014 (Aircraft Noise Regulation) Cost- Effectiveness Analysis Update (Ricondo for daa).

6. Scenario 6: (FWNM).
7. Scenario 7: Option 7b and Semi-Mixed Mode- Mixed Mode for Departures and Option 7b for Arrivals between2300 and 0659
8. Scenario 8: Option 7b and Semi-Mixed Mode- Mixed Mode for Arrivals and Option 7b for Departures between 2300 and 0659
9. Scenario 9: Option 7b and North Runway Only between 0000 and 0559.
10. Scenario 10: Option 7b and alternate use North and South Runway between 0000 and 0559.

12.2.17. Initially all scenarios where deemed cost effective in reducing the number of people Highly Annoyed (HA) and Highly Seep Disturbed (HSD) from 2018, therefore complying with the cNAO. Having regard to the current operating restrictions it was estimated that between 2022 and 2025 the cumulative impact would cost €963bn. The CEA looks at the cost effectiveness of all the possible scenarios available to comply with the cNAO.

12.2.18. The RICONDO report concludes that Scenario 2 is the most cost effectiveness to reduce the number of people significantly adversely affected for a change in noise for both L_{den} and L_{night} levels below the 2018 situation levels.

Residential Sound Insulation Grant Scheme (RSIGS)

12.2.19. The Vanguardia Report, and my detailed assessment below, includes a breakdown of the mitigation measures proposed with the RA. In general, a range of variants were investigated to assess the cost effectiveness of providing insulation having regard to those living within certain noise contours. Schools have been discounted as the RA is only considered to be impacting those at night and residential homes have been included. The criteria of eligibility for the proposed insulation are in addition to all other insulation available under the NR original permission.

12.2.20. The delivery of a RSIGS is necessary to prevent any significant impact on the sleep disturbance of the existing and proposed community from the proposed night flights. A grant of up to €20,000 is available for bedroom insulation for those located within two eligible areas, two criteria, dwellings exposed to noise levels that, in 2025, either a) exceed 55 dB L_{night}, or b) exceed 50 dB L_{night} and are 9 dB higher than in a scenario with the operating restrictions. The EIAR, states that these two criteria will

be included provided they are not eligible under existing noise insulation schemes- i.e., the original NR permission- further detailed below.

ANCA assessment of the CEA

12.2.21. ANCA also undertook their own cost-effectiveness evaluation and results are presented in Appendix J of the Draft Regulatory Decision. ANCA took a high-level approach in the assessment of some of the applicant's costs and broadly agreed with the passenger forecasting model based on the conclusions in the Mott MacDonald Report and up to date information by IATA[23]. ANCAs assessment of the CEA of the RD and the scale of cost saving presented by the applicant is questioned in the grounds of appeal who do not consider they have adequately applied the Balanced Approach. It is noted in the grounds of appeal that scenarios which reduced the impact on the population where not accepted by ANCA.

In relation to the use of the runways, ANCA requested the applicant to model two additional future scenarios as summarised below:

1. Scenario 12: Option 7b and South Runway only between 2300 and 0600.
2. Scenario 13: Option 7b and South Runway only between 2330 and 0500.

12.2.22. The applicant's CEA considers how the runway patterns preform at minimising the number of people significantly adversely affected. Scenario 2 (Option 7b and South Runway only between 0000 and 0559) is the scenario with the lowest number of people exposed to changes that potentially cause a significant adverse effect resulting from the change in noise levels by L_{night} (applicant's preferred scenario).

12.2.23. ANCA undertook a full analysis of all the scenarios, noting that certain scenarios perform better in some years with regard to the number of people exposed to noise greater than 55 dB L_{night}, while other perform better in the longer term, less people exposed to noise greater than 55 dB L_{night}. This is because the different use of the runways will produce different noise contours and include a different range of population within the contour areas. Also, some scenarios perform better at minimising the number of people HSD, but less so at minimising the number of people exposed to high noise levels. ANCA was satisfied with the applicant's conclusion, albeit, noting other scenarios are also cost-effective at reducing the

[23] IATA (2021) COVID-19: An almost full recovery of air travel in prospect.

number of people exposed to aircraft noise. ANCAs overarching finding in Appendix J of the Draft Regulatory Decision is that when assessing the number of people HSD, the "*difference between the various runway patterns is very small, and the targets set within the NAO continue to be comfortably met under each of the runway patterns*".

12.2.24. In relation to the costing for the mitigation measures, the applicant put forward and assessed one scheme for noise insulation where a grant of €20,000 for noise insulation is given to dwelling exposed to noise levels exceeding 55 dB L_{night} in 2025 and not eligible under existing noise insulation scheme (Variant B) .ANCA assessed a further seven variations of the noise scheme, *inter alia*, the same level of grant where noise levels have exceeded 50 dB and are 9 dB higher in 2022 and/or 2025 or higher in 2019, (Variant C6).

12.2.25. In ANCAs assessment of both the runway pattern and the insulation scheme, they concluded the most cost-effective measure under the HSD metric (i.e. number of people Highly sleep disturbed) was runway pattern under Scenario 9 and noise insulation Variant C6 (dwellings exposed to noise levels that, in 2025, either a) exceed 55 dB L_{night}, or b) exceed 50 dB and are 9 dB higher than in a scenario with the operating restrictions, provided they are not eligible under existing noise insulation schemes). The most cost-effective measure overall was a runway pattern under Scenario 10 and noise insulation Variant B (permitted inclusion scheme for those within the 55 dB L_{night}). ANCAs assessment under the HSD metric is different under the HSD and cost-effective assessment although the conclusions follow the applicant's preferred long-term measure is for Scenario 2 with a noise insulation Variant B (only 55 dB L_{night}). I note Scenario 10 is like Scenario 2 although includes the use of both the SR and NR between 0000 and 0559 rather than only SR in Scenario 2.

12.2.26. The third condition of the Regulatory Decision reflects the applicant's proposal applicant to provide a voluntary residential sound insulation grant scheme (RSIGS) for dwellings located within the 55 dB L_{night} contour area and which have not already benefited from noise insulation under any other previous scheme (variant B) and operate the runway as per Scenario 2.

Supplementary Information

12.2.27. The RICONDO report was updated and resubmitted as a response to the Board request for additional information (Sept 2023). New noise modelling has been submitted with the supplementary information and is based on actual flight patterns since the opening of the NR and noise modelling updated to include new forecast movements for 10% more annual night flights in 2025. The new noise modelling is also based on a change to the fleet mix with more Boeing 737 MAX aircraft. Some of the aircraft modelled are noisier than the average aircraft and the movement of cargo flights at night have the implications for noise contours and noise emissions during the nighttime hours.

12.2.28. ANCA made a submission to the Board on the supplementary information to state that whilst they had not undertaken a full technical analysis, the CEA and the conclusions of RD may now be different to the initial assessment.

12.2.29. The new flight paths change the number of people Highly Annoyed (HA) and Highly Sleep Disturbed (HSD) with a north westerly turn on the NR earlier than previously modelled, avoiding the Blanchardstown area and fewer aircraft turning south. The assessment of the impact of the operational changes on the HA and HSD are included in the EIAR and it has been concluded that for those HA there will be an initial decrease in 2025 and then an increase 2035 in the proposed scenario when compared to the permitted scenario. There will be an increase in those HSD in both years under the proposed scenario when compared to the permitted scenario. Whilst the figures of those HA and HSD are different, the trends remain the same in the supplementary EIAR (2023) when compared to the Revised EIAR (2021).

12.2.30. Changes in the flight patterns will alter the noise contours for RA and the RD. It is noted in the RICONDO report (2023) that the number of people at significant noise exposure levels (45 dB or higher) based on the L_{den} metric increases by 65% compared to the previous results and those exposed to significant adverse changes (40 dB or higher) in L_{night} increase by 50%. It still concludes that the preferential use of the runway is most cost effective under Scenario 2. It is stated that this will provide a cost savings when compared to the Forecast without New Measure Scenario, which assumed additional air traffic controller staff during the nighttime hours to manage two runways. There are no changes to the proposed insulation

scheme and the cost per unit (i.e. dwelling) remains the same as the previous assessment at €20,000 per dwelling.

12.2.31. Having regard to the information contained in RICONDO reports, as updated, and the information contained in the EIAR I am satisfied that the conclusions of CEA would not be substantially different under the new noise modelling. In reaching this conclusion, I have had regard to the costings and conclusions presented in all the variations of the applicants RICONDO reports which present a similar costing for the noise insulation and the employment of an air traffic controller.

12.2.32. **Assessment of the Balanced Approach and Regulatory Decision**

Introduction

12.2.33. ANCAs RD forms the basis for conditions in the FCC grant of permission for the RA. Third party submissions have raised concern about the assessment undertaken by ANCA, the impact on the HSD and HA and the absence of excluding a number of scenarios in the assessment. They do not consider the Balanced approach has been applied.

12.2.34. In my opinion, the requirements of the balanced approach to assessment operating procedures at an airport, are not only restricted to the costing of mitigation measures, but regard must be given to the necessity for these mitigation measures- i.e., the entirety of the changes proposed at the airport.

12.2.35. The introduction of the Noise Quota Scheme (NQS) is considered a significant alteration to the operating procedures at Dublin Airport. ANCA have assessed these proposed changes, and the final determination, the RD, sets out the terms and conditions for the Airport to operate under. ANCA required an amendment to the applicant's initial proposal which includes a greater NQS (16,260) which is to be used during those shoulder hours (23:00- 00:00 and 06:00 -07:00) rather than between 23:30-06:00 originally applied for by the applicant. This means that the applicant has a greater annual noise quota budget allocation although it must be used over the 8hr night period rather than the applicant's initial proposal for only 6.5hrs with no restrictions during the shoulder hours. Other high-level operating restrictions include the restriction of an aircraft with noise quota count (QC) of 4.0 on take-off and 2.0 on landing, the aircraft with the noisier classification.

12.2.36. The applicant's additional information to the Board is accompanied by, *inter alia*, an additional awakening assessment. This assessment uses different noise metric (L_{Amax}) to the applicant's noise modelling (L_{night} and L_{den}) to assess the impact of the RD and RA on sleep disturbance. It concludes that there will significantly more additional awakenings by 2035 with the RA in place than without it. The Board will note throughout my Planning Assessment and EIAR, concern has been raised regarding the absence of an Additional Awakening Assessment. On foot of this assessment, and other considerations, I have recommended additional operating restrictions in the form of aircraft movement limits. The Vanguardia Report, and Addendum, recommend the inclusion of an aircraft movement limit, restriction on aircraft noise levels at night and an additional criterion for insulation, to mitigate the impact of the RD. I consider these alterations to the operation of the airport are necessary to ensure that significant adverse effects are mitigated and would require an amendment to the RD.

12.2.37. In considering the alterations to the proposed RD, I have had regard to the amended flight patterns submitted in the applicant supplementary information. In the absence of these alterations, I do not consider my assessment would have been substantially different with or without the changes proposed in the supplementary information. In the interest of clarity and for a thorough assessment, amended Eligibility Contours illustrating the change in areas proposed for insulation were submitted. I note a change in areas which would be included with an Eligibility Contours although I consider the terms of the RD for insulation and the NQS would still be applicable. It is also noted that the RD and the associated documentation of ANCA, allow for alterations to the contours and review of a 2-year cycle.

ANCA Assessment of the Cost-Effective Analysis

12.2.38. The cost effectiveness analysis of the applicants operating restrictions and mitigation measures, has regard to the costing of implementing the balanced approach and is broadly based on the viability of insulating dwellings which will be impacted by the nighttime flights.

12.2.39. ANCAs cost benefit assessment was based on the noise modelling presented by the applicant and was based on the noise quote of 16,260 over the night period 23:00 to 0659. The assessment in Appendix J of the draft RD concludes that the most cost-

effective measure was a runway pattern under scenario 10 and noise insulation variant B (55 dB L_{night}). The RD includes this insulation scheme in the Third Condition.

12.2.40. I note Appendix J, and ANCAs conclusion, references runway patterns scenario 9 and scenario 10 as the most effective under the HSD metric and the cost-effective measure respectively. The applicant's preferred use was scenario 2 (during 00:00 and 06:00 only the SR is used). I note neither the Regulatory Decision nor the Relevant Action requires any alteration to the applicant's preferred scenario for the use of the runway. The issue of the preferential use of the runway is discussed in detail throughout my assessment and in the EIAR. The Board will note that there is no evidence in either the RD or the RA to suggest that the applicant is using anything other than scenario 2 which was previously assessed in the RICONDO Report. The updated RICONDO Report retains Scenario 2 with the additional of 55 dB L_{night} RSIGS as the most cost-effective method to meet the c. NAO and priority associated with reducing high level nigh-time disturbance. The use of the runway between 23:00 – 00:00 and 06:00- 07:00 will operate as per Condition No 3 a)- c) of the NR permission and Option 7b at all other times.

12.2.41. ANCA submitted an observation on the supplementary information received by the Board in September 2023. Whilst it was emphasised that no quantification of the impacts from those changes in the supplementary information, ANCA are concerned that due to the differences in the updated forecast and fleet changes, the configuration of the NQS and the insulation scheme eligibility as provided in the Regulatory Decision may no longer be appropriate. In addition, ANCA state that due to these changes the CEA carried out for the RD may demonstrate different costs of these restrictions due to updated forecasts.

12.2.42. In the first instance, I refer the Board to my overall assessment of the proposed NQS which the RD is based on. My assessment has regard to the additional awakening assessment and recommends additional operating restrictions such as aircraft movements limits, to ensure the impact of aircraft noise is minimised. This operating restriction would further reduce the number of people highly sleep disturbed and highly annoyed, which would again amend the CEA. I consider that any change in fleet mix, flight patterns or use of the runway would alter the results of the CEA to some extent. The important issue for the Board to consider is the information is

available to understand that a balanced approach to the operating restrictions has been presented in accordance with the Regulation 598/2014 (Aircraft Noise Regulation).

12.2.43. In general, the supplementary information states that whilst some of the population that were significantly affected by nighttime noise are now not affected, others that were previously not affected by nighttime noise (i.e., to the north of the NR) now will be affected. The CEA results still conclude Scenario 2, the preferred scenario, to have the lowest number of people exposed to significant adverse changes in L_{night} levels and is considered more effective than the Forecast without New Measures Scenario. I have no information before me to suggest that the results of this CEA do not provide a cost-effective solution to the introduction of the NQS during the night and the achievement of the noise abatement objectives.

12.2.44. In the second instance, the proposal includes the same mitigation measures necessary to comply with the NAO and the updated CEA includes those costs for insulation like the original costing (i.e., €6,427 for 2020 and €6,542 for 2023). Any amendments to the RD will require all those eligible dwellings to be included in the scheme, as detailed below.

12.2.45. Having regard to the RICONDO report, which has been updated, I do not consider the CEA is substantially different to the CEA considered by ANCA. The Vanguardia Addendum report has not raised any concerns and considered the applicant has submitted sufficient information to make an informed judgement and apply a balanced approach to the RD.

12.2.46. The main input into the decision making on the balanced approach is the use of the runway (Scenarios) and the proposed delivery of insulation to mitigate against the additional noise generated from increased nighttime activity at the airport. Concerns have been raised in the Vanguardia Report and throughout my assessment in relation to the absence of the specific inclusion of the second criteria for insulation i.e., a threshold of 50 dB L_{night} where the RA has caused a 9 dB increase in noise. This should be explicitly detailed in any alteration of the RD as it is necessary mitigation for those within the noise contours related to any alteration to flight paths.

Noise Abatement Objective

12.2.47. The NAO is set by ANCA and there is a requirement for Daa to comply with the four objectives. ANCA have a statutory role in setting and enforcing the Regulatory Decision which are actions required by Daa to ensure the objectives of the NAO can be met. The fourth objective of the NAO requires:

- The number of people exposed to aircraft noise above 55 dB L_{night} and 65 dB L_{den} shall be reduced compared to 2019.

12.2.48. The figures in the EIAR (Table 13C-52 and 13C-64), indicate that under the proposed scenario, with the Relevant Action (proposed scenario), the number of people exposed to aircraft noise above 55 dB L_{night} will be greater in both 2025 and 2035 when compared to 2018 and the permitted scenario. This means that the proposed preferred scenario cannot meet one of those objectives of the NAO with the proposed operating restrictions.

12.2.49. The setting of these objectives is a matter for ANCA and not for the Board to amend. ANCA previously reported on the effectiveness of the NAO in managing the effects of aircraft noise emissions on the surrounding communities and concluded that effective measures were not in place for those located within the NAO priority level of 55 dB L_{night} as they did not have access to home insulation scheme[24]. This aside, the Board, in its consideration of this RA in so far as the appeal relates to the relevant RD, can adopt noise mitigation measures or operating restrictions, or a combination thereof, which were not, during the process that gave rise to the relevant regulatory decision. This is allowed under Section 37R of the PDA[25] even where those operating restrictions or mitigation measures have not been the subject of previous consultation conducted by the competent authority. Where the Board considers it necessary to noise mitigation measures or operating restrictions public consultation is required.

12.2.50. As discussed in the Vanguardia Report, and referenced throughout my assessment, the regulatory decision, does not include any restrictions on the movement of aircraft during the night. The additional awakening report and other supplementary

[24] A review of the effectiveness of noise mitigation measures at Dublin Airport for the year 2022 on achieving the noise abatement objective, ANCA July 2023 Noise mitigation effectiveness review report for 2022.pdf (fingal.ie)

[25] Section 37R of the Planning and Development Act, 2000, as amended. Revised Acts (lawreform.ie)

information received by the Board (e.g., N60[26] metric assessment), highlight the need for additional operating restrictions to ensure the impact of any nighttime movements is significantly reduced. In this regard, I recommend the Board consider including alterations to the noise mitigation measures or operating restrictions contained in the RD to ensure the impact of the aircraft noise emissions on surrounding communities is sufficiently managed.

Best Practice

12.2.51. The RD includes a technical background to the noise assessment contained in the RA and is a standalone process, unique to Ireland. The RD was undertaken in tandem with the RA and the conditions were accepted by the PA and included into the RA. Many of the third-party submissions have raised concern with ANCAs assessment and reference the operation of other airports, including those in the UK.

12.2.52. I note the inclusion of a Balanced Approach is a requirement of the European Legislation. Many of the European and UK airports currently operate during the night and/or have a NQS in place. The Vanguardia Report includes reference to the operation of other airports with a focus on the UK airports with similar operating procedures to the RA. These are referenced throughout the report where necessary although the focus is on the use of the NQS and the aircraft movements. The Board will note the recommendation in the Vanguardia Report regarding additional conditions of the RD. These include a limit on the aircraft movements at night and the inclusion of additional criteria for the insulation scheme. I have undertaken an assessment of the best practice approach to the operation of the NQS, having regard to three large London airports (Luton, Gatwick and Heathrow). I have concluded that the NQS on its own has the potential to have a negative impact, similar to the conclusions of the Vanguardia Report. I consider that best practice of other European and UK airports has not been adequately considered in the assessment of both the RD and RA.

Alterations to the Regulatory Decision (RD)

12.2.53. Alterations to the RD are permitted under Part 12 of the Airport Noise (Dublin Airport) Regulations Act 2019 and Section 37R 4 a) of the PDA Act, as amended. Should the

[26] N60 is the number of planes exceeding 60 dB which fly over a home during a given period (i.e., 8hrs for night)

Board be minded making any noise mitigation measures or operating restrictions which were not previously subject to assessment in the RD they are required to identify all the noise mitigation measures and operating restrictions (if any) proposed to be adopted and not just those measures and restrictions which were initially included in the Regulatory decision[27]. At a minimum the Board is required to give reasons for the proposed changes in the draft decision and annex them to the related report.

12.2.54. A period of public consultation on a draft report is required for 14 weeks. During this time the Board is required to engage in discussions with the Irish Aviation Authority and operators of aircraft in the airport concerning the technical feasibility of, and other alternatives to, the noise mitigation measures or operating restrictions (if any), or the combination thereof, the subject of the draft decision.

12.2.55. Following the public consultation period and consideration of all submitted documents the Board must decide to confirm the relevant Regulatory Decision or revoke and replace the relevant regulatory decision. A final report shall be prepared detailing the final decision.

12.2.56. A draft amendment to the RD has been appended to this report highlighted the main three changes proposed.

12.2.57. **Conclusion**

12.2.58. It is my opinion based on the evaluation carried out above, that the information contained in the RD and the RA does not adequately demonstrate consideration of all measures necessary to ensure the increase in flights during the nighttime hours would prevent a significant negative impact on the existing population. The main reason for this is that both the RD and RA allow for the unrestricted movement of aircraft during the additional nighttime hours (23:00 to 0:00 and 06:00 to 07:00). The RD and RA have not assessed the impact of the operation of the aircraft for all the potential noise metrics available for assessing aircraft noise and the Vanguardia report raised concern that the NQS would not sufficiently reduce the impact to an acceptable level.

[27] Section 37R 4 c) of the Planning and Development Act, 2000 as amended and Subsection (12) of Section 9 of the Aircraft Noise (Dublin Airport) Regulations Act 2019

12.2.59. The Board will note the applicant's Additional Awakening Assessment, which is based on the L_{Amax} of each Air Traffic Movement (ATM) highlights the impact of aircraft movements on sleep disturbance. This is discussed in detail below in Section 12.6 and within the EIAR, impacts from aircraft noise, and I have concluded that a greater number of aircraft movements can be linked to additional awakenings on the existing communities.

12.2.60. The impact of the nighttime operation could be mitigated by the inclusion of an aircraft movement restriction which would, in combination to the NQS and insulation scheme, reduce the impact on sleep disturbance to an acceptable level. This issues is discussed in detail throughout my assessment. These operational changes would require a change to the RD and subsequent RA and a further period of consultation as prescribed under Subsection (12) of section 9 of the Aircraft Noise (Dublin Airport) Regulation Act and Section 37R of the PDA Act, 2000, as amended.

12.3. Condition No 3 (Hours of operation)

12.3.1. Introduction

12.3.2. The proposed RA relates to the alteration of Condition No 3 (d) of PL06F.217429 (Reg Ref F04A/1755) stated below:

On completion of construction of the runway hereby permitted, the runways at the airport shall be operated in accordance with the mode of operation – Option 7b – as detailed in the Environmental Impact Statement Addendum, Section 16 as received by the planning authority on the 9th day of August 2005 and shall provide that –

b) the parallel runways (10R-28L and 10L-28R) shall be used in preference to the cross runway, 16-34,

c) when winds are westerly, Runway 28L shall be preferred for arriving aircraft. Either Runway 28L or 28R shall be used for departing aircraft as determined by air traffic control,

d) when winds are easterly, either Runway 10L or 10R as determined by air traffic control shall be preferred for arriving aircraft. Runway 10R shall be preferred for departing aircraft, and

e) *Runway 10L-28R shall not be used for take-off or landing between **2300 hours and 0700 hours,** except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.*

Reason: In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Statement in the interest of the protection of the amenities of the surrounding area.

12.3.3. Permission is being sought to amend this condition No 3(d) so that it reads:

Runway 10L-28R shall not be used for take-off or landing between 0000 hours and 0559 hours except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports or where Runway 10L-28R length is required for a specific aircraft type.

12.3.4. The amendment proposes to use the NR during the additional two hours during the night i.e., between 23:00 and 00:00 and 06:00 and 07:00. Air Traffic Movements (ATMs) will be controlled during the night by the introduction of a Noise Quota Scheme (NQS). This NQS will replace the flight restriction in Condition No. 5 (65 flights per night).

12.3.5. The NQS is based on an annual budget allocation to be used by Dublin Airport for the movement of aircraft between 23:00 and 07:00. Each aircraft is classified and awarded a quota count (QC) value depending on the amount of noise generated on based on their ICAO certificated noise levels. Each aircraft type is classified separately for arrival and departure. The noise quotas are designed to encourage the use of quieter aircraft.

12.3.6. **Noise Quota Scheme (NQS)**

12.3.7. ANCA, in their assessment and RD, considered the additional use of the NR during the additional nighttime hours (23:00 to 00:00 and 06:00 to 07:00) was acceptable subject to an NQS. It was concluded that the NQS, in conjunction the applicant's proposed nighttime insulation scheme, could replace the restriction of 65 flights per night. The NQS would provide a balance between the number of people forecast to

be exposed to nighttime aircraft noise (including those exposed above the NAO nighttime priority noise level of 55 dB L_{night}) and those who may experience significant adverse changes in nighttime noise exposure.

12.3.8. Alterations to the NQS were made by ANCA during the RD process. The initial RA assessed the impact of the NQS over the entire nighttime period (8hrs). The choice of the applicant's QC derived metrics (i.e., the use of L_{night} over an 8-hr period) in assessing the NQS and the total period of nighttime assessment (i.e. between 23:30 and 06:00 rather than 23:00 to 07:00) was questioned by both ANCA and the planning authority. There was concern that in the absence of mitigation established communities would be potentially exposed to significant adverse noise impacts at nighttime. It was not considered that the RA was consistent with the balanced approach. An independent review of the EIAR (commissioned by the PA) identified potentially significant adverse and residual environmental impacts because of noise.

12.3.9. The applicant was requested to assess the aircraft operation during the proposed hours of operation 1.5 hr period (23:30- 00:00 and 06:00-07:00) and amend the NQS to reflect the use of the scheme during those hours only. The final RD includes a NQS allocation of 16,260 over the 8-hr nighttime period. The PA accepted the reasons set out by ANCA in the RD, that extending the use of the NR by 2 hours to commence from 06:00 and cease at 00:00 would strike a balance between the number of people forecast to be exposed to night time aircraft noise, including the number of people exposed above the NAO night-time priority value of 55 dB L_{night}, and those who may experience significant adverse changes in night time noise exposure.

12.3.10. **Submissions relevant to Condition No 3 (d)**

The main issues raised in the grounds of appeal relate to the impact from the noise within the additional nighttime hours of operation.

Relevant Action

- There will be significantly more people Highly Annoyed (HA) and Highly Sleep Disturbed (HSD) under the proposed scenario.
- There is no explanation to the figures provided in the noise modelling.

- The further information, and EIAR appendix, received by the PA indicates that the 2025 scenario is worse when compared to the original submitted EIAR. No explanation has been provided.
- Comparisons to other airport operating structures should be made.
- The proposal requires alterations to parts a) - c) of Condition No.3.

Supplementary Information to the Board

- Many of the comments reiterate the original concerns and raised issues with regard the impact of increase noise on sleep disturbance which is discussed in detail in Section 9.8 and the EIAR on population and Human health.

12.3.11. **Compliance with parts a) to c)**

12.3.12. Parts a) to c) of Condition No 3 relate to the preferential use of the North Runway (NR) and the South Runway (SR) and is based on the proposed flight paths in the original Environmental Impact Assessment (EIAR) for the NR permission. This is known as Option 7b. Option 7b determines the use of the runways based on the wind direction. The NR operates in a westerly direction c. 80% of the time and easterly direction c. 20% of the time, as determined by the wind direction. In general terms this means that due to the 80% westerly wind and condition 3 b, runway 28L (SR) or 28R (NR) shall be used for departing aircraft and only 28L (SR) for arriving aircraft. Therefore, the operation of both runways would indicate that SR is general used for arrivals and the NR for departures. Some submissions refer to this as the “mode of operation”.

12.3.13. The assessment of these flight paths and use of the runway is assessed in detail throughout my report. In general, the Board will note that the grounds of appeal were concerned with the flight paths not operating in compliance with those conditions included in the original NR permission.

12.3.14. On foot of the Boards first additional information request the applicant submitted amended flight paths to reflect the actual operation of the NR rather than those initially predicted and included in the RD and RA. These alterations change the mode of operation of the runways from mixed mode (previously proposed in revised submission in 2021) i.e., the parallel use of both the NR and the SR for departures

between 06:00 to 08:00 to single mode (original proposed in the RA in 2020) i.e., only the NR will be used for departures during 06:00 to 08:00. The flight patterns from the NR have also been amended, i.e. the applicant's supplementary information submission to the Board, to consider the requirements of the Irish Aviation Authority and divert north, northwest, earlier from the NR than originally proposed.

12.3.15. Although there have been alterations to the mode of operation of the runways and the flight patterns of the aircrafts, the preferential use of the runways i.e., condition no 3 a)- c) is not proposed to be amended. The applicant has stated throughout the documentation, and the supplementary information received by the Board that the proposal will comply with Option 7b (i.e., Scenario 2 of the EIAR and CEA). The Board will also note that the mode of operation, i.e., either single or parallel use of both runways was assessed by ANCA and the PA during the assessment of the RD and RA and no issues with compliance and conditions No. 3 a) to c) were raised. In this regard, I have no concerns there is any proposal to alter part a to c of condition No 3.

12.3.16. **Fingal County Development Plan 2023-2029**

12.3.17. The RA does not include any proposal for physical infrastructure and only relates to the operation of the runway of the NR. There are no specific policies in the development plan which restrict the hours of operation at the airport. The development plan policy for the airport is specific to noise issues arising from the operation. Support for the relevant noise action plans is include as summarised below:

- Dublin Agglomeration Environmental Noise Action Plan 2018–2023
- Noise Action Plan for Dublin Airport 2019–2023
- Fingal Noise Action Plan 2018 – 2023

12.3.18. Objective DAO11 of the development plan provides guidance on the requirement for Noise Insulation in accordance with Table 8.1 of the development plan (i.e., Noise Zones and proposed developments) and states "*To accept that time based operational restrictions on usage of the runways are not unreasonable to minimise the adverse impact of noise on existing housing within the inner and outer noise zone*." Objective DAO13 (Aircraft Operations and Noise) further elaborates on the

potential negative impact of noise from aircraft operations. It states that while not placing unreasonable but allowing reasonable restrictions on airport development, the balanced approach will be considered, in consultation with communities, to prevent detrimental effects on local communities.

12.3.19. Having regard to the policies and objectives of the development plan I consider the use of time-based operational restrictions to minimise the adverse impact (as per Objective DAO11) is open to consideration, although should have regard to the Balanced Approach to ensure they are reasonable (Objective DAO13).

12.3.20. **Cost Effective Assessment (CEA)**

12.3.21. The Balanced Approach to dealing with noise from aircraft movements at airports requires an assessment of a range of measures including, a reduction of noise at source, land planning and management, noise abatement procedure and operating restriction. The RD was subject to the Balanced Approach and accompanied by a CEA of proposed operational changes of the NR (i.e. extension of the use of NR between 23:00 and 00:00 and 06:00 to 07:00).

12.3.22. The applicant's EIAR concluded that the most effective method of reducing the impact of the additional hours of operation was to provide an insulation scheme to all properties within a 55 dB L_{night} contour plus those within a 50 dB L_{night} plus 9 dB change in the first year of the RA. ANCA undertook their own CEA and concluded a similar approach to the applicant, although not explicitly stating the 50 dB L_{night} plus 9 dB change. The final RD only included eligibility for 55 dB L_{night} contour. The RD is accompanied by Eligibility Maps illustrating these properties which fall within those contours detailed above. The Boards second additional information request required the Eligibility Conour maps to be updated, in compliance with amended flight patterns. These updated maps include all those eligible for additional mitigation in the form on nighttime insulation.

12.3.23. The RD is assessed in detail below and it has been concluded that subject to alterations including additional operating restrictions at the airport, the CEA of those mitigation measures is considered acceptable.

12.3.24. **Impact of Residential Amenity**

12.3.25. The grounds of appeal are most concerned with the impact of the additional operational hours and sleep disturbance. They consider that both the additional hours of operation and the associated increase in aircraft movements will increase the impact of aircraft noise at night of the existing communities around the airport and under the flight paths. This proposal and the proposed amendments, submitted don foot of the Boards additional information request, have been subject to EIAR. The EIAR concludes that the RA will have a significant adverse impact on theses existing communities. Mitigation measures in the form of insulation are required to prevent these significant adverse effects.

12.3.26. The Board's first additional information request required the applicant to submit, *inter alia,* an Additional Awakening assessment. This assessment used different noise metrics than the EIAR (L_{Amax}) to assess the impact of the aircraft movements during the additional hours of operation of the NR. The Vanguardia Report recommends, having regard to the supplementary information, that operation during the nighttime hours should also include a restriction on air traffic movements (i.e. number of flights allowed during the nighttime period), to minimise the impact of sleep disturbance and the residential amenity of residents of those communities in the vicinity of the airport.

12.3.27. **Conclusion**

12.3.28. The proposal for the additional hours of operation during the nighttime has been assessed by ANCA throughout the RD and the PA in the RA. The applicant proposes to replace the aircraft movement restrictions (65 per night) to a Noise Quota Schene (NQS) between 0000 and 0559. The applicant considered this NQS will promote the use of quieter aircraft during the night. The EIAR concludes that these operating restrictions will impact the sleep disturbance on the existing communities although mitigation measures in the form of nighttime noise insulation will prevent a significant adverse effect.

12.3.29. I have had regard to the Vanguardia report, the RD and RA, the third-party submissions and the applicant's documentation. I am satisfied that the principle of extending the hours of operation of the airport is not precluded by any international,

national, or local policies and is acceptable subject to compliance with the planning assessment below.

12.3.30. The Board will note the main concerns with the additional operating proposal during the additional 2 nighttime hours relates to the applicant's proposal to mitigate the impact of aircraft movements during these two hours with an NQS. The implications of the operating procedure along with the proposed mitigation measures have been addressed in detail below.

12.4. Condition No 5 (Noise Quota Scheme (NQS))

12.4.1. Introduction

12.4.2. The RA includes an alteration of Condition No 5 of PL06F.217429 (Reg Ref F04A/1755) as detailed below:

> *On completion of construction of the runway hereby permitted, the average number of night-time aircraft movements at the airport* ***shall not exceed 65/night*** *(between 2300 hours and 0700 hours) when measured over the 92-day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March, 2007.*
>
> *Reason: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night-time use of the existing parallel runway'.*

Permission is now being sought to amend the above condition 5 so that it reads:

> *A noise quota system is proposed for night-time noise at the airport. The airport shall be subject to an annual noise quota of 7990 between the hours of 2330hrs and 0600hrs.*

12.4.3. The applicant argues that the introduction of a Noise Quota Scheme (NQS) will promote the use of quieter aircraft at night in line with similar operations in other airports. The introduction of this NQS was also integrated into the RD, went on public consultation and is the first condition of the RD, and states that Condition 5 of the North Runway Planning Permission shall be revoked and replaced with a Night-term Noise Quota Scheme as described in the first Condition. ANCA considered the NQS during the assessment of the RD and Balanced Approach. The applicant was

requested to amend the allocation of the NQS from 7,990 over an hr average nighttime period to a NQS of 16,260 points per year based on the additional hours of operation (23:00 to 0:00 and 06:00 to 07:00).

12.4.4. **Submissions on the Noise Quota Scheme (NQS)**

Third party submissions have raised concerns in relation to the NQS as summarised below:

Original Relevant Action

- ANCA have permitted a NQS 16,270 more than that applied for by Daa.
- There is limited justification as to the rationale behind ANCA decision making.
- The only deviation from the Daa's submission is the choice of an 8-hour Quota Count System instead of a 6.5 hour.
- The Quota Count System (16,260 count value) proposed does not have an associated movement limit which is the norm in the UK.
- The additional NQS (16,260) equates to 44.54 ATMs per night (annual).
- There are currently 100 flights per night on the SR.
- There needs to be a true understanding of the number of flights per night.
- There is a NQ of 0 given to an aircraft with noise below 81 dB. The NQS would not limit any number of movements of this aircraft.

Supplementary Information to the Board

- Airline companies support the implementation of the NQS and have a strong interest on the creation of a night-time regulatory regime with clear rights and a Balanced Approach.
- Many standard aircraft (e.g., 737-800's) would only geta quota of 0.25 while others (e.g., 737-Max-8s) would only have a quota of 0.125.
- ANCA increased the Noise quota without any consideration to the impact on the population.
- Best practice at many airports includes both a noise quota an aircraft movement cap.

- The noise quota above 16,000 exceeds all the London airports combined.
- Heathrow has a noise quota and a restriction on movement.
- There has been no comparison to any of the European Airports and the noise quota used.
- All aircraft is loud, just different degrees of loudness.
- Night flights are defined by the EU as those between 23:00 and 07:00.
- Whilst it is acknowledged the noise of aircraft is getting quieter than predecessors it is generally EPNL dB 93-94 dB with a noise quota of 2.

12.4.5. **Enforcement Notice**

12.4.6. A number of third-party submissions raised concern that the applicant is already exceeding the 65 flights per night (between 2300 hours and 0700 hours) when measured over the 92-day modelling period. They consider the operations are unauthorised and therefore to permit the RA would be permitted unauthorised development.

12.4.7. Fingal County Council issued an enforcement notice under section 154 of the Planning and Development Act, 2000, as amended, in respect of Condition No.5. There is currently a High Court stay on this enforcement notice, until the Board's decision on this Relevant Action. The applicant considers the RA may result in clarification of the meaning and scope of Condition No.5.

12.4.8. The applicant's response to the Board FI notes differing views on this enforcement. The applicant considered that the North Runway only became operational in August 2022, more than halfway through the 92-day period referred to in Condition No 5 and accordingly Condition No.5 did not become applicable in 2022.

I note the scheduling of flights during the night is a matter for Daa and subject to continuous change. This aside, I have no evidence before me to suggest the proposal for the RA is to address any unauthorised action. A response to the supplementary information was received by both ANCA and the PA and no issues relating to unauthorised development have been raised. Any non-compliance with the original NR permission and enforcement issues are a matter for the PA. The RA

and my assessment deals with the replacement of the 65 flights per night to the NQS, rather than retrospective or current scheduling at the airport.

12.4.9. **Fingal County Development Plan 2023-2029**

12.4.10. The current Fingal County Development plan (2023) includes an objective to introduce a noise quota system for the airport.

- Objective DAO16 – Introduction of a Noise Quota System

  To encourage and promote the introduction of a noise quota system at Dublin Airport to encourage Airlines to use quieter aircraft so as to prevent and reduce, where necessary, on a prioritised basis the effects due to long term exposure to aircraft noise.

This objective was not included in the previous development plan (2017) which was the plan in place during the Relevant Action decision. Objective DAO16 highlights the benefits of a NQS whereas the use of quitter aircraft can help alleviate any long-term exposure of the population to negative impacts from aircraft noise.

12.4.11. **Noise Quota Scheme (NQS)**

Introduction

12.4.12. The proposal includes the replacement of the restriction of the number of aircraft movements over a specified period (65/night based on a 92-day modelling period) with a Noise Quota Scheme (NQS). As stated previously, ANCA amended the NQS from 7,990 to 16,260 to be applied over the additional two-hour period.

12.4.13. The submissions and observations mostly object to the increased quota permitted by ANCA, and the absence of aircraft movement restrictions during the nighttime hours of operation at the Airport. The classification of aircraft in the NQS is not considered a sufficient method to prevent an adverse impact on the existing communities at night. I have assessed the NQS below, in the context of the alterations proposed to Condition No 5.

Alterations to the NQS

12.4.14. The original RA was accompanied by a document quantifying the NQS[28] with 7,990 points. In response to a further information request by the PA and ANCA, the applicant submitted an amended document quantifying the NQS[29] . The alterations assessed the impact of the NQ over a 2-hr period rather than the initial 6.5hr period to ensure the impact of aircraft noise was controlled between 23:00 and 07:00 (the nighttime hours). In response to the FI request the applicant resubmitted a EIAR and other accompanying documentation (September 2021). The applicant's response provided a breakdown of the NQS over the two hours for 16,260 points although requested that ANCA and the PA did not amend the initial proposal to include the new NQ. The RD and RA included the NQS for 16,260, which although is greater than the applicant initially requested, it needs to be allocated over a longer period (i.e. between the hours of 23:00 and 07:00, the entire nighttime hours) more than the applicant initially requested.

12.4.15. When considering the applicants initial proposal, the NQS would only have been applicable between the hours of 23:30 and 06:00 with unrestricted aircraft movements between 23:00 and 23:30 and again between 06:00 and 07:00. These "shoulder hour" are times when the impact of aircraft movements and associated noise, would have the greatest impact on sleep disturbance. In general, both ANCA and the PA considered the extension of the NQS across the full 8hr night period (i.e., including the additional 2 nighttime hours) would allow a greater control on the movement of aircraft rather than the initial 6.5hr period which included no flight restrictions between 23:30- 0:00 and 06:00- 07:00.

Noise Classification Scheme

12.4.16. The noise classification system, in the NQS, uses aircraft classification (based on the QC classification system) and allows each nighttime flight to be individually counted against an overall noise quota (or noise budget) i.e., the noisiness of the aircraft. The noise classification level for each aircraft has regard for the engine type and take-off weight and different aircraft are classified separately based on the take-off and landing as detailed below.

[28] Dublin Airport: Developing a Proposed Night Quota System" Anderson Acoustics (04th December 2020)
[29] Dublin Airport: Developing a Proposed Night Quota System" Anderson Acoustics (18th of June 2021)

Table 1: Noise Classification Scheme

Noise Classification Level	Quota Count (QC)
Greater than 101.0 EPN dB*	16.0
99-101.9 EPNdB	8.0
96-98.9 EPNdB	4.0
93-95.9 EPNdB	2.0
90-92.9 EPNdB	1.0
87-89.9 EPNdB	0.5
84-86.9 EPNdB	0.25
81-83.9 EPNdB	0.125
Less than 81 EPNdB	0

* Effective Perceived Noise in decibels (EPNdB) is a measure of human annoyance to aircraft noise which has special spectral characteristics and persistence of sounds. These can relate to jets, propeller driven heavy aircraft. It is measured in a standard manner and based on the ECAC/ICAO noise certification.

12.4.17. Part 2 of the First Condition of the RD includes limitations when applying the NQ system such as no aircraft with a Quota Count of 4.0, typically the noisier aircraft, or more shall be permitted to take off at the airport during the nighttime and no aircraft with a Quota Count of 2.0 or more shall per permitted to land at the Airport during the nighttime.

12.4.18. Many of the third-party submissions consider the use of the classification system, in tandem with the NQS points is not sufficient to prevent any significant negative impact of the aircraft movements at night.

12.4.19. The Vanguardia report includes an analysis of the quota system. The QC bandings are detailed, and the report notes concern on the sole reliance of the QC system to address a noise problem at an airport. It is stated, in this report, that while the QC system is an effective way of ranking how noise an aircraft is, it does not necessarily reflect how noisy the aircraft will be at a specific airport. This is because the EPN dB is not correlated to population response and cannot be readily converted to A weighted noise metrics (i.e. the full energy of the event of the aircraft movement). Therefore, there is no average noise response to risk of increased noise from the

movement of aircraft during the nighttime (i.e. the full impact of the noise from the aircraft movement).

12.4.20. In general, the problem with the QC system is that it does not adequately account for the impact of the movement of aircraft. For example, every 3 dB increase in measured EPNL represents a doubling of noise energy. This is an approximate rating as an aircraft can be at the lower end of a QC classification i.e., 90.1 EPN dB in QC 1 or at the higher end of QC 2 would be an aircraft with 95.9 EPN dB. This is a fourfold difference in noise energy although only a different of 1 QC point. In addition to this, aircraft with a QC of 0.125 (under 83.9 EPN dB) are exempt from the NQC and their movements would be unlimited. Therefore, under the noise classification system, there is a potential for substantial number of aircraft movements during the additional 2 hr nighttime period.

12.4.21. The impact of noise from the aircraft movement can be linked to the additional awakening report which uses the noise metric L_{Amax} which is a maximum value of A-weighted sound pressure level reached during a measurement period. The maximum noise levels emitted per aircraft provide a better understanding of the increased movements of aircraft and the impact on sleep disturbance rather than the average noise metrics. The use of noise metrics in the RD and RA is assessed at length below with regard the Additional Awakening Assessment although in general the Vanguardia report notes the method used in the RD and RA is not sufficient to assess the impact of the on the sleep disturbance of the population. This understanding of the noise metrics is important for assessing the implications of removing the night flight restrictions in Condition No. 5 and replacing these with an NQS. As previously noted, the development plan policy promotes the move towards a NQ system as it promotes the use of quieter aircraft. It is important that this move helps alleviate any long-term exposure of the population to negative impacts from aircraft noise rather than to exacerbate the impacts.

Additional Awakening Assessment

12.4.22. The Board's first request for additional information required the submission of an Additional Awakening Assessment. As stated throughout this report, it is widely accepted that the Additional Awakening Assessment provides a greater understanding of the impact of aircraft movement on the effects of noise on sleep.

12.4.23. The Additional Awakening report indicates that during the busy summer period there will be a greater number of additional awakenings from the easterly operation from the proposed scenario in both 2025 and 2035, when compared to the permitted scenario, and a decrease in 2025 and then increase in 2035 for the westerly operations, under the same scenario. For the additional awakening, there is initially a slight decrease in the number of persons impacted, annually in 2025, when compared to the permitted scenario and then a significant increase in the 2035 assessment year.

12.4.24. The difference in trends between the AA and HSD is that the reduction in persons affected under the L_{night} scenarios would reduce with or without the RA in place initially in 2025, whereas the increase in number of persons impacted by the additional awakenings increased initially in 2025 due to the increased flight movements.

12.4.25. The applicant's submitted information does not include any assessment on these results (the difference in trends between the AA and HSD). The information presented in the additional Awakening Report and the EIAR, indicate that trends for AA and the %HSD in the short term appear to be different although the longer-term trend is reported as the same, i.e. the impact in 2035 will be greater under the RA than the proposed scenario. When looking at the preferential use of the runways and the use of Scenario 2 (i.e., use of the NR for the additional two hours) it can be assumed that the increased aircraft movements and landings on the southern runway will lead to increased awakening for the Portmarnock area (easterly operation). These easterly operations tend to be for arrivals and having regard to the increase movement of cargo flights at night, it can be assumed that these additional awakenings may be linked to the movement of the noisiest aircraft. The decrease in additional awakenings in 2025 can assumed to be due to the change in flight paths away from a more urban area- i.e., Blanchardstown to the rural area of the NR (westerly operation).

12.4.26. The results of the additional awakening are assessed in greater detail below, although for the purpose of understanding the implications of amending Condition No.5, it should be noted that the Additional Awakening Assessment can provide an understanding of the implications of the noisy aircraft movements on sleep

disturbance and further supports the need to compliment the NQS with an aircraft movement limit.

Air Traffic Movements (ATMs)

12.4.27. The information in the EIAR states the Relevant Action provides for an additional 13,000 flights per year. It is not proposed that this quantum increases between 2025 and 2035 (in other words there will be no further increase in flights after the initial increase of 13,000 in 2025). The proposed number of ATMs proposed during the additional hours varies throughout the applicant's documentation. The applicant's Mott MacDonald Report estimates the Dublin Forecast Night Movement Demand between 23:00- 07:00 (on a busy day schedule) in 2025 would be 133 flights. Table 13.1 of the EIAR states that the ATMs per annum for 2025 will be 240,000 with 114 ATMs during the night in a typical summer busy day, with no change up to the year 2035.

12.4.28. The QC (Quota Count)/ATM (air traffic movement) target for the NQS is derived from assessing records of the aircraft types that used the airport at night and the noise certification of each aircraft using the EPN dB metric to establish which of the QC categories each ATM lies in. The QC/ATM target is then calculated by summing all the QC values for every aircraft and dividing it by the number of ATMs. The original QC/ATM target was 0.49 and was based on an annual NQS of 7,990, applicable between 2330 and 05:59). The final RD amended the QC/ATM target to 0.51 based on 16,260 between 2300 to 07:00.

12.4.29. The Vanguardia Report quantifies the QC/ATM target into ATMs. A QC target of 0.51 equates to c. 87 flights per night between the hrs of 23:00 and 06:59. If calculated on an annual basis, this equates to c. 32,000 ATMs per year. Based on the applicant's information, the yearly flights proposed would equate to c. 48,545 (133 per night[30]). This is not an exact calculation as the Vanguardia Report does not consider a busy summer schedule and has regard to the applicants QC/ATM calculations for the NQS.

12.4.30. The Board will note the difference in total number of aircraft movements which can operate during the night when using different scenarios. When using the QC budget,

[30] Dublin Airport Operating Restrictions: Quantification of Impacts on Future Growth (June 2023)

if calculated on a nightly basis and using an average QC/ATM, there could be c. 32,000 aircraft movements, using the EIAR information there would be 13,000 aircraft movements and, in the applicants, most recent forecast schedule there would be c.48,545. The number of aircraft movements is relevant when considering the Additional Awakening assessment and the potential impact on sleep disturbance from the movement of individual aircraft.

Fleet Mix

12.4.31. The fleet mix used by airlines at the airport has implications for the noise contours. The Mott MacDonald report and the EIAR include breakdowns of the fleet mix used in the forecasting. There is no increase in the ATMs proposed between 2025 and 2035 and will remain the same after the initial increase of 13,000 additional flights per year.

12.4.32. Appendix 13B of the EIAR includes the details of the change to fleet mix between 2025 and 2035. The applicant has stated that the supplementary information (2023) assumes that the fleet mix will be modernised to less noisy aircraft at a quicker rate, than previously forecast in the Revised EIAR (2021). For example, the Airbus 320 reduces substantially in 2035 and the Airbus 320neo ATMs increases markedly. Similarly, the Boeing 737-800 reduces in 2035 and the 737max increases dramatically and likewise for the B757,767 and 777, with growth in the B77x and 787.

12.4.33. The Mott Macdonald forecasting indicates that there will be an increase in cargo flights during the nighttime period, with an increase of 9 per night, when compared to the 2019 baseline. It states the higher night flights are mainly due to the growth in night cargo flights. These tend to be retrofitted old commercial aircraft which have noisier emissions.

Best practice

12.4.34. The submissions and observations to the RD, RA and supplementary information have requested that the Board assess other airports as best practice examples of similar nighttime operations. The operational activity at Heathrow airport is constantly refenced.

12.4.35. The Mott MacDonald Report (September 2020) provides an analysis of case studies which operate slot allocation during the night, including Frankfurt, Brussels, Paris CDG, London, Amsterdam and Warsaw. It is noted that the 3 main London airports (Heathrow, Gatwick and Stansted) are subject to night flying restrictions between the hours of 23:30-06:00, applied by the UK Department for Transport (DfT). The restrictions set seasonal limits on both the number of night movements and on the number of Quota Count (QC) noise points. This night restricts are set for 5- year periods and the government consult widely on the changes to any limits. The number of night movements has remained the same since 1999 although the noise quota has been reduced. No reference or analysis of the operating restriction of both NQS and ATMs has been provided or potential introduction of a movement limit for Dublin Airport.

12.4.36. The Vanguardia Report uses Heathrow as an example of the operation of the QC system. I note this airport and Gatwick and Stansted operate the night flights within the parameters of a movement limit and a noise quota limit as set by the Department for Transport[31] (DfT). This is reassessed every three years. An overview of the restrictions at Heathrow are provided below:

- There are two time periods: 23:00 - 07:00 and 23:30 - 06:00 both with restrictions on certain types of aircraft with a lower noise classification (precluding the noisier aircraft type).
- The more restrictive period (23:30 - 06:00) is known as the Night Quota Period (NQP) and has limits on the number of movements which are set by the DfT.
- An annual Noise Quota Scheme of 5,150; 2,415 in the winter season and 2,735 in the summer season.
- An annual Movement Limit of 5,800-night flights: 3,250 in the summer season and 2,550 in the winter season.

12.4.37. Heathrow is also permitted to carry over up to 10% of the ‘left over’ movements from summer to winter, which means the winter season limits vary more than the summer

[31] Night Flight Restrictions at Heathrow Gatwick and Stansted. Decision Document. (Department for Transport July 2021) Night Flight Restrictions at Heathrow, Gatwick and Stansted (publishing.service.gov.uk)

limits. The summer season is defined using British Summer Time. Heathrow is not permitted to accumulate the carry-over from one year to the next

12.4.38. Gatwick and Stansted operation is like Heathrow. Gatwick has a yearly NQS of 6,935 and a movement limit of 14,450 where 11,200 of that is allocated to the summer period. Stansted has a yearly NQS of 7,690 and a movement limit of 13,706 where 8,100 of this is allocated to the summer period. The Dublin airport NQS of 16,260 exceeds all these airports.

Support for the NQS

12.4.39. Many submissions have been received from the commercial sector and Aviation industry advocating support for the use of the NQS and the additional operating hours as set out in the RA. It is considered a necessary proposal to allow the growth of Irelands economic sector and those early morning flights support business operations throughout the country. The applicant's supporting documentation clearly demonstrates the importance of the airport in providing both direct and indirect economic benefits for Ireland. The Inter*VISTAS*[32] report uses revised air traffic forecasts in the supplementary information and concludes that the economic impact from the operating restrictions in Condition No 3 a) and 5 in 2025 is €314m (Gross Value Added (GVA)).

12.4.40. The application of the Balanced Approach stems from International Aviation Guidance, where reasonable restrictions should be considered when applying a balanced approach to assessing aircraft-related development and operation procedures. A move to a NQS and alterations to airport operating procedures is supported in the development plan but must have regard to the impacts from aircraft related noise disturbance.

12.4.41. **Assessment of the Noise Quota Scheme**

Introduction

12.4.42. The move towards a NQS is supported in international and local policy. The operation of airports into the nighttime is common at most European airports and allows for long haul flight arrivals and in the case of the RA, will allow for earlier short

[32] Dublin Airport Economic Impact of Operating Restrictions- Update (Addendum September 2023)

haul departures. The operation of the airport outside the busy time can also allow the movement of cargo flights, such like the proposed RA, which tend to be noisier aircraft. The inclusion of a NQS is important to promote the use of quieter aircraft.

12.4.43. The RA includes the removal of the flight restriction with an NQS and operation during the hours of 23:00-0:00 and 06:00- 07:00. The applicant's initial proposal for NQS of 7,990 between the hrs of 23:30 and 06:00 would have included an unrestricted movement of aircraft between the hrs of 23:00 and 00:00 and 06:00 and 07:00. ANCAs required alterations is applicable to the entire nighttime 8hr period 23:00 to 07:00 although permits a higher NQS of 16,260.

12.4.44. The issue with the NQS relates, in the most part, to the number of aircraft movements allowed within the quota. The increased quota of 16,260 permits a higher number of aircraft movements, albeit within a longer period and it is acceptable that ANCAs inclusion of the shoulder hours (23:30 to 00:00 and 06:00 to 07:00) would be necessary to ensure a certain control over the noise levels associated with the movement of aircraft. The concern with the classification system means that a substantial number of ATMs can take place, but only marginally less noisy aircraft and the overall QC budget based on current numbers of aircraft. The NQS includes a series of exemptions that would apply to aircraft movements that count towards the annual noise quota and the application includes the ability to 'carry over' unused quota allowances from one year to the next. In addition, Condition No 3 d) only restricts the use of the NR (runway 10L-28R) between the hours of 23:00 and 07:00, therefore the SR can take advantage of the NQS at other times during the night, where the NR cannot operate.

12.4.45. The Vanguardia Report notes the use of a NQS alone is not sufficient to prevent a negative impact sleep disturbance. The NQS promotes the use of quieter aircraft but allows a greater number of aircraft movements which in themselves can have a detrimental impact on sleep. The impact of aircraft movement on sleep, during these additional hours is better understood when looking at the results from the additional awakening assessment and can be better mitigated by the inclusion of a restriction on the aircraft movements and/or additional insulation for those persons subject to any aircraft noise.

Air Traffic Movements, fleet forecasting and the classification system.

12.4.46. As stated above, there is some discrepancy in the applicants proposed ATMs at night for the RA. The Mott MacDonald Report and the EIAR vary with a difference of 19 flights. There is no descriptive breakdown of the percentage of annual flights operating at night in either the Mott MacDonald Report or the EIAR or an analysis or the seasonal adjustment for the 92-day average.

12.4.47. I note Gatwick operates with c. 77% of its flights during the summer period at night, Stansted with 60% and Heathrow with c. 56%. There does not appear to be any common trends for the operation in the busy summer period and the flights at night in representative UK airports.

12.4.48. As stated throughout my assessment and the Vanguardia Report, it is important for the NQS to be supplemented with a restriction on aircraft movements during the nighttime hours. The applicant's response to PA further information queries on the NQS calculations indicates that the QC will be split c. 70% for the summer season and is based on previous airport operations[33]. Having regard to an average flight movement of 87 per night, annually, (based on the NQS quota), the applicant could operate 31,755 flights during the night. When considering the 70% for the summer period there would be 22,228 flights available for this season. Having regard to this figure, the applicant could operate c. 241 flights at night over the 92-day busy period. This would be a near doubling of the applicant's proposal (i.e., EIAR states there will be an annual increase of 13,000 flights), therefore it is evident that the operation of the NQS on its own would allow for an excessive number of aircraft movements, when considering either the yearly average or even a seasonal adjustment for the summer busy period.

12.4.49. A more conservative estimation for the aircraft restrictions would be to include the 87 flights per night for the 92-day busy period (8,004 flights for the summer) adjusted to c. 11,434 yearly when considering 70% of the flights during the summer busy period. Even if considering the higher calculation from Table 13.1 of the EIAR, 114 flights per night for the 92-day busy period would equal 10,488 flights for the summer). When adjusted for an annual average (i.e., 70% for the seasonal) this would equate

[33] Annex C: Seasonal Movement and QC Split: Dublin Airport North Runway, Relevant Action Application, Final-Response to ANCA Direction 01 in relation to application F20A/0668

to c. 14,982 flights. This aircraft movement is similar to airports such as Gatwick (14,450) although a NQS of 16,260 would remain much higher when compared to the operation of the airport (i.e., Gatwick has a NQS 6,935).

12.4.50. The Board will note that my calculations are based on the applicant's documentation, in the same manner as the Vanguardia Report based a recommendation on the applicants QC/ATM. The Vanguardia Report does not include any analysis or breakdown of annual or seasonal adjustment, such like that included in Condition No. 5 (i.e., 92-day busy period) and I am satisfied that, having regard to the use of the applicants 87 ATMs proposal, a cap on the annual movement can be reasonably included in any alteration for operating restrictions.

12.4.51. I recommended that an annual movement limit for aircraft is included with a seasonal allocation of 70% for the busy summer period. This would generally equate to an average number of night-time aircraft movements at the airport shall not exceed 87/night (between 2300 hours and 0700 hours) when measured over the 92-day modelling period.

12.4.52. I consider that it is reasonable and practical to restrict the aircraft movement to the proposed aircraft movements in the applicant's EIAR which is 13,000 per year. This conclusion also has consideration to the conclusions in the EIAR which relate to the impact of aircraft noise on the existing communities at night. In compliance with international best practice and in keeping with the information in the applicant's documentation, I recommended that the split in seasonal operation is included at 70% and the summer movement limit of 9,100-night flights are permitted (i.e., Movement limit: Winter 3,900 and Summer 9,100). This aircraft movement limit would allow c. 100 aircraft movements per night during the 92-day summer busy period.

12.4.53. Theses alterations would permit the applicant to operate additional flights during the nighttime hours, but with the inclusion of a NQS, but the RD restrictions should remain, further discussed below.

<u>Noise Quota Scheme and mitigation measures</u>

12.4.54. The introduction of the NQS to replace the 65 flights per night and the operation of this scheme during the nighttime hours, requires the implementation of an insulation scheme to mitigate against the impacts on sleep disturbance. The applicant's

proposal for the NQS is based on costings for the preferred use of the runway and the insulation scheme proposed. The flight paths and fleet mix etc are used to generate noise contours which are used to predict the dwellings and population which would be affected by the RD and RA.

12.4.55. The First Condition of the RD states that ANCAs Cost- Effective Assessment (CEA) identified that while Condition No 5 reduced the population highly sleep disturbed (%HSD) and the population exposed above the NAO night-time priority of 55 dB $L_{night,}$ it was more costly than using an NQS. Concern is raised in third party submissions that ANCA have not considered fully the impact on residential amenity in the CEA and only considered the costing of the RA.

12.4.56. The rationale behind the CEA is assessed in detail throughout my assessment. It is noted that it is generally acceptable that delivery of insulation can be costed as a mitigation measure within the Balanced Approach to changing of operational activities at airports. The Vanguardia Report highlights a range of issues regarding the final Regulatory Decision about the provision of additional mitigation, including the absence of explicitly stating a second criteria to include a change of flight paths and against the very noisy aircraft. The report also notes that many of those persons affected by the movement of very noisy aircraft and noise issues from a change in flight paths would fall within these Eligibility Contours (i.e., persons subject to any aircraft noise greater than 80 dB L_{Amax} and a threshold of 50 dB L_{night} where the RA has caused a 9-decibel increase in noise) and may already be included for insulation under the original NR permission or this 55 dB L_{night} contours. I do not consider any alterations to the insulation measures necessary to mitigate against the noise from the NQS would significantly alter the CEA for the RA.

12.4.57. Part 2 of the First Condition of the RD includes details on the operation of the NQS system, many of which relates specifically to air traffic control. The Board will note certain restrictions on the use of the NQS and the associated Noise classification system restrict the movement of noisier aircraft. A certain classification of aircraft is restricted from take -off and landing during the night as follows:

- Part 2.1 b) No aircraft with a Quota Count of 4.0 or more shall be permitted to take off at the Airport during the nighttime.

- Part 2.1 c) No aircraft with a Quota Count of 2.0 or more shall be permitted to land at the Airport during the nighttime.

12.4.58. A Classification of 4.0 or more relates to all aircraft with a noise classification level of greater than 96 EPN dB. Aircraft greater than 2 relates to all aircraft with a noise classification level of greater than 93 EPN dB. The difference is because aircraft are noisier on take-off rather than landing. The RA proposes an increase in the movement of cargo flights during the night. There have been no concerns raised with regard the restriction of movement of these aircraft type although the Vanguardia Report has recommended that noise insulation be provided to dwellings located within the flight paths of aircraft which have a noise footprint of 80 dB L_{Amax}, based on the noise footprint of the airports westerly and easterly single modes of approach and departure (not averaging the modes of operation of the airport over the 92 days of summer) between 23:00 and 07:00.

12.4.59. The inclusion of this additional mitigation measure will ensure that those properties, which may find themselves within the flight paths of very noisy aircraft will be adequately mitigated. The conditions of the RD do not adequately address this impact as there is no direct correlation between the Effective Perceived Noise Level (EPN) dB and the A weighted noise (i.e., L_{Amax}) of an aircraft. There is concern that a restriction on an aircraft with a QC of 4.0 on departure or 2.0 on arrival would ban the very noisy aircraft during the nighttime although it would not prevent other aircraft of a lower QC value that adversely affect sleep from using the airport. The QC system has a primary intention of introduction less noise aircraft and a secondary effect on mitigating against sleep disturbance. The use of the additional insulation criteria can complement the First Condition of the RD.

12.4.60. **Conclusion**

12.4.61. There is no objection to the principle of alteration to Condition No 5 and the replacement of the restriction on flights per night with a NQS although there is insufficient evidence in the applicant's information or the RD to suggest that the increased movement of aircraft associated with NQS will not have a significant negative impact on the sleep disturbance. The applicant's documentation does not provide sufficient information on the potential movement of aircraft within the noise

classification criteria, which can allow a large movement of aircraft within quite a low NQS, and the impact this movement of aircraft could have on sleep disturbance.

12.4.62. The additional awakening report highlights the significance of awakenings from single mode operation in the summer, particularly from easterly operations. I am satisfied that the alteration to the noise insulation scheme to allow insulation of a property which are subject to aircraft noise between 2300 and 0700 hrs of 80 dB L_{Amax}, based on the noise footprint of the airport's westerly and easterly single modes of approach and departure will complement the current insulation scheme and mitigate against the noisiest aircraft movements.

12.4.63. The EIAR includes data to state that the ATMs will initially increase by 13,000 flights per year in 2025 and then no further increase between 2025 and 2035. Assuming a 70% operation during the busy summer period, up to 70,000 additional traffic movements are possible. As stated above, no breakdown of the annual operation of day and night fights has been included in the EIAR. Whilst air traffic control will ultimately restrict the scheduling of flights during the daytime hours, there would be concern that a significant proportion of this increase in ATMs would operate during the nighttime hours, under the NQS. Having regard to the results of the Additional Awakening Report, this would have the potential to have a significant negative impact on sleep disturbance.

12.4.64. Best practice in UK airports would suggest that any NQS should be supplemented by fleet movement restriction and the London Airports which operate a NQS also operate an aircraft movement restriction. The number of movements is clearly indicated along with the split for seasonal operation. Should the Board agree with the recommendation for inclusion of an aircraft movement restriction, I recommend the Relevant Action and the Regulatory Decision is amended to include an annual movement limit of c, 13,000. In compliance with international best practice, it is recommended that the split in seasonal operation is included at 70% and the summer movement limit of 9,100-night flights are permitted (i.e., Movement limit: Winter 3,900 and Summer 9,100).

12.4.65. Any restriction on flight movement would require an alteration to the RD and should be reviewed in co-ordination with the outcomes of the NQS, every 5 years from the grant of any RD. Any proposed alteration to these operating restrictions shall also be

subject to an additional period of public consultation, including consultation with Irish Aviation Authority. Therefore, I am satisfied that further engagement with the relevant experts and prescribed bodies is available to the Board, should they be minded incorporating the recommendations that I have proposed on the Relevant Action.

I recommend that the Board consider the following proposed amendments to the Noise Quota Scheme:

- The airport shall be subject to an annual aircraft movement limit of 13,000 between the nighttime hours of 23:00 and 06:59 (inclusive, local time) with aircraft movements.
- The insulation scheme shall be expanded to include residential dwellings subject to aircraft noise of 80 dB L_{Amax} based on the noise footprint of the airport's westerly and easterly single modes of approach and departure (not averaging the modes of operation of the airport over the 92 days of summer) between 2300 hrs and 0700hrs.

12.5. Mitigation Measures (Insulation Schemes).

12.5.1. Introduction

12.5.2. Condition No 7, 8 and 9 of the NR permission (PL06F.217429, Reg Ref F04A/1755) introduced the requirement for noise insulation at residential properties and schools in the vicinity of the airport based on the noise contour levels within 12 months of the opening of the runway as stated below. The Relevant Action does not propose to amend these conditions and includes an additional insulation scheme to mitigate impacts from the noise generated additional nighttime flights.

- Condition No. 6: Prior to commencement of development a scheme for voluntary noise insulation shall include all schools and registered pre-schools predicted to fall within the contour of 60 dB $L_{Aeq\ 16\ hours}$ within twelve months of the planned opening of the runway to use and, in any event, shall include Saint Margaret's School, Portmarnock Community School, Saint Nicholas of Myra, River Meade and Malahide Road schools. The scheme shall be designed and provided so as to ensure that maximum noise limits within the

classrooms and school buildings generally shall not exceed 45 dB $L_{Aeq\ 8}$ hours (a typical school day)

- Condition No. 7: Prior to commencement of development a scheme for the voluntary noise insulation of existing dwellings shall be agreed and include all dwellings predicted to fall within the contour of 63 dB $L_{Aeq\ 16\ hours}$ within 12 months of the planned opening of the runway.
- Condition No 8: The runway shall not be brought into use until noise insulation approved under conditions number 6 and 7 are installed in all cases where a voluntary offer has been accepted within the time limit of the scheme.
- Condition No 9: Prior to commencement of development the applicant should agree a voluntary purchase of dwellings shall be submitted to and agreed in writing by the planning authority. The scheme shall include all dwellings predicted to fall within the contour of 69 dB $L_{Aeq\ 16\ hours}$ within twelve months of the planned opening of the runway for use.

12.5.3. **Regulatory Decision (RD) and Residential Sound Insulation Grant Scheme (RSIGS)**

12.5.4. The Third Condition of the RD states that a Night-Time Residential Sound Insulation Grant Scheme shall be provided in line with details in the condition. The terms of the Residential Sound Insulation Grant Scheme (RSIGS) are based around the night-time priority value of 55 dB L_{night} as determined in the NAO. The condition is stated below:

- A voluntary residential sound insulation grant scheme (RSIGS) for residential dwellings shall be provided. Initial eligibility to the scheme shall apply to all residential dwellings situated within the Initial Eligibility Contour Area as shown in Figure 3.1 - regulatory decision, Third Condition. Residential Sound Insulation Grant Scheme (RSIGS) - Initial Eligibility Contour Area – June 2022

12.5.5. Eligibility to the scheme shall be reviewed every 2 years commencing in 2027 with residential dwellings situated in the 55 dB L_{night} contour (Maps which accompanied the RD) being eligible under the scheme as detailed under:

- Part 1 Definitions

- Part 2 – Purpose of the Scheme
- Part 3 – Eligibility
- Part 4 – Measures available under the Scheme
- Part 5 – Procedure

12.5.6. The Relevant Action included a proposal to amend the noise mitigation measures as follows:

- A noise insulation grant scheme for eligible dwellings within specific night noise contours,
- A detailed Noise Monitoring Framework to monitor the noise performance with results to be reported annually to the Aircraft Noise Competent Authority (ANCA), in compliance with the Aircraft Noise (Dublin Airport) Regulation Act 2019.

12.5.7. The PA in granting permission for Relevant Action integrated the Third Condition of the RD as condition No 5, as detailed above and the RSIGS for those areas within the 55 dB L_{night} contour. The insulation scheme is required to meet the objectives of the NAO.

12.5.8. **Supplementary Information requested by the Board and proposed mitigation scheme.**

<u>First Request for additional information</u>

12.5.9. The Board requested the applicant to submit additional information on the 27th of April 2023 in relation to:

1. Impact of Peak L_{Amax} Noise Levels from Air Traffic Movements (ATMs) on Sleep.
2. Sensitivity Testing of the Population Numbers Covered by the Noise Contour Predictions.
3. Baseline years assumed in the assessment.

12.5.10. The applicant responded to this request on the 14th of September 2023. The response amended the EIAR and was on public display for an additional period of consultation.

12.5.11. The applicant's response includes new modelling scenarios based on live information which has become available since the opening of the NR. The new flight paths and change of fleet mix have generated new noise contours for the 55 dB L_{night} are included in the supplementary EIAR and associated noise modelling. The proposed nighttime insulation for 55 dB L_{night} contour will remain, and the supplementary information submitted by the applicant did not propose any alterations to the nighttime RSIGS.

12.5.12. The supplementary EIAR and the ANCA assessment of the draft Regulatory Decision[34] and refers to a second criteria for eligibility for insulation as follows:

- Exposed to a "very significant" rating arising from forecast noise levels of at least 50 dB L_{night} in the first full year when the Relevant Action comes into operation, with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year. For the purpose of this assessment a comparison of the 2025 Permitted and Proposed Scenarios has been used to estimate which dwellings would be eligible.

This second criteria were not included in the Regulatory Decision or the conditions for the Relevant Action by Planning Authority. They have been included in the EIAR as mitigation measures. The inclusion of this second criteria is further discussed below.

<u>Second Request for additional information</u>

12.5.13. The RD and RA include detailed maps on the location of dwellings which are eligible for insulation under the proposed RSIGS. Having regard to the format of the maps included with the supplementary information, the submissions received and the implications of the new flight paths, the Board requested the applicant to submit a second clarification of additional information on the 13th of February 2021specifically in relation to maps submitted.

12.5.14. The applicant was requested to submit additional maps to illustrate all authorised habitable dwellings within the 55 dB L_{night} and 63 L_{den} contour for the year 2025 at an appropriate detailed scale. The purpose of these maps was to allow the Board to

[34] Draft Regulatory Decision: Appendix J Cost Effectiveness Methodology and Results: Aircraft Noise Competent Authority

undertake an assessment of any comparison with Eligibility Contour Area Maps in Fig 3.1 and Maps 1-23 of the Regulatory Decision.

12.5.15. **Submissions on Insulation Scheme**

Original Relevant Action

12.5.16. The HSE submission raised an issue regarding the number of persons affected by a high level of ground noise (e.g. 55 dB L_{night} or above). They consider the sound insulation scheme should be expanded to allow the WHO levels of 45 dB L_{den} and 40 dB L_{night} to be used when assessing eligibility for the scheme.

12.5.17. Other submissions from residents in the vicinity of the site have raised concern in relation to the ANCA assessment and the application of the insulation scheme as summarised below:

- Insulation Scheme proposed by ANCA insulates less houses (c. 30 houses qualify in total) than in the planning application by the Daa (c. 34 qualify in total). Many houses in Coolquay, The Ward, St Margarets and Kileek Lane have been removed.
- In its draft decision, ANCA did not use the criteria 2 specification (>50dB L_{night} with a 9dB increase) as referred to by Daa in their cost-effectiveness analysis. They only used criteria 1 (>55dB $L_{night)}$).
- A higher number of houses were identified by the Daa for insulation scheme at pre-application stage than were determined required at planning application stage by ANCA.
- Insulation Scheme only applies to the cohort deemed ‘very significantly’ affected by noise which is against the advice by the HSE in their submission.
- No mitigation is proposed for ‘moderately’ or ‘significantly’ affected dwellings.
- The noise insulation scheme proposed by ANCA conflicts with the Fingal Development Plan and many dwellings from Zone B (>55dB L_{night}) will be omitted from the insulation scheme, thus not meeting the relevant internal noise guidelines.

- Day time insulation scheme modelled with straight out routes and not with divergent routes. Dwellings excluded as a result and therefore subjected to harmful levels of noise.
- Mitigation for dwellings in the N60 contours (60 dB) is not included or costed within the CEA, therefore not in keeping with the balanced approach.
- The insulation scheme in the grant of permission for the northern runway is intrinsically linked to the alterations proposed to Condition No 3 and No. 5 and the Relevant Action.

Submissions on Supplementary Information

- The scheme is not sufficient to address significant noise reduction and the use of professional installers is not available to carry out the installation.
- Permissions were granted for houses by FCC based on the noise contours in the development plan maps. No noise insulation measures were required.
- The insulation scheme is yet to prove useful.
- The home buyout (market value plus 30%) for those in the direct flight path is not reflected in the noise insulation scheme.
- The agreed insulation scheme allows eligibility into the scheme to be reviewed every 2 years commencing in 2027. This is too long for someone to wait if they are affected by noise levels.
- The noise insulation scheme should include woks to reduce the noise limit internally and the Daa should have to pay for all works to achieve this limit.
- There is no evidence to suggest that the noise insulation scheme is efficient in mitigating against noise pollution.
- The insulation scheme proposed by ANCA insulates less houses than the planning application submitted by Daa.
- The works for the noise insulation scheme are not adequate to mitigate.
- Daa are not engaging with the local community on the insulation scheme.

Submission on the Eligibility Contours (April 2024)

- The insulation scheme is not fit for purpose and will not protect against the noise at night.
- Measurements of noise taken in bedrooms of housing already insulated indicate that the noise levels exceed the recommendations in the Fingal development plan and are not sufficient to protect human health.
- Recently insulated houses do not include any difference in the sound levels within the house and the proposed insulation scheme is not sufficient to mitigate against the impact of noise.
- There are no specific details as to the criteria analysis for the impact on the new area incorporated into the eligibility contours.
- There are properties around Portmarnock train station which are eligible for insulation (i.e., granted after December 2019) but not included in the scheme.
- Landing from the west onto the NR have not been included in the eligibility contours or the insulation scheme.

12.5.18. **ANCA Assessment**

Current Situation

12.5.19. Third party submissions do not consider the noise insulation scheme can adequately mitigate against the impact of noise at night. A recently published ANCA report "A review of the effectiveness of noise mitigation measures at Dublin Airport for the year 2022 on achieving the noise abatement objective" was highlighted within some third-party submissions. This report is part of ANCAs remit to review the effectiveness of noise mitigation measures at Dublin Airport in achieving the NAO. ANCA used actual contour maps produced by Daa for the year 2022, to assess the compliance with the NAO and concluded that for the 2022 assessment year one of the four NAO expected outcomes has not been achieved (i.e. there are homes located within the NAO priority level of 55dB L_{night} that do not currently have access to home insulation measures through an approved insulation scheme) and noise mitigation measured identified by Daa have not been effective in this respect. ANCA will act under relevant legislation towards achieving this objective and have stated that they can use powers under Regulation (EU) 598/2014 or the Act of 2019, or both.

12.5.20. I note this assessment relates in the most part to the operation of the SR for the purpose of the 55-59 L_{night} contour. The contours exceed the Residential Noise Insulation Scheme (RNIS) and the Home Sound Insulation Programme (HSIP) contours. The ANCA report notes that there are homes located within the NAO priority level of 55 dB L_{night} that do not currently have access to home insulation measures through an approved insulation scheme. These homes are located to the east and west of the SR, outside the areas for home which are eligible for HSIP and RNIS insulation. It notes that although this report is for the 2022 assessment period, airspace changes were introduced for westerly departure routes from the north runway in February 2023 and are included in the assessment.

12.5.21. I consider the outcomes of the report are important to understand the implications of the RA. It highlights existing dwellings which are not within the contours eligible for insulation. It also provides evidence that ANCA have powers to act on non-compliance with the Regulatory Decision. These results indicate that there can be situations where there is a potential for dwellings to be exposed to nighttime noise who do not have the benefit of a nighttime insulation scheme (i.e. above the priority level of 55dB L_{night}). Therefore, it is important that the any grant of the Relevant Action can provide adequate insulation to those residents exposed to significant levels of nighttime noise form the aircraft movements.

Regulatory Decision and the Relevant Action

12.5.22. The Balanced approach requires the consideration and assessment of possible mitigation measures in a consistent way and address noise impacts in the most cost-effective way. The RICONDO Report concludes that preferential use of the runway under Scenario 2 (Relevant Action) is the most cost-effective operational amendment to reduce HSD and HA populations below 2018. Table 5.1 of the RICONDO Report (2023) indicates that with Scenario 2 there will be 1,174 people exposed to noise levels of 55 dB or higher L_{night} and with the nighttime insulation scheme 80 will remain exposed to 55 dB L_{night} levels. It concludes that Scenario 2 causes the lowest number of people exposed to changes in L_{night} at potential significant adverse effect levels compared to 2018 and the additional of 55 dB L_{night} Residential Sound Insulation Grant Scheme is required to address those people highly impacted by night-time noise.

12.5.23. ANCAs reviewed the runway restriction scenarios and variations of insulation schemes in a cost-effective analysis. Scenarios 2 (use of the NR during the nighttime hours) and noise insulation variant B (the proposed insulation for dwellings in contours which exceed 55 dB L_{night}), has been included in the Regulatory Decision and the permission for the Relevant Action. ANCAs review[35] noted the most effective measure under the HSD metric was a combination of runway pattern P09 and noise insulation variant C6. Mitigation measures like variant C6 (€20,000 grant for dwellings exposed to noise levels that, in 2025, either a) exceed 55 dB L_{night}, or b) exceed 50 dB and are 9 dB higher than in a scenario with the operating restrictions, provided they are not eligible under existing noise insulation schemes) are included in Chpt 13 of the EIAR as mitigation measures proposed to reduce the impact of air noise.

12.5.24. The final RD as included in the conditions of the RA only requires the provision of a €20,000 grant for dwellings exposed to noise levels that, in 2025, exceed 55 dB $L_{night.}$ Third party submission raised concern on the eligibility for insulation. It is noted that the criteria for insulation for all dwellings >50 dB L_{night} with a 9dB increase has been removed from the Daa CEA. In addition, they reference to preplanning meetings between the applicant and Daa, which indicate that this >50dB L_{night} with a 9dB increase initially related to the 2018 baseline noise contours rather than the change since opening on the NR.

12.5.25. **Assessment of the Noise Insulation Scheme**

Original NR permission

12.5.26. As previously stated in Section 12.5.1 above, the original NR permission includes 4 no. conditions relating to noise insulation and/or dwelling purchase schemes. Those dwellings which are eligible for insulation in the original NR scheme, will remain eligible. Third party submissions have raised the validity of these conditions as it is considered the noise contours, and those dwelling which are eligible for insulation, have been amended because of the proposed RA. The RA does not propose any alterations to these conditions, it proposes bedroom window insulation to mitigate the proposed change in nighttime operation. This nighttime insulation scheme is

[35] Appendix J: Cost Effectiveness Methodology and Results: Draft Regulatory Decision; ANCA

available for properties which are not eligible for other insulation in the NR permission and are located within the 55 dB L_{night} contours. Any issues with relate to compliance with the conditions of the NR permission (PL06F.217429, Reg Ref F04A/1755), not included in the RA, are a matter for ANCA and FCC and not the Board.

Supplementary Information and new flight path submitted by the Applicant.

12.5.27. The applicant's response to the Boards first additional information request includes an amendment to the flight patterns from the NR which altered the noise contours, mostly from the NR but also slightly at the SR. In general, flights will mostly depart from the NR in a north and north westerly pattern and will arrive on the SR from the east. Alterations to the noise contours have also altered the eligibility for inclusion in the insulation scheme for mitigation. Detailed maps to assess the impact on the population within the new contours was requested by the Board in the second request for additional information.

12.5.28. The Vanguardia Report includes an assessment of the applicant's insulation scheme. Whilst it notes the change in the flight patterns and noise contours, the assessment of the scheme is not specific to static noise contours and the reality of operation is that there may be a departure from the noise insulation scheme due to a potential movement of flight patterns by the applicant. Any recommended alterations to the insulation scheme are applicable to both the original submitted RA and the supplementary information. Therefore, should the Board be minded granting permission for the original submitted RA flight paths (2021), and/or any other variation of an amended scheme they should have regard for the recommended amendments to the mitigation scheme. In addition, they should be aware that the any proposed alterations to the mitigation scheme in the RA requires further public consultation as defined in the Airport Noise Act, 2019.

Criteria for the Eligibility of the Insulation Scheme

12.5.29. The RICONDO Report states that 80 people will remain exposed to 55 dB L_{night} levels after the proposed insulation scheme for those dwellings has been provided (i.e. those dwelling insulated who are eligible within the 55 dB L_{night} contours). As stated above a second criteria for the insulation scheme (i.e >50dB L_{night} with a 9dB increase) were investigated by ANCA to reduce any impact on people highly

exposed and has been included in the EIAR as a mitigation measure. The Vangaurdia Addendum Report indicates some discrepancy in the submitted documentation and the absence of all criteria necessary to insulate dwellings exposed to any changes in the flight paths (i.e. explicitly including the second eligibility criteria).

12.5.30. Section 13.6 of Chpt 13 of the EIAR states that the basis for including "the 50 dB L_{night} with a change of at least 9 dB criterion is that these are the people who are not exposed to a level of 55 dB L_{night} but who will, without mitigation, experience a very significant effect in the year that the North Runway opens at night, using the rating scale presented in Table 13-4.

12.5.31. The Eligibility Contour Maps submitted in response to the Boards second request for additional information include all areas which will experience a 'very significant' effect in 2025 because of the RA. The applicant states that these maps are based on information presented in Figure 13C-10 of the EIAR, the 55 dB L_{night} contour and areas where a dwelling is forecast to experience noise exposure of at least 50 dB L_{night} and an increase in noise exposure of at least 9 dB when compared to the current permitted operation.

12.5.32. The Vanguardia Addendum Report highlights the absence of the second criterion, 50 dB L_{night} and an increase in noise exposure of at least 9 dB, in the applicants CEA report (2021). This report only assesses the cost effectiveness of a *Residential Sound Insulation Grant Programme: Provide sound insulation grant assistance to sound insulate dwelling units with exterior levels at 55 dB Lnight or higher based on forecast 2025 levels* and makes no mention of the second noise insulation criterion of a threshold of 50 dB L_{night} where the RA has caused a 9 dB increase in noise.

12.5.33. There appears to be some discrepancy in the information submitted for both the RD and RA. This has also been raised in the third-party submissions. I have serious concerns that the 50 dB L_{night} with a change of at least 9 dB criterion has not been adequately addressed in either the final Regulatory Decision or the relevant condition No 5 of the Relevant Action. The inclusion of this additional criterion is necessary to allow insulation for those people newly exposed to noise increase from the change in flight paths, or other operational activities. Those newly impacted by a change in noise levels are more significantly affected by any adverse effects. For

example, Table 13-36 of the EIAR includes the noise levels at representative locations (L_{night}) at the difference in noise levels between the permitted and proposed scenarios in 2025. Both Tyrellstown, Toberburr (ARO1) and Ridgewood would see larger increases of up to 10 dB (A) associated with very high impacts. These areas are not included in the 55 dB L_{night} contours, as per the applicants updated Eligibility Contour Maps as they are located within predicted noise contour areas under 50 dB L_{night}. These areas will see a change of up to 10 dB (A) because of the change in noise levels from the Relevant Action.

12.5.34. There are no noise sensitive monitoring locations to the west of ARO1 and therefore it is difficult to assess the difference which will occur in terms of increase in noise levels on these areas as a result of the changes from the Relevant Action and the new NR flight paths. Considering a +10 dB change at Tyrellstown, which is slightly east of the flight paths, it could be assumed that these areas would experience a similar, if not greater increase in noise as they are located close to the flight paths. Areas to the west of the noise sensitive monitoring location are included in the updated Eligibility Noise Contours, as those are areas where a 50 dB plus 9 dB increase may be experienced. An increase of 9 dB (A) is considered to be significant and requires mitigation. Whilst those dwellings may also benefit from the current daytime insulation scheme from the permitted NR application, the EIAR does not include such information.

12.5.35. The inclusion of the second criterion would incorporate dwellings which find themselves within the contours of new flight paths and or change in fleet mix, which had not been previously considered by the applicants or ANCA. Any change in flight paths should be minimal and should not have a significant impact on the cost-effective assessment. I have concluded this having regard to the information in the cost-benefit analysis which states that out of the 1,174 people initially exposed to noise levels of 55 dB or higher Lnight levels only a limited number (80 people) will remain exposed to these levels after mitigation. As stated, above ANCA review the noise mitigation measures on an annual basis, therefore the inclusion of the second criteria allows a review of the noise insulation scheme in conjunction with any change in noise contours.

12.5.36. To ensure the second criteria sufficiently integrates those dwelling which experience a change in noise due to flight patterns it is essential that a robust noise monitoring

framework is in place. As stated, above Table 13.36 of the EIAR includes all the noise sensitive monitoring locations. No monitoring locations are within the NR flight patterns and should be amended to ensure any insulation scheme mitigates against those significant affected by the RA. This can be reasonably included as a condition on a grant of permission or proposed amendment to the RD scheme.

12.5.37. The Vanguardia Report notes that the insulation scheme proposed is generous and generally acceptable to mitigate against the impacts from the RA, subject to the explicit inclusion of the second criterion.

Insulation against Noisy Aircraft

12.5.38. The NQS includes a restriction on the departure of aircraft with a noise classification of 4.0 and arrival of noise classification of 2.0. The Vanguardia Report recommends an additional criterion for insulation for dwelling located within the footprints of aircraft with noise levels of 80 dB L_{Amax}. This recommendation is based on a UK study in 1992 which found that ATM levels of about 80 dB L_{Amax} was likely to cause an increase in sleep disturbance. The average arousal level during the night, from the movement of aircraft, was about 1 person in 30. Using this additional awakening method of assessment, 1 additional awakening is rated as a significant effect on sleep disturbance. Based on this study Heathrow has a supplementary night noise insulation criterion whereby properties predicated to experience 80 dB L_{Amax} or more at night from the noisest ATM qualify for noise insulation. This recommendation is in addition to those within the L_{night} contours.

12.5.39. The correlation between the L_{Amax} and the restriction on the noise classification of aircraft using the runway at night (arrivals and departures) is discussed above in the NQS assessment and it was concluded that the there is no direct correlation with the EPN and L_{Amax} of the aircraft and although the noise classification can restrict very noise aircraft, it will not prevent noise disturbance from those ATMs greater than 80 dB L_{Amax}. Therefore, I recommend that the noise insulation scheme is amended to include a condition specifying the inclusion of dwellings within the noise contours of aircraft with noise levels greater than 80 dB L_{Amax} , as specified in the Vanguardia Report.

12.5.40. **Conclusion**

Having regard to information in the EIAR which relies on two criteria within the night noise insulations scheme, to provide appropriate mitigation for the people which live within a level where a high impact arises from the Relevant Action, I consider the Regulatory Decision should be amended to explicitly state the following:

- €20,000 grant for dwellings exposed to noise levels that, in 2025, either a) exceed 55 dB L_{night}, or b) situated in the 50 dB L_{night} contour in the first full year when the Relevant Action comes into operation, together with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year.

  Reason – To ensure the delivery of mitigation measures for those persons which will experience adverse noise impact due to a change in flight patterns during the nighttime.

- Introduce an additional third stand-alone qualifying criterion for noise insulation for all residential properties subject to aircraft noise of 80 dB L_{Amax} , at the exterior façade of their house, based on the noise footprint of the airport's westerly and easterly single modes of approach and departure and not averaging the modes of operation of the airport over the 92 days of summer, between 2300 hrs and 0700hrs.

  (NB this may fall within the proposed noise insulation envelope criteria of >55 dB L_{night} or >50 dB L_{night} and at least a 9 dBA change in L_{night}.)

  Reason – To account for the impact of noise from individual ATMs assessed in terms of the maximum noise level at a receptor during the fly-by.

12.6. Noise Mapping, Guidance, Zones, Contours and Modelling Results

12.6.1. Introduction

12.6.2. This section provides an overview of the noise mapping, associated contours and the appropriate interpretation and use of the mapping, contours, and metrics within the Regulatory Decision (RD) and Relevant Action (RA). The third parties have raised concerns in relation to the choice of noise metrics to assess the impact, and the overall implications of the noise contours and parameters on the general

population. The supplementary information, received by the Board in September 2023, amended the flight paths and noise contours in the RA.

Strategic Noise Mapping

12.6.3. The Environmental Noise Directive (END) (Directive 2002/49/EC) requires member states to prepare and publish noise maps every five years. The EPA is the designated body for the purpose of noise mapping under the European Communities (Environmental Noise) Regulations, SI 549 of 2018. EPA Noise Maps include contours maps illustrating the strategic noise mapping of the airport for Round 4 (2022). DAA is responsible for the Dublin airport noise map and is then incorporated into the four Local Authorities (Fingal CC, South Dubin CC, Dublin CC and Dun Laoghaire CC) noise maps to produce one overall noise map for the Dublin agglomeration. The Round 4 (2022) noise map representing the situation in 2021. The NR was not operational during 2021 and therefore no noise mapping of the current situation is available on the EPA dataset.

12.6.4. In addition to the EPA Maps, Dublin Airport include a WebTrak Flight Monitoring System[36] which allows a public view of the arrivals and departures of aircraft. This data also includes noise contours based on 2020 and 2021 data for a summer day, summer night and Annual L_{den}. This data also represents the situation in 2021 when the NR was not operational. The data from the strategic noise modelling in the EPA Noise Maps and Dublin agglomeration are used to designate noise zones in the Fingal County Development Plan 2023-2029 and Dublin Airport Local Area Plan 2020.

Regulatory Decision and Relevant Action

12.6.5. The plans and particulars submitted for both the RD and the RA include reference to noise zones and include noise contours from the permitted and proposed scenarios. The noise zones define areas or regions consistent with a land use community wherein the ambient noise levels are generally similar (within a range of 5 dB) whereas the noise contours are based on the noise generated from the aircraft and are useful for understanding the noise exposure of the local community.

[36] WebTrak : Dublin Airport (emsbk.com)

12.6.6. The flight paths of existing and predicted air traffic movements (ATMs) are used to generate the noise contours for the Relevant Action. These contours provide an understanding the impact of the current permitted scenario (i.e., the ATMs and current operating restrictions) and the proposed scenario (the ATMs restrictions removed and replaced with a noise quota).

12.6.7. The Board will note there is a range of opinions on the interpretation of which noise metrics/ indicators are used for reporting and assessment in both the RD and the RA. The EIAR includes a range of noise contours for assessment although the most relevant when assessing the impact of aircraft noise of the population is the L_{den} and L_{night}. Third party submissions have raised concern with applicants' choice of noise modelling and the overall compliance with the noise contours set out in the Fingal County Development Plan. Some of the issues discussed in this section are also included in the EIAR for population and human health and aircraft noise and vibration. In addition to the EIAR, the applicant's response to the Board request for further information also includes an additional awakening assessment which investigates the impact of peak L_{Amax} noise levels from ATMs.

Air Traffic Movements (ATMs)

12.6.8. Condition No 3 includes operating restrictions for the use of both the NR (10L/28R), the SR (10R/28L). Condition no. 3 is detailed above, and the Relevant Action did not include any proposal to amend the terms of Condition No 3 a)-c). The preferential use of the runway (arrival and departure of aircraft) is mainly based on the wind direction.

12.6.9. Condition No 3 d) was amended in the RA to restrict the use of the NR (10L/28R) between the hrs of 00:00 to 05:59 rather than previously between the hrs of 23:00 and 07:00, an extension of 2 hrs use. The alterations in the RA are reflected the Second Condition of the Regulatory Decision (times of runway use).

12.6.10. Condition No 5 includes operating restrictions in the form of a limitation of ATMs (65 per night averages over a 92-day summer average) between 2300 hours and 0700 hours. The Relevant Action proposes to remove the restriction of ATMs and replace with a noise quota based on a target average fleet noise per movement.

12.6.11. The ATM restriction in Condition no 5 has been replaced with the NQS. The alterations to the ATMs have been discussed above and in the EIAR. It has been

stated that the ATMs will first increase in 2025, in the proposed scenario (i.e., RA) by c. 10,000 which remains the same under the 2035 scenario.

12.6.12. The removal of the ATM restriction and introduction of the NQS alters the noise contours proposed for the airport. The supplementary information also included a change to the flight paths which, in combination with the ATM increase and NQS, alters the contours and noise modelling.

Noise Contours

12.6.13. The initial EIAR (Dec 2020) included noise modelling for the proposed Relevant Action and integration of the noise quota. This modelling was amended in a revised EIAR (Sept 2021) to include a respond to the PA and ANCA additional information request and included an additional year (2053) in the assessment. A further Supplementary EIAR (Sept 2023) has been submitted in response to the Boards FI request.

12.6.14. The consideration of new noise modelling has led to alterations to the L_{night} metrics and those noise contours for the proposed scenario. Chapter 13 of the updated EIAR includes details of the Aircraft Noise and Vibration. As stated above, the years used for the modelling have changed and where the original EIAR used:

- 2022 Relevant Action
- 2018 Baseline
- 2022 Baseline
- 2025 Consented.

The EIAR Supplementary includes the following scenarios:

- 2025 Proposed
- 2025 Permitted.

12.6.15. Whilst the use of two different sets of noise assessments prevents direct comparisons to be made with results, I have focused my assessment on the overall impacts of the proposal on the L_{night}, as the Relevant Action relates to same. I have assessed the information provided in all variations of EIAR's submitted and that supplementary EIAR and I consider there is sufficient information available to undertake an assessment of the impact of the proposal on the local community.

12.6.16. In the first instance, I would highlight to the Board that the applicant's amended noise modelling has led to alterations of the noise contours for the proposed scenario and reflect those changes detailed above. Figure 13.8 of the EIAR (Dec 2020) includes contours for 55 dB L_{night} 2022 Relevant Action (green) and Fig 13-10 of the supplementary EIAR (September 2023) includes contours for 55 dB L_{night} 2025 proposed. I note that new contours, particularly to the northwest has been expanded to cover a wider area. Alterations to these contours also illustrate areas in the centre which may now not be included within the 55 dB L_{night} proposed contours. Chapter 13 of the revised EIAR (2022) did not include similar contours. Theses alterations have implications for the noise insulation scheme permitted by the Regulatory Decision, in addition to alterations to noise impacts on different areas, number of dwellings and population. The Board has requested the applicant submit new Eligibility Contours to reflect the areas proposed to be included for mitigation, further detailed below.

12.6.17. Whilst the alterations in the flight paths have generated new noise contours for the proposed RA, I note the information in the EIAR and in the Vanguardia Report indicates that the outcome between the revised EIAR and the supplementary EIAR remains the same. In this regard, the noise modelling indicates that the differences between the revised EIAR (2021) and the supplementary EIAR (2023) in the number of persons Highly Annoyed (HA) and Highly Sleep Disturbed (HSD) are small and do not materially alter the conclusions regarding the significance of these effects between the two assessments.

12.6.18. **Submissions on Noise Mapping, Guidance, Zones, Contours and Modelling Results**

12.6.19. Submissions have been received on the compliance with noise zones, the applicant's choice of noise metrics and the noise modelling of the aircraft movements. These issues are raised on the grounds of appeal, observations and in submissions to the additional information received by the Board. Independent noise monitoring results have been submitted by Acoustic Expert[37] on behalf of residents in the vicinity of the site and/or under flight paths. Issues which specifically relate to

[37]A number of residents to the north and northeast of the NR and Dunboyne have submitted noise recordings and noise assessments from Wave Dynamics.

the number of people highly annoyed and highly sleep disturbed are addressed in the EIAR. In addition, comments on the additional awakening assessment are relevant in the discussion on both the Regulatory Decision and the impacts of aircraft noise in the EIAR.

12.6.20. Issues raised in the third-party submissions are similar in both the original and response to the additional information and are summarised below.

Noise Zones

- There are now three rural villages (Coolquay, Kinsealy and Rivermeade) located within or partly within the air traffic noise zones in the Fingal County Development Plan
- Noise Zones A, B and C in the plan take account of the planning permission granted for the NR and run in an east-west direction.
- The Relevant Action does not comply with the noise zones in the development plan and therefore results in a material contravention of the development plan.

Noise Guidance

- The WHO guidance is the most relevant to assess the impact of airport noise.
- The WHO guidance includes a threshold of 50 dB L_{night} for excess night exposure.
- The submissions make reference to the UK guidance, ProPG: Planning and Noise, Professional Practice Guidance on Planning & Noise, New Residential Development (May 2017). These should be used to assess any impact in terms of noise.

Noise Metrics

- Use of Sound Exposure Level (SEL) as a measurement of nighttime noise is more appropriate for assessing the impact of aircraft noise.
- Independent noise reports note that the use of SEL noise metric.
- External dB levels of 80-90 L_{Afmax} and L_{AsMAX} and SEL are normal and have not been recorded on the noise contours.

- There is no L_{Amax} for any westerly departures.
- The averaging of sound levels over an 8hr period is not appropriate when it only happens for two hours are inappropriate.

Air Traffic Movements

- The proposed flight movements and “Standard Instrument Departure” (SID) chart for category C & D jet engines (in comparison to permitted development and the “Relevant Action” Reg Ref F20A/0668)
- An incorrect set of flight lines have been used to assess the Noise Insulation Programme.
- More people are exposed to higher noise levels than the modelling undertaken suggests.
- The Planner’s Report is incorrect, the proposal does alter the flight paths to those submitted under the original planning permission F04A/1755.

North Runway Technical Group

- A group of third parties and aviation experts have assessed the proposed flight paths.
- AirNav makes vague statements about the complexity, safety and regulation.
- Public information available on www.dublin-north-runway.com has been submitted with the submission.
- Low altitude and climb impacts earlier on departure and impacts a different population. The applicant could alter the departure and climb proposals to ensure a reduction in the impact of noise from the Relevant Action.
- The missed approach is not fit for purpose and has not been considered in full by the Daa. There are alternative options for Daa to operate a missed approach rather than currently proposed (i.e. diverging north).
- The use of the runways should be swapped, i.e. the north should be used for arrivals and the south used for departures.

12.6.21. **Airport Noise Zones and Noise Contours**

Introduction

12.6.22. The Fingal County Council Noise Action Plan for Dublin Airport 2019-2023 (Dec 2018) includes Aircraft Noise Zones. These Aircraft Noise Zones have been integrated into Table 8.1 of the Fingal County Development Plan 2023-2029. The noise zones (A-D) are based on two noise metrics $L_{Aeq,\ 16hr}$ (day) and L_{night} (night) and each zone includes specific objectives for land use planning. These standards have been developed in compliance with relevant standards and guidance sources e.g., ProPG: Planning and Noise and ICAO guidance on land-use planning and management.

The Noise Zones thresholds are summarised below:

- Noise Zone A: ≥63 dB $L_{Aeq,16hr,}$ and/or >55 dB L_{night}
- Noise Zone B: ≥54 and <63 dB $L_{Aeq,16hr,}$ and >55 dB L_{night}
- Noise Zone C: ≥54 and <63 dB $L_{Aeq,16hr,}$ and ≥ 48 and <55 dB L_{night}
- Noise Zone D: ≥ 50 and < 54 dB LAeq,16hr, and ≥ 40 and < 48 dB L_{night}

12.6.23. The grounds of appeal have consistently raised issues with the RA and the noise zones in the development plan. The appellants consider the RA does not comply with those noise zones in the development plan, particularly those noise contours presented in the Supplementary EIAR, materially contravene the noise zones of the development plan. The planning authority have also raised concern that the change in flight paths in the supplementary information may not aling with Noise Zones A-D which potentially has wider implications for the operation of land use policy.

Fingal County Development Plan 2023-2029 and Dublin Airport LAP 2020.

12.6.24. The Fingal County Development Plan 2023-2029 (FCDP) includes policies and objectives for appropriate future development in the vicinity of the airport. These policies and objectives have regard to the impact of noise from aircraft. Section 14.16.1 and Table 14.16 of the development plan, in addition to objectives detailed below, provides guidance for proper development within the noise zones.

Objective DMSO105 of the development plan requires noise insulation where appropriate in Noise Zone B and C and where necessary in assessment Zone D.

New residential development and other noise sensitive uses will be resisted in Noise Zone A (i.e. 55 dB L_{night}). The objectives also states that time based operational restrictions on usage of a second runway are not unreasonable to minimize adverse impacts of noise on existing housing within the inner and outer noise zones.

12.6.25. Objective DMSO106 requires all necessary mitigation measures to be considered having regard to any aircraft related development, operation procedures and the balanced approach and Objective DMSO107 restricts development which would likely conflict with the aircraft movements and on flight paths.

12.6.26. I note those objectives in the development plan are relevant to any future development within the identified noise zones. There are no specific objectives which relate to restriction of operation of the aircraft movements or operating procedures, outside the balanced approach. I note the development plan states that the noise zones require to be updated regularly to allow a more effective land use planning to ensure no inappropriate development, this intention is also reiterated in Objective DA11 of the Dublin Airport LAP 2020 which states:

> *Review the operation of the Noise Zones on an ongoing basis in line with the most up to date legislative frameworks in the area, the ongoing programme of noise monitoring in the vicinity of the Airport flight paths, and the availability of improved noise forecasts.*

12.6.27. The policies and objectives of the development plan and the LAP provide evidence that the review of the noise zones at the airport is on a continuous basis zone and is fluid. This aside, I note the noise contours which accompanied the RD and RA were generally in line with the noise zones of the development plan.

The supplementary information, submitted in response to the Boards first additional information request, includes a change in the pattern of flight paths. Having regard to this supplementary information, the Board requested the applicant to submit maps illustrating the 55 dB L_{night} and the 63 dB L_{den}. The scale of the maps provides a more user-friendly scale which allows comparisons with the development plan noise zones and assists with the assessment of the RD.

12.6.28. I have assessed the eligibility contours and noise contours for comparisons with the development plan noise zones. In relation to the noise contours the maps illustrate that the 55 dB L_{night} contours are generally in line with the amended eligibility

contours except for the compliance with criteria 2 for insulation (50 dB plus 9 dB for change in the first year). I consider the 55 dB L_{night} is the most appropriate noise metric to assess the RA, having regard to the change in operation procedures during the nighttime. Whilst the applicant has not provided a direct comparison between the amended contours and the noise zones, I note they generally align with either Noise Zone A or B (i.e. 55 dB L_{night}) aside from two deviations to the west of the junction with the R121 and the R122 and an area to the east of the junction with the R135 and the M2. Some of this area lies outside Zone A and B and fall into Zone C.

12.6.29. The area to the west of the R121 and R122 is highlighted in Map 20 and 21 (with insulation) of the applicant's response to the second additional information request to the Board. I note many of the properties to the south of the junction have already been mitigated under insulation scheme to date. Dwellings and sites along the R121 have been insulated by planning condition. These maps clarify that these areas have been included within the development plan noise zones as they were subject to the development plan requirements.

12.6.30. The areas to the east of the junction with the R135 and the M2 crosses between the Noise Zone, A, B and C. This area is highlighted in Maps 14 and 17 (with insulation) of the applicant's response to the second additional information request to the Board. Like the above situation, many dwellings in this area have been mitigated under an insulation scheme to date or lands have been subject to insulation by a planning condition.

12.6.31. The Planning Authority have raised concern that the updated flight paths may not align with the noise zones which could potentially have implications for the wider land use policy around the airport. The Planning Authority has not elaborated on which noise contour or Airport Noise Zone do not align. I note the applicant submitted maps to the planning authority as part of a further information request on the RA (Appendix 6A of the Revised EIAR 2021). These maps illustrate, *inter alia*, 55 dB L_{night} within Noise Zone A. Other noise contours overlaid with the noise contours maps include, 48 dB L_{night}, 54 dB $L_{Aeq,16hr}$ and 63 dB $L_{Aeq,16\ hr.}$ Appendix 13 of the supplementary EIAR includes noise contours maps based on similar noise metrics. Although the supplementary information does not include any overlaid noise contours maps, and as stated above, I consider there is general compliance with the

noise zones in the development plan. The most significant change to the noise contours relate to the areas within Zone C.

12.6.32. Having regard to the information in the RA and the additional information submitted to the Board, I am satisfied that the noise contours are generally in compliance with those of the development plan which require that noise sensitive development is either restricted or insulated. The two areas detailed above, while outside Noise Zone A and B, they remain within the Zone C. Table 8.1 of the development plan requires future development within both Zone C and D to have regard for any noise sensitive issues which may arise from the airport operation. The threshold for considered for C is ≥ 48 and <55 dB L_{night} which would encompass the night contours for the proposed mitigation from the RA. All prospective applicants for future development within all the noise zones are required to be cognisant of good acoustic design with significant restrictions in A and B.

12.6.33. All areas which are subject to increase in noise from the RA are contained within the Noise Zones and included in the Eligibility for RSIGS. Many of these areas will also be within the contours for a more enhanced insulation from the original NR permission. It is important to note that the policies and objectives relating to these noise zones do not preclude the operation of the airport, rather they require that future developments are insulated against the impact of airport noise. The RSIGS from the RD is included as a condition of the RA and requires constant update in line with any alteration in contours from the airport operation.

12.6.34. A number of third-party submissions consider the noise contours from the RA and amended flight paths are substantially different to the noise contours in the development plan and would be a material contravention of the plan. The PA submission has not raised issues about any material contravention of the development plan, rather it is stated that the format from the supplementary EIAR makes it difficult to assess any compliance with the noise zones and there is a potential for conflict with the land use policies. I am satisfied that the second additional information request includes maps at a scale which allows a detailed comparison of the noise contours and noise zones. To this end, I consider that no significant issues arise between the RA and the noise zones in the development plan, subject to compliance with the RD and there will be a continuous level of fluidity

of the changes to the zones as dictated by the noise forecasting. Compliance with these changes and the NAO and RD are a matter for ANCA.

Meath County Council Development Plan 2021-2027

12.6.35. Map 5.4.2 of the Meath County Development Plan 2021-2027 illustrates Airport Noise Protection Zones A, B and C which are extensions from those Airport Noise Zone in the Fingal County Council. Meath County Council submitted an observation to FCC in relation to the RA enquiring if residents of Meath would be eligible for insulation. The noise contours and eligibility maps from the initial RA, submitted to FCC, extended into Meath and across Airport Noise Protection Zones B and C. The updated Eligibility Maps (2024) includes changes to the insulation scheme, to reflect the updated flight patterns, and illustrate a new area to the north of the original area which include dwellings not within the previous eligibility contour areas in County Meath. This new eligibility contour area is within the area designated for Zone C of the Airport Noise Protection Zones.

12.6.36. As stated above, the areas entitled to insulation and included in the Eligibility Contour areas extend into Meath County Council. These areas fall under the second criteria (i.e. noise insulation for dwellings within an Eligibility Contour for 50 dB L_{night} with a change of 9 dB $L_{night)}$. All those dwellings located within the Eligibility Contours will be included in the proposed RSIGS, irrespective of being in County Meath or Fingal County, administered by Daa and ANCA where necessary.

Regulatory Decision, Relevant Action, and the Insulation scheme

12.6.37. The RD considered the use of land use planning as a measure which may contribute towards noise management. This land use planning consideration is restricted to decision on the compatibility of future planning decisions and the defined noise zones. The RD does not include any proposal to amend the noise zones. ANCA notes that the 48 dB L_{night} from the 2025 noise forecast sits within Zone C. Likewise the 55 dB L_{night} falls mainly within Zone B and A, reflecting the nighttime noise thresholds[38].

12.6.38. During consideration of the RA the planning authority requested the applicant to submit additional information on compliance with the noise zones. Appendix 6A of

[38] Regulatory Decision Report.pdf (fingal.ie)

the revised EIAR (2021) details the potential impact of the RA on existing land use and land use zoning. Table 3 of this appendix includes the results of the RA impacts on FCC Noise Zones. It states that in the permitted scenario in 2022 there is a slight encroachment into noise zone A, although under all other permitted and proposed scenarios in 2025 and 2035 there will be no encroachment of any contours outside the designated Noise Zones. Based on the information submitted in Appendix 6A of the revised EIAR, the PA was satisfied that the RA would not necessitate any change to the noise zones and the future development potential of zoned lands is unaffected.

12.6.39. The RD and RA includes a noise insulation scheme for dwellings within an Eligibility Contour area of 55 dB L_{night} and a second criteria for 50 dB L_{night} with a change of 9 dB L_{night} for dwelling within these noise contours in the first year of opening of the NR. The significance of this mitigation is dealt with throughout the assessment and in Chpt 13 of the EIAR. The implications of alterations to the flight paths have been raised continuously by the third party, particularly the response to the supplementary EIAR. The Board requested revised Eligibility Contour Maps from the applicant, having regard to the revised flight paths submitted with the supplementary EIAR. These maps allow comparisons to be made with the permitted RD maps and those now based on the amended proposed scenario. They illustrate alterations to the proposed nighttime mitigation scheme to encompass properties within the amended flight paths. Third party submissions note that many of the dwellings and persons now included within the eligibility area, where not included in the original maps, they also do not consider the insulation scheme can sufficiently mitigate against significant effects. I have addressed this issue below and note that the insulation scheme, although requires additional criteria for eligibility, would be sufficient to mitigate against sleep disturbance.

12.6.40. I note the Eligibility Contours in both the permitted RD and the amended maps submitted in response to the Boards FI request, do not exactly follow the Noise Zone contours in the development plan. The main changes between the permitted eligibility contours (2022) and the proposed scenario (2023) include the following:

- Inclusion of residential estate to the south of Portmarnock now eligible for insulation due to an increase in noise contours to the east of the SR.

- Decrease in eligibility contours to the west of SR, mostly relates to an industrial estate.
- Decrease in eligibility of insulation to the west of the R135, around The Ward, to the west of the NR.
- Increase in eligibility to the north of the R121 and R130 around the Corrstown, Kiloscan and Coolquay area.

12.6.41. As stated above, the Eligibility contours are based on the 55 dB L_{night} and a second criteria for 50 dB L_{night} with a change of 9 dB L_{night} for dwellings within these noise contours in the first year of opening of the NR. The terms and conditions of the Third Condition of the RD require the Eligibility contours to be reviewed every two years commencing in 2027 with residential dwellings situated in the 55 dB L_{night} contour being eligible. The review of these eligibility criteria is a matter for ANCA in the undertaking of their statutory functions.

Conclusion on Airport Noise Zones and Noise Metrics

12.6.42. The Airport Noise Zones in the development plan are used as appropriate land use measures to ensure any future development is mitigated against the impacts of the aircraft noise. While no direct comparisons can be made between the noise contours and noise zones, I have taken a balanced approach to assessing compliance with the Airport Noise Zones, where the overall findings between the supplementary information and the original RA are generally similar. These noise zones are generally in line with the flight paths for the SR and NR.

12.6.43. The supplementary information includes alterations to those flights not considered in the RD and the RA. The EIAR has been updated to assess the impact of these flight paths and the Eligibility Contour maps updated (March 2024) to include the two criteria for nighttime insulation. Any alteration to the RD requires additional public consultation. In this regard, the Board will note throughout my assessment the recommendation to amend the RD considering the restrictions on aircraft movements and noisest aircraft at night. The specific detailed inclusion of the criteria for 50 dB L_{night} with a change of 9 dB L_{night} for dwelling within these noise contours in the first year of opening of the NR, in the Third Condition of the RD will ensure that the mitigation scheme will be in keeping with any future changes in the flight paths, ensuring that no additional population will be significantly affected.

12.6.44. **Noise Guidance**

Introduction

12.6.45. The RD was made in line with the Environmental Noise Directive (2002/49/EC). and the Environmental Noise Regulations. ANCA considered the information in the RA, and other information submitted by the applicant, and engaged independent noise experts to assist with the draft RD. The conditions set out in the RD are included in the RA.

12.6.46. The Relevant Action and the information presented in the EIAR includes a range of noise metrics and associated modelling. These provide an assessment on the impact of the change to Condition No 3 d and 5. The appellant's have raised concern about the noise metrics and standards considered in both the RD and the RA. The consider the standards applied for assessing the impacts are too low, not in compliance with the WHO guidance and do not adequately allow and assessment of the impacts on sleep. Reference is made to other more relevant noise metrics (e.g., SEL) and guidance in WHO and UK documents.

12.6.47. I have provided the Board with an overview of the main guidance and best practice relating to the assessment of the impact of airport noise and assessed the appropriateness of using the L_{Amax} metric for the nighttime assessment.

World Health Organization (WHO) Guidelines

12.6.48. The WHO Guidelines[39] provide recommended exposure levels for environmental noise. This guidance is developed by a Guideline Development Group (CDG) following a Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach and review of eight systematic reviews of evidence which were conducted to assess the relationship between environmental noise and the following health outcomes:

- cardiovascular disease (IHD),
- effects on sleep(%HSD),
- annoyance (%HA),
- cognitive impairment hearing impairment and tinnitus.

[39] Environmental Noise Guidelines for the European Region (2018)

12.6.49. The applicants noise modelling provides a scenario for the population exposed of at least 50 dB L_{night} and assessed those HSD and HA using the methodology set out in EU Directive 2020/367.

12.6.50. Section 3.3 of the WHO guidelines provide recommendations for aircraft noise during the day and night. The CDG recommended reducing noise levels produced by aircraft below 45 dB L_{den} and 40 dB L_{night}. It is considered that above 40 dB L_{night} the noise levels would be associated with adverse effects on sleep. In relation to noise indicators refence to L_{den} and L_{night} are most extensively used. The guidelines note that single-event noise indicators (e.g., L_{Amax}) are warranted in the context of awakenings although the relationship between a single event noise and long-term health outcomes at the population remains tentative and therefore there is not detailed guidance in these WHO guidelines.

12.6.51. Section 6.1.1 of the Vanguardia Report provides a background on the WHO Guidelines and the subsequent review in 2018. The report notes that levels of 45 dB L_{den} and 40 dB L_{night} are stringent and would prohibit virtually any aircraft movement at night at Dublin airport, or indeed any airport and do not consider any noise insulation. The Vanguardia report notes that noise insulation criterion of 55 dB L_{night} and the 50 dB L_{night} plus 9 dB for any change has been included to mitigate against the impacts from a higher noise level.

ProPG: Planning & Noise – New Residential Development

12.6.52. ProPG: Planning & Noise – New Residential Development, May 2017 includes reference to measurement for airport noise. Appropriate noise levels are based on guidance issued by WHO and assume normal diurnal fluctuations in external noise. Both SEL and $L_{Amax,F}$ are guidance levels for regular noise events such as airport noise. In relation to internal noise guidance it states that "*In most circumstances in noise sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night".* If this noise level cannot be met then other factors such as source, number, distribution, predictability and regulatory of noise events should be used.

12.6.53. Appendix A: of these guidelines reiterate some of the information provided in the WHO guidance in relation to impact of noise events. The effects on sleep are discussed regarding an awakening threshold. Awakening is summarised as the

potential for sleep disturbance, premature awakening, difficulty getting back to sleep and accepts that the maximum noise level (L_{Amax}) is noise events can be used as a basis of assessing this impact.

Relevant Action

12.6.54. Most of the noise assessments presented in all versions of the EIAR relates to L_{night} and L_{den}. These have been criticized as not representative of noise disturbance at an airport as they relate to averaging of noise rather than the actual situation at night. L_{Amax} noise metric was referenced in the ANCA's Natura Impact Statement for the NAO and RD (June 2022) as a means of explaining the impact of noise for the different aircraft on take-off and landing. No assessment was included in the RD when assessing the impact on the population.

12.6.55. Section 13C.3 of the air modelling results and figures in the EIAR list the noise metrics used for the modelling methodology. N65 and N60 are metrics are used to predict the number of aircraft exceeding either 65 dB L_{Amax} during the day (N65) or 60 dB L_{Amax} during the night (N60). The Board requested the applicant to submit further information in the form of "*analysis of the effect of peak L_{Amax} noise levels from ATMs on additional awakenings at night regarding the baseline and consented scenarios."*

12.6.56. The additional awakening assessment allows a more detailed assessment, over and above the N65 and N60 because it provides an assessment of the impact on the sleep during the 2-hr shoulder period, rather than as an average during the entire night period. Whilst the N65 and N60 results provide a more meaningful depiction of the potential of noise exposure from ATMs, rather than the L_{night}, they still only allow an indication of noise levels over an average period during the night i.e., 8 hrs rather than only 2 hrs as proposed in the RA.

12.6.57. The applicant's additional awakening assessment includes an independent review to state that such form of assessment on the additional awakenings is not a significant criterion to assess any increase in awakenings. Reference to certain studies on awakenings are integrated into this independent review.

Noise Guidance & Noise Metrics in assessing the impact of the RA.

12.6.58. There is a range of guidance on methods to assess the impact of airport noise on the population. These variations include SEL (measurement of an individual noise event as if the event had occurred within a one-second time period), $L_{Aeq,hr}$ (Average A weighted, equivalent sound level over a specific period), L_{night} (no of people exposed to night time noise) and L_{Amax} (the highest time-weighted sound level measured during a period). Whilst I note there are other noise metrics to assess the impact of aircraft noise during the night, these are the most relevant.

12.6.59. The initial noise modelling in the EIAR included, for the most part, L_{night} metric. The applicant argues that the use of this metric is standardised, included in the WHO Environmental Noise Guidance (2018) and can be used to calculate the percentage of the population highly sleep-disturbed (%HSD).

12.6.60. The Board requested the applicant to assess the additional awakenings based on the approach described in the review of the WHO ENG 2018[40] . This report considered more research evidence, not initially considered during the drafting of the WHO 2018 guidance and was presented to the CDG.

12.6.61. The assessment of the additional awakening is provided in detail below and I consider that the available guidance indicates that the use of L_{Amax} provides a greater understanding of the impact aircraft noise on sleep disturbance during the two hours proposed for the increased ATMs (23:00 to 00:00 and 06:00 to 07:00).

12.6.62. **Air Traffic Movements**

Introduction

12.6.63. In addition to the quantum of ATMs proposed third party submissions also raise concern as to the direction of the aircraft movement, as permitted under the original NR permission, the permitted RA and the supplementary information which is based on the live data since the opening of the NR. The mode of operation and the direction of the flight paths are raised in a significant number of submissions.

12.6.64. The quantum of ATMs proposed has been addressed in detail in my analysis of the NQS. A recommendation to include an annual aircraft movement is evaluated in both

[40] Mathias Basner and Sarah Mc Guire; WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep 2018; International Journal of Environmental Research and Public Health

in my assessment and the Vanguardia Report. This section relates mostly to the implications of the operational use of the runway due to the direction of take-off and landing or aircraft on each of the runways and is intended to complement my assessment of Condition No 3.

Runway operations.

12.6.65. The scenarios for take-off and landing presented in the updated information 2023 are the same as those in the September 2021 submission as follows:

- South Runway is the existing main runway which is aligned approximately east west;
- Cross runway is the existing runway aligned approximate north-west south-east;
- 10R refers to movements on the South Runway heading in an easterly direction;
- 28L refers to movements on the South Runway heading in a westerly direction;
- 10L refers to movements on the North Runway heading in an easterly direction;
- 28R refers to movements on the North Runway heading in a westerly direction;

12.6.66. Condition No 3 a) to c) is based on the mode of operation – Option 7b – as detailed in the Environmental Impact Statement Addendum of the original NR permission. This is a single mode of operation i.e. westerly single mode is with departures and arrivals to the west and vice versa for easterly mode. Dublin is approximately 75% westerly single mode and 25% easterly single mode due to the prevailing west to southwest winds. The reflects the preference for aircraft to take off and land into the wind.

Table 2: Permitted Runway Operation

Runway		**Permitted**[41]

[41] Condition 3 a-c: Daytime operation (PL06F.217429 (Reg Ref F04A/1755)

North Runway (10L/28R)	10L	Winds easterly preferred for arrival
	28R	Winds westerly preferred for departure if determined by Air traffic control
South Runway (10R/28L)	10R	Winds easterly preferred for departing. Can also be used for arrival if determined by Air traffic control
	28L	Winds westerly preferred for arrival. Can also be used for departing if determined by Air traffic control
Cross Runway (16/34)	16	SR and NR used in preference to Cross runway.
	34	

Proposed alterations to the Flight paths from the original NR permission

12.6.67. Third party submissions on the RA note the flight paths differ from those in the original EIAR. These concerns are reiterated in the submissions on the supplementary information. The permitted runway operation is detailed in the table above.

12.6.68. The Vanguardia Report includes an assessment of the original flight paths with reference the refinement of contours to allow for dispersion of flight tracks either side of nominal flight tracks entered in the model and the basis of applying the Option 7b contours options. Section 5 of the Vanguardia report assumes the applicants air traffic forecasts are a suitable basis for a comparison between the no-development and the proposed Option 7b noise contours options.

12.6.69. The Board included Condition No 3, based on the flight tracks in this EIAR. There are no proposals to amend the preferred use of the runways. I note there is a wide variation for the potential operational use of the runways. Whilst it is predominantly based on the direction of the winds, condition no 3 allows for variations in the preferential use, based on the requirements of air traffic control.

Proposed alterations to the Flight Paths as per the Supplementary Information

12.6.70. The supplementary information included a change in flight paths. The amended flight paths include divergence north from the NR on departure earlier than previously proposed in the original NR proposal. The appellants are concerned these flight paths, and associated noise modelling, contradict the permitted flight paths in condition No 3 of the original permission for the NR which refers to Option 7b. They refer to the Standard Flight Departures and the movement of aircraft on take-off. It is considered the text referred to in the original EIAR has not been complied with and the turning of flights earlier north, when departing from the NR, does not comply with the flight paths permitted in the original NR permission.

12.6.71. The applicant states that in consultation with the IAA flight departure routes from the NR have been amended from the routes initially proposed in the original NR permission. The applicant's submission states that "*updated assessment is based on analysis of radar data of actual routes flown since change to the published procedures* (23rd February 2023)". Section 2.1 of the Noise Modelling Report submitted in response to ABP FI request notes the following information has been integrated in the updated noise modelling methodology for the years 2025 and 2035:

- Changes to the runway use assumption in the early morning, in particular segregated mode, where either the North or South runway is used for departures, with the other used for arrivals.
- Updated departure routes, for westerly departures, based on recent radar data,
- Changes to the distribution of the aircraft from the runways following analysis of the distribution of lights in 2022.

12.6.72. The supplementary EIAR includes updated noise modelling to reflect the alterations in the flight paths. Figure 13B-3 (North Runway Modelled Routes) and Figure 13 B-2 (South Runway Modelled Routes) illustrate the change to permitted runway operations (i.e., the actual flight paths). When compared to the similar illustrations in the revised EIAR (September 2021) it is clear there are alterations to the arrival routes to both runways (east and west) and the departure routes for either category A & B aircraft, or Category C & D aircraft, where A & B are generally smaller aircrafts than C & D. The greatest difference, and main concern from third party submissions,

is the alterations to the departures on the NR. In general terms the departures off the NR are turning north earlier, around The Ward and Newpark, than previously proposed. The earlier divergence north, northwest, is the main change to the flight routes.

12.6.73. A number of submissions have been received from the North Runway Technical Group. This group is made up of residents who have expertise in aviation and/or engineering. They consider the applicant is incorrect in concluding that the flight paths now proposed are a necessity to comply with safety issues and note a range of options for the operation of the runway, including the change of the south for departures and the north for arrivals. They reference a more appropriate missed approach which the Daa have not considered adequately.

12.6.74. The Vanguardia Addendum Report specifically addresses issues regarding the alteration in mode of operation. It is noted that condition no 3 says the "***the runways*** *at the airport shall be operated in accordance with the mode of operation…….*" (author's emphasis). The applicant has confirmed throughout the RA and in the supplementary information that the terms of condition no 3 a) to c) will not be altered. It is noted that the flight paths have been altered to diverge northwest immediately on take-off when departing the NR to the west. The applicant has stated that this flight pattern is based on a requirement by the Irish Aviation Authority. Section 3.1 of the Vanguardia Addendum Report notes that this divergence is of aircraft approach or departure from the airport falls under the control of the air space via the Air Traffic Control regime as dictated by the IAA in line with international treaty agreements and a priority to promote public safety.

12.6.75. As per my assessment below, and in the interest of clarity, the Board will note that the flight patterns submitted in the applicant's supplementary information and included for the purpose of the proposed scenario of the EIAR, differ to those submitted in the original EIS for the NR application. The Board will note that the flight patterns submitted to the planning authority for the original Relevant Action also differed from those submitted with the original EIS for the NR application. The main difference between the revised EIAR and the amended supplementary EIAR is the divergence north from the NR, earlier than previously indicated in the revised EIAR permitted by the planning authority.

12.6.76. I am satisfied that the impact of these alterations has been fully assessed in the submitted documentation and having regard to the Vanguardia Report, further discussed below, I consider that they relate to air traffic control requirements. The Board requested additional information on the applicants proposed insulation scheme, which I note aligns with the proposed flight patterns. I am satisfied that the Board can assess the impact of these amendments to the original flight patterns, and I consider they are acceptable.

Segregated Mode Vs Mixed Mode

12.6.77. The operational use of the SR and NR has also been raised by third parties. The supplementary information and updated noise modelling assume that one runway will be used for departures between 06:00 and 07:59 (i.e., segregated). This was proposed in the original RA and amended in the Revised EIAR (September 2021) to include a mixed mode. The difference in both modes is detailed below:

- Segregated mode is when an airport with more than one runway uses each one for arrivals or departures only.
- Mixed mode is when a runway is used for both arrivals and departures (not at the same time).

12.6.78. The segregated and mixed mode have not been restricted by the parameters in Condition No. 3 a) to b). The 92-day summer average of the single mode is biased towards westerly mode as it is predominant. This is traditionally what has been used to assess airport noise impact as people are surveyed retrospectively about how the noise affects them over a medium length period rather than on a specific day as there are many variables about how they might react.

The noise contours in the supplementary EIAR reflect the change to the segregated mode. The main change is the use of the NR only for departures to the west as detailed below.

Future Runway Usage.

12.6.79. Future Runway Usage has been amended following the submission of the FI to the Board (EIAR Dec 2020[42] vs EIAR Sept 2023[43]). Both scenarios assumed that 1% of

[42] Table 13B-10: Future Runway Usage
[43] Table 13B-5: Future Runway Usage

the ATMs would use the Crosswind Runway. The EIAR Supplement includes a new scenario for the NR operation where maintenance activity required for the SR (4 nights every 6-8 weeks) will require the NR to be used for all flights between 23:30 to 04:29. This is assumed that any scheduling of works on the SR is when it has been assumed that the use of the SR is the preferred option. The table below shows the percentage difference in alterations to the updated scenario, when compared to the original RA. No technical assessment of the future runway use was presented in the EIAR 2021.

Table 3: Future Runway Usage

Runway	Arrivals		Departures	
	EIAR 2020	EIAR 2023	EIAR 2020	EIAR 2023
10L/10R*	29%	22.6%	29%	22.6%
28L/28R**	70%	76.4%	70%	76.4%
16	0.75%	0.71%	0.75%	0.74%
34	0.25%	0.29%	0.25%	0.29%

*10L: NR, 10R:SR **28R:NR, 28L:SR

12.6.80. I note that increase in runway usage reflects the westerly operations with the greatest number of ATMs are based on flights departing to the west (i.e., use of 28L/28R). The greater number of flights to the west indicates that those communities to the north and northwest of the NR (28R) will be most affected during the take-off/ departures and those communities to the east of the SR (28L) will be most affected by the arrivals on the SR.

12.6.81. The future runway usage is linked to the preferential use of the runway in condition no 3 a-c) and any change in the mode of operation. The applicants change from mixed to segregated mode has been detailed in the supplementary EIAR as a mitigation measure. As the figures above indicate, the change in mode has benefits to the communities who experience a switch in mode from the SR to the NR, whereas those communities newly overflow will experience an adverse impact.

12.6.82. **Additional awakenings**

Introduction

12.6.83. The RD and EIAR used L_{night} and L_{den} noise metrics allow an analysis of the aircraft noise as an average over a longer period – 8hrs for L_{night} and 24 hrs for L_{den}. On first review of the RD and RA the Board considered additional information should be submitted by the applicant to inform its decision-making process. Item No 1 related to an additional awakening assessment. The additional awakening assessment is an assessment of the maximum noise levels ($L_{AS,max}$) from individual aircraft events during the additional 2 hours period specific in the Relevant Action (23:00 to 00:00 and 06:00 to 07:00). The maximum noise levels are used to determine the probability of each aircraft event causing an awakening, separately for each receptor. Section 3.0 of the applicants Noise Modelling Report (FI response to the ABP) provides a response to Item 1 (Additional Awakenings).

Third party submissions

12.6.84. Submissions on both the original RA and the supplementary information received by the Board raise concern in relation to the assessment of L_{Amax} and the additional awakening report. It was initially stated that there was insufficient information in the RA to assess the impact of L_{Amax}. Following the submission of the additional awakening report concern has been raised that there is insufficient information to assess the impact of any dwellings affected by the individual aircraft, i.e. the results of the additional awakening report have not been integrated into the EIAR. Reference is also made to the applicant's submission on the need for an additional awakening assessment, which notes the absence of any conclusive analysis to discount this assessment and affirms that that early morning noise is much more disruptive of sleep than late evening noise because a person's sleep is in a lighter part of the cycle in the morning. The appellants refer to the use of additional working assessment at other European Airports assess the impact of significance on affected areas.

12.6.85. A submission relating to the additional awakening assessment was received by an Independent Acoustic Expert (SUONO) on behalf of St Margaret's The Ward Residents Group; referring the need to integrate a Significant Observed Adverse Effect Level (SOAEL) assessment, like England and Wales.

12.6.86. A submission from a resident's association in the vicinity of the airport site was accompanied by a report of a sleep analysis who have raised concern in relation to the applicants additional awakening information. It is stated that studies clearly indicate an association with aircraft noise, sleep disturbance and health issues. The additional awakening report should have been presented in a different format and accompanied with maps illustrating those properties where one additional awakening was possible. Those persons who live beside the airport are more likely to experience additional awakening at the end of their sleep cycle.

Applicant's Submission

12.6.87. The supplementary information includes an Additional Awakening assessment[44] and an independent expert opinion on the additional awakening assessment. The applicant (and a submitted independent expert submission) is of the opinion that the assessment of additional awakening and the use of L_{Amax} noise indicators is not an appropriate threshold to assesses the harmful effects of noise on sleep disturbance as this method does not clearly provide an accurate measure of the probability of awakening. For the Additional Awakening Assessment reporting to be effective the applicant's independent expert considers there needs to be a full assessment of sleep and sleep awakenings within appropriate equipment. They consider the use of L_{night} metrics is more appropriate as set out in the WHO Guidance as it allows an assessment of the impact on sleep across the night. This aside they have provided an assessment of maximum noise level ($L_{AS,max}$) from individual aircraft events at receptors in the study area. The conclusion from this assessment is summarised as follows:

Annual

- Annual nightly additional awakenings are less from the baseline year of 2018 in all permitted and proposed scenarios in 2025 and 2035.
- Annual nightly additional awakenings are less in the proposed scenarios in 2025 although greater in the proposed scenario in 2035.

[44] Noise Modelling Report, ABP RFI APR 2023, Bickerdike Allen Partners (September 2023)

- Annual- single mode operations from the east will have greater nightly additional awakenings in the proposed scenario than the permitted scenarios in both 2025 and 2035.
- Annual- single mode operations from the west will have greater nightly additional awakenings in the proposed scenario than the permitted scenarios only in 2035.

Summer

- Summer nightly additional awakenings are less in 2025 for the proposed scenario although greater in the proposed than the permitted scenario in 2035.
- Summer- single mode operations from the east will have greater nightly additional awakenings in the proposed scenario than the permitted scenarios in both 2025 and 2035.

12.6.88. Summer- single mode operations from the west will have greater nightly additional awakenings in the proposed scenario than the permitted scenarios only in 2035.

12.6.89. The applicant's analysis states that these additional awakenings will occur irrespective of any impact from aircraft noise because sleep can be disturbed in many different methods. The applicant's result in the additional awakening assessment[45] also state that due to the study population of over 1 million the chance of an additional awakening on average is under 3%. This is considered a very low change of additional awakening. It is also stated that a reduction in additional awakening is expected from 2018, which is 40% by 2025 without the RA. These additional awakening will also drop by 2035, by 55% with the RA and 65% without it. The summer night additional awakening is forecast to be higher by 12%. As stated above, flights from the western operations are less noisy. The applicant finally concludes that the L_{night} metric used to determine the population HSD is of a similar magnitude to the additional awakenings.

[45] Section 3 of the Noise Modelling Report ABP REF 27 APRIL 2023: prepared by Bickerdike Allen Partners

Assessment

12.6.90. Several issues have been raised in the applicant's submission and the third parties which relate to the additional awakening assessment. In the first instance, the use of the additional awakening is questioned as appropriate method to assess the impact of aircraft noise on the population and secondly the significance of the results from the assessment are not considered to be representative of the actual impact on the population.

12.6.91. In the first instance, the Board's rationale for requesting the additional assessment related to the impact of ATM during the additional hours. The initial EIAR and ANCA assessment relay solely on the L_{night} metric, which averaged over the 8 hours between 2300 and 0700 and "smooths" out the noise generated in these more intense shorter periods of greater numbers and more frequent ATMs. The concentration of flights will occur in the early and late parts of the night for 2hrs of the total night period and not over the entire 8hr period.

12.6.92. The applicant notes that the WHO Guidance states that the L_{night} metric is an appropriate threshold for assessing the impact of night noise on sleep disturbance although as stated above the guidelines also states that the use of L_{Amax} is also warranted for single-event noise indicators in the context of awakenings. The guidance states that the relationship between a single event noise and long-term health outcomes at the population remains tentative. This aside, best practice guidance referred to in the Fingal County Development Plan 2023-2029, ProPG: Planning & Noise – New Residential Development, states that awakening is summarised as the potential for sleep disturbance, premature awakening and difficulty getting back to sleep. The maximum noise level of aircraft (L_{Amax}) can be used as a basis of assessing this impact.

12.6.93. The Vanguardia Report provides extensive supporting information on the use of the Additional Awakening approach rather than the L_{night} as the latter is less sensitive. The effects of aircraft noise on sleep are the same between different scenarios no matter the number of ATMs under the L_{night} assessments because the provided energy is the same rather than using the Additional wakening approach. Having regard to the range of referencing in airport noise guidance to L_{Amax} and additional

awakening I am satisfied that this assessment can be used to supplement the information in the EIAR and other documents which accompanied the RA.

12.6.94. The applicant's assessment states that the proposed scenario will see a reduction in additional awakenings from 2018 (i.e., 40%) to 2025. While this may be technically accurate, globally noise aviation has reduced from 2018. The Vanguardia Report notes that like the L_{night} assessments, the Additional Awakening Assessment follows the same broad trend as the evaluation of the %HSD when comparing a 2018 baseline to future assessment years of 2025 and 2035. In this case, there will be substantially more people highly sleep disturbed and/or experience an additional awakening within the RA in place in 2025 and 2035 compared to the years without the RA in place. Although these trends remain the same, the Vanguardia Addendum Report highlights that the additional awakening is more sensitive to the number of ATMs at night. In my opinion, those comparisons between the permitted and proposed scenario provide a greater understanding of the impact of additional awakenings from the Relevant Action. To this end, the results of the % people HSD, which is based on the average nighttime hours, do not fully reflect the impact of the nighttime flights on sleep disturbance during the shoulder hours (23:00 to 00:00 and 06:00 to 07:00).

12.6.95. Regarding the information submitted in the assessment, I note that during the busy summer period there will be a greater number of additional awakenings from the easterly operation from the proposed scenario in both 2025 and 2035 and a decrease in 2025 and then increase in 2035 for the westerly operations. No detailed analysis on the rationale for the noisier easternly operations is included in the assessment although when assessing the results and the noise contours in the noise modelling it indicates that in 2025 only the SR runway was in use under the permitted scenario and as the likelihood of an additional awakening is strongly linked to the number of ATMs, by 2035 the increase in ATMs would mean that the additional awakenings would also increase under the proposed scenario, due to the use of the NR. Summer average is clearly a busier period; therefore, the additional awakenings would be greater during this time under both scenarios and for both assessment years due to the increase movement of aircraft.

12.6.96. Information included in the Mott McDonald report (September 2023) indicates that future night movement demand is expected to be c. 133 movements by 2025, mainly

due to the growth in night cargo flights (currently c. 6 and proposed c. 24 per night). These cargo flights are typically older, noisier aircraft which have a greater potential to reach a higher L_{Amax} level. I consider the information in this report supports the use of the additional awakening assessment as an aid to assess the impact of the Relevant Action on sleep disturbance. When using the information presented in the EIAR for N60 metrics it can be concluded that there will be significantly more population within the ≥50 dB contours in 2025 and 2035, compared to the permitted scenario, which allows a broad understanding of the impact of noise aircraft during the average night period (i.e., 8hrs). The use of the additional awakening assessment, in conjunction with the information contained in the EIAR, supports the conclusions on the Vanguardia Report and Addendum report that there will be a greater number of people significantly affected by an additional awakening.

12.6.97. The Vanguardia Report provides a comprehensive analysis of the benefits of using maximum noise levels (L_{Amax}) to assess how the aircraft noise can affect sleep in terms of short- and long-term effects. The *Basner* Report is referenced as the most appropriate and up to date guidance for assessing the impact of aircraft noise effects on sleep. The Basner Report assesses the impact aircraft movement on additional awakening and states that the effects of aircraft noise on sleep do not change if all the ATMs are 3 dB less noisy but the number of ATMs doubles. This would mean that if all the aircraft where less noisy those HSD would decrease proportionately.

12.6.98. When assessing the impact of the RA, the additional awakening and the EIAR information both conclude there will be an increase in HSD and awakenings. This would indicate that all aircraft will not be less noisy under the NQS rather there annual night quota will be based on a target average fleet noise per movement. The background on the noise quota and aircraft classification is detailed above, and concludes that slight variations in the classification system can allow a much noisier aircraft , for example aircraft rated at 90.1 EPN dB are in the bottom of the QC 1 and those rated at 5.9 EPN dB are at the top of the QC 2 and would differ by 5 dB, representing almost a four-fold difference in noise energy. For example, there is an extensive range in each of the ICAO classification categories to allow significantly noisy aircraft, therefore the applicants QC budget could be made up of a large number of noisy aircraft rather than restricting the noisy aircraft. The Vangaurdia Report considers the large numbers of aircraft allow in the QC budget should be

restricted by an aircraft movement limit. The Vanguardia Report also referenced other studies which conclude that there is an arousal rate of 1 in 30 from aircraft noise events from aircraft emitting noise over 80 dB L_{Amax}. The report recommends an additional criterion for insulation to ensure mitigation from the movement of noisier aircraft during the additional nighttime hours of operation. A recommendation on a cap of peak noise levels for the loudest aircraft of 80 dB L_{Amax} between the hours of 23:00 and 07:00 is included in the Vanguardia report.

12.6.99. Having regard to the additional awakening report in conjunction with the EIAR and the noise quote classification system, the Vanguardia Report recommends the inclusion of a cap on the total number of ATMs at night and additional qualifying criteria for noise insulation for residential properties subject to aircraft noise between 2300 and 0700 80 dB L_{Amax}.

Conclusion

12.6.100. The best available guidance for assessing the impact of aircraft movements on sleep disturbance indicates that the use of noise metrics to assessment the maximum noise levels of the aircraft is more appropriate than the assessment of an average noise levels. This is because aircraft noise is not experienced as an average over the whole of the night. I am satisfied that the use of the additional wakening assessment is appropriate to understand the impact of the RA during the additional hours of operation.

12.6.101. Although the conclusion of the Additional awakening report follows the same broad trend as the evaluation of the %HSD in the EIAR, when comparing the 2018 baseline to future years of 2025 and 2035, it also provides an understanding of the impact of the sensitivity of the population from the additional movements of aircraft during the shoulder hours. The applicant states that the chance of an additional awakening for the population under consideration is on average 3%. In future years, the forecast level of additional awakenings on a summer night is 12% higher than on an annual night, due to the greater number of movements. This clearly indicates a link between the number of ATMs and the additional awakenings and further strengthens the Vanguardia Report recommendation, which I agree with, to include a restriction on the number of Air traffic movements, in conjunction with the NQS, particularly for the 92-day busy period.

12.6.102. **Assessment of the Noise Mapping, Guidance, Zones, Contours and Modelling Results**

The strategic mapping, available noise guidance, noise modelling and contours have all been used in my assessment of the RA.

Noise mapping and Airport Zones.

12.6.103. The strategic mapping from both the EPA and the Dublin Agglomeration are used to designate the airport noise zones in the county development plan and the Dublin Airport LAP. These are used to inform the future development of lands in the vicinity of the airport and control noise sensitive development in areas which experience high levels from the operation of the airport.

12.6.104. The integration of the flight paths with the airport noise zones has been raised in third party submissions with concern that the RA does not comply with the current zones. The submission from Fingal County Council raised concern that the supplementary information was in a format which made it unclear if the noise contours proposed complied with the airport noise zones.

12.6.105. The applicant's second further information submission to the Board includes Eligibility Contours regarding the delivery of a proposed mitigation scheme. These maps allow a comparison with the airport zones and although not overlaid, the format allows an assessment. I have concluded that the noise contours associated with the change in flight paths in the supplementary information in general complies with the airport noise zones in the development plan. The two new areas, within the eligibility contours, are located outside Noise Zone A and B. The relate to the nighttime noise threshold of up to and equal to 55 dB L_{night}. The new areas remain within Noise Zone C which has a nighttime noise threshold of less than 55 dB L_{night}. There remains a requirement for future developments within Noise Zone C to be assessed against the impact of noise disturbance from aircraft noise. This aside, the Board will note the policies and objectives of the development plan, relating to the development within airport noise zones does not preclude the operational activities at the airport or prevent the submission of the Relevant Action.

12.6.106. The development plan noise zone is a land use policy restricting the location of noise sensitive development within the vicinity of the airport and/or requiring appropriate insulation in future development. I am satisfied that the applicant's eligibility contours

submitted with the Board second request for additional information will provide additional nighttime insulation for those properties located within the 55 dB L_{night} contours and >50dB L_{night} with a 9dB increase contours.

Noise Guidance and assessment of noise metrics

12.6.107. The use of L_{den} and L_{night} is a common noise metric to understand the impact of noise from aircraft. The EU Regulation 598/2014 requires air traffic noise to be described "at least" using these indicators with reference to the use of other additional noise indicators[46]". The noise modelling methodology in the RD and RA application mostly use L_{den} and L_{night}, although other noise indicators are also used throughout the submitted documentation and the noise modelling in the EIAR (Section 13C: Air Noise modelling results and figures e.g., N60 and N65).

- 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).

12.6.108. The use of the L_{Amax} metric allows an understanding of the impact of the noise emitted from the maximum level of aircraft noise at source and the level experienced by communities near airports. Both the WHO guidelines and the UK noise guidance for Planning & Noise include reference to the use of L_{Amax} for noise events such as airport noise. I am satisfied that the noise generated by the RA would not represent an average impact over the night period and the L_{Amax} noise metric allows for a greater understanding of the impact on sleep disturbance and %HSD.

Air Traffic Movements and Additional Awakening Assessment

12.6.109. The movement of aircraft is used to provide noise modelling in the RD and RA. The noise modelling and associated noise contours allow an assessment of the impact of the operational changes in the RA*, inter alia,* the increased operation at night and the introduction of the NQS during these hours. The information presented in the EIAR details the increase movement of aircraft initially because of the RA in 2025 which remains the same in the 2035 scenario. It is stated that the impact on those HA and

[46] REGULATION (EU) No 598/2014 (Annex 1) https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0598)23rd of October 2023

HSD from the RA will decrease in 2025 and then increase in 2035, when compared to 2018. The Vanguardia Report notes that this trend would be expected anyway without the RA in place due to the introduction of less noisy aircraft. The increase between 2025 and 2035 relates to an increase in the number of flights. The NAO would be complied with even without the RA in place. The importance of the figures in the EIAR, regarding the HA and HSD, is the RA leads to an increase in the ATMs with a greater proportional increase at night due to the proposed movements. This change will significantly increase the impact of sleep disturbance without the necessary mitigation.

12.6.110. The additional awakening assessment also indicates that the RA by permitting additional shoulder hours will increase the impact of sleep disturbance when using the L_{Amax} noise metrics. This is due to the increase ATMs during the additional hours with the greatest impact during the busy summer period.

12.6.111. The Vanguardia Report includes a recommendation to apply a third standalone criteria for noise insulation for all residential properties subject to aircraft noise of 80 dB L_{Amax} between 23:00 and 07:00. This will ensure that the impact of the noisier aircraft is adequately mitigated. The RD includes a restriction on the movement of aircraft with a noise classification of 4.0 during the night (i.e. noisier aircraft). I consider the combination of both will ensure any significant impact on sleep will be mitigated for the residents of those properties. The Vanguardia report also recommends the introduction of a cap on the total number of ATMs at night based on those ATMs derived from the calculation of the QC budget. This has been assessed in detail throughout my report and the Board will note that I have concluded the NQS is not sufficient to prevent a significant negative impact on sleep disturbance and introduction of this cap necessary to mitigate against the RA.

Mode of operation

12.6.112. The IAA requirement to change the flight routes from the NR is raised as one of the greatest concerns in the third-party submissions. The applicant has repeatedly stated that this is a safety issue. No submissions have been received from the IAA in relation to this requirement.

12.6.113. I note Section 6.2.4 of Option 7b states that Aircraft of Categories C/D (medium to heavy jets) departing to the west (Runway 28) are required to maintain straight

ahead after take-off to 5NM before commencing turn, unless otherwise cleared by ATC, above 3000 feet. The departures now follow a 15-degree divergence from the runway axes immediately on take-off, which has led to the north-west for westerly departure. This requirement to use the runway differs from the requirements of No 3 a)- b) which dictate the preferential use of both runways as determined by the wind directly. I note there is an element of deviation from the routes, when required by air traffic control (ATC). It is not clear from the text in Section 6.2.4 of Option 7b, as stated above, what, if any, situation is required to allow this deviation. This aside, the Vanguardia Report notes that a divergence follows the ICAO requirement that when parallel runways are in use there must be a 15-degree divergence of aircraft from the runway axis immediately on take-off, is not a land use issue rather an operational change to address a safety concern.

12.6.114. These changes are not only relevant for the RA, i.e., operation during the nighttime hours, but the noise modelling is reflective of the new flight paths during the day. The supplementary information, which reflected the new flight paths, included an update to the relevant chapters of the EIAR. This information was on public display for the wider public and a significant number of extra submissions were received on this advertised information. The additional participants were mostly from those residents to the northwest, impacted by the changes in flight paths.

12.6.115. In the first instance, I note the EIAR allows some deviation to the paths, as required by ATC, as referenced in the Vanguardia Report as an ICAO requirement. In the second instance, the applicant has provided an assessment of the changes in flight paths which have been assessed throughout both my planning assessment, EIAR and included in the Vanguardia Assessment. The overall impacts of the new flight paths follow the same broad changes as the initial RA, any changes are highlighted in the updated EIAR and included below in my EIAR assessment. The updated eligibility contour maps provided greater clarity on the dwellings now included for insulations, i.e., impacted by the new noise contours. I am satisfied that the overall impact of the changes has been fully assessed and considered as part of this RA.

12.6.116. The change in mode from mixed in the revised EIAR (2021) to segregated in the supplementary (2023) reverts to a change from the original RA (2020). This mode is included in the noise modelling in the supplementary information. The Vanguardia report states that this change in the use of the runway will bring a minor noise benefit

in terms of the % of HSD when aggregated over the additional nighttime hours although a much greater effect in limiting the numbers of person likely to experience additional awakening. For example, by departing from the NR during the morning hours, an area which is less densely populated will be overflown (i.e. rural area to the north of the NR rather than the urban area of Blanchardstown to the west of the SR). This would effectively reduce the number of people impacted by the departing flight off the NR in the morning. The Vanguardia Report states that the proposed segregated use of the runway, which has a potential beneficial impact on those HSD, could be incorporated as a requirement of planning conditions.

12.6.117. Third party submissions on the change in mode consider the move back to a segregated mode has been included by the applicant to ensure the noise modelling is amended to reduce the numbers of persons significantly affected by the RA. I consider the change in mode for the NR during the morning hours does produce a minor noise benefit due to the change of departures away from the urban area of Blanchardstown towards the more rural populated area to the north of the NR.

12.6.118. The applicant's supplementary EIAR states that operating restrictions in place to mitigate against adverse effects include *"A preferential runway use system at night with activity on the North Runway limited to a total of two hours".* In considering the impact of those %HSD the use of the preferential use of the runway as a mitigating factor must also be considered. The Vangaurdia report recommends the possibility of including this mode as a planning condition although having regard to the requirements of the Airport Noise Act, 2019, the Board is required to go on public consultation with any alterations to the mitigation or operating procedures in the RD.

I consider this mitigating factor should be included as a separate condition of the RD should the Board be minded granting permission for the RA. This does not alter any of the preferential requirements of the runways in Condition No 3 a-c) and would be a specific additional requirement.

12.6.119. **Conclusion**

12.6.120. The RA is based on the movement of aircraft during additional hours at night and within the context of an NQS. The Board's independent acoustic expert was not satisfied that noise metrics used to assess the RD and RA could be adequately used

to assess the impact of sleep disturbance from the proposed RA. Additional information was requested which include the submission of an Additional Awakening Report. The applicant's response to the FI request also included amendments to flight patterns, not previously included in the RA.

A supplementary EIAR accompanied the applicant's submission. I have concluded that, based on the Additional Awakening Assessment, the uncontrolled movement of ATM during the additional hours would have the potential to have a significant impact. In the absence of a restriction on the aircraft movements the use of the NQS alone, during the nighttime hours, has the potential to have a significant negative impact on residents within the vicinity of the airport. The use of an aircraft movement restriction, in conjunction with the proposed NQS, is considered a more viable option for the airport to operate during the nighttime. In reaching this conclusion, I have had regard to the third-party submissions, the Vanguardia Report and the applicant's documentation. The introduction of a restriction on the aircraft movements would be considered necessary irrelevant to the change in flight paths submitted in the applicant's supplementary information.

12.7. Material Contravention of the Fingal County Development Plan 2023-2029

12.7.1. Introduction

12.7.2. The planning authority considered the Relevant Action under a previous development plan, Fingal County Development Plan 2017-2023. Variation No 1 of this plan included, *inter alia*, the inclusion of Aircraft Noise Zones and relevant criteria to assess future development within each of the airport noise zones.

12.7.3. The Fingal County Development Plan 2023-2029 was adopted after the PA decision and came into effect on the 05th of April 2023. I have considered the policies and objectives of this development plan throughout my assessment of the Relevant Action.

12.7.4. I note the information in the most recent development plan is generally in compliance with the development plan as considered by the planning authority in the making of their decision. Information on the Airport Noise Zones, as presented in Variation No 1 of the 2017-2023 development plan, is replicated in the current development plan and the criteria for development in the airport noise zones remains the same. The

main difference between policies and objectives in the previous and current plan, in relation to the airport policy, is the inclusion of policy promoting the use of the "Balanced Approach" in any assessment of operational changes at Dublin Airport and support for the Noise Quota System.

12.7.5. **Submissions**

12.7.6. Third party submissions have raised concern that the noise modelling as presented in both the original Relevant Action submitted to the planning authority, and the amended noise modelling and associated noise contours in the supplementary information, does not comply with the Airport Noise Zones. It is considered that the Relevant Action does not comply with the Aircraft Noise Zones in the development plan and therefore results in a material contravention of the development plan.

12.7.7. **Development Plan Policy and Objectives for Aircraft Noise Zones**

12.7.8. Table 8.1 of the Fingal County Development Plan includes a list of the Aircraft Noise Zones A, B, C and D. These are detailed above in Section 12.6. Three of these zones are shown on the development plan maps (A, B and C). Zone D exists to identify any larger residential development in the vicinity of the flight paths in order to promote appropriate land use and to identify encroachment. A list of townlands which are located within Zone D are included in Appendix 10 of the development plan.

12.7.9. The policies and objectives for these noise zones, relate to the management of future development within each zone using specific criteria. New residential development and other noise sensitive uses is generally restricted in Zone A, whilst future development in Zone B to D will be required to demonstrate that good acoustic design has been followed.

12.7.10. **Assessment of contravention with the Aircraft Noise Zones**

12.7.11. I have addressed the impact of the Relevant Action in the Aircraft Noise Zones throughout my assessment. In general, the Board will note I have concluded that in the first instance, the policies and objectives of the development plan, in relation to these noise zones, do not preclude any operational activities at Dublin Airport. In the second instance, I do not have any serious concerns that the noise contours, which

relate to the proposed flight paths in the Relevant Action, would be of a significant deviation to the noise zones in the development plan or those considered by ANCA and the planning authority in their considered of the Relevant Action.

12.7.12. The Board should note that compliance with these noise zones has been raised by ANCA and the planning authority in both their submissions on the supplementary information received by the Board. I have addressed these submissions in detail below. The Board will note that the applicant's supplementary information did not include any illustrations with the proposed noise contours overlaid on the current Aircraft Noise zones. This aside, I have considered the maps submitted with the updated Eligibility Contour Maps and I note the main difference in those contours relates to the areas now included in the noise contours >50 dB L_{night} with a 9dB increase, which remain within Noise Zone D. In addition, these eligibility contour maps also include a comparison between the Regulatory Decision maps granted by ANCA and the planning authority, which illustrates the main difference in areas considered by ANCA and the areas now presented to the Board for consideration. The main difference is the inclusion of a new area to the northwest of the NR and the removal of an area to the west of the NR. The new areas will now be eligible for proposed nighttime insulation.

12.7.13. The applicant's updated Eligibility Contour Maps did not distinguish between the initial 55 dB L_{night} contour areas and the updated 55 dB L_{night} contour areas. The submission received from ANCA, or the planning authority do not highlight the exact areas or provide specific details on which Aircraft Noise Zones they have concerns. I note neither submission considers the Relevant Action, or the updated information submitted in the applicant's supplementary information, is a material contravention of any development plan policy.

12.7.14. **Conclusion**

12.7.15. Therefore, having regard to the policies and objectives of the Fingal County Development Plan 2023-2029, in relation to the Aircraft Noise Zones, I do not consider the Relevant Action is a material contravention of the development plan.

12.8. Impact on Residential Amenities

12.8.1. Introduction

12.8.2. The number of people Highly Annoyed (%HA) and Highly Sleep Disturbed (%HSD) is used to understand the impact of the RA on the population. Chapter 7 of the EIAR includes an assessment of the impact of the noise on the population and human health and includes an assessment on the %HA and %HSD.

The NAO objectives include targets for the reduction in the number of people HSD and HA when compared to 2019, detailed below:

- 2030 shall reduce by 30%:
- 2035 shall reduce by 40%;
- 2040 shall reduce by 50%;

12.8.3. In addition to those HA and HSD the NAO requires the number of people exposed to aircraft noise above 55 dB L_{night} and 65 dB L_{den} shall be reduced compared to 2019.

12.8.4. ANCA concluded that the RD and RA can achieve these targets. ANCA are responsible for monitoring and managing these targets, in conjunction with the Daa, and have recently reported that one of the four NAO targets are not being achieved as all homes within the priority targets above 55 dB L_{night} do not have access to home insulation.

12.8.5. Submissions

12.8.6. The majority of third-party submissions are from concerned residents, resident associations and local representatives. In general, the greatest concern for the residents is the increase in noise during the day and at night because of the changes proposed in the RA. Although the RA only relates to the introduction of a NQS and additional night operation, the applicant confirmed that flight patterns have changed since the opening of the NR in August 2022. This has led to a change to the daytime noise for some residents who previously did not experience aircraft noise and amendments to the L_{den} which impact those Highly Annoyed.

12.8.7. Alterations to Condition No 3 d) and No 5 of PL06F.217429 (Reg Ref F04A/1755) primary relate to the introduction of the NQS during the additional 2 hrs of nighttime

operation. The residents are mainly concerning the impact of the noise from these operations and increases in L_{night} and % HSD will lead to significant sleep disturbance and have a significant negative impact on the residential amenities on the existing communities.

12.8.8. **Fingal Development Plan 2023-2029**

12.8.9. The Fingal Development Plan 2023-2029 includes an overriding theme to ensure the communities surrounding the airport are considered and the impact of the airport operation. The noise zones have been in place since 2005 and allow effective land-use planning for development in these noise zones. Compliance of the RA with these noise zones has been discussed in detail above.

12.8.10. Policy DAP6- Health of Residents and Aviation Noise- sets out the need to protect residents affected by aviation noise, particularly at night-time. The development plan also includes specific objectives to restrict development within the noise zones (DAO12 and DA014), require noise insulation for new developments (DAO11) and support the 'Balanced Approach" to mitigating against the noise pollution on existing residential communities (DA013). Regarding the implementation of the balanced approach the development plan requires a focus on "*a need to minimise the adverse impact of noise without placing unreasonable restrictions on development and to avoid future conflicts between the community and the operation of the Airport".*

12.8.11. The development plan also highlights the continuous ongoing review of the Noise Zones and public safety zones (DAO15 and DAO19) with improved noise forecasts is required to ensure they are up to date.

12.8.12. It is clear from the development plan guidance, and the policies and objectives, that the balanced approach to the airport operation is supported. The zoning objective for the Dublin Airport (DA) relates to the land use zoning although also contains a note to include associated lands with the airport use such as noise contours as necessary to maintain or increase the quality of life of neighbouring communities and foster compatibility between aviation activities and residential areas.

12.8.13. The guidance in the development plan provides links between the airport operation and the need to protect residential amenity. As discussed previously, I am satisfied that the noise zones do not preclude specific airport operations, yet it is important

that the RA is undertaken in line with a balanced approach whilst also mitigating against negative impacts on the residential areas.

12.8.14. **Highly Annoyed (HA)**

12.8.15. The impact on human health from increased aviation noise has been raised continuously by third parties. The applicant states that human health aspects shall be assessed in accordance with Environmental Noise Directive and the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018). These are commonly referred to the Highly Annoyed (HA) and Highly Sleep Disturbed (HSD) population.

12.8.16. An assessment of the number of people highly annoyed (HA) has been detailed in the EIAR. The proposed (RA) and permitted (NR original permission) scenarios are compared. The supplementary information includes a change to the flight patterns from the NR. The Vanguardia Addendum Report notes the difference in the impacts on the number of people HA in the supplementary EIAR (2023) is not significantly altered when compared to the Revised EIAR (2021).

12.8.17. When comparing those HA to the 2018 baseline information the number of persons will reduce under both permitted and proposed scenarios in 2025 and 2035. The Vanguardia report notes this is due to the fleet mix using the airport changing over time to include a greater proportion of less noisy modern aircraft compared to the baseline in 2018.

12.8.18. There will be an initial decrease in people HA initially in 2025 when comparing the permitted and proposed scenarios in the EIAR (section 13.7.11) due to alterations in the use of the runways and a change of the population now within the contours 63 L_{den} contours (less urban and more rural). There will be an increase of 21% of people HA in 2035 under the proposed scenario when compared to the permitted scenario. This is due to the initial increase in night flights followed by no increase in air movements at night but following a different flight pattern. The increase in HA L_{den} would be expected due to the additional two hours proposed in the Relevant Action which averages over the noise levels for the entire, day, evening, and night.

12.8.19. The information in the EIAR indicates that a change in flight paths and associated contours can significantly change the number of people which are HA by the RA.

This highlights the need to ensure that those which find themselves newly impacted are eligible for the RSIGS. As discussed in previous sections, I consider any permission for the RA explicitly states that those impacted by a change in flight paths would be eligible for nighttime insulation.

12.8.20. The NAO requires a reduction in the number of people exposed to aircraft noise above 55 dB L_{night} and 65 dB L_{den} when compared to 2019. I note ANCAs recent reporting on compliance with the NAO raised concern with regard the 55 dB L_{night} priority levels rather than the 65 dB L_{den}. This aside, I note the RD requires the applicant to regularly monitor and report on the 65 dB L_{den} noise contours which relates directly to the daytime operation. Insulation is also available under the original NR permission for dwellings located within 63 dB $L_{Aeq\ 16\ hours}$ within 12 months of the planned opening of the runway.

12.8.21. The RA is primarily concerned with the change in operations during the night. The Vanguardia Report recommends additional operating restrictions to ensure noise levels are adequately mitigated. I am satisfied that during the day and/or over the 16-hr day/evening period, the mitigation measures either currently in place or proposed under the original permission can ensure those HA will be mitigated. The Vanguardia report has not raised any issues with the applicants L_{den} metrics or recommended any additional operating restrictions for daytime operating. As previously stated, compliance with conditions of planning permissions is a matter for the planning authority for ANCA and not for the Board.

12.8.22. **Highly Sleep Disturbed (HSD)**

12.8.23. The number of people HSD does not follow the same pattern as HA as there is a greater impact on sleep disturbance (HSD) due to the proposed increase of flights during the night. There is an increase in those persons HSD in both the assessment years 2025 and 2035 when compared to the permitted scenarios. The initial increase is only slightly more, and this is due to the change from the SR to the NR (less urban and more rural population) although like the HA trend there is significantly more people HSD in 2035 because of the RA than without it with a c. 36% difference (including consented proposals). Whilst the initial is only slightly more due to a change of flight paths away from a more densely populated area, the increased difference in 2035 does not account for the change in populated area and the

increase is due to the increased number of flights and the noise emitted from these aircraft movements.

12.8.24. The increase in those HSD has been assessed using the L_{night} noise metric as an average impact during the nighttime hours. The EIAR relies on the two criteria of the nighttime noise insulation scheme to prevent any significant impact. The EIAR states that 729 people will experience a very significant to profound effect under the proposed scenario in 2025 and 508 in 2035. The amended EIAR is based on the applicant's new flight patterns.

12.8.25. I am satisfied that all dwellings located within the flight paths at night who have the potential to be affected will be included within the applicant's new insulation scheme at night. This is discussed in detail above and throughout my EIAR section below, and the Vanguardia Report notes the applicant's insulation scheme uses qualifying criteria that are in the top half of the best schemes in Europe and internationally.

12.8.26. The Vanguardia Report also recommends the inclusion of additional operating restrictions in the form of air traffic movement limit and insulation for dwellings within the contours of aircraft which have a noise of 80 dB L_{Amax} (based on the noise footprint of the airports westerly and easterly single modes of approach and departure of the noisiest aircraft using the airport at night). These will provide further mitigation existing communities from the impact of the aircraft noise at night.

Supplementary Information and new flight paths

12.8.27. I note the amended flight patterns submitted with the applicant's supplementary information encompasses dwelling which may not have been exposed to aircraft noise previously. The RD and RA includes a second criteria for insulation eligibility for those which are in new flight paths (50 dB L_{night} and an increase in noise exposure of at least 9 dB when compared to the current permitted operation). The Board's second request for additional information relates to amended contour areas for dwellings eligible for insulation under the RSIGS. Areas to the north and northwest of the NR are now within the eligibility contours. An assessment of the impact on those newly impacted by the change to flight patterns is included above although I note the Vanguardia Report has regard for the alterations to the flight paths. Section 6.1.2 of the report and considered difference between the assumed and the actual flight paths and states that overall outcomes of the RA are broadly the

same e.g. the sharing of ATMs across two rather than one runway means some people experience less noise effects, but others experience more. The delivery of an insulation scheme can mitigate against this noise, and it is noted that the overall numbers between the revised and supplementary information are not substantially different.

12.8.28. On balance I am satisfied that the numbers of people HSD are not substantially different to the initial conclusions contained in the original and revised EIAR considered by ANCA and the PA. I am satisfied that insulation scheme proposed, and those proposed operating restrictions can appropriately mitigate against the increase aircraft noise at night.

12.8.29. **External Amenity Space**

12.8.30. The impact of the RA on the external amenity space of dwellings within the noise contours has been raised by third parties. The dumping of fuel and associated impact on amenity space is also raised as a concern. The proposal relates, in the most part, to the additional movement of aircraft during the nighttime hours when external amenity space will not generally be in use.

12.8.31. The applicant's supplementary information amended the flight patterns and scheduling for the airport. It is stated throughout the applicant's documentation that the amended operating hours will accommodate short haul flight departures and long-haul arrivals in the morning. Additional night flights for cargo are also included in the new forecasting. The amended scheduling and increase ATMs are during the nighttime rather than the daytime. The noise forecasting has shifted the peak hour movement at the runways from 07:00-07:59 to 06:00- 06:59, earlier to accommodate short haul flights.

12.8.32. Regarding concerns with dumping of fuel, I note this only occurs in emergency situations, with one event recorded in 2018, over the Irish sea, south of Drogheda. Because of the infrequency of this occurrence, I do not consider fuel dumping has a negative impact on the amenities of residents in the vicinity of the airport.

12.8.33. I am satisfied that the greatest potential disruption on the residential amenity for the residents in the vicinity of the airport and the flight paths will be due to the increase in

air traffic during the nighttime hours and any impacts on external amenities will be minimal.

12.8.34. **Conclusion**

12.8.35. I have had regard to the policies and objectives of the development plan for the operating restrictions at Dublin Airport, the information submitted by the applicant and the third parties and I conclude that, in conjunction with the alterations to the operating procedures proposed for the RA and the proposed insulation scheme, the RA will not have a significant negative impact on the residential amenities of the residents in the vicinity of the airport and within the flight paths proposed.

12.9. Passenger Capacity at Dublin Airport

12.9.1. The current annual passenger capacity restriction for Dublin Airport in for 32 million passengers per annum (mppa). The passenger cap is included in Condition No. 3 of the Terminal 2 permission, PL06F.220670 (F06A/1248), and relates to the combined capacity of Terminal 1 and 2. The increased capacity at Dublin Airport, due to the RA, is raised as concern by third parties who have stated that it will exceed the existing cap at the airport. It has also been stated that the current cap of 32 mmpa has already been exceeded.

12.9.2. The applicants noise modelling is based on forecasting for the airport. The Mott MacDonald Report has been updated with the supplementary information (2023) to include new annual forecasts for capacity at the airport. The forecasting predicts the growth of passengers above 32 mmpa from 2024 onwards, rather than 2025 as originally predicted. The long term forecast from 2027 is unchanged.

12.9.3. The RA does not seek any amendment to the permitted annual passenger capacity at the airport. The limits are linked to the capacity of the terminal to accommodate additional passengers and no assessment of the alterations to this capacity has been undertaken by the Planning authority. A separate stand-alone application has been submitted to the Planning Authority for infrastructure works and increased capacity to 40 mmpa. At the time of writing this report the further information request has been issued by Fingal Couty Council.

12.10. Submissions from Fingal County Council and ANCA

12.10.1. Fingal County Council

Introduction

12.10.2. The PA submitted a response to the supplementary information, noting the applicant submitted information which went beyond the scope of the Boards request. Although it is stated that no detailed analysis of the supplementary information was submitted several high-level issues were raised as summarised and responded to below.

12.10.3. FCC comments on the additional awakening assessment and sensitivity testing

- Item 1: The outcome of the sensitivity testing has not been used to assess the significance of effects or supported by figures in the Additional Awakening report.
- Item 2: All the relevant scenarios have not been considered and assessed and the outcome of the sensitivity testing does not inform Chapter 13.
- Item 3: A clear response to the noise modelling does not appear to be submitted. Analysis for 3 c) considers a "proposed reduced scenario" which is the proposed scenario with a number of movements factored down, so they are 25% last below 2018, whilst keeping the fleet mix constant. This is reported to result in a similar number of movements to the permitted scenario but retains the use of the NR for part of the night. The Board should satisfy itself that this adequately responds to the request.

Response to FCC comments on the additional awakening assessment and sensitivity testing

12.10.4. The applicant did not consider the additional awakening assessment was of significance in the assessment of the RA. Having regard to the results of the additional awakening assessment the applicant has concluded that given the size of the population under consideration the chance of an additional awakening is low, and on average under 3%.

12.10.5. The Vangaurdia Report considered the applicants submission and the other expert acoustic reports. The additional wakening assessment is considered of significance as one additional awakening has a greater impact than normal awakenings and

correlates with a steep increase in the number of people being HSD. This indicates a greater sensitivity to the number of ATMs, hence the need to include an aircraft movement restriction.

12.10.6. The request for sensitivity testing was not explicitly linked to the additional awakening assessment. It has been used to assess the applicants noise modelling and allows for an assessment of the variables affecting the noise metrics such as flights changes, aircraft movements, fleet mix etc during the assessment years. It allows for uncertainty to be factored into the assessment and provides a greater understanding of the applicant's predictions. The sensitivity tests are equivalent to +/ - 25% i.e. noise contours will either shrink by 25% or increase by 25% and this is linked to c. 1 dB change, all things being equal, and the fleet mix remains the same. A 1 dB change in sound is not considered to be significant.

12.10.7. There is no necessity for the sensitivity testing to include any additional awakening assessment as the Vanguardia Report has undertaken an expert assessment and conclusion using the applicants' submitted information. In general, the broad trend remains the same in both the sensitivity testing and the additional awakening. The key concern raised in the Vanguardia Report relates to the unrestricted movement of ATMs during the additional 2 hr period and that impact on sleep disturbance.

12.10.8. The details of the proposed scenario include a number of movements factored down, so they are 25% last below 2018, whilst keeping the fleet mix constant. These are included in the NOISE MODELLING REPORT ABP RFI 27 APR 2023 at pages 31 to 34. This information indicates that the "reduced scenario" results in a similar number of movements to the permitted scenario, but the impacts are different because it includes the use of the NR at night whereas as the proposed scenario does not include the NR. In general terms, this means that the number of overflights at any receptor and the distribution of dwellings in the areas overflown are different between the permitted and proposed scenarios (as would be expected) and permitted scenario and reduced scenario (last 25% below the 2018 levels) are similar (sensitivity test and noise modelling are considered acceptable). I am satisfied the information is an appropriate response to the RFI.

FCC comments on fleet renewal

- The updated air traffic forecasts have been used which reflect earlier fleet modernisation and recent levels of activity at the NR since it became operational.
- it is unclear the level of influence Daa specific incentives/ restrictions may have on fleet assumptions and whether associated influences are different between the permitted and proposed scenarios.

Response to FCC comments on fleet renewal

12.10.9. The applicants' assumptions for the fleet renewal have changed and is based on up-to-date information. The Mott MacDonald report refers to the absence of Boeing 737MAX delivery to Ryanair as quick as expected due to the absence of available replacements. This information is an update to the previous Mott MacDonald reports. I have no evidence before me to suggest that the applicant has stated throughout either the RD or the RA process that they had any such restriction or incentives to amend the fleet renewal of airlines. The Noise Action Plan for Dublin Airport 2019-2023 includes action to encourage Daa to work with airline partners to introduce quieter aircraft, particularly at night. Chapter 13 of the EIAR- Ground Noise and Vibration- references this action and consultation undertaken in Dec 2022 with the airline on the promotion of quieter aircraft. No results or final conclusions have been included in the applicant's documentation and I am also not aware that the planning authority considered Daa influence to promote quieter aircraft previously during the initial assessment. This aside, I note the action 1 of the Noise Action Plan encourages Daa to work on quieter aircraft, rather than include the requirement as part of a development plan objective.

12.10.10. The Vanguardia Report notes that the sensitivity testing includes an element of uncertainty testing which allows for variations in changes of fleet mix. The applicant has also included noisy aircraft and cargo during the night in their forecasting updates. Should less noisy aircraft be integrated into the fleet mix then there will be a reduction in the number of persons HSD.

12.10.11. I am satisfied that sufficient information accompanied the RA and the supplementary information to undertake an assessment on the impact of the fleet renewal on the noise modelling.

FCC comments on air traffic forecast data

- Material differences in the distribution of aircraft from the NR. The L_{night} and L_{den} between the supplementary and previous submission have not been included in the applicant's response.
- Chpt 13 now states that for the proposed scenario, the 32 mmpa cap is predicted to be reached in 2024 and that in 2026 the cap will also be reached in the permitted scenario. There is confusion as a letter from the applicant's agent has stated that the original forecasts show 32 mmpa being reached by 2025 without the RA.
- The 2025 and 2035 assessment years have been retained for the noise and vibration assessments. The activity in 2024 being like that in 2025 is cited as the reason for not adopting the 2024 assessment year. Analysis supporting this approach has not been provided as part of the noise assessment.

Response to FCC comments on air traffic forecast data

- The noise modelling has been updated in the supplementary information and EIAR to reflect the distribution of aircraft from the NR. While direct L_{night} and L_{den} differences have not been presented by the applicant, I have undertaken an assessment of both as detailed throughout the EIAR (revised 2021 and supplementary 2023) and I have highlighted and concluded on any information of significance the Board should be aware of.
- The updated information confirms that the RA does not seek any amendment of the permitted annual passenger numbers. The original forecast saw passenger numbers reaching 32 mmpa by 2025 without the RA, the supplementary information includes 2024. The Vanguardia Report notes the possibility for discrepancies as to what year the passenger cap reaches 32mmpa but considers that as the airport is already very close to 32 mmpa any change will be proportionately small and the resulting noise impacts of the limit being reached is an even smaller magnitude.
- The use of 2025 and 2035 for the noise and vibration assessments allows comparisons to the revised EIAR (2021) as permitted by FCC and ANCA. It is acknowledged that the revised EIAR (2021) also includes 2022 permitted as

an assessment scenario although I note the applicants supplementary EIAR (2023) is based on actual flight paths etc rather than predicted information. In addition, as referenced throughout the Vangaurdia Report and Addendum Report, the difference in noise assessments between one year, while keeping the variable similar, would result in noise impacts of a small magnitude.

FCC comments on NR flight paths

- The actual flight paths of the NR have been recorded and used in the assessment. It is considered the change in input would influence the shape of the noise contours generated and associated assessments.
- Figures presented for L_{den} and L_{night} are included in the scenarios. Analysis of the difference from previous flight path scenarios has not been provided.
- Alterations to operational and data inputs shall require commensurate assessment and consideration by ABP in its capacity as a competent authority for EIAR and AA.

Response to FCC comments on NR flight paths

- The applicant has submitted updated noise contours maps and associated assessments, i.e., alterations to the EIAR, to reflect the actual flight paths. My assessment above and within the EIAR has regard to the updated information and I have provided comparisons with the revised EIAR (2021) where necessary.
- The applicant has not provided an analysis of the difference from the previous flight path scenarios granted in the RD and RA. Third party submissions have raised these changes and included independent acoustic analysis at locations where the new flights paths have been operating since the opening of the NR. I have provided an assessment of the difference in the noise contours where applicable, in general the flight patterns have been altered to include a greater number of departures north and northwest from the NR with less departures from the SR. This has changed the population affected although the Vanguardia Report notes the overall impact remains broadly similar.
- All alterations and changes have been considered in my EIAR and AA assessment. An amended EIAR was submitted with the supplementary

information and included in my assessment. The applicant has screened the changes for AA, and this has been referenced in my assessment.

FCC comments on Noise Zones

- Direct comparison of the presented noise contours against the noise zone policy contours within the 2020 Dublin Airport Local Area Plan, and the Fingal County Development Plan is not possible based on the format of information presented by the applicant in the supplementary information. For the permitted and proposed scenarios there may be potential for the exceedance of contours in limited areas.
- The updated eligibility contours submitted to the Board are noted and whilst recognising the use of different metrics, it is noted that the noise contours now presented may not align with the Noise Zones A-D in the development plan. The Board is requested to consider this observation in the determination and potential wider implications for the operation of land use policy.

Response to FCC comments on Noise Zones

- The Board requested amended Eligibility Contour maps to illustrate the changes in noise contours for the 55 dB L_{night} and 63 dB L_{den} contours. These amended maps allowed a better comparison and an analysis of the noise policy contours. I have used these maps in my assessment above regarding the noise modelling etc. FCC comments relate to the implications and operation of land use policy and although not going into specific detail it is assumed this relates to development pan policy restricting noise sensitive developments in different control zones.
- No maps have been submitted with the supplementary maps to undertake an exact comparison with the Airport Nose Zone areas. The eligibility contours have been amended to include the new flight paths proposed. In general, I consider the areas arising with Noise Zone A and B. The 50 dB L_{night} plus 5 dB for change contours diverges in a more northern direction and includes new areas eligible for insulation. In addition, I note the development plan does not include any maps for areas included in Noise Zone D. Appendix 10 lists those townlands to which assessment Zone D. I consider the Eligibility Contour

areas for the 50 dB L_{night} plus 5 dB are mostly within Zone C and at the worst-case scenario within Noise Zone D.

FCC comments on mode of operation

- The change in the mode of operation back to segregated mode will have an influence on the noise modelling and associated assessments.
- Chpt 13 and 14 includes a segregated mode.
- Preferential runway uses at night with activity on the NR limited to 2hrs is presented as a mitigation measures/ control.

Response to FCC comments on mode of operation

- The noise modelling in the supplementary information assumes that segregated mode (only one runway) is in use from 06:00 to 08:00 (reverting to a change made in the 2021 EIAR). The EIAR 2021 assumed mixed mode operations. The proposed use reverts to the original mode of operation.
- The Vanguardia Addendum Report notes the noise modelling has included the change in mode to segregated which has led to a minor noise benefit. The report also states this benefit could be incorporated as a requirement of planning conditions. The Vanguardia Report also notes the restriction of the NR to only 2hrs a night has only a modest noise benefit of the %HSD when averaged during the 8 hrs but a much greater effect in limiting the numbers of persons likely to experience additional awakenings assessment. Therefore, the mode currently proposed could be classified as a possible mitigation measure. This is addressed in the EIAR.

12.10.12. **Aircraft Noise Competent Authority (ANCA)**

ANCA submitted a response to the supplementary information and the applicant's second submission to the Board and new Eligibility Contour Maps.

12.10.13. ANCA Submission to the supplementary information

ANCA submission to the supplementary information states that there has been no quantification of the impact of the new changes is included although the following comments have been made.

Fleet Mix

- 737max aircraft types are currently in operation and included in the updated forecast with a large deployment now and future years.
- There are increased proportions of Generation Zero (GO) aircraft (oldest and noisiest aircraft in operation) in the updated forecast which increased percentages for this type in 2025 and 2035, with no narrative on the implications.

Aircraft numbers and movements

- The updated forecast includes a greater number of night-time flights than were forecast with the Application.
- The operation of the airport's runway at night as modelled in the updated information is different to the original forecast within the Application. This will have a consequential impact on the pattern of night-time noise exposure that originally assessed by ANCA in making the regulatory decision.

Insulation Scheme and Cost-Effective Analysis

- The configuration of the NQS and the insulation scheme eligibility as provide by ANCA Regulatory Decision may no longer be appropriate.
- The cost effectiveness analysis (CEA) carried out by ANCA used the June 2021 forecast by DAA to determine the cost of Condition 3d and 5 restrictions may now be different.

12.10.14. Response to issues raised by ANCA.

The planning assessment above includes an overview of those changes in the supplementary information and both this assessment and the assessment in the EIAR below evaluates the impacts of these changes. ANCAs comments mainly relate to the proposed fleet changes, aircraft movements and the implications on the insulation scheme and the CEA issued to determine the cost of alterations to Conditions No 3 d) and No.5. The Vanguardia Addendum Report has addressed some of these issues directly and others throughout the Addendum report, as summarised below:

Fleet Modernisation and Forecast

- The 737 Max has been included in the new forecasting although the aircraft type will contribute significantly less to the total noise that the A320 and Boing 737-800.
- The increased proportion of Generation Zero (GO) aircraft indicates a slowing of the introduction of newer less noisy aircraft. Trends expected after the pandemic (i.e. manufacturing of new aircraft) and airlines possibly delaying buying new aircraft.

Uncertainty

- The sensitivity tests (i.e., the noise level could be +/-X dB) submitted with the supplementary information remove a lot of the uncertainty around forecasting.
- Uncertainty will not fundamentally change the overall assessment in the EIAR. This assessment concludes that fewer people are significantly affected in 2025 and 2035 when compared to 2018 (or 2019) although more people will be significantly adversely affected in 2025 and 2035 with the RA in place, than without it.
- Uncertainty can influence how people are affected on a quantitative basis which can be somewhat countered by the inclusion of a noise insulation scheme.

Insulation Scheme and Cost Effect Analysis

- The CEA on the RD provides sufficient information to make an informed decision.
- The RICONDO Report 2023 includes an updated CEA and concludes the updated cost-effectiveness analysis recommends the same measures as the 2021 report.
- The second criteria for insulation i.e., threshold of 50 dB L_{night} where the RA has caused a 9 dB increase in noise was removed from the written text of the final RD, Third Condition. This is due to the potential for alterations in flight paths, it is recommended that this is explicitly stated in the RD and RA.

12.10.15. Assessment of ANCA submission to the supplementary information

I have had regard to those comments by ANCA. Whilst they are mainly technical and have been addressed in the Vanguardia Addendum Report, the Board should note that the overall findings of the EIAR remains substantially the same, even with these changes included in the forecasting within the supplementary information.

I consider the most substantial alterations to the ANCAs initial assessment under the RD and RA is the inclusion of a different geographical area within the flight paths. This impact has been assessed in the EIAR and the overall areas included within the RD for the purpose of Insulation remains almost identical (i.e., 20.8km^2 in Dec 2021 and 20.7km^2 in the September 2023 submission). The number of persons within this area is now less than initially assessed in the RD. The change mainly relates to the geographical location of persons impacted rather than the overall number of persons impacted.

I am satisfied that the supplementary information submitted would not significantly alter the findings of the RD in a manner which would render the initial findings significantly obsolete and on balance the overall conclusions in the permitted RA and the amendments to the RA due to the supplementary information remain the same.

12.10.16. ANCA submission on the amended Eligibility Maps

- The NAO for Dublin Airport identifies two priority noise exposure levels at 55 dB L_{night} and 65 dB L_{den}. There is a home insulation scheme already available for the dwellings located within 65 dB L_{den} exposure level.
- The eligibility maps submitted to the Board do not appear to clearly identify uninsulated dwellings within the eligibility contours.
- ANCA note that it may not be possible, from the map details provided, to determine whether buildings shown “are authorised habitable dwellings” or buildings such as others uses.
- The difference between the contour shapes around the NR, between June 2022 and September 2023 are noted.
- The primary policy of the ICAO on aircraft noise is the Balanced Approach to Aircraft Noise Management. Land-use planning and management is one of the four pillars of the balanced approach. The information submitted by the

applicant on the 04th of March 2024 refenced this issue but did not contain detail to demonstrate the impact of the proposed development with the Airport Noise Zones of the Fingal Development Plan 2023-2024.

12.10.17. Response to issues raised by ANCA.

Uninsulated dwellings

- The Board requested the applicant to submit Eligibility Contour Maps, to enable an assessment of the comparison with those maps submitted with the Regulatory Decision, and the noise contour areas now proposed.
- Figure 3.1 of the permitted Regulatory Decision included an overview map and additional detailed sub maps, illustrating the 55 dB L_{night} noise contour line and the areas included within this noise contour area, eligible for nighttime insulation.
- These permitted regulatory maps (June 2022) did not include any details of insulated or uninsulated dwellings. The Boards additional information requested did not require amended eligibility maps to undertake an assessment of insulated or uninsulated dwellings.

Authorised Habitable Dwellings

- ANCA note that it may not be possible to distinguish from the maps submitted, between habitable dwellings and those which are not habitable (i.e. the difference between those which are commercial etc.).
- The applicant's response to the Boards FI submission provides a background as to the collection of information on the "authorised habitable dwellings". The applicant notes that the FCC planning register was refenced and whilst every effort was made to ensure the information was as accurate as possible, it is only as reliable as the public information allowed.
- I note the amended maps submitted to the Board, allow an overview of the proposed alterations to those areas included in the Eligibility for nighttime insulation. It is my opinion that the information was intended to provide the Board and third parties with an understanding of any new areas which would be eligible for nighttime insulation, having regard to the new flight patterns

proposed. I consider the applicant's submitted maps, clearly highlight all areas which are now included in the 55 dB L_{night} noise contour areas.

Airport Noise Zones

- ANCA note the applicant has refenced the Airport Noise Zones A, B, C and D in the submission to the Board although has raised concern that the applicant has failed to demonstrate any impact of the proposal on these airport noise zones.
- I note the applicant refers to the use of effective land-use zoning measures to control development within the separate airport noise zones. The applicant notes that *"new dwellings, and associated population increases, within the relevant noise zone area are suitably mitigated through design under relevant noise conditions on planning permissions in line with the 'Balanced Approach*".
- I have addressed the impact of the Relevant Action, and the alterations to the fight patterns, in detail above in my assessment. I have concluded that the objectives in the development plan for land-use management, within these noise zones, does not preclude the airport operations and the proposal currently before the Board.
- Having regard to the details in the Eligibility contour maps for the permitted Regulatory Decision (June 2022) and the Eligibility contour maps submitted with the supplementary information to the Board (September 2023), I am satisfied that the new flight patterns would not be significantly different to those 55 dB L_{night} contours initially considered by ANCA. In this regard, I do not consider there will be significant deviation between the contours for the insulation scheme and the airport noise zones.
- I note the greatest variation to the noise insulation scheme relates to the noise contours for the dwellings eligible for insulation which relates to 50 dB L_{night} contour in the first full year when the Relevant Action comes into operation, together with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year. Eligibility for insulation within this contour area will be temporary and restricted to alterations in the flight patterns. I do not consider this will cause any significant issues with regard to

future developments and the land- use amendment of the Airport Noise Zones.

12.10.18. Conclusion on ANCA submission to the amended Eligibility Maps

ANCA note the information on the applicants submitted Eligibility Contour areas including the absence of uninsulated dwellings. The Board will note the Third Condition of the Regulatory Decision (ANCA June 2022) includes detailed terms of refence for the applicant (Daa) to comply with when delivering the resindeital sound insulation grant scheme (RSIGS). The Board will note that I have no recommendation to amend the terms of this scheme, aside from the inclusion of additional areas within the eligibility contours (i.e. explicitly including those situated in the 50 dB L_{night} contour in the first full year when the Relevant Action comes into operation, together with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year and also all residential properties subject to aircraft noise of 80 dB L_{Amax} , at the exterior façade of their house).

I have considered the impact of the proposed Regulatory Decision and Relevant Action on the Airport Noise Zones throughout my assessment. The Board will note the noise contours associated with the amended flight paths have not been exactly overlaid onto the existing Airport Noise Zones, although I have no significant concerns with regard to any contravention with the policies and objective relating to the Airport Noise Zones.

12.11. Submissions from other Prescribed Bodies

12.11.1. Irish Aviation Authority (IAA)

12.11.2. The IAA made a submission on the original RA to state they supported the application. No further submissions have been received by the Board. The applicant states throughout the submitted documentation that the rationale for the alteration to the flight paths along the NR is due to health and safety aspects and requirements of the IAA.

12.11.3. Third party submissions, some of whom claim to have aircraft experience (i.e. North Runway Technical Group), do not consider the applicants assertion that the flight paths must be amended are correct. They consider there are other feasible options

for the flight paths on NR rather than the proposed routes and northern divergence illustrated in the supplementary information.

12.11.4. I consider the alteration in flight paths are considered an air traffic control issue rather than an acoustic requirement, this aside Section 5.1 of the Vanguardia Addendum Report provides an overview to the alterations for the flight paths as stated below:

> *The original EIAR for the Northern Runway assumed that aircraft would depart in a westerly direction from the northern runway (28R) in a straight line i.e., on axis with the runway, for 5 nautical miles before diverting from this course. Whereas the flight paths in both the revised and supplementary EIARs follow the ICAO requirement that when parallel runways are in use there must be a 15-degree divergence of aircraft from the runway axes immediately on take-off. This has been modelled as a 15-degree divergence of aircraft using the North Runway (28R) towards the north-west. This represents the reality of how the Northern Runway has operated since it opened in Augst 2022*.

12.11.5. The Vanguardia Report does not provide any assessment of the acceptance of this proposed route, rather an overview of compliance with Condition 3 a)- c) concludes that the preferential use of the runways is to remain the same as proposed in the original NR permission.

12.11.6. Having regard to the absence of any further correspondence from the IAA on the supplementary information, I do not consider the Board can dismiss the applicant's assertions on the need for the new flight patterns and I consider it reasonable that these would be required for safe operation of aircraft movements departing from the NR.

12.11.7. Should the Board consider the recommendation of this report, and the proposed alterations to the RD for the air traffic movements and insulation criteria, the Airport Noise Act, 2019, requires further engagement with the IAA during the 14-week additional consultation period.

12.11.8. **Meath County Council**

12.11.9. Meath County Council submitted an observation to FCC in relation to the RA. The integration of mitigation measures and clarity around eligibility for houses in Meath County was raised. I note the eligibility maps for the RSIGS include an area along the southeast of Meath County. This area was included in the RD and RA (2021) and overlaps Airport Noise Protection Zones B and C as illustrated on Map 5.4.2 of the Meath County Development Plan 2021-2027. The updated Eligibility Maps (2024) illustrate a new area to the north of the original area, which I note is only within Zone C of the Airport Noise Protection Zones. This aside, as stated throughout my report, all those dwellings located within the Eligibility Contours will be included in the proposed RSIGS, irrespective of being in County Meath or Fingal County. ANCA are the competent authority for responsibility for managing, mitigation and monitoring noise issues at Dublin Airport and can ensure compliance with the RD nationally.

12.11.10. A submission from Meath County Council was also submitted on the Boards request for additional information. This submission contained several individual submissions from council representatives. I have summarised these observations and addressed the issues under common themes raised by third parties.

12.11.11. **Health Safety Executive (HSE)**

12.11.12. The HSE submitted two observations on the RA, one from the Head Office and a second form a Divisional Office (HSE east). The issues raised in both submissions are similar and have been combined and summarised below:

<u>WHO Guidelines</u>

- The WHO guidelines of 45 dB L_{den} and 40 dB L_{night} should have been used for ground noise assessments.
- The current WHO recommendation is to reduce noise levels to below 45 dB L_{den} from 55 dB L_{den} for the hours between 0700 and 2300 and to reduce to below 40 dB L_{night} from 40 dB – 45 dB L_{night} for nighttime hours between 2300 and 0700.

<u>Mitigation Measures</u>

- Should permission be allowed for the increased hours, all those significantly impacted should be mitigated.

- The EHS considers the WHO levels of 50 dB L_{den} to 45 dB $L_{night.}$ should be used when assessing the eligibility for the sound insulation scheme.
- Insulation measures are welcome.

Ground Noise

- Apron 5H (separate application to the northeast of the site) is included in the scenario for 2025. This states there will be an increase in persons exposed to at least a high level of ground noise (up from 6 to 35 persons).

Air Quality

- There should be no significant changes in the impact of air quality between the permitted scenario and the proposed Relevant Action and the EIAR shows the residual effects as not significant.

Water

- The EHS is satisfied the proposal will not have a significant effect on the water environment.

HA & HSD

- The reduction in number of people significantly affected from 2018 is welcome although there remains a high level of people exposed to airline noise (281) above the WHO recommendations for 40 dB L_{night}. This is associated with adverse health effects.
- The EHS is satisfied that no dwelling will exceed noise levels more than 97 dB LC_{max} at least once per day.

12.11.13. Response to the HSE submission

WHO Guidelines

12.11.14. Section 6.1.1 of the Vanguardia Report provides a background on the WHO Guidelines and the subsequent review in 2018. The report notes that levels of 45 dB L_{den} and 40 dB L_{night} are stringent and would prohibit virtually any aircraft movement at night at Dublin airport, or indeed any airport and do not consider any noise insulation. Whilst the use of 55 dB L_{night} is not set out in national legislation, I note the END (2002/49/EC) requires member states to report on those persons exposed to

air traffic noise contours 50-54, 55-59, 60-64, 65-69, > 70 L_{night} and the total area (in km2) exposed to values of L_{den} higher than 55, 65 and 75 dB respectively. It can be reasonably assumed than environmental noise under these contours would not have a significant negative effect on the population.

Mitigation Measures

12.11.15. As per above, insulation provision for properties located within 55 dB L_{night} has not been proposed. The EIAR includes a second criteria for 50 dB plus 9 dB for any change in flight paths. No insulation under these noise levels has been recommended in the Vanguardia Report and this acoustic assessment notes the insulation scheme as one of the most generous in Europe.

Ground Noise, Water and Air Quality

12.11.16. The EIAR includes an assessment of the impact on ground noise, water, and air quality. Third party submissions have been considered within my assessment. It concludes that there will be no significant negative impacts on any of the environmental parameters.

HA & HSD

12.11.17. The number of people HA and HSD has been assessed in detail in the EIAR. The use of a separate range of noise metrics to assess the impact on sleep disturbance has been requested by the Board and included in the Vanguardia Report. The EIAR concluded that a range of additional mitigation measures are necessary to ensure the significance of effect are adequately mitigated. I am satisfied that the impact on HA and HSD has been sufficiently addressed in my assessment.

12.11.18. Conclusion on HSE submission.

12.11.19. I note the concerns raised in the HSE relate to the protection of the existing proposed communities in the vicinity of the site who may experience significant adverse effects from the impacts of the increased aircraft noise. I am satisfied that the issues raised have been adequately addressed throughout my assessment above and in the EIAR and that the range of operating restriction and mitigation measures have been considered to ensure the appropriate protection of the community.

13.0 **Environmental Impact Assessment (EIA)**

13.1. **Introduction**

13.1.1. The Relevant Action was accompanied by an Environmental Impact Assessment Report. This section of the report evaluates and assesses the content of the environmental impact assessment of the proposed development in accordance with the EU Directive 2011/92/EU, as amended by 2014/52/EU, National legislation and Section 172 of the PDA, 2000 (as amended) which defines EIAR as:

> a. consisting of the preparation of an EIAR by the applicant, the carrying out of consultations, the examination of the EIAR and relevant supplementary information by the Board, the reasoned conclusions of the Board and the integration of the reasoned conclusion into the decision of the Board, and
>
> b. includes an examination, analysis and evaluation, by the Board, that identifies, describes and assesses the likely direct and indirect significant effects of the proposed development on defined environmental parameters, and which includes significant effects arising from the vulnerability of the project to risks of major accidents and/or disasters.

Article 94 of the Planning and Development Regulations, 2001 and associated Schedule 6 set out requirements on the contents of an EIAR.

13.1.2. This EIA section of the report is therefore divided into two sections. The first section provides an examination of the EIAR and assesses compliance with the requirements of Article 94 and Schedule 6 of the Regulations. The second section provides an examination, analysis and evaluation of the development and an assessment of the likely direct and indirect significant effects of it on defined environmental parameters, having regard to the EIAR and relevant supplementary information. It also provides a reasoned conclusion and allows for integration of the reasoned conclusions into the Boards decision, should they agree with the recommendation made.

13.1.3. Compliance with the Requirements of Article 94 and Schedule 6 of the Regulations, 2001

Section 94 (a) Information to be contained in an EIAR (Schedule 6, paragraph 1)	
A description of the proposed development comprising information on the site, design, size and other relevant features of the proposed development (including the additional information referred to under section 94(b).	A description of the Relevant Action is contained in Chapter 2 of the EIAR including details on the characteristics and need for the proposal. In each technical chapter the EIAR details are provided on use of natural resources and the production of emissions and/or waste (where relevant). It is noted that the proposal does not involve any construction works to the consented infrastructure of the North Runway.
A description of the likely significant effects on the environment of the proposed development (including the additional information referred to under section 94(b).	A description of the likely significant effects of the development on the environment is provided in the technical chapters, and associated documentation, of the EIAR. Technical chapters reflect the environmental parameters set out in Article 94. As indicated in the environmental impact assessment below, I am not satisfied that the EIAR has adequately identified the significance of environmental effects with regard to population and human health or air noise and vibration.
A description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment of the development (including the additional information referred to under section 94(b).	The proposed development includes mitigation in the form of insulation grants to houses affected by noise and operating restrictions to address potential adverse noise effects identified in technical studies. These, and arrangements for monitoring and mitigation are summarised in Section 11.9 of the EIAR. Mitigation measures presented in the EIAR are largely capable of offsetting significant adverse effects, with respect of the impact on those highly sleep disturbed but only when considering the applicant's choice of noise metrics to examine the impact (i.e. impact of noise over the L_{night}, average 8-hour period). The use of different noise metrics (i.e. L_{Amax}) to examine the impact of the additional awakening, indicates that additional operating restrictions and mitigation measures are required to prevent a long-term significant adverse effect on the existing communities.
A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment (including the additional information referred to under section 94(b).	A description of the alternatives considered is contained in Chapter 4 of the EIAR. The alternatives considered include a consideration of different scenarios for the use of the runways, having regard to different times and modes of operation for each runway (NR & SR). The main reasons for opting for the current proposal were based on compliance with the balanced approach of allowing the expansion of the airport operations while considering a cost benefit analysis of providing an insulation scheme to ensure adequate mitigation against adverse effects. I am satisfied that the applicant has studied reasonable alternatives in assessing the

	proposed development and has outlined the main reasons for opting for the current proposal before the Board and in doing so the applicant has taken into account the potential impacts on the environment.
Section 94(b) Additional information, relevant to the specific characteristics of the development and to the environmental features likely to be affected (Schedule 6, Paragraph 2).	
A description of the baseline environment and likely evolution in the absence of the development.	In each technical chapter, assessing the environmental effects, details are provided on the existing baseline environment.
A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved	The methodology employed in carrying out the EIAR, including the forecasting methods is set out, where relevant, in each of the individual chapters assessing the environmental effects. The applicant has indicated where difficulties have been encountered (technical or otherwise) in compiling the information to carry out EIAR. I comment on these, where necessary in the technical assessment below and for the reasons stated, I have set out where I consider that forecasting methods employed may not be adequate in respect of preventing likely effects to population and human health and aircraft noise and vibration.
A description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it.	This issue is specifically dealt with in the in Chapter 8 of the EIAR. Specific risks have been identified, using modelling and probability, in relation to the potential of an aircraft crash during take-off and landing. The risks identified constitute the most likely risks and are assessed in my report.
A summary of the information in non-technical language.	This information has been submitted as a separate standalone document (Vol I). I have read this document, and I am satisfied that the document is concise and comprehensive and is written in a language that is easily understood by a lay member of the public.
Sources used for the description and the assessments used in the report	The sources used to inform the description, and the assessment of the potential environmental impact are set out at the end of each chapter. I consider the sources relied upon are generally appropriate and sufficient except in relation to concerns raised in respect of population and human health and aircraft noise and vibration. I have commented on this accordingly in my assessment below.
A list of the experts who contributed to the preparation of the report	A list of the various experts who contributed to the report are set out in Table 1.2 in Chapter 1 of the Report. Chapter 1 was revised following a request by the planning authority, to include additional details on the experts who prepared the modelling data.

Consultations

13.1.4. The application has been submitted in accordance with the requirements of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended) in respect of public notices. In addition, the Board carried out public consultation consistent with the Planning and Development Act (amended) on the supplementary EIAR. This process allowed observations and submissions in addition to those submitted to the appeal on the RA. The applicant's response to the Boards second request for additional information was recirculated to third parties in the interest of natural justice. I am satisfied that appropriate consultations have been carried out and that third parties have had the opportunity to comment on the proposed development advance of decision making.

Compliance

13.1.5. Having regard to the foregoing, whilst the applicant provides much of the information required to comply with 94 of the Planning and Development Regulations, 2001, for the reasons stated in the technical assessment below, I consider that the likely effects of the Relevant Action on population human health and aircraft noise and vibrations should also be assessed having regard to the applicant additional awakening assessment, submitted in response to the Boards request for additional information. This has been referenced throughout my assessment, where relevant.

13.2. Revised and Supplementary EIAR

13.2.1. An EIAR was submitted with the Relevant Action (September 2020). A revised EIAR was submitted to the planning authority as part of an additional information request (September 2021). A supplementary EIAR was submitted to the Board in response to a further information request (September 2023). An overview of the main changes in the revised and supplementary EIAR is summarised below.

Revised EIAR

13.2.2. The EIAR was independently reviewed on behalf of FCC. The revised information is summarised below:

a) Details on the competencies of experts and EIAR project team details.

b) Clarification on the permitted & proposed scenarios and the use of terms such as constrained & unconstrained.

c) Assessment of a longer-term scenario and revised assessments for the years 2022, 2025 and 2035.

d) Do nothing/ worst case scenarios are noted as 2025 for the “worst case scenario”.

e) Consideration of alternatives to include assessment of the years 2022, 2025 and 2035.

f) Information on timings of consultations, issues arising and how these have informed/been assessed in the EIAR.

g) Material Assets- Chapter 19, was updated to include the local planning policy.

h) Population and Human Health – Chapter 7, was revised to present the findings of the unmitigated scenario and a discussion on the residual impacts.

i) Ground Noise and Vibration - Chapter 14, was revised to include the longer-term assessments years, changes to traffic levels, and a cumulative assessment of the interaction between the ground and air noise, calculating quantitatively, the number of persons: “highly annoyed” or “highly sleep disturbed”.

j) Traffic and Transport - Chapter 9 includes a traffic update.

k) Climate and Carbon -Chapter 11, Further consideration was given to impacts regarding two key aspects 1) climate change mitigation (assessment years revised) and 2) climate change adaptation (no physical works proposed).

l) Cultural Heritage – Chapter 20, A revised table to include the designated archaeological and architectural heritage sites protected by statutory legislation.

m) Interaction and cumulative effects – Chapter 21 was reviewed and expanded to address all potential cumulative impacts as per EPA guidance.

n) Summary of impacts and mitigation- Chapter 23 includes a summary table of features and/or measures envisaged to avoid, prevent or reduce and, if possible, offset likely significant effects of the proposed development, and a timescale for the implementation of proposed mitigation measures.

o) Non-Technical Summary was re written to address the comments of the RFI and include all the key details of the project, likely significant effects, mitigation measures and expected adverse effects.

Supplementary EIAR

13.2.3. This EIAR Supplement includes alterations to the noise modelling and flight paths and those sections of the EIAR were amended to consider these new scenarios. The supplementary EIAR considers the noise quota permitted by ANCA in the final Regulatory Decision – i.e., 16,260 between 23:00 and 07:00 whilst the revised EIAR considers the noise quota proposed by the application- i.e., 7,990 between 24:00 and 06:00. The alterations related to the following chapters and included updated noise modelling scenarios to reflect updated population figures, forecasts to future activity and change to allows for actual activity at the airport since the NR became operational. These changes had implications for the following chapters in the supplementary EIAR.

- Chapter 7: Population and Human Health
- Chapter 11: Climate and Carbon
- Chapter 13: Aircraft Noise and Vibration
- Chapter 14: Ground Noise and Vibration
- Chapter 22: Future Development Plans.

13.2.4. The assessment of the EIAR below, and my planning assessment, has regard for the revised EIAR (September 2021) and the supplementary EIAR, (September 2023).

13.2.5. I have carried out an examination of the information presented by the applicant, including the EIAR, and the submissions made in respect of the Regulatory Decision

and the Relevant Action. A summary of the results of all submissions made by the planning authority, prescribed bodies, appellants, and observers, has been set out at Section 6.0 and 7.0 of this report, and addressed where relevant.

13.2.6. The main issues raised specific to EIAR include the following:

- impact of additional aircraft movements at night on the population and human health, and;
- the generation of additional CHGs from the increase of aircraft movements and the impact on climate change.

13.2.7. These issues are addressed below under the relevant headings, and as appropriate in the reasoned conclusion and recommendation, including additional recommendation to amending the regulatory decision. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality, and that the information contained in the EIAR, and supplementary information provided by the developer, adequately identifies, and describes the direct, indirect and cumulative effects of the proposed development on the environment and complies with article 94 of the Planning and Development Regulations 2000, as amended.

13.3. Alternatives

13.3.1. Introduction

Chapter 4 provides an examination of the alternatives. This chapter has not been updated in the supplementary EIAR as no further alternatives were considered in the revised document.

The do-nothing scenario is the permitted scenario where the airport operates in compliance with Conditions No 3 d and 5. Ten potential scenarios have been examined (0-10) and include different variations for the use and hours of operation of the runways. Scenario 1 is the do- nothing scenario (Forecast Without Measures FWM)., Scenario 2 is the Relevant Action.

Table 4.1 of the revised EIAR provides an environmental analysis of all scenarios as summarised below.

1. Forecast without New Measures (FWNM): Option 7b between 0700 and 2259 and fully mixed mode between 2300 and 0659. This is a baseline scenario for which all other scenarios are assessed against and includes the removal of restrictions from conditions no 3 d) and No 5.
2. Scenario 2: Option 7b and South Runway only between 0000 and 0559
3. Scenario 3: Option 7b for 24 hrs.
4. Scenario 4: Option 7b and reverse Option 7b between 2300 and 0659
5. Scenario 5: Option 7b and Alternate Option 7b and Reverse Option 7b between 2300 and 0659
6. Scenario 6: (FWNM) (same as scenario 1)
7. Scenario 7: Option 7b and Semi-Mixed Mode- Mixed Mode for Departures and Option 7b for Arrivals between2300 and 0659
8. Scenario 8: Option 7b and Semi-Mixed Mode- Mixed Mode for Arrivals and Option 7b for Departures between 2300 and 0659
9. Scenario 9: Option 7b and North Runway Only between 0000 and 0559.
10. Scenario 10: Option 7b and alternate use North and South Runway between 0000 and 0559.

These scenarios were also considered in ANCA's assessment that led to the issuing of the Regulatory Decision and are based on the preferential use of the runway during additional hours and operational activities. The passenger cap of 32 mppa remained constant throughout all the alternatives. In all scenarios the environmental assessment, and interactions, concluded that there would be an adverse impact on population and human health, a potential for significant adverse effects on air and ground noise and vibration and an imperceptible impact on all other areas.

Scenario 2, the current proposal, was chosen as it had the lowest number of people exposed to significant effects, having regard to the L_{night} and L_{den} contours.

13.3.2. Assessment

The revised chapters in the supplementary EIAR considers differences between the permitted scenario and a proposed scenario to assess the impacts from the Regulatory Decision and the Relevant Action. The main difference in the proposed

scenario includes alterations to the noise quota (i.e., 16,260 between 23:00 and 07:00 whilst the revised EIAR considers the noise quota proposed by the application- i.e., 7,990 between 24:00 and 06:00) and operational changes since the opening of the NR.

I do not consider the supplementary information significantly alters the original assessment of alternatives. The scenarios have been retained and assessed appropriately throughout the supplementary documentation, which I consider reasonable. I am satisfied that the alternatives assessed in the EIAR are reasonable.

13.3.3. Conclusion

The EIAR concluded that the proposed development represents the optimum solution for operational restrictions and mitigation measures considering European Directives, National and Local Planning policies, to prevent an adverse impact on the number of people exposed to significant noise levels. Having examined the alternatives and the options proposed I am satisfied the applicant has considered alternatives in sufficient detail so as to comply with the legislation.

13.4. Population and Human Health

13.4.1. Introduction

Chapter 7 deals with population and human health. A new Chpt 7 is included in the supplementary EIAR and replaces Chpt 7 of the revised EIAR.

This chapter sets out the relevant European, National, and other international guidelines on airport noise. The WHO Environmental Noise Guidelines prepared for the European Union set out recommendations that average daytime noise levels produced by aircraft are below 45 dB L_{den} and average night nose levels are below 40 dB L_{night}.

This chapter considered the effects on the amenity and local communities and human health and well-being. It considers methodology for determining the effects of aircraft noise on the population and utilises scientific literature, the London HUDU Rapid Health Impact Assessment Tool and predicated noise contours for the assessment. The population of Highly Annoyed (HA) and Highly Sleep Disturbed

(HSD) (Human Health and Wellbeing) is assessed using the approach recommended in the WHO guidelines.

There is a significant amount of scientific research and guidance on airport noise and whilst there are variations on the thresholds for impact there is repeated evidence to link the adverse effects of airport noise disturbance with human health. Key health outcomes include noise annoyance, sleep disturbance, cardiovascular health, mental health, and children's learning.

The information contained in Chapter 13 Air Noise and Vibration, Chapter 11 Climate and Carbon and Chapter 14 Ground Noise and Vibration are used to assess the impact on population and human health. These chapters and associated appendices include updated noise modelling information to reflect changes in the forecast for future activity and changes to allow for the actual activity in flights since the North Runway became operational.

13.4.2. The assessment in this chapter includes the main changes between the revised EIAR (2021) and the supplementary EIAR (2023) as summarised below:

- The Noise Quota Assessment is based on the RD which requires a quota of 16,260 across 8 hr period rather than the initial 7,990 over the 6.5hr period.
- Removed the assessment year 2022 from the analysis.
- Amended Table 7-25 (number of people HSD in 2025 proposed scenario)
- Amended the predicted ground noise levels in Chapter 14.
- The latest available population figures for Fingal are from the 2022 census rather than 2016 census.

13.4.3. Baseline

Amenity and Local Communities

The Relevant Action introduces a noise quota system during the night to control flights at the airport, replacing the movement of 65 air movements per night. The potential impacts on air quality, air noise and vibration, ground noise and vibration and the cumulative effects on local communities are assessed. The significance of effect in the EIAR follows the definition of values required to be reported under Directive 2002/49/EC. The main findings in the EIAR are summarised below:

- The number of persons experiencing a significant adverse residual effect from air noise and vibration (Table 7.16) is higher at night (2025 2.7% and 2035 2.5%) than in the daytime (2025 and 2035 <0.1%) because of the Relevant Action.
- There will be no residual significant adverse effect on any amenity and community facilities from the ground noise and vibration in any of the assessment years.
- The noise modelling for proposed scenario in 2025 and 2035 indicates a reduction in dB for L_{den} and L_{night}, when compared to the permitted scenario, for the cumulative impact of the ground, air and road noise at all representative locations close the airport.
- The noise modelling indicates that while some of the local community will benefit from the proposed development others will experience significant adverse effects from air and ground- borne noise and vibration.

Human Health and Wellbeing

The potential impacts on air quality, noise and vibration, ground noise and vibration, health assessment of air quality, noise and vibration and neighbourhood amenity, climate change and access to work and training are assessed. The main findings in the EIAR are summarised below:

- The impact on Human Health is assessed to be permanent significant adverse for both assessment years (2025 and 2035).
- The impact on the incidence of IHD (Ischemic Heart Disease) has not been assessed as the EIAR states the exact number cannot be calculated.
- There will be no significant change to the local air quality environment (NO_2, PM_{10} and $PM_{2.5}$) or odour as a result in the Relevant Action for both assessment years.

Air Noise and Vibration

- There is (Table 7.22) a decrease in the persons high annoyed from the proposed scenario in 2025 (-3%) when compared to the permitted scenario.

The number of people HA will increase in 2035 (+19%). Both scenarios include consented developments.

- There will be an (Table 7.23) increase in persons highly sleep disturbed (during the night) in both 2025 (8%) and 2035 (56%) because of the proposed scenario compared to the permitted scenario. Both scenarios include consented developments.

Ground Noise

- There will be an (Table 7.24) increase in the number of people HA from the ground noise and vibration, including consented developments in both assessment years 2025 (0.36%) and 2035 (0.07%) in the proposed scenario when compared to the permitted scenario.
- There will be an (Table 7.25) increase in the number of people HSD from the ground noise and vibration including consented development in both assessment years 2025 (1.46%) and 2035 (1.14%) in the proposed scenario when compared to the permitted scenario.

Climate Change

- There will be an initial increase in CHG emissions (tCO2e) in 2025 (1.16% in the proposed scenario compared to the permitted scenario) and then a decrease in emissions in 2035 under the proposed scenario.

Access to work and training.

- The removal of operating restrictions will reduce the economic gap and provide a positive economic impact estimated at 1,510 jobs and €125m in Gross Value Added to the economy by 2025.

13.4.4. Submissions

A significant number of submissions have been received from the residents in the vicinity of the airport and along the flight paths. Concern is raised in relation to the impact on sleep and those associated health benefits. The submissions, in some cases, reiterate the same concerns, therefore I have summarised the issues within common themes below:

Scientific health evidence

- Health Report compiled by a leading specialist Professor Münzel, on aircraft noise and their effects on the cardiovascular system concludes that the night-time period from 23:00-07:00 should be protected and that the effects of the Relevant Action will lead to a significant deterioration in the health of the population affected.
- A scientific paper prepared by one of the medical directors in St Vincent's Hospital accompanied a third-party appeal. The paper notes the link between aircraft noise, sleep disturbance and human health. The impact of aircraft movement is greater at the end of the sleep cycle. A map of the additional awakening should have been included and every additional awakening illustrated.
- ANCA and the PA failed to engage medical expertise in their decision-making process.
- Based on the noise report conducted on properties already insulated by the Daa it is shown that occupants of these properties are still at noise exposure levels that are a serious risk to their health.
- ANCA have failed in their draft decision to account for the health costs associated with the Daa proposal.
- The independent assessment carried out for the PA states there will be a potentially significant adverse and residual environmental impacts on human health and wellbeing as a result of noise, on amenity and local communities as a result of noise was identified.

Impact on health and wellbeing

- Childrens growth is being impacted by the increased number of flights early in the morning and late at night.
- Some children with learning difficulties under the flight paths are more susceptible to the night flights and impacts on health.
- There has been 110 dB noise level recorded at a school site which is very distressing for vulnerable children.

- The EIAR does not fully address the severe health impacts on residents in the vicinity.
- Many new residents under the illegal flight paths are now experiencing high blood pressure, stress, and anxiety.
- The vulnerable persons will be affected greater.
- The aircraft noise impacts can lead to cardiovascular disease and stroke.
- The HSE submission and the Environmental Health Section submission both raise the impact of the additional nighttime flights on the quality of life of the residents.
- The opening of the NR has contributed to negative health benefits for residents within the new flight paths.
- 79,405 people will be left Highly Annoyed and 37,080 will be left Highly Sleep Disturbed in 2025

Cost benefit analysis by ANCA

- ANCA have not explored relocation options or taken on board the residual health effects and costs associated with their decision.
- Finance for a relocation scheme could be raised through a 'polluter pays' principle charged on air travellers.
- The reports on cost effectiveness submitted by the Daa exclude quantification of costs associated with the adverse health effects inflicted on residents despite this being requested by ANCA.
- ANCA looked at a comparison of scenario P02 with P11. Scenario P11 (South Runway for all night-time flights and leaving Condition 3(d) in place) shows less night-time impact than P02 (equivalent of the proposed Relevant Action) and has lower numbers of HSD and HA. Including P02 and excluding P11 is not a Balanced Approach.

General comments

- The proposal does not comply with the WHO nighttime noise guidance.

- Conditions No 6 and 7 of the original NR permission should be in place before the NR is operational.
- The noise impact from the flights will have a negative impact on residential amenities and therefore on the land use zonings, to improve residential amenity.
- Windows of dwellings under the flight paths cannot be opened during the summer.
- The noise impact on the residents in the vicinity of the site is a residual impact.

13.4.5. Impacts identified in the EIAR.

- Permanent significant adverse impact on amenity and local communities will occur for both assessment years 2025 and 2035.
- Negative health impact on the population and human health from air quality, noise and vibration and impact on sleep disturbance will occur for both assessment years 2025 and 2035.
- Neutral health impact due to the impact from alterations to the greenhouse gas emissions in both 2025 and 2035.
- Positive impact on the local population for access to work and training in both 2025 and 2035

13.4.6. Mitigation

No additional mitigation measures, over and above those listed in Chpt 13 and 14 are proposed.

The use of a noise insulation scheme has been proposed to mitigate the impacts on population and human health as summarised below:

The proposed scheme will provide a grant of €20,000 to fund sound insulation improvement works, for dwellings meeting either of the following criteria:

- Exposed to night-time noise levels of at least 55 dB L_{night} once the North Runway is operational, or

- Exposed to a “very significant” rating arising from forecast noise levels of at least 50 dB L_{night} in the first full year when the Relevant Action comes into operation, with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year. For this assessment a comparison of the 2025 Permitted and Proposed Scenarios has been used to estimate which dwellings would be eligible.
- Eligibility within the 55 dB L_{night} contour will be reviewed every 2 years.
- The proposed night insulation scheme is additional to the existing daytime noise insulation scheme currently provided in accordance with Condition 7 of North Runway planning permission.

Runway operation

- A preferential runway use system at night with activity on the North Runway limited to a total of two hours (between 06:00 and 08:00).

Noise Quota Scheme

- Introduction of an annual night-time noise quota scheme.

13.4.7. Residual Effects

- There will be a reduction in residual effects of sleep disturbance in 2025 with the RA in place compared to the permitted scenario although this will increase by 28 people in 2035.

13.4.8. Assessment of significance and effects

The following assessment of the effects of the RA on population and human health has regard for both the information contained in the EIAR and the applicant’s response to the Board’s additional information request. I have broadly addressed the impact on those Highly Annoyed (HA) and Highly Sleep Disturbed (HSD). The greatest impact of the RA is from the sleep disturbance associated with aircraft movements. The results from the applicants Additional Awakening Assessment have been integrated into this assessment. The combination of an assessment of those HA and HSD, and the additional awakening assessment, will ensure a holistic approach in the assessment of effects on population and human health.

<u>Human Health and Scientific Evidence</u>

The analysis of the impact on population and human health is mostly based on information presented throughout the EIAR on the noise modelling for air and ground aircraft movements and the air quality and carbon emissions. The positive impacts from the Relevant Action mainly relate to the generation of employment activities from the Relevant Action.

As stated above, much of the link between health impacts is due to the sleep disturbance from both the additional hours of operation (23:00 to 00:00 and 06:00 to 07:00) and the additional flights due to the noise quota. The harmful impact on the population is quantified by an understanding of the dose- effect relations as defined in Annex III of the END 2002/49/EC. These are commonly referred to the Highly Annoyed (HA) and Highly Sleep Disturbed (HSD) population.

Studies submitted with the third-party submissions relate to specific health impacts from aircraft noise exposure such as cardiovascular disease, mood disorders, childhood literacy, obesity etc. Many of these third-party submissions and studies have regard to the END and WHO guidance.

In relation to the impact on cardiovascular disease (CVD), I note the updated EIAR acknowledged that while the aircraft noise exposure may increase heart disease, the exact number of cases of IHD (ischemic heart disease) cannot be calculated. The END does state the exact number of IHD cases cannot be calculated for aircraft noise although those population exposed to adequate L_{den} levels is estimated as a marker of the increased risk of IHD. In addition, the WHO guidelines indicate a relevant risk increase from exposure to aircraft noise at 52.6 dB L_{den} although states that the that evidence supporting this conclusion is very weak.

The Vanguardia report notes that the EIAR focuses on the effect of noise at night on sleep, as the most significant adverse effect. Having regard to the plethora of information submitted I am satisfied that the impact of the Relevant Action on population and human health can be adequately assessed by having regard to the number of people that will be HA and HSD. I consider the assessment of HA and HSD is internationally accepted. In addition, the Vanguardia Report provides an analysis of those relevant studies on the impact of aircraft noise, including those submitted by the applicant, which I have used as guidance to inform the use of noise metrics (i.e., HSD as an average impact and additional awakening as an impact on

the two additional hours) in the RD and RA and the impact on population and human health.

Percentage of persons Highly Annoyed (%HA)

The EIAR reports separately on the number of people HA by air noise and vibration and ground noise and vibration. I consider the aircraft noise has the greatest impact on the sleep disturbance therefore reference to HA is mainly based on noise modelling generated for the permitted and proposed scenarios for aircraft movements on departure and arrival.

The original EIAR (Dec 2020) includes the number of people **highly annoyed** in both 2018 and 2019. The revised EIAR (2021) includes assessments for 2022, 2025 and 2035 and the supplementary EIAR (2023) only includes scenarios for 2025 and 2035. I have used the 2019 baseline from the original EIAR (Table 13.33) to assess the impact of the RA against compliance with the Noise Abatement Objective (NAO), further detailed below. This also give the Board an understanding of the impact on those HA, when compared to the baseline scenario.

Table 4- Number of People Highly Annoyed

	No. people highly annoyed (HA)[47]	
Scenario	Excluding Consented developments	Including Consented Developments
2019 Baseline[48]	110,234	120,201
2025 Permitted[49]	55,041	64,967
2025 Proposed	**53,854**	**62,872**
2035 Permitted	29,232	36,826
2035 Proposed	**35,445**	**43,669**

[47]The WHO guidelines define those Highly Annoyed population from aircraft noise as those at noise exposure levels above 45.4 dB L_{den} and is based over a 24-hr period.
[48] Table 13-15 EIAR Main Report (December 2020)
[49] Both the 2025 & 2035 proposed and permitted scenarios are based on the EIAR supplementary 2023

The number of HA people is reflective of the L_{den} contours which includes the number of people impacted by increased noise during a 24-hr period (with penalty for evening and nighttime noise). Initially, those persons HA will decrease by 2% in 2025 under the proposed scenario, when compared to the permitted scenario and then increase by 21% in 2035. Both scenarios in 2025 and 2035 will be much lower than the baseline scenario (including 2018). The Vanguardia Report notes that those HA will be lower in both 2025 and 2035 with or without the RA in place due to the change in fleet mix and the noise emissions of modern aircraft.

Issues raised throughout the third-party submissions relate to the increase in HA in the Relevant Action in 2035 when compared to the permitted scenario. The rationale for these changes is discussed throughout the EIAR. In general, they mainly relate to the change in aircraft movements and flight paths throughout both the daytime and nighttime to accommodate the additional hours of operation and change to NQS. This is the forecast scheduling for the airport. The applicant's documentation refers to the demand for earlier departures for business throughout Europe.

The initial decrease in people highly annoyed initially in 2025 is based on alterations to the use of the runway and the population now within the 55 dB contours (Section 13.7.11). Under the proposed scenario there will be more departures using the NR, rather than the SR, which means that less of Blanchardstown and the surrounding communities will be affected by aircraft noise. This area is more densely populated than the area to the north of the airport and therefore the number of people HA will decrease.

There will be an increase of 21% of people highly annoyed in 2035 under the proposed scenario when compared to the permitted scenario because of an increase aircraft movements NR. This is due to the smaller contours in 2035, because of a move away from noisy aircraft and more modern fleet renewal. This means less people in the more densely populated areas will be impacted therefore the offset in those HA is not as great.

Significance of effect: In both the 2025 and 2035 scenarios the magnitude of impacts has been assessed. In 2025, 119 more people will have a significant adverse effect under the proposed scenario and 104 in 2035. None of the population will be very significantly or profoundly effected in 2025 or 2035. Increases under 3

dB (A) are expected at some representative locations which are not rated as significant. The change in proposed scenarios will also decrease noise impacts in some cases. In 2025 there will be a net significant beneficial effect for c. 7,000 people under the proposed scenario and in 2035 a beneficial effect for c. 100 people when comparing the proposed scenario with the permitted scenario (i.e. less people experiencing a significant effect from aircraft noise over the L_{den} 24 hr period).

Alterations from revised EIAR: As stated throughout this assessment, the supplementary EIAR has been updated to reflect new modelling and operational arrangements which are in place since the NR opened. The revised EIAR had a lesser number of person's HA in both 2025 (67) and 2035 (20) experiencing a significant adverse effect. This represents almost double those HA in 2025 (119) and more than tripling in 2035 (104) as detailed in the supplementary EIAR. Therefore, the noise modelling presented in the EIAR which represents the actual flight paths since the opening of the NR, concludes that there is a greater number of persons experiencing a significant adverse effect under the proposed scenario.

NAO: The use of the baseline information (i.e. 2018 and 2019 figures) is important to assess the impact of the Relevant Action against the NAO. The expected outcomes in the NAO regarding HA persons require a reduction in the number of people HA as 30% by 2030, 40% by 2035, and 50% by 2040 in comparison to 2019. Whilst the 2030 and 2040 scenario are not included in the EIAR, the information presented clearly indicates that those HA in both scenarios will have reduced by more than 40% by 2035. Therefore, the proposed scenario can meet the expected outcome in the NAO with regard reduction of those persons HA.

Conclusion on HA: The Relevant Action includes alterations to the use of the SR and the NR in the permitted and proposed scenarios. Under the proposed scenario the NR will be used during the nighttime and for departures with segregated mode only between 06:00 and 08:00. This alteration means aircraft will not fly over the densely populated area of Blanchardstown, but will be diverted north, over a less densely populated area. This change means that the number of people HA will initially decrease in 2025 under the proposed scenario. In 2035 the use of more modern aircraft will mean that ATMs will be less noisy, noise contours will be smaller within the L_{den} and the changes between the permitted and proposed scenarios will include less rural areas. Therefore, in the assessment year 2035 the significance of

effect will be greater in the proposed scenario than 2025 and greater than the permitted scenario. These are persons located within the higher noise contour areas, as proposed over the L_{den} 24hour period.

These alterations in the HA rely on the movements between the use of the runways and the divergence of flights away from densely populated areas. Third parties consider the applicant has intentionally altered the preferential use of the runway to reduce the number of people effected. I have considered the use of the runway as a mitigation measure, as stated in the EIAR, and I consider that any grant of permission should explicitly refer to the segregated use as a mitigation measure.

Percentage of persons Highly Sleep Disturbed (%HSD)

The percentage of people HSD has also been mainly addressed in Chapter 13, aircraft noise and vibration, and further discussed in Chapter 7, ground noise and vibration. The supplementary EIAR (2023) assessed the number of people HSD for 2025 (Table 13.38) and 2035 (Table 13-48) as summarised below.

Table 5- Number of persons Highly Sleep Disturbed

	No. people Highly Sleep Disturbed	
Scenario	Excluding Consented developments	Including Consented Developments
2019 Baseline[50]	47,044	53,084
2025 Permitted[51]	22,281	27,474
2025 Proposed	**23,884**	**29,589**
2035 Permitted	9,430	13,592
2035 Proposed	**16,026**	**21,189**

In both assessment year scenarios, the number of persons HSD increased in the proposed scenario when compared to the permitted scenario. The increase is most significant in the 2035 assessment year. An increase in the % HSD would be

[50] Table 13-15 EIAR Main Report (December 2020)
[51] Both the 2025 & 2035 proposed and permitted scenarios are based on the EIAR supplementary 2023

expected as it refers to those persons exposed to at least 40 dB L_{night} where the Relevant Action includes night flights for an additional 2 hrs during the night. The supplementary EIAR also refers to the increase in the number of people exposed to at least a high level of noise (i.e., 55 dB L_{night} or above) from 212 to 1,197 (Table 13.47 excluding consented) 4,188 (Table 13-47 including consented). In broad terms the inclusion of the use of the NR at night will increase those HSD when compared to the permitted scenario.

Significance of effect: In both the 2025 and 2035 scenarios the magnitude of impacts has been assessed. There will be some areas where the number of people HSD will decrease and some areas where the number of people experience HSD will increase. In most cases the alterations will be up to 3 dB, which is defined in the EIAR as a medium effect, i.e. will not have a significant effect. There are representative locations which will experience and increase of 9-10 dB in 2025 (Tyrellestown, Toberburr and Ridgewood). An increase of 9-10 dB is considered a significant effect as it equals a doubling of the sound levels. The EIAR states that 729 people will experience a very significant to profound effect under the proposed scenario in 2025 and 508 in 2035.

NAO: The information presented in the EIAR, as summarised in Table 5 above, clearly indicates that, like the HA, in both scenarios those HSD will have reduced by more than 40% in 2035 and the NAO expected outcomes can be met. As previously stated, the Vangaurdia Report notes those persons HSD will be less in the assessment years 2025 and 2035 under both the permitted and proposed scenarios when compared against the baseline of 2018.

Alterations from the 2021 EIAR: As stated throughout this assessment, the supplementary EIAR has been updated to reflect new modelling and operational arrangements which are in place since the NR opened. This includes dwellings and persons not previously included in certain noise contours areas, now included. I note the same data included in the revised EIAR (Table 13-59, Sept 2021), as permitted, includes 454 people exposed to at least a high level of noise (i.e., 55 dB L_{night} or above in 2035). When comparing this data, there is a substantial increase in the additional people effected under this amended operational arrangement and whilst it is acknowledged the noise contours are not directly comparable, there remains

concern that there is a significantly larger population exposed to at least a high level of noise than was anticipated in the revised EIAR (Sept 2021).

Conclusion on HSD: The impact on the population and human health will be greatest under the L_{night} scenarios due to the number of those ATMs during the nighttime hours. Those persons HSD will increase in both assessment years, 2025 and 2035, in the proposed scenario when compared to the permitted scenario. There will also be a lot more people with at least a significant adverse effect (9,456) in the proposed scenario in 2035, i.e. long-term impacts from the Relevant Action. There is also a lot more people HSD from the noise modelling based on the actual NR operations as submitted in the supplementary EIAR, for example those with at least a significant adverse effect in the proposed scenario in 2035 previously in the revised EIAR was 4,706, an increase of c. 50%. The inclusion of adequate mitigation measures to reduce the significance of these effects is crucial for the Relevant Action to prevent any significant permanent long-term effects on the human health and population.

Even when considering the need for a balanced approach, any amendment to operating procedures should ensure that the Relevant Action does not have a significant adverse effect on population and human health. It is my opinion that the balanced approach requires that the financial benefit of implementing the operational changes is not prohibited by unnecessary or extreme mitigation measures to prevent the significant impact on the population. The necessity for additional operating restrictions and mitigation measures is addressed below.

Additional Awakening Assessment

The analysis of the additional awakenings, submitted in response to the Boards request, provides a broader understanding of the impacts during the “shoulder hours” additional nighttime hours. As detailed above, it provides an assessment of the noise generated from air traffic movements as a peak (L_{Amax}) rather than noise generated on average during the night hr period (L_{night}). Third party submissions have raised concern that this assessment has not been integrated into the EIAR.

The results of the additional awakening assessment are important and provide a full understanding of the effects of the RA on the population and human health. The additional awakening assessment follows the same broad trend as the results of the

HSD and HA above, whereas there will be less people effected in both 2025 and 2035 than compared to 2018. There is a difference between both assessments, on an annual basis the additional awakenings decrease between 2025 and 2035, whereas they increase under the HSD and HA. This aside, the applicants additional awakening assessment indicates that when compared to the permitted scenario there will be initially less additional awakenings in 2025 (321) although this will significantly increase to 5,012 during the summer period during 2035.

The Vanguardia Report provides an overview of the significance of additional awakening on sleep disturbance having regard to the most up to date research and emphasises the impact of the movement of additional aircraft at night.

The HSD assessment averages out the effect across a wider population area (during the nighttime hours) and, due to the preferential use of the north runway, would indicate that those mainly affected by the NR departures between 06:00 and 08:00 would be the residents of properties to the northwest of the NR. The information in the additional awakening report indicates a greater impact from the easterly operations. Having regard to the preferential use of the runway, the existing communities within Portmarnock would be more significantly affected with the NQS in place, due to a larger number of additional awakenings under the proposed scenario. The Vanguardia Report notes that the information submitted in the applicants additional awakening report highlights the need to introduce a cap on aircraft movements because the L_{night} metric used in the EIAR is relatively insensitive to changes in the numbers of ATMs.

Whilst I note the applicant has stated that, due to the size of the study area, and the relatively low percentage of additional awakening (3%) over the entire study area, I am also cognisant of the final figures and the significance of the impact on the population from the easterly operation and the increase of c 5,000 additional awakenings by 2035, when compared to the permitted scenario. In this regard, I do not consider the applicant has adequately addressed the full effect of the RA on the sleep disturbance of existing population.

The Vanguardia report recommends that a cap of the movement of aircraft is included, in conjunction with the NQS, to ensure that effects of aircraft noise on sleep do not change significantly once the NQS is in place. The recommendation for

a cap restriction is based on the applicant's NQS data, which has also been used to generate the noise modelling and in turn assess the impact of significance and those mitigation measures required. The use of air traffic movements restriction is a more realistic alignment with the applicants' overall proposals, having regard to the potential noise effects from aircraft associated with the noise classification system and also the aircraft movement over a two-hour period. Therefore, I am satisfied that although the additional awakening findings have not been included in the EIAR, any restriction of aircraft movements can adequately mitigate, in conjunction with the NQS and other recommended operating restrictions, against a significant adverse impact on sleep disturbance of the existing population.

In coming to this conclusion, I have had regard to the flight paths submitted with the original RA and those new flight paths in the supplementary EIAR. The number of ATMs or terms of the NQS scheme has not significantly altered between the information permitted under the RA and or the amended proposal in the supplementary scheme, therefore the inclusion of an aircraft movement limit is recommended irrespective to those changes submitted with the applicant's supplementary documentation.

RSIS Insulation Scheme

The effectiveness of the insulation scheme has been raised by third parties. Both the effectiveness of the previous insulation schemes and the financing of future scheme has been raised as concern. The EIAR includes two criteria to mitigate the impact on population and human health as detailed above. In summary it includes dwellings within the 55 dB L_{night} contour and those exposed to a "very significant" rating arising from noise levels of at least 50 dB L_{night} in the first full year when the Relevant Action comes into operation, with a change of at least + 9 dB.

The Regulatory Decision only includes one criterion for eligibility for nighttime insulation, those within the 55 dB L_{night} contour. ANCAs cost effective analysis on the draft RD assessed the number of variations of the insulation scheme and concluded that although Variant C6 (both criteria in the EIAR) was the most effective measure under the HSD metric (along with runway pattern Scenario 9), the most cost-effective measure was a runway pattern under Scenario 10 and noise insulation Variant B.

The Regulatory Decision was adopted by the Planning Authority in granted the Relevant Action.

Third party submissions have raised concerns on the assessment undertaken by ANCA and the absence of any quantification of health effects. They do not consider a balanced approach has been adopted by ANCA. The consideration of a health expert in the application of a balance approach, *inter alia,* has also been raised.

The background to the Balanced approach is detailed extensively throughout my assessment. The application of this approach relates to the adopting and costing of various measures necessary to address a noise problem at the airport. Whilst I appreciate the data presented in the EIAR indicates that the number of people HA and HSD will meet those expected outcomes set by ANCA in the NAO, this is reliant on two criteria for mitigation, not included in the final RD or permission for the Relevant Action. Therefore, in my opinion, the permission by ANCA and the Planning Authority cannot adequately address the noise problem which arises from Relevant Action.

The supplementary EIAR also states that even after allowing for mitigation, there will be a limited number experiencing residual noise effects and while there will be a reduction in people experiencing noise effects in 2025 it will increase in 2035. Although not explicitly stated, the information presented in Table 13-53 of the supplementary EIAR on the number of people exposed to high residual noise levels, indicates that there will be 80 people in 2025 and 41 in 2035 exposed to high residual noise. A comparison with the permitted scenario indicates a reduction of 25 people exposed to high residual noise levels in 2025 and an increase of 28 people in 2035 during the night (i.e. L_{night}). No explanation has been provided in the EIAR for the increase in the number of people exposed to high or very high residual noise although considering the additional mitigation measures proposed throughout my assessment it is reasonable to assume there will be a further reduction in the number of people who experience residual effects from the Relevant Action.

Having regard to the results of the additional awakening report, the Vanguardia Report recommends that the Regulatory Decision and Relevant Action include a further qualifying criterion for noise insulation that would include all residential properties predicted to be exposed to peak noise levels of 80 dB L_{Amax} by the loudest

aircraft using the airport between 2300 and 0700 hrs. I note this would address concerns of the third parties relating to the landing of aircraft on the NR from a westerly operation (i.e., 30%) as they considered these movements were not included in the noise modelling.

13.4.9. Conclusion

The broad outcome for those HA and HSD is that fewer people will be either HA or HSD in the assessment years when compared to the baseline year of either 2019 or 2018 although in the long term more people will be HA and HSD with the RA in place rather than the permitted scenario. The noise metrics used to assess the HA and HSD describe an average impact on the population. Aircraft noise is not experienced as an average as the noise events from ATMs are intermittent which cause sleep disturbance.

The results from the additional awakening assessment are important to understand the difference of impacts of aircraft movements over a 2-hour period rather than average over the night. They indicate that significantly more people will experience an additional awakening in 2035 with the RA in place when compared to the permitted scenario. For example, in 2035, 4,449 more people will experience an additional awakening although 7,596 will be more HSD when compared to the permitted scenario. The impact of one additional awakening is considerably more significant than the impact of one person HSD. This is due to the sensitivity of the impact of an additional awakening, which produces a conscious awakening rather than a self-reported significant impact (HSD).

The initial reduction in the number of people HA is primarily based on the move between the SR and the NR and is based over a 24-hr period. As the proposal relates to the change in operations at night, the effect on the people HSD provides a better understanding of the noise impacts from the Relevant Action on sleep disturbance as it is based on the increased ATMs during the night.

Having regard to the number of people who will be impacted by the Relevant Action, mitigation measures are extremely important. The EIAR relies on two criteria for the insulation scheme, including those exposed to a “very significant” rating arising from noise levels of at least 50 dB night in the first full year when the Relevant Action comes into operation, with a change of at least + 9 dB, as a measure to mitigate

against significant adverse impacts on population and human health. There is a disjointed approach to the assessment in the EIAR and the applicants cost effective assessment, where Scenario 2 (55 dB L_{night}) is proposed. In addition, the final Regulatory Decision and the Planning Authority decision only include dwellings within the 55 dB L_{night} contours as eligible for the insulation scheme.

The inclusion of a third qualifying criterion for noise insulation that would include all residential properties predicted to be exposed to peak noise levels of 80 dB L_{Amax} by the loudest aircraft using the airport between 2300 and 0700 hrs, would also ensure that aircraft movements not included in the average noise contours (i.e., L_{night}) which may affect additional awakenings can be adequately mitigated. An example of this may be in a scenario where the preferential use of the runways 30% of the time- i.e., arrivals on the NR from the westerly direction. Mitigation measures in the form of additional nighttime insulation will reduce the number of persons experiencing a significant adverse effect on sleep disturbance when implementation all the noise mitigation measures recommended in the Vanguardia Report.

13.5. Major Accidents and Disasters

13.5.1. Introduction

Chapter 8 deals with Major Accidents and Disasters. This chapter has not been updated in the supplementary EIAR.

The risk of airplane crash is considered the biggest potential accident that could occur in terms of probability. The chapter sets out the national and local legislation relevant to assessing the risk to dangerous activities. The operation of the airport is regulated by the Irish Aviation Authority (IAA).

13.5.2. Baseline

The probability of an aircraft crash from the Relevant Action is assessed against modelling for feet mix, predicted aircraft movements and take-off and landing operations. This modelling approach is used by UK Department of Transport (DfT). The risk is characterised as, individual risk and societal risk.

Individual risk is the measure deployed for the Public Safety Zones (PSZs) in the development plan. Individual risk levels are employed to assess this risk – i.e. I in

10,000, 100,000 and million probabilities, is a high, medium, and low risk. The PSZs as per the development plan are useful to understand the impact the risk of impact associated with the Relevant Action.

- In 2025 it was assumed that the number of people within the 1 in 100,000 per annum contours were the same in the proposed and permitted scenarios. There was a predicted minor increase in the number of residential properties and commercial sites. The contours are very similar in the 2035 scenario.
- The 1 in 10,000 per annum risk contours for the three runways are contained in within the airport boundary (low risk). Eighty Five percent of the 1 in 100,000 is also contained within the airport boundary (medium risk).
- In the 1 in 1,000,000 risk contour there were no changes between the permitted and proposed scenario in 2025 or 2035 (high risk). There are 12 more properties in this zone in the 2025 and 2035 proposed scenario.

Societal risk is associated with the frequency of accidents (N)leading to a defined number of facilities and can be quantified by using a specific equation called “Scaled Risk Integral” (SRI). The significance of impact is derived from the SRI.

- There is a slight increase in the SRI in the proposed scenarios in 2025 and 2035, when compared to the permitted scenario, at all sites, non-airport sites and the airport campus.

The potential impact on bird strike, wake vortex and emergency fuel dumping were assessed.

- The airport currently has a bird hazard management plan with various measures to prevent bird strikes. Technological advances in aircraft design make them more resilient to bird strike.
- The impact of wake vortex (vibration from aircraft turbulence) on buildings below the flight paths was considered during the NR permission and the Relevant Action does not propose any alterations.
- Evidence form the UK indicates there are very few incidences of fuel dumping. If it does need to take place, it is undertaken in a controlled manner in selected areas. This only occurs when a flight needs to decent when its maximum weight is too great – i.e., emergency landing. Only one occurrence

has taken place since 2014- dumped over the Irish Sea. Modern aircraft allow maximum landing and take-off at the same weight.

13.5.3. Submissions

Third party submissions have raised concern in relation to the direction of the flight paths over a waste recovery facility which is part of the Greater Dublin Drainage Project (current case ABP 312131). No cumulative impact has been undertaken to ensure there is no risk of a major accident.

13.5.4. Impacts

- In relation to the individual risk, there will be a slight to moderate effects on the additional 12 dwellings in the 1 in 1million contours.
- In relation to the societal risk, the risk remains in the moderate effects for both 2025 and 2035 assessment years.

13.5.5. Mitigation

No mitigation measures have been proposed.

13.5.6. Assessment of significance and effects

The Fingal County Development Plan includes inner and outer public safety zones in accordance with the guidance set out in the Environmental Resources Management [ERM] Report 2005.

- Objective DAO19 – Review of Public Safety Zones - Support the review of Public Safety Zones associated with Dublin Airport and implement the policies to be determined by the Government in relation to these Public Safety Zones

These public safety zones are used to ensure planning is restricted in the vicinity of the airport site. The individual risk assessment concludes that under the 2025 and 2035 assessment years there will be a relatively minor increase of 12 properties in the high-risk area. Due to the dispersed nature of housing around the airport site, any impact will be negligible.

There is a relatively minor increase in the SRI with a low probability for any fatality events in both 2025 and 2035. I note the calculation for this risk in both permitted and proposed scenario and I do not consider the increased level of risk would have any significant adverse effect.

Alterations from the 2021 EIAR: I note the alterations in the supplementary EIAR. The change of flight paths has led to a reduction of dwellings in the higher noise contours which correlate with the PSZ – i.e., Nose Zone A and the Inner PSZ and Noise Zone B with the Outer PSZ. This decrease would further reduce the individual risk and I have no concerns the supplementary information would cause any additional risk.

13.5.7. Conclusion

I have considered all the written submissions made in relation to major accidents and disasters, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.6. Traffic and Transportation

13.6.1. Introduction

Chapter 9 deals with traffic and transport. A revised chapter has not been submitted with the supplementary EIAR and the assessment scenarios relate to 2022, 2025 and 2035.

An assessment of the permitted scenario (permitted operation of the NR) and proposed scenario (with the Relevant Action) includes the forecast passenger growth (within the 32mmpa cap) and increase surface access passenger's journeys (passenger journeys to the airport by road).

A Local Area Model (LAM) has been developed to forecast the impact on the road network with 12 links including the MA, M50, R132 and R108. Several committed public transport schemes such as the Metrolink and Bus Connects have informed the mode share for future travellers.

Airside passenger profiles for the permitted and proposed scenarios have been converted to landside passenger profiles. It is assumed passengers enter the Airport on the landside two hours before their flight is due and exit one hour after the flight arrives.

Those road links which had less than a 5% impact from the permitted scenario were excluded from the final assessment, where the traffic flows where 5% higher than the

permitted scenario they were compared to the maximum individual hourly permitted scenario on the same road links. If the difference was significant a road capacity analysis was carried out to determine if the road could cater for the new maximum flow.

Baseline

In 2025 and 2035 the difference between the vehicle trips proposed by the Relevant Action when compared to the permitted scenarios conclude the greatest increase in traffic in the hours commencing 00:00, 01:00, 04:00, and 07:00 in both assessment years. There are slight increases mid-day and decreased trips at other times -e.g., 23:00, 03:00 and 05:00.

The distribution of vehicles at the junctions has been assessment for both assessment years. Overall, the largest increase in traffic will be seen at the M1 Airport link, J1-J2 entrance/ exit along the M1 and the R132 going south. In 2025 there will be 2% increase in traffic at the M1 Airport Link and 0% in the 2035 year for the proposed scenario when compared to the permitted scenario. In 2025 there will be a 2% increase in traffic on the R132 South, reducing to 0% in 2035 under the same scenario. During the busiest times, the greatest increase will be at the R108 (01:00 to 02:00) which will exceed 5% of the overall max. hourly permitted flow. This will be a ratio of 0.57 of the max volume to capacity (V/C).

13.6.2. Impacts

The greatest impact will be on the R108 during the hours of 01:00 and 02:00 although is not considered significant.

13.6.3. Mitigation

No mitigation or monitoring is required.

13.6.4. Assessment of significance and effects

The greatest increase in traffic from the Relevant Action is reflective of the proposed operation of the NR between the hours of 23:00 and 00:00 and 06:00 and 07:00. The traffic analysis includes an analysis on those junctions in the vicinity of the site and concludes that only one junction will experience any significant increase in traffic flow from the proposed scenario. The volume of capacity assessment concludes that the R108 has sufficient capacity to accommodate the increase in traffic. I do not consider

the increase traffic generated from the Relevant Action will have a significant negative impact on traffic flows.

Alterations from the 2021 EIAR: Chapter 11: Climate and Carbon was updated in the Supplementary EIAR. Theis updated chapter considered additional surface access passenger journeys generated by the Relevant Action, for the purpose of additional GHG emissions and impact on the climate. The Relevant Action includes an additional 4.54% of surface access passenger journeys in 2025 in the proposed scenario when compared to the permitted scenario and 0.46% increase in 2035, the same increase as the revised EIAR. I do not consider the findings in the supplementary EIAR (2023) have an impact on the traffic and transport assessment in the revised EIAR (2021).

13.6.5. Conclusion

I have considered all the written submissions of which relate to the traffic and transport generated by the Relevant Action. I am satisfied that it is not likely any significant adverse effects in the traffic and transport will arise from the Relevant Action.

13.7. Air Quality

13.7.1. Introduction

Chapter 10 deals with Air Quality. A revised chapter has not been submitted with the supplementary EIAR.

The focus of the assessment is on the short-term and long-term concentrations of Nitrogen dioxide (NO_2) and Particulate Matter (PM_{10} and $PM_{2.5}$) associated with the aircraft movements. An Advanced Dispersion Modelling System has been used to predict the future changes in air quality. The chapter provides a background of the national and local air quality standards and the objectives required to improve air quality.

Sensitive receptors have been identified in accordance with National Roads Authority Guidance at locations where the public are likely to be regularly attending. The NO^2 concentrations from the local authority “Newry and Mourne” were used as there is no air quality background values for local authorities in Ireland.

Baseline

The information from the Dublin Airport Authority Pollutant Monitoring was used to assess NO^2 and PM_{10} concentrations. Measurements up to 2020 have been recorded with a daily mean of 5 PM_{10} in 2019. The limit value for NO^2 or PM_{10} was not reached in any years between 2011 and 2020. The highest recording of NO^2 was at the southern and western boundary of the airport and beside the bus depot.

There is no EPA pollutant monitoring of NO^2, PM_{10} and $PM_{2.5}$ in the vicinity of the site. The closest locations are Pearse Street and St Johns Road. EPA background pollutant concentrations are monitored at Swords. These are used to assess the impact on the receiving environment.

A total of 52 existing receptors where selected to represent a group of dwellings, schools, and public houses. For the proposed scenarios all receptors will be within the lowest band for NO^2 (annual mean <32 µg/m^3) and a lower band for both PM_{10} and $PM_{2.5}$ (annual mean 10 - 20 µg/m^3).

The results of the odour modelling are presented in Appendix 10C of the revised EIAR. Having regard to the 98th percentile of the 1- hour exposure (OUe/m^3) no receptor is anticipated to exceed levels > 1 OUe/m^3 with the highest odour levels proposed in 2025 as 0.6OUe/m^3 and in 2035 0.4OUe/m^3 at the Coachman's Inn, c.500m east of Dublin Airport.

13.7.2. Submissions

Many of the submissions have raised issues regarding the CHG emissions from the increase in aircraft movements. In this regard the third parties also consider the non-CO^2 emissions can have a greater impact than CO^2 impacts and should not be ignored.

13.7.3. Impacts

The Relevant Action will have a negligible impact on the air quality.

13.7.4. Mitigation

No mitigation is required.

13.7.5. Assessment

The assessment does not identify any exceedances of any air or odour limits at the 52 chosen receptors in either assessment years 2025 or 2035 from the proposed scenario. Based on the information presented and the modelling undertaken I consider that to be a reasonable conclusion and I do not consider the proposal will have a significant impact on the air quality.

Alterations from the 2021 Revised EIAR: The supplementary EIAR includes updates for new noise modelling. Those air traffic movements proposals between the revised EIAR (2021) and the supplementary EIAR (2023) and I do not consider the alterations in the supplementary information will generate additional emissions which would impact the conclusions for air quality.

13.7.6. Conclusion

I have considered all the written submissions made in relation to Air Quality, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.8. Climate and Carbon

13.8.1. Introduction

Chpt 11 of the EIAR deals with Climate and Carbon. This chapter was amended as part of the supplementary EIAR (Sept 2023). The EIAR provides a background of the relevant guidance and legislation for aviation emissions and climate change.

The RA introduced a noise quota scheme to replace a restriction of ATMs during the night and an extension on the operational hours of the NR during the night (addition 2 hours between 11.00- 00.00 and 06:00 – 07.00). The two scenarios for the carbon assessment include the permitted scenario- as per the conditions of the NR permission, and the proposed scenario- with the Relevant Action.

The EIAR notes an increase in the ATMs and passenger numbers under the proposed scenario relative to the permitted scenario in the 2025 assessment year. The ATMs remain the same for the proposed scenario between 2035 although the surface access passenger journeys will increase.

As there are no physical works to the airport it is not expected that there is an increase of emissions due to the operation of the airport buildings because of the RA. There will be no emissions as a result of construction works. The climate impact and increase in CO_2 and non-CO_2 emissions is based on the Mott MacDonald report[52] which states there will be an increase of c. 13 ATMs from 2025 to 2035 between the permitted and proposed scenarios. It is stated that additional surface access passenger journeys have been included in the assessment of significant effects.

Baseline

The assessment of effects is based on a comparison of the projected CO_2 emission associated with the Landing and Take-off cycle (LTO) cycle (landing), Continuous Climb Departures (CCD) phase (take off), surface access passenger journeys and total CHG emissions for both the permitted and proposed scenarios in 2025 and 2035. The projections are as follows:

- For LTO the emissions (i.e. Tonnes of Carbon Dioxide Equivalent (tCO_2e)) will increase more in the proposed scenario than the permitted (4.1%) and then decrease more in the proposed than permitted scenario in 2035 (-2.86%).
- For CCD the emissions (tCO_2e) will follow a similar pattern where it will increase more in the proposed scenario than the permitted (0.53%) in 2025 and then decrease more in the proposed than the permitted (-11.43%) in 2035.
- There will be more surface access passenger journeys in the proposed scenario than the permitted (12,966 more surface passengers) with a 4.54% increase in emissions between the proposed and permitted scenarios and again in 2035 there will be more slight increase of 1,398 more passengers and 0.46% variation in emissions.
- The total annual CHG emissions has been calculated at 4,167,017 tCO_2e more in the proposed scenario than the permitted in 2025 (1.16%) and less in the 2035 proposed scenario -9.87%.

[52] Dublin Airport Operating Restrictions: Quantification of Impacts on Future Growth; Mott Mc Donald September 2023

The EIAR concludes that whilst the increase in flights will initially increase the CHG emissions in 2025, more in the proposed scenario, it is expected that there will be a decrease in the emissions in 2035 between the permitted and proposed scenarios. The rationale for the decrease in 2035 is that although there will be the same number of flights, in 2035 some short-haul night flights have been modelled as part of the proposed scenario and do not occur in the permitted scenario and these are expected to be replaced with long-haul flights operating during the day. The increase in short-haul flights and decrease in long-haul flights, at night, for the proposed scenario for 2035 will result in lower CHG emissions.

13.8.2. Submissions

The submissions from appellants and observers to both the RA and the significant FI have raised concern of the impact of the RA and the associated increase in CHGs and climate change. Issues raised in the submissions are summarised below:

- There is no assessment of the impact of the increased ATMs and climate change.
- The Board should carry out their own independent analysis.
- A full environmental assessment is required as per S15 of the Climate Action and Low Carbon Development Act, 2015 (as amended).
- Directive 2014/52/EU requires the long-term effects are to be included.
- A recent report from SEAI notes an increase in emissions in 2023 from aviation (using the use of Jet Kerosene).
- A CHG reduction of 1.79% by 2035 (as stated in the documents) is not broadly consistent with the overall national target and a greater reduction is required to meet a net zero target by 2050.
- Carbon costs of ATMs are not included in the ANCA decision.
- The Council did not undertake their own environmental assessment of the impact on climate and simply quote Section 15 of the Climate Act
- The emissions for growth past 32m should also be included.
- Compliance with EU targets have been ignored.

- The EIAR failed to take account of the latest national inventory emissions dataset and failed to consider the future planned passenger number beyond 32m and therefore failed to assess the true significant effects which are 'major adverse' as per the IEMA guidelines.

An Taisce made a submission on the original RA and further information raising concern in relation to the following:

- The airports GHG emissions will increase by 5.5 % by year 2025.
- The impact on the climate is incompatible with Ireland's obligations under the Paris Agreement.
- The EIAR does not adequately describe the direct and indirect significant effects from the proposal.
- The EIAR is insufficient to comply with the requirements of EIAR Directive (2014/52/EU).
- The non- CO_2 emissions from plans have not been assessed and have a significant radiative forcing (anthropogenic) impact on the climate.
- The proposal for night-time flights has a greater climate impact than flights during the day (link to a research paper attached).

13.8.3. Legislation and Policy

Third party submissions do not consider the proposal, and associated CHG emissions, can comply with Irelands obligations for climate targets. Several European climate agreements have been referred to in the submissions.

The EIAR refers to the International, European, National and Local policy relevant to the assessment of climate and carbon impacts. I have assessed the legislation and policy included in the EIAR and summarised those which I consider the most relevant to assess the impact of the Relevant Action. I note the terms of those plans, and I conclude that reductions for CO_2, in the aviation sector, have been set at an international level. Importantly the newly adopted CAP 2024 does not include a specific CHG target for the aviation industry but refers to actions which need to be put in place to support the use of sustainable aviation fuels.

I consider the following legislation and policy the most relevant to assess the impact of the Relevant Action on the climate.

International Civil Aviation Organization (ICAO)

- In 2016, ICAO agreed a resolution for a global market-based measure to address CO_2 emissions from international aviation as of 2021.
- Airlines are required to monitor all international routes and offset emissions by purchasing eligible emissions units generated by projects that reduce emissions in other sectors (e.g., renewable energy).
- Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) includes standards and recommended practices on an international level with measures to offset CO_2 emissions after 2020. The aim is for a no- net increase in CO_2 emissions after 2021.

EU Climate Law includes targets for climate neutrality by 2050. Legislation and guidance relevant to aviation include:

- Paris Agreement and EU Green Deal actions and policy incentives to make Europe climate neutral by 2050.
- EU Emission Trading System (EU ETS) allows EU member states to limit or reduce GHG by allowing them to buy, sell or trade emissions allowances. EU airlines are required to monitor, report, and verify emissions from qualifying flights within Europe.
- ReFuelEU aviation initiative is part of the EUs fit for 55 package to lower the CO2 emissions and provide sustainable aviation fuels (SAF). This new (2023) legislation will put air transport on the trajectory of the EU climate targets for 2030 and 2050. The initiative is within the scope of complying with the Renewal Energy Directive (RED) with rules for competent authorities designated by member states to enforce the regulations.

Section 15 of the Climate Action and Low Carbon Development Act 2015 (the Climate Act). The (amendment) Act 2021 includes a national transition objective towards a low carbon, climate resilient and a sustainable economy by the end of year 2050. It requires public bodies to have regard to national actions to address climate change including mitigation and adaptation measures.

Climate Action Plan 2024 Since the submission of the applicant's supplementary EIAR (Sept 2023) Irelands Climate Action Plan (CAP) was updated. CAP 2024 was approved by Government on 21st of May 2024 and sets out how Ireland can move towards the reduction of greenhouse gases (CHGs) to 2030 and 2050.

Regarding the Aviation Sectors, Section 15.2.5.4 of CAP 2024 states that the European Green Deal aims to achieve a net-zero reflecting long-term goals agreed by International Civil Aviation Organisation (ICAO) for net zero carbon emissions for international aviation by 2050. Having regard to the international nature of the aviation emissions, the efforts to reduce aviation emissions would be undertaken within an international framework. The Department of Transport are establishing a Task force and are responsible for actions to ensure Ireland can meet any regulatory obligations to decarbonise aviation. Reference to non-CO_2 climate impacts of aviation and government engaging on an EU level is also included in the CAP 2024.

The CAP 2024 reinforces the information in the EIAR where on an international level the ICAO is undertaking a collaborative industry based and multilateral approach to the proposed reduction in aviation emissions and therefore the government has set aside any targets for the aviation sector with regard CHG reductions.

National Mitigation Plan (July 2017) sets out the governments shared approach to reducing GHG emissions and move towards a low carbon and climate resilient future by 2050. Decarbonising the transport sector remains an aim through the implementation of fiscal incentives and integration of land use and transport.

- Measure T12- Aviation Efficiency notes the implementation of a UK-Ireland Functional Airspace Block (FAB) in 2008 to help reduce fragmentation and has helped deliver 232,000 tonnes of CO_2 from 73,000 tonnes of fuel. The plan notes no further action required.

National Adaptation Action Plan (January 2018) sets a pathway to build a more resilient economy and society which can deal within the challenges of Climate Change. The challenges for dealing with the effects of climate change are detailed in this plan and the interaction with other plans to tackle the impacts of climate change such as transport adaptation plans.

Sectoral Adaptation Plans

- Adaptation Planning – Developing Resilience to Climate Change in the Irish Transport Sector (DTTAS, 2017)
    - Section 8.2.3 Airports.
    - Airports seek to ensure new development deliver increased resource efficiency.
    - Dublin airport used standard drainage networks which include climate change factor in calculations.
    - Operating reviews and contingency procedures at airports ensure consistency with best aviation practice and report information on climate change from the EPA.
- A National Aviation Policy for Ireland (August 2015 DTTS)
    - Section 2.3 Sustainability, Climate Change, and the Environment.
    - New aircraft are 70% more fuel efficient that 40 years ago.
    - The current contribution of aviation to overall CHG emissions is relatively low at less than 3%.
    - Since 2012 EU carriers must record emissions.
    - Actions include compliance with international standards for aviation emissions, the any adaptation plans for Ireland and aviation options in line with EU Adaption Strategy.

Conclusion for legislation and policy

Targets for the reduction of CO^2 emissions in the aviation sector are being set by the ICAO and filtered down to the EU and then for airlines and EU members states to comply with. It is important to note that many of the third-party submissions have raised concern that any increase in CHG emissions will not comply with the national targets set in CAP 2024. As stated above, the reductions in CHG emissions associated with the aviation industry is being dealt with at an international and EU level with an important initiative ReFuelEU set to significantly address sustainable aviation fuel. I note the national, sectoral, and local climate and transport plans for Ireland do not include specific targets for the airport operators to comply with and it is my opinion that this Relevant Action is not required to comply with any national CHG

emission targets as this is a European wide objective rather one specifically elating to Dublin Airport.

The international guidance and targets indicate that the aviation industry is moving towards a Net Zero Target by 2050. There are many incentives for airlines to reduce emissions and going forward replacement aircraft will be designed to be aerodynamic, more fuel efficient as well as low-carbon aviation fuels. Compliance with these initiatives have not been included in the applicant's quantification of carbon emissions.

13.8.4. Impacts

In the short term there will an increase in CO_2 emissions initially (2025) which will then decrease in 2035 when compared to the permitted (NR operations with operating restrictions) and proposed (permission of the Relevant Action).

Section 11.7 of the EIAR concludes there will have a minor adverse impact.

13.8.5. Mitigation

The airport operates a Carbon Reduction Strategy[53] which addresses carbon emissions on an airport-wide basis.

13.8.6. Assessment of Issues and Significance of effects

Movement of ATMs

The number of aircraft movements first increases in 2025 and then remains unchanged in the proposed scenario, when compared to the permitted scenario. The CHG emissions will be initially greater in the proposed scenario when compared to the permitted scenario and then decrease in 2035. This decrease relies on a change in forecasted aircraft scheduling for 2025 and 2035. This forecast scheduling indicates there will be an increase in short-haul night flights modelled in 2035 which will decrease long-haul day flights, leading to lower CCD emissions in the proposed scenario for 2035 when compared to the permitted scenario.

I note the emissions analysis in Chpt 11 is based on the information provided in the Mott MacDonald assessment - Dublin Airport Operating Restrictions and Quantification of Impacts on Future Growth. A revised version was submitted to the

[53] dublin-airport-carbon-reduction-strategy.pdf (dublinairport.com)

planning authority (June 2021) and again as part of the supplementary information (September 2023). As stated above, the EIAR concludes that the CHG emissions will in the first instance increase in 2025- when comparing the permitted and proposed scenario- and then decrease in 2035.

I have assessed the "Night Movement Demand" information in the three Mott Mac Donald reports. The first (September 2020) includes the forecast for 2035 with 82 short haul flights and 16 long haul flights proposed, the same as assessment year 2025. Reference to the night demand forecast for 2035 has been removed from the second edition (June 2021) and the third (September 2023) reports. No evidence has been provided in the first Mott MacDonald report- which references 2035- to suggest that the forecast for night movement demand will include any change to the short and long-haul scheduling to ensure the reduction in CHG emissions at night. The applicant's proposal for scheduling may have changed in the revised documents although they have not provided any details for 2035 in the "Forecast Night movement Demand". Even when factoring in a level of uncertainty into the scheduling for 2035, having regard to the absence of any scheduling information, I cannot conclude that there will be an overall positive impact on carbon emissions in the long term when comparing the proposed and permitted scenario.

The Board will note the information in relation to the CHG calculation relies on alterations between day and night scheduling. Updated forecasting proposals have been included in the Chapters 13 and 14 of the supplementary EIAR and the associated Appendix. The Board will note my assessment of aircraft noise and ground noise, which includes a breakdown of the aircraft movements for the proposed and permitted scenarios as summarised below:

- The total number of flights during the day is proposed to decrease under the proposed scenario in both 2025 and 2035.
- The total number of flights during the night is proposed to increase by approximately double under the proposed scenario and remain the same between 2025 and 2035.
- The total number of flights increases between the permitted and proposed scenario and then remains unchanged between 2025 and 2035.

These results indicate that there will be a doubling of night flights under the proposed scenario rather than the permitted scenario, although the applicants forecasting has regard for the total increase of annual aircraft movements (i.e., 13,000). Recommendation throughout my planning assessment supports the introduction of an aircraft moment restriction, in addition to the NQS. The move towards less noisy modern aircraft, in compliance with an aircraft movement restriction, can support a reduction in CHG emissions and while there will be an increase in emissions, there would be no further increase and a potential for decrease in the long term. In addition, the EIAR assumes the worst-case scenario in the number of aircraft movement- i.e., on a busy summer day, therefore the overall proposed aircraft movement, for 2025, provides a worst-case scenario for CHG emissions from the proposed development.

The Board will note the applicant has not factored in any compliance with the EU targets for addressing carbon emissions in the aviation sector, although referenced these within the accompanying documents. Having regard to the proposed modernisation of fleet mix, in conjunction with the recommendation for a restriction on aircraft movements, these would impact the significance of impact of the any change in CHG emissions.

The applicants' predictions for CHG emissions, against the national emissions inventory scenario, in 2025 is 0.09%. This has regard to the initial increase, the worst-case scenario for fleet mix and movement and no mitigation for a change in fuel. Having regard to the IEMA guidelines the assessment has regard to the level of mitigation and the alignment to a trajectory towards net zero by 2050 in assessing the significance of impact I am satisfied that significance of impact will initially be a minor adverse effect and will remain the same, rather than have a beneficial impact.

Surface Passenger Numbers

An increase in the number of surface passenger numbers has been factored into the climate assessment. The EIAR states that an initial increase in surface passenger journeys, between the permitted and proposed scenarios, in 2025 will generated 4.54% more emissions (tCO2e). The projections state that the surface access passenger journeys will remain higher in the proposed than permitted scenarios in 2035 (0.46%) although the increase is reduced significantly.

The conclusion in the EIAR does not specifically address the variation in figures in the surface passenger journeys although it is assumed that the rationale for the reduced impact would again relate to the change in short haul night flights and long-haul day flights under this scenario.

I note Chapter 11 of the revised EIAR (2021) includes a similar conclusion to the carbon impact of surface passenger numbers although the conclusion makes reference to the modelled runway usage (i.e., from the original EIAR 2020 with parallel runways used for departures between 6:00 to 0:00- semi-mixed mode- in 2025 and 2035. It would have been useful to understand any changes to the mode of operation which may affect surface passenger numbers although the Board will note the conclusions of Chpt 9- Traffic and Transport- and only a slight effect of the increase of traffic under the proposed scenario.

Having regard to the information in the supplementary EAR and the information in Chpt 9 and 11 of the revised EIAR (2021) I am satisfied that although there will be an increase in CHG emissions from the movement of surface passengers under the proposed scenario- this will be a minor long-term impact in 2035. In coming to this conclusion, the Board will note that the EIAR does not include any improvement works to the public transport system, serving the airport, which I consider reasonable and represents the worst-case scenario.

Assessment of the Significance of Impacts

The applicant notes that CHG mitigation measures have been included when assessing the proposal for significant impacts. The revised Chpt 11 uses the updated guidance by Institute of Environmental Management & Assessment (IEMA) (2022)[54]. The EIAR states that when assessing the impact of the significance of the projects CHG emissions it must consider the level of mitigation of CHG emissions and the alignment towards a net zero by 2050. I note this guidance provides methodology for the calculation of CHG emissions. Section 5.7 of the IEMA guidance provides a quantification calculation where the CHG emissions factor is multiplied by the activity data to give the CHG emission or removal. When assessing the emissions its states that all emissions are significant and contribute to climate change although some projects will replace existing development which have higher

[54] Guidance on assessing Greenhouse Gas Emissions and Evaluating their Significance (IMEA) 2022.

CHG profiles. Therefore, the difference between the CHG permitted and those now proposed are relevant in assessing the significance of impact.

The CHG emissions will increase in 2025 and then decrease by 2035 even though the number of ATMs remain the same. When using the IEMA guidance, the difference between the CHG emissions of the permitted and proposed scenarios can be assessed, even where there is an increase in emissions. As previously stated, Section 11.6.5 of the EIAR states that no market -based measures have been incorporated into the CHG calculations and gross emissions are prior to reducing or off-setting the total emissions.

Although I have some concerns with the absence of scheduling for 2035 and the possible rescheduling of short and long-haul flights between day and night, The Board should note my overall assessments of the Relevant Action and those recommendations of the noise expert. In this regard, the inclusion of a restriction of ATMs on night flights to 87 would lower the CHG emissions below those projected in the EIAR (c. 113). The combination of aircraft movements and operating of the noise classification system (i.e., a limit of 4.0 departing) can potentially restrict larger cargo flights which may be noisier and emit more CHG emissions.

In addition to those recommended changes to the operation of the NR mitigation measures, the provisions EIAR regulations (2018)[55] require not only the impact of a project on climate change through greenhouse gas emissions (an outward assessment), but also the vulnerability of the project itself to future changes and its capacity to adapt to the impacts of climate change (an inward assessment). I consider the EIAR has briefly touched on international and EU initiatives for the aviation sector to adapt to the impacts of climate change, although the overall conclusion is not based on these. In my opinion, this inward assessment would not have a greater significant impact on the CHG, having regard to the Relevant Action and the recommendation to control ATMs.

Non CHG Emissions

Third parties have raised concern in relation to the increase in emissions, other than CO_2, which also have the potential to impact the environment and health. I have

[55] European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018)

addressed this issue within my assessment on Air Quality which concludes no significance of impacts from the RA.

Difference between 2021 EIAR

The 2021 EIAR concluded that the CHG emissions would initially increase in 2025 and then decrease in the proposed scenario. When compared to the permitted scenario there was a greater annual emission of CHG gas initially in 2025 and then a decrease in 2035. It is stated that although there will be the same ATMs there will be an increase in short haul flights and a decrease in long haul flights under the proposed scenario for 2035.

The trend for increase of CHG emissions and then a decrease is the same in the supplementary EIAR when compared to the revised EIAR although the quantum of CHG emissions now included in the proposed and permitted scenarios is much greater.

13.8.7. Conclusion

As part of its functions the Board must, in so far as practicable, perform its functions in a manner that is consistent with a) the most recent approved climate action plan, b) most recent approved national long term climate action strategy, c) national adaptation framework, sectoral plans, d) furtherance of the national climate objective and e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State[56].

I have had regard to the latest CAP 2024, the national and sectoral adaption plans and frameworks with regard transportation and aviation and any national climate objectives for the aviation industry and I am satisfied that the Relevant Action will not preclude the achievement of any of these targets and will not have long term significant negative impact on climate change. In coming to this conclusion, the Board will note that I have had regard to international and EU requirements for member states when assessing the impacts of climate change in the aviation sector. I have also had regard to my assessment throughout the EIAR and the Relevant Action and the recommendation for further restrictions to the regulatory condition and Relevant Action for restrictions of ATMs at night.

[56] Section 15 (1) of the Climate Action and Low Carbon Development Act 2015 (as amended)

I have considered all the written submissions made in relation to Climate Change and Carbon, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and the EIAR accompanying the application that no significant adverse effect is likely to arise.

13.9. **Water**

13.9.1. Introduction

Chapter 12 of the revised EIAR deals with water. This chapter has not been updated as part of the supplementary EIAR.

Surface Water

Dublin Airport is within four WFD sub- basins – the Mayne, Sluice, Ward, and Santry. Most of the airport site drains to the Cuckoo Stream in the Mayne sub-basin. A description of the watercourses in the vicinity of the site is set out in the EIAR and includes monitoring results of the Mayne River sub-basin, including the Cuckoo Stream. A site downstream of the Cuckoo River is monitored by the EPA and the applicant undertakes regular monitoring of the area beside the airport outfall. The WFD status for the Mayne and Cuckoo River is designated as being of poor ecological status for the period of 2013-2018 due to the location in an urban area. IFI indicate no potential for salmon due to deterioration of waters, although there are plans to reintroduce protected species into the water course.

The NR also drains into the Forest little stream and Kealy's and Ward Stream, within the Sluice River sub-basin of the Mayne sub-catchment. These are not monitored by the EPA; they are monitored by the applicant. Results from monitoring from 2006 indicate that the water quality is improving although the latest results between 2020-2021 indicate that it would not meet the standard for good ecological status. These waters have not been assigned a status by the EPA. IFI indicate that there is a potential for brown trout and other fish species downstream.

The western end of the NR is within the Ward sub-basin although stormwater does not discharge into this catchment. EPA monitoring results of the Ward River and its tributaries are included in the assessment undertaken and these waterbodies are classified as moderate in 2020.

A small part of the airport site drains to the Santry River sub- basin, were the Santry River flows south of the SR and the designated airport parking area. The EPA monitor water quality of this River downstream of the Airport and this water body has been assigned an ecological status of poor for the period of 2013-2018.

Groundwater

The geology and groundwater have been reviewed in the EIAR. In terms of the groundwater classification, the bedrock beneath the airport and surrounding area is classified as Locally Important Aquifer and which an area designated as a Poor Aquifer towards the south-east of the airport. There is no public water supply or group water schemes Source Protection Areas mapped within a 2km radius of the Dublin Airport.

The majority of the airport is within the Dublin Groundwater Body (IE_EA_G_ which 008) which is classified as Good under the WFD for the period 2013 and 2018. The Swords groundwater body, to the northwest of the airport (IE_EA_G_011) is classified as good and not at risk for the same period. The eastern end of the NR is within the Industrial Facility (IE_EA_G_086) groundwater body is classified as poor and at risk. An Industrial Emissions licence was granted to Dublin Aerospace Licence (P0480-02) which operates out of Hanger 5 at Dubin Airport.

Flood Risk

Dublin Airport is not mapped on the OPW Flood Maps as being prone to flooding. A small area of the Forest Little/ Sluice sub-basin is mapped as having a high probability of flood (I. Annual exceedance probability (AEP) of 10%). This area is grassed and does not contain any airport buildings or infrastructure.

Stormwater Drainage Network

The storm water network for Dublin Airport provides attenuation for all the hard standing areas and operational discharges are controlled under an existing trade effluent licence.

13.9.2. Impacts

No impacts identified.

13.9.3. Mitigation

No mitigation measures are proposed.

13.9.4. Assessment of Significance of Effects.

The primary threat to the surface water quality has been identified as de-icing of aircraft. A pollution control system is already in existing for the runways. The permitted scenario allows for 65 movements between 23:00- 07:00 and the proposed scenario will include c. 82 movements for the equivalent amount of time. The number of aircraft required to be de-iced is not significant.

There will be no change to the stormwater run-off volumes, attenuation discharge rates, attenuation volume requirements, or discharge locations because of the proposed Relevant Action.

13.9.5. Conclusion

I have considered all the written submissions made in relation to Water, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.10. **Aircraft Noise and Vibration**

13.10.1. Introduction

Chapter 13 deals with Aircraft Noise and Vibration. A new Chpt 13 is included in the supplementary EIAR which replaces Chtp 13 of the revised EIAR. The main changes included in this chapter comprises of:

- Use of updated air traffic forecast data which reflects earlier fleet modernisation and recent levels of activity at the airport since the operation of the NR in August 2022,
- Assumption that the segregated mode will be used between 06:00 to 08:00, back to the original proposal in 2020.
- Use of the actual flight paths from the NR using radar data to determine the future modelled tracks,
- Changes to the distribution of the aircraft from the runways;

- Inclusion of consented developments approved since the original application was made.
- The assessment year of 2022 have been removed and only 2025 and 2035 are included for the purpose of assessment.
- Air Traffic Movements projected for 2025 and 2035 have increased from 236 (c. 98 night-time) in the revised EIAR to 240 (c. 114 nighttime) in the supplementary EIAR. An increase of c. 6% in 2025 and 5% in 2035 when comparing the permitted and proposed scenarios.
- The increased ATMs at night, due to the Relevant Action, have a knock-on effect on day flights (i.e., if it arrives at night and leaves the next day) therefore the day modelling (L_{den}) has been updated to reflect the change in scheduling.

Noise monitoring results from attended and unattended surveys at various locations in 2016 and 2018 were used for the baseline. The EIAR uses 2018 as baseline year for comparing noise changes. Graphics and illustrations which refer to 2018 generally reflect the baseline without the permitted scenarios (NR and night flight restrictions).

Permitted and proposed scenarios have been included for the assessment years 2025 and 2035. Permitted scenarios are based on the actual radar flight information relevant for the current operation of the NR, including the operation restrictions for night flights and 65 ATMs per night. Proposed scenarios include the operation of the NR with the alterations to the conditions for the Relevant Action, including additional hours and the NQS rather than the restriction on movements of 65 per night. The Relevant Action permission, and the Regulatory Decision were previously based on predicted scenarios. Information on the past predicted noise modelling was previously based on a combination of Aeronautical Information Publication (AIP) and the actual flight paths from the airports Noise and Flight Track Monitoring System (NFTMS) which was representative of the future routes for the purpose of noise modelling.

Baseline

Noise modelling has been included in Appendix 13B (Air Noise modelling methodology) and 13C (Air Noise modelling results and figures). The EIAR states that noise modelling scenarios on the future operation of the airport are based on the Mott MacDonald report[57] (June 2021). The noise contours for the baseline data and the 2025 and 2035 scenarios have been used to compare alterations to noise contours from the aircraft movements. Scenarios for 2022, previously included in the revised EIAR (June 2021) have been removed from the Supplementary EIAR.

Permitted and Proposed scenarios for the assessment years 2025 and 2035 have been provided for both the day (L_{den}) and night (L_{night}) periods. The applicant has stated that the increase in night flights, and associated scheduling will have a knock-on effect on day flights, hence the inclusion of amended L_{den} results. The impact on residential and non-residential receptors has been included in the assessment.

The impact of any increase in aircraft noise and vibration on the population for is described as Highly Sleep Disturbed (HSD) and Highly Annoyed (HA). Targets to reduce the impact on both HSD and HA are set by ANCA in the Noise Abatement Objective (NAO), as discussed above.

The results presented in the supplementary EIAR for both the permitted and proposed scenario in 2025 and 2035 are different to those presented in the revised EIAR, due to the change in scenarios detailed above.

L_{den} Results

The Relevant Action includes additional aircraft movements during the 23:00 and 00:00 and 06:00 and 07:00. It is stated in the EIAR that these additional aircraft movements and other updated amendment*, inter alia*, the new flight patterns, will lead to alterations in the day contours (L_{den}). Condition No.7 of NR permission (PL06F.217429 (F04A/1755)) requires insulation for dwellings within the 65 dB L_{den} noise contours. It is not proposed that this condition is amended in the Relevant Action.

[57] Dublin Airport Operating Restrictions Quantification of Impacts on Future Growth Addendum to the Analysis (June 2021).

The EIAR includes a description of the 2025 and 2035 permitted scenario and provides an update of the L_{den} contours and those HSD and HA in the proposed scenario in 2025 and 2035. Updated figures and contour maps are included in Appendix 13. For 2025, the Relevant Action, when compared to the permitted scenario, is expected to increase the 65 dB L_{den} contours to the northwest of the NR and the west of the SR and decrease the 65 dB L_{den} contour to the west of the SR. This is similar in the 2035 scenario although less of a difference in two scenarios to the west of both runways.

Table 13.19 of the EIAR includes the noise levels during the day at representative locations (also used in the revised EIAR) for 2018 in relation to the permitted scenarios. Table 13.31 includes the updated noise levels for the proposed scenarios at the same location with the differences in noise levels set out. The noise levels at all locations are different under the proposed 2025 scenario with the greatest impact at locations under the flight paths. Representative locations to the north- e.g., Ridgewood in Swords- have an increase of 2 dB (A) when comparing the permitted and proposed scenarios in 2025, while areas to the south and west of the SR- e.g., Ongar and Kilshane Cross- will have a decrease of c. 2 dB (A) when comparing the permitted a proposed scenario in 2025.

The number of people HA, including consented developments, is lower in the proposed scenario in 2025 (2,095) and more in the proposed scenario in 2035 (6,843) when compared to the permitted scenario.

L_{night} Results

Appendix 13C includes the results from the noise modelling and the dwellings and populations likely to be impacted under the proposed and permitted scenarios. A comparison to 2018 results is also included. Table 13C-16 and 13C-28 have been analysed to provide an overview of the impacts of nighttime noise on the existing and permitted dwellings and Table 13C-52 and 13C-64 for the existing and proposed population.

More existing **dwellings** (Table 13C-16) will be located within the ≥ 55 L_{night} contour area in both the proposed scenario for 2025 (permitted (115) and proposed (466)), and in the proposed scenario for 2035 (permitted (79) and the proposed (373)). In both proposed scenarios (2025 and 2035) there are more dwellings in the ≥ 55

contour than the 2018 scenario. While the number of existing dwellings in the ≥55 contour will increase initially in the proposed scenario the number will decrease in 2035, like the permitted scenario. There are no permitted dwellings (Table 13C-28) in the ≥55 contour for either 2025 or 2035, and 267 and 156 in the proposed scenarios for 2025 and 2035 respectively.

Table 13C-52 and 13C-64 includes figures for the existing and proposed **population.** The results indicate a similar scenario to the existing and permitted dwellings in the ≥55 contour. The existing population in the ≥55 contour will first increase in 2025 in the permitted (315) and proposed (1,463) scenario and then decrease in 2035 (permitted (212) and proposed (1,197). There is a decrease in both scenarios from 2025 and 2035 although substantially more population within this contour in the proposed scenario. Those within ≥55 contour would decrease from 2018 in the permitted scenario but not in the proposed scenario.

Fig 13-10 of the supplementary EIAR illustrates the 55 dB **L_{night} contours** for the 2025 permitted and proposed scenarios. Fig 13-12 illustrates the same scenario for 2035. For both scenarios there is a larger area included in the contour on the eastern side (arrivals) of the SR and around the NR, to the west (departures).

The results of the forecasting provide information for the **HA and HSD** population. Comparing the 2025 proposed scenario with the permitted scenario the number of people exposed to aircraft noise will increase in most contours. Table 13.3 indicates that the number of people HSD by aircraft noise increased by 7% (22,281 to 23,884). This figure excludes consented developments. For the 55 L_{night} or above contour the number of people exposed increase from 315 to 1,463. Comparing the 2035 proposed scenario with the 2035 permitted scenario, the number of people exposed to aircraft noise will increase for all contour levels. The number of people assessed as HSD by aircraft noise increases by 70% from 9,430 to 16,026. For the 55 L_{night} or above the number of people increases from 212 to 1,197 in the proposed scenario.

Vibration

The impact of vibration is included. The number of dwellings exceeding the threshold for potential vibration effects due to airborne aircraft is based on noise results of at least 97 dB L_{Cmax} at least once per 24-hour day. In 2018 this was 4 aircraft. For both

the permitted and proposed scenarios in 2025 and 2035 no dwellings will be affected by levels which exceed this threshold.

Fleet Mix and forecast of movements.

The **forecast scenarios** are based on movements for fleet in the permitted and proposed scenarios for 2025 and presented in 2035. These are detailed in Appendix 13B and 14B of the supplementary EIAR. I have summarised information from Table 14B:2 as it provides an overview of the modelled aircraft movements in both scenarios for both assessment years.

Table 6: Annual Aircraft Movements for day 07hr-23hr.

	2025	2035
Permitted	207,831	209,067
Proposed	203,872	203,872
The total number of flights during the day is proposed to decrease under the proposed scenario in both 2025 and 2035.		

Table 7: Annual Aircraft Movements for night 23hr-07hr.

	2025	2035
Permitted	18,923	18,920
Proposed	35,922	35,922
The total number of flights during the night is proposed to increase by approximately double under the proposed scenario and remain the same between 2025 and 2035.		

Table 8: Total Annual Aircraft movements for permitted and proposed scenarios.

	2025	2035
Permitted	226,754	227,987
Proposed	239,794	239,794

The total number of flights increases between the permitted and proposed scenario in both assessment years 2025 and 2035. Aircraft movements will remain the same in the proposed scenario both 2025 and 2025.

Earlier fleet renewal will have an impact on the noise contours. Although the ATMs will remain the same between 2025 and 2035, under the proposed scenario, the earlier fleet modernisation will cause the contours to be smaller.

Non- residential receptors

The threshold for medium effect for schools, residential healthcare facilities and places of worship is set at 55 dB L_{den} and 45 dB L_{night} for residential health care facilities between 23:00 and 07:00. A change of 3 dB (A) is rated as a medium effect. The number of non-residential properties above this threshold will be less in the proposed scenario for 2025 when compared to the permitted scenario although in 2035 there will be no more schools and one residential healthcare facilities within the medium absolute effect. The conclusion of the EIAR notes that for three residential healthcare facilities the increase in night noise (L_{night} metric) will have a significant adverse effect.

13.10.2. Submissions

A significant amount of the third-party submissions has raised concern in relation to the impact of the aircraft noise and vibration at night, the new flight paths and the number of aircraft movements during the nighttime hours.

I have summarised the submission received on both the appeal and the supplementary EIAR below under common themes:

Impact of Noise on the new flight paths

- Independent Acoustic Assessments have been submitted from individual residents of dwellings to the north, northeast and northwest of the NR as evidence that the aircraft do not follow the permitted flight paths and reach up to recordings of 100 L_{max} in some instances.
- The independent noise consultant points out that the use of SEL metric as the most valid and realistic measurement to assess the impact on noise

receptors. There is no mention of ProPG Guidelines or use of L_{Amax} in application documentation submitted.

- No additional noise measurements have been undertaken in 2022 or 2023. The EIAR uses data from a noise measurement campaign in 2016, these figures used are considered out of date. No effort has been made to translate the noise data collected from the noise monitoring stations and compare this data with the noise contours.
- The Board needs to undertake an independent noise assessment.
- The revised noise statistics for 2025 proposed scenario versus the original 2025 Relevant Action reveal that the Daa predictions are worse now with the revised EIAR that the original EIAR in December 2020. The differences and reasons for these changes in noise levels are not explained by the DAA or ANCA.
- More people will be exposed to daytime noise levels > 45dB L_{den} and night-time noise >40dB L_{night} in 2025 because of the 'Relevant Action'.
- The residual effects cannot be considered unless there is an understanding of the c. 9,000 people who will experience adverse effects (Table 13.52).
- There is a discrepancy in the use of the baseline year in 2018 and 2019.

Additional Awakening

- The additional awakening assessment should have been included in the EIAR and there is no indication of the impact of these increased noise levels.

Number of Aircraft Traffic Movements (ATMs)

- The number of ATMs has increased in 2025 in the supplementary EIAR (236, 000 in 2021 EIAR and 240,000 in 2023 EIAR).
- Night noise imposed on new populations from the North Runway for only a gain of 2 extra flights between 06:00-08:00 and 4 between 22:00-24:00, as outlined in the DAA's forecasts.

Mitigation (Insulation Scheme)

- The EIAR does not fully assess the scale of the mitigation measures required to reduce the impact on the significant and profound effects.
- It is not clear from the information which properties receive noise insulation and are part of the permitted scheme (RSIS).
- It is not clear from the EIAR if the threshold for insulation (SSIS) can be achieved (L_{Aeq}, 30minutes).
- The insulation scheme should be expanded to cover L_{den} metric to ensure all significant effects area covered.
- There need to be more information in the EIAR to indicate which properties have received the noise insulation scheme. Maps need to be updated to show properties affected.

Fleet Mix

- As fleet replacement didn't work in the past, why do ANCA solely rely on fleet replacement to Chapter 14 levels to reduce noise if movement levels are to increase?
- No interrogation of the Daa flight schedules was carried out by ANCA. Noisier aircraft have been allowed utilise the runways at night.

Eligibility Conour Maps

- The alteration to the eligibility contours maps (RD) has not been adequality addressed in the EIAR.
- The public impacted by the alterations to the eligibility contour maps where not aware they would be impacted and as such did not make any submissions to the RA.

13.10.3. Impacts

Significant adverse impact on the population and human health from the increased movement of aircraft due to sleep disturbance of residents.

Significant adverse impact on residential properties at night and during the day of non-residential receptors (schools, residential healthcare facilities and places of worship).

13.10.4. Mitigation

The Relevant Action includes an amendment to the mitigation measures. The existing and proposed schemes are explained in detail in Section 9.7. A night noise insulation scheme is proposed to address the noise effects assessed in the EIAR and includes a grant of €20,000 for fund noise insulation schemes which meet either of the following criteria:

- Exposed to night-time noise levels of at least 55 dB L_{night} once the NR is operational,
- Exposed to a "very significant" rating arising from forecast noise levels of at least 50 dB L_{night} in the first full year when the Relevant Action comes into operation, with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year. For this assessment a comparison of the 2025 permitted and proposed scenarios has been used to estimate which dwellings would be eligible.

These schemes are in addition to those eligible under condition No 7 of the NR permission.

13.10.5. Residual Effects

Significant residual adverse effect on 8,970 persons in 2025 and 8,301 persons using the 40 dB L_{night} scenario and 80 people exposed to high or very high residual L_{night} (i.e., greater than 55 L_{night}) in 2025 and 41 in 2035.

The assessment of residual effects has regard for the proposed development and those eligible for insulation under another insulation scheme. There will be a decrease in residual effects at night initially in 2025 (25 people) when compared with the permitted scenario and then an increase in 2035 (28 people).

13.10.6. Assessment of issues and significance of effects.

<u>Procedural Issues</u>

Third-party submissions received on the Board's second request for additional information (Amended Eligibility Contour Maps) have raised concern that they were not aware of the alteration in the flight paths and associated noise contours and could not engage with the planning process. I note the applicant's response to the

Board's first additional information request included new contours associated with the change in flight paths. The EIAR chapters and associated appendices have been updated to reflect these changes. It is very clear from the applicant's documentation that new noise contours extended north and earlier off the NR, than previously predicted in the revised EIAR (2021). The supplementary EIAR includes figures and concludes on the impacts having regard to these updated noise contour areas. In assessing the impacts of these new contour areas, I considered the updated Eligibility contour maps would allow a greater in-depth understanding of the insulation scheme. The updated Eligibility Contour maps are based on the noise contour maps submitted with the supplementary EIAR, as placed on public display for 5 weeks, and do not include any new contour areas.

Whilst I appreciate the updated Eligibility Contour areas allow for greater clarity on the noise contour areas, they did not include any new areas. The public consultation on the amended EIAR was open to the general public, with public notices as per the legislation. A significant number of additional observations were received on foot of this public consultation period. In the interest of natural justice, it was considered that the updated Eligibility Contour maps would be recirculated to those who had already made submissions.

In assessing the impact of the RA, and the change in noise contour levels associated with the new flight patterns, I have not only had regard to the submissions received but also the information in the EIAR, the amended maps and the impacts on all areas, dwelling and population affected by the RD and RA. I am satisfied that submissions do not raise any further issues which I have not assessed in the consideration of the RD and RA.

Should the Board be minded granting permission, with any operating restrictions or additional mitigation measures, not previously subject to public consultation during the RD process, i.e., the proposal now before it, the additional 14-week public consultation period allows for more engagement with the public.

Baseline Year

The EIAR uses 2018 as a baseline year to compare the permitted and proposed scenario. The use of a baseline year allows a comparison for the scenarios and the benefits and/or negative impacts on the population. The NAO uses the year 2019 as

a baseline year for assessing the impacts on those HSD and HA against the objectives.

The use of both 2019 and 2018 is raised in the grounds of appeal. In the first instance appellants note that 2019 was the worst year for noise levels and a year where Daa breached the 32mppa cap, where 2018 was the worst year for noise where the passenger cap was not breached. It is not considered that the use of 2018 and 2019 meets the requirements of Directive 2002/49/EC as required by the Aircraft Noise (Dublin Airport) Regulation Act 2019. The appellants recommend a more appropriate year for a baseline assessment is 2016.

I note that neither the Directive 2002/49/EC or the Aircraft Noise (Dublin Airport) Regulation Act 2019 specify the use of any year for either the competent authority to use in its balanced approach or for the applicant to include in any environmental assessment of a noise problem.

The original EIAR (2020) (Table 13.3.4) provides a justification for the use of 2018. This is the last full year when the airport was close to but less than 32mppa. Given that the aircraft activity and the noise impacts were less in 2018, the use of this as a baseline year allows for a conservative comparison with the future scenarios. The Vanguardia Report also addressed the use of 2019 as a reference. It is stated that this year was the last full year before the Covid pandemic and it is not uncommon for the baseline year to be that when the levels of ATMs were at maximum permitted or full capacity of the airport. It is also stated that there would need to be 25% more ATMs/ mmpa to affect the energy averaged noise. For example, all things being equal the difference in average noise between 32.9mmpa and 32 mmpa is c. 0.1dB(A). In relation to the use of 2016 rather the 2019 or indeed 2018, the difference in noise would be negligible.

In addition to the above, I consider 2019 and 2018 are more appropriate baseline years than 2016 as the fleet mix in these years is likely to contain newer aircraft which is less noisy than 2016. The noise modelling submitted with the supplementary information to the Board contains sensitivity testing, this allows for variations of the noise contours to ensure the noise modelling submitted is representative of changes in the contours.

Therefore, having regard to the Vanguardia Report and the information submitted in the EIAR, the supplementary information, inter alia, sensitivity testing, I have no concerns in relation to the use of 2018 and 2019 as baseline years.

Fleet Mix and forecast of aircraft movements.

The noise modelling is based on fleet mix forecast for the years 2025 and 2035. The use of different fleet in the supplementary EIAR has been raised in third party submission and by ANCA.

The supplementary information states that the forecasting and modelling has been updated to represent, *inter alia*, earlier fleet modernisation. A more modern fleet is quieter due to the change in aerodynamics and fuel efficiency making them less noisy than older aircraft.

The EIAR notes that whilst aircraft activity may remain the same between 2025 and 2035 the use of less noisy fleet will reduce the noise contours on an average basis (L_{den}). In summary the EIAR states that the ATMs will be higher in the proposed scenario than the permitted scenario in both 2025 and 2035 with 13,040 more annual movements in 2025 and 11,807 in 2035. Initially there will be more ATMs in 2025 during the night under the proposed scenario (c. 17,000) than the permitted scenario although this will not change under the 2035 scenario. There will also be more ATMs during the day in 2025 (3,959) in the proposed scenario than the permitted scenario and in 2035 (5,195).

The greatest increase in ATMs annually will be during the night period in 2035 and while the EIAR states there will be no further increase in ATMs at night the movements will increase during the day. These results have implications for other assessments, such as Climate Change and impact on population and human health, although with regard to the impact of the forecast of movements at night, the initial impact will be the greatest due to the annual increase of c. 17,000 aircraft during the night when compared to the permitted scenario. This increase in ATMs at night in Appendix 14 is substantially more than other comparisons throughout the EIAR e.g., Table 11.1 of Chapter 11 indicates a difference of 13,000 annual aircraft movement for 2025The difference in aircraft movement forecasting throughout the applicant's documentation provides further support for the need to combine any NQS with an aircraft movement limit.

Appendix 13B describes the fleet used in the forecasting and noise modelling. The EIAR refers to the Mott MacDonald Report which includes details on the updated fleet renewal. The forecasting assumes a move to the most modern types (G2) of aircraft in the 2030s. ANCAs submission has raised concern that the initial application for 2025 did not include any 737max aircraft types and the amended figures show a larger deployment in 2025 and in future years. In addition, the submission states there is no noise implications for the increased proportions of (Generation Zero GO) aircraft which are the oldest and noisest. The Vanguardia Report notes the fleet mix and comments by ANCA. The use of the 737max is greater although there are greater numbers of A320 and Boeing 737-800 aircraft which dominate. Therefore, the noise from the 737max will not contribute significantly to the noise modelling. The L_{Amax} of these noisier aircraft has been addressed throughout my assessment.

I note the updated Mott MacDonald report includes 24 cargo flights in the 2025 scenario and 9 cargo flights in the previous assessment (July 2021). Whilst not explicitly stated, these cargo aircraft are usually old commercial aircraft repurposed. The Vanguardia Report notes the impact of fleet renewal on the noise modelling is subject to moderate to significant uncertainty particularly when looking to the near to medium future (5-10 years). The sensitivity testing was requested by the Board allows this uncertainty to checked. The sensitivity tests which are equivalent to around +/- 25% variability in the numbers of ATMs. It is concluded that the modelling adequately reflects the proposed scenario within the applicants EIAR and supporting documentation.

This aside, the any increase an ATMs should be linked to the additional awakening assessment. Whilst the trading of noisier cargo aircraft and lower noise generating GO aircraft will lead to a reduction in average (L_{night}) noise, I consider the increase of cargo flights will cause additional awakenings. The restriction on ATMs in the shoulder hours and mitigation for dwelling subject to increased noise at night will ensure mitigation during the night.

Additional Awakening

In response to the Boards FI response (Item 1) the applicant submitted an additional awakening assessment. The applicant did not include the results of this assessment

in the EIAR. Submissions raise concern that the absence of this additional assessment, the EIAR is not complete and does not adequately consider the impact of sleep disturbance from additional awakenings and therefore, there can be no conclusion of effect.

The EIAR uses noise modelling from a large range of noise metrics. Appendix 13C includes figures for N60 which provide an overview of the number of aircraft exceeding 60 dB L_{Amax} during the average summer night. The results of this assessment[58] conclude that study area, existing dwellings, permitted dwellings on land zoned for residential development, existing population and permitted population counts of those within the ≥ 50 dB contour for N60 metric is significantly greater in both the 2025 and 2035 scenarios in the proposed scenario when compared to the permitted scenario.

The additional awakening assessment provides a greater understanding of the noise level of each individual ATM whereas the N60 is based on averages over the night period. The advantages of the additional awakening assessment relate to the understanding of the moment of noisy aircraft during the additional 2 hr night period and therefore the impact of noise from the aircraft movements on sleep disturbance.

In response to the absence of the additional awakening results in the EIAR, the Vangaurdia Report notes that although the results are a beneficial aid at communicating and understanding the sensitivities of the population to the maximum noise level of ATM, it is not critical in the assessment of the likely significant effects of the aircraft noise and vibration.

The applicant's Additional Awakening assessment concludes there will be a 3% change of an additional awakening. They consider this impact low having regard to the size of the study area. This assessment is described in detail in my planning assessment above which concludes that having regard to the maximum noise level ($L_{AS,max}$) from individual aircraft events, there is an increased probability of additional awakening on the westerly operations in summer (single mode) in both the 2025 and 2035 years for the proposed scenario when compared to the permitted scenario and an increase on the easterly operations only for 2035 scenario.

[58] Supplementary EIAR (September 2023) Table 13C-8, 13C-20, 13C-32, 13C-44, 13C-56, 13C-68, and 13C-80.

The Additional Awakening Assessment has been evaluated in the Vanguardia Report and it concludes that while the same long-term trends as the EIAR using the %HSD and L_{night} metric are followed, substantially more people are predicted to experience at least one additional awakening per night with the RA in place in 2035 and 2035 compared to without it. The number of ATMs to induce one additional awakening on average doesn't follow the same trend as assumed by the %HSD approach. Using the AA method one additional awakening is rated as a significant effect, rather than the %HSD where the relative change in ATMs would be predicted to have a nil to minor effect on sleep.

My assessment on the noise modelling and additional awakening assessment recommends additional operating restrictions in the form aircraft operating restrictions. It is considered that these restrictions, in combination with the recommendations of the insulation scheme and the implementation of the NQS, are sufficient to mitigate any significant or residual effects from the RA.

Therefore, having regard to the totality of the information in the EIAR and the applicants supporting documentation, there is sufficient information to understand the impacts of the aircraft noise at night. Having regard to the information contained in the EIAR, I do not consider the additional awakening report was required to be integrated in the EIAR to provide an assessment of the impact of the Relevant Action on the population.

Noise Modelling

Noise Surveys from monitoring during 2016 was used to establish a baseline. The use of noise survey results in 2016 was deemed as outdated by third parties who consider since the passing of time, more noise surveys should have been undertaken. I have addressed the use of the baseline year- i.e., 2018 vs 2019 previously. These results had regard to the 2016, which I consider reasonable.

Most of the submissions also raise the impact of the alterations to the flight patterns as confirmed by the applicant in the submission to the Boards FI request. There is concern that the supplementary information now illustrates that the predictions of the impact from air noise from the Relevant Action is not worse than the previous results in the revised EIAR and this difference and reason for these changes in noise levels have not been adequately explained.

I have provided and overview and assessment of the information presented in the EIAR with regard the noise modelling for L_{den} and L_{night}. In general, the figures presented follow trends throughout all the documentation where there will be more people HSD and HA under the Relevant Action, rather than current permitted scenario. Due to the change in flight paths some geographical areas will experience an increase in some HA and HSD, and there will be a decrease in other areas. This is mainly due to the redistribution of flight patterns from the NR. The live data used in the EIAR also provides an analysis of the current events rather than assumptions which would previously been used in the revised EIAR (September 2021). 2025 and 2035 are still used as assessment years and other factors such as the proposed passenger cap remain the same. In addition, the sensitivity testing allows for some uncertainty in the results presented which is typically equivalent to around +/- 25% variability in the numbers of ATMs. The analysis of the ATMs indicates that although the annual movement will initially be greater in 2025 it will not increase any further in 2035.

L_{den}: Noise modelling concludes that initially less people will be HA during the day in 2025 but the number increases substantially in 2035. The noise level changes at the representative locations have indicate that receptors will experience c. 1- 2 dB changes, with areas to the northwest of the NR and west of the SR experiencing an increase. This change is assessed as having a low impact. Those areas newly included in the 63 dB L_{den} contours would be eligible for insulation under Condition No 7 of the NR (PL06F.217429, Reg Ref F04A/1755). This condition requires the scheme to be reviewed every two years. No examination of this insulation scheme has been included in the RA as it only relates to insulation at night. Many these dwellings may also fall within another insulation schemes and most likely within the new 55 dB L_{night} contours. Having regard to the noise modelling results for 2025 and 2035 and the available noise insulations schemes, I do not consider the Relevant Action will have a significant negative impact on the any residential or non-residential sensitive receptors following the delivery of insulation schemes for these properties. In addition, it should be noted that any concerns with the insulation proposed under the NR permission will be a matter for the PA and ANCA under compliance for that permission.

L_{night}: The ≥ 55 dB contour is used as a reference in my assessment as it provides an understanding of the population and dwellings located in areas which require mitigation measure to ensure no significant impact from the Relevant Action. The HSD assessment indicates that there is a trend for more dwellings to be in these contours in the 2025 assessment year and then less in 2035. This trend is the same for both the permitted and proposed scenarios although there will be a greater number of dwellings and population located within the ≥ 55 dB contour in the proposed scenario rather than the permitted scenario. This is due to the initial increase in night flights followed by no increase in air movements at night and the subsequent air movements follow a different flight pattern. The increase in those HSD and HA in the L_{night} would be expected due to the additional two hours proposed for nighttime flights in the Relevant Action. Mitigation in the form of extra insulation reduces the significance of those impacted by these aircraft movements. Insulation for those impacted by noisier aircraft movement is also recommended and can mitigate against movements of aircraft outside the average noise contours at night.

Residual Effects can be assessed adequately from the information in the EIAR on the difference in the proposed and permitted scenarios when using the assessment years 2025 and 2035. The EIAR states that 80 people will be exposed to high or very high residual L_{night} (i.e., greater than 55 L_{night}) levels in 2025 and 41 in 2035. There will be less people exposed to high residual noise levels in the proposed scenario in 2025 although more people exposed to high residual noise levels in 2035, when compared to the permitted scenario. This trend relating to the residual effects follows the same broad trends as the findings in relation to the % people HSD, when assessing the difference between the permitted and proposed scenarios. This is because the change in flight patterns (i.e. departures of the NR over less urban densely populated areas) and use of less noisy aircraft leads to a decrease in noise levels to some properties for both L_{den} and L_{night}, particularly around the SR where flights will be arriving from a westerly direction under the preferential use of the runway.

Changes of mode of operation

Section 13.6.30 of the supplementary EIAR includes the range of operational procedures use to minimise noise. The operation of the NR using Option 7B as

permitted by the NR original permission will remain and is intended to lessen the impact on local communities, due to the preferential use of the runways.

The supplementary EIAR includes a change to the use of the use of the runway and this scenario assumes that segregated mode is in use on the NR for departures from 06:00 to 08:00. It is stated that this alteration reverts a change made in 2021 EIAR and back to the original proposal for the Relevant Action, i.e. the mixed mode for the runways. The use of the runways for segregated or single mode is not prescribed in the conditions for the NR although has been assessed in the cost benefit analysis for the Regulatory Decision, as examined in detail in my main assessment above.

This change from single to segregated mode is raised by a third party who considers that the alteration will lead to a more restricted use of the runway during the hours of 06:00 and 08:00. The applicant does not provide any details on the alteration from single to segregated mode. Notwithstanding this I have no concerns that this alteration from mixed to segregated mode on the NR between 06:00 to 08:00 would result in any significant impact on the noise modelling provided in the EIAR. Due to the inclusion of the NR for departures between 06:00 and 08:00 as a mitigation measures, I consider any grant of permission should explicitly refer to this segregate mode.

Permitted Vs Proposed Scenarios.

Third parties consider that no assessment of the difference in the revised (2021) and supplementary (2023) EIAR was undertaken by the applicant. The Board will note I have assessed these differences between both versions where relevant.

As stated above, the number of people HA, including consented developments, is lower in the proposed scenario in 2025 (c. 3,000) and more in the proposed scenario in 2035 (6,843) when compared to the permitted scenario. The number of people HSD is higher in both 2025 and 2035 in the proposed scenario when compared to the permitted scenario. These results follow the same trends as presented in the Revised EIAR (2021), although the quantum is different in the supplementary EIAR (2023).

The increase in the number of ATMs is not significantly different in the supplementary EIAR when compared to the same figures in revised EIAR for the

year 2025 although when comparing the total annual aircraft movement for 2035, there will be c. 10,000 less in the proposed scenario in the supplementary EIAR.

For example, the table below is extracted from Table 14B: 5, 6 & 7 revised EIAR 2021. A similar table in Appendix 14B:2 of the supplementary EIAR (2023) includes 239,794 aircraft movements for 2035 under the proposed scenario.

Table 9: Total Annual Aircraft movements for permitted and proposed scenarios (Revised EIAR 2021).

	2025	**2035**
Permitted	226,734	227,987
Proposed	239,793	249,951

All other results from Appendix 14 of the revised 2021 EIAR indicate similar ATMs have been used for the permitted scenarios in both 2025 and 2035. There is no exact explanation for the reduction in aircraft movements in the supplementary information although I note the Vangaurdia Report confirms the applicant's noise modelling is satisfactory. Levels of uncertainty have been factored into the sensitivity testing for 25% to account for potential variations in the results presented in the noise modelling as standard practice.

Independent Noise Expert submissions on noise modelling, flight paths and the EIAR

A significant number of independent acoustic assessments have been submitted by observers. Four of these are from properties to the north and northwest of the NR which are now overflown by the amended flight paths. Those locations under the new flight paths would not have previously been included in the 55 dB L_{night} contours or even the 63 dB L_{den} contours and would not have a had the benefit an insulation scheme. They would be eligible under an amended Regulatory Decision and/or amended condition requiring an amendment to the eligibility for those in an insulation scheme. The Relevant Action relates in the most part to nighttime operation and the inclusion of the NQS. The Board will note my recommendation and those within the Vanguardia Report, to include additional operating restrictions for aircraft movements and use of noisier aircraft at night and additional insulation schemes to ensure those most affected (i.e., within the 50 dB L_{night} plus 9dB change and any recorded 80dB

L_{Amax}). These will ensure the noise impacts on the community in the flight paths are further mitigated during the nighttime hours.

The independent acoustic assessment results also include results of recordings of 100 L_{Amax} in some instances. The independent noise consultant points out that the use of SEL metric is the most valid and realistic measurement and considers the ProPG Guidelines and LAmax should have been referenced throughout the application. There is a variety of noise metrics which can be used to assess air noise and the choice of noise metrics is addressed throughout my assessment. I have concluded that the information presented in the additional awakening assessment and N60 modelling in the EIAR provide sufficient information to allow a detailed assessment on the airborne noise.

The Vanguardia Report has regard to these independent reports and notes that different noise measures employed will result in differences in measurements recorded, uncertainty etc. Those maximum measurements during the day will not affect the levels at night as the QC scheme prevents noisiest aircraft flying at night. In addition, the Vangaurdia Report notes that it is inevitable that the modelling will initially not match the noise levels of all receptors all the time and those submitted do not appear to reflect the 92-day summer average.

Section 9.2.6 of the Vanguardia Addendum Report includes reference to the independent acoustic assessments which accompanied the third-party submissions. The Vanguardia Addendum Report provides an overview on the range of noise recordings in the submissions provided by the third parties, with references to the impact these different noise results and use of noise metrics used in the third-party submission may have on the existing communities. The Vanguardia Report concludes that while there may be some differences to noise level recordings, the noise modelling, in these independent noise assessments, has been based on fixed inputs and parameters designed to give different baseline scenarios to inform the conditions at these properties. The noise results in these independent noise assessments, would be expected to be different at certain locations given the difference in environmental conditions, including the seasonal adjustment in aircraft movements, although the broad trends and conclusions in the EIAR would remain the same.

A number of independent acoustic expert submissions has been submitted by the main residential association representative in the vicinity of the site (St Margarets The Ward). Some of these independent noise assessments have also been submitted by individual who reside in the vicinity of the airport site. Issues raised in one of these reports (SUONO) relate to the use of noise metric, Significant Observed Adverse Effect level (SOAEL) for the additional awakening assessment and considers this would allow a significance of the impact of aircraft noise in the EIAR. Section 9.1.2- 9. .5 of the Vangaurdia Addendum Report includes a detailed response to this report. With regard to the significance of impact, I note the applicant's range of assessment i.e., 3 dB to 5.9 dB change has been detailed as a moderate effect and any increase in noise levels above these are considered to have a significant effect. The applicants use of noise metrics and the significance of effects is noted in the Vanguardia Report and the Boards Noise expert confirms that the applicant's reference to the significance of effects has been typically used in many EIARs transport infrastructure projects for decades.

Having regard to the information submitted with the EIAR, the supplementary information and the Vanguardia Report, I am satisfied that the applicants noise modelling is sufficient to understand the impacts of the RA.

Finally, a submission from a resident's association states that they have commissioned an independent acoustic assessment, which is nearing completion, and request that the Board accept the final details of this report for consideration in the RA. A significant number of independent assessments have accompanied third party submissions on the original EIAR, revised EIAR and supplementary EIAR and the additional documentation submitted to the Board. Both the Board independent acoustic expert and I have assessed these submissions, and I am satisfied that there is sufficient acoustic information from both the applicant and third parties to undertake an assessment of the significance of the aircraft noise and vibration and an additional report is not required.

Residential Noise Insulation Scheme

The use of the nighttime insulation scheme, and the delivery of the insulation scheme in the NR permission, has been raised continuously in RD and the RA submissions. The use of insulation as mitigation against aircraft noise is

internationally recognised as appropriate and the Vanguardia report notes the Dublin scheme one of the most generous in Europe.

National and local policy supports the use of appropriate measures to mitigate against significant noise generated from activities. NPO65 of the NPF promotes the use of pro-active management of noise to address significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans. Noise Action Plans for both Fingal County and Dublin Airport include reference to operational procedures to ensure a balanced approach and the development plan ensures future applicants in noise sensitive areas are adequately mitigated.

The Relevant Action relates to the change in the number of people who will not be eligible for insulation under the eligibility for L_{night} or above contour, as follows:

- For the 55 L_{night} or above contour the number of people exposed increase in the 2025 scenario from 315 to 1,463 (1,148).
- For the 55 L_{night} or above the number of people exposed increases in the 2035 scenario from 212 to 1,197 (985).

The cost-effective analysis has regard to the delivery of insulation for all eligible properties.

The Third Condition on the Regulatory decision, as transferred to the conditions of the Relevant Action includes mitigation for those within the 55 Db L_{night} contours. These contours need to be reviewed regulatory by Daa and those properties within any amended 55 dB L_{night} contours will become eligible for the night mitigation.

The EIAR also included a second band of mitigation for those people who are not exposed to a level of 55 dB but who will, without mitigation, experience a very significant effect (i.e., change in noise level greater than 9 dB) in the year the NR opens at night. This additional mitigation has not been included in the Regulatory Decision or the Relevant Action and a recommendation to explicitly include this as a mitigation measure has been included in my assessment of impacts.

The Vanguardia Report provides a background and reference to the additional awakening assessment and the impact on sleep that those noisy aircraft can have. Based on the results of the Additional Awakening Report an additional stand-alone

qualifying criterion for noise insulation is recommended for all residential properties subject to aircraft noise between 2300 and 0700 hrs of 80 dB L_{Amax}. This is based on the noise footprint of the airports westerly and easterly single modes of approach and departure of the noisiest aircraft using the airport. As discussed throughout this noise assessment above and this EIAR, the proposed scenarios include cargo aircraft in the nighttime hours, aircraft which has the potential to have the greatest impact on sleep disturbance. I consider it important that those properties within the 80 dB L_{Amax} should be eligible for the nighttime noise insulation scheme, to ensure that those additional awakenings do not have a significant negative impact on the properties affected.

Noise Monitoring Framework

Section 13.8.7 of the EIAR states that a noise monitoring framework has been implemented for monitoring noise performance with respect to the NAO as set by ANCA and in compliance with the Aircraft Noise (Dublin Airport) Regulation Act 2019. Noise performance is reporting on the following:

- Effects of aircraft noise
- Exposure to aircraft noise
- Aircraft Source Noise Measures
- Operational Measures
- Noise Insulating Scheme Reporting
- Community Noise Reporting.

ANCA undertake a yearly report on the compliance with the NAO, as discussed above. ANCA annual report for 2023[59] also notes that during 2023, the number of noise monitors around the airport increased by 19. It is not clear if the monitoring is linked to the RD, and I am concerned it only related to the 55 dB L_{night} contours as expressed throughout my assessment. My assessment on the noise insulation scheme has raised concern that no results from any representative location within the new flight paths have been recorded. The areas include the 50 dB with an increase in 9 dB for change. The Noise Insulations Scheme Reporting should include

[59] anca-annual-report-2023.pdf (fingal.ie)

the areas in the 50 dB with an increase in 9 dB for change. This is in addition to the requirements for the NAO to ensure effective monitoring of noise impacts from flight paths and integration off all dwellings which may be significantly affected and eligible for the insulation scheme.

13.10.7. Conclusion

The results from the EIAR state that the Relevant Action will be a residual impact on 80 people who will be exposed to high or very high residual L_{night} (i.e., greater than 55 L_{night}) levels in 2025 and 41 in 2035. This is based on the certain criteria for air traffic movements, fleet mix and eligibility criteria for nighttime insulation.

The significance of effect of the impacts of the RA on aircraft noise and vibration has been presented in the EIAR as an average over the entire 8 hours nighttime period. Aircraft noise is not experienced as an average and the noise impacts of sleep from ATMs are intermittent and not continuous. The additional awakening results generally follow the same pattern as the HA and HSD, but the scale of the additional awakening results has a much greater significance due to the reality of the effect of one additional awakening. The impact arising from the additional awakening assessment is greater due to the number of aircraft movements which is allowable under the NQS system. Having regard to the information presented in the EIAR, an increase of 13,000 air traffic movements is included into the assessment of significant of effect on the population from the Relevant Action. I consider by the inclusion of a specific restriction on the aircraft movements, in addition to the applicant's proposal to operate a NQS scheme, the impacts from high aircraft noise levels can be mitigated.

Therefore, I conclude that through the inclusion of an appropriate aircraft movement restriction, as included in the EIAR and noise modelling, during the additional nighttime hours and the use of an insulation scheme the existing community can be adequately protected by the increase in aircraft noise and vibration levels due to the Relevant Action.

13.11. Ground Noise and Vibration

13.11.1. Introduction

Chapter 14 deals with ground noise and vibration. A new Chpt 14 is included in the supplementary EIAR which replaces Chpt 14 of the revised EIAR. The main changes included in this chapter are the same as those considered in Chpt 13 and include:

- Use of updated air traffic forecast data which reflects earlier fleet modernisation and recent levels of activity at the airport since the operation of the NR in August 2022,
- Assumption that the segregated mode will be used between 06:00 to 08:00, back to the original proposal in 2020.
- Use of the actual flight paths from the NR using radar data to determine the future modelled tracks,
- Changes to the distribution of the aircraft from the runways;
- Inclusion of consented developments approved since the original application was made.
- The assessment year of 2022 have been removed and only 2025 and 2035 are included for the purpose of assessment.
- Air Traffic Movements projected for 2025 and 2035 have increased from 236 (c. 98 night-time) in the revised EIAR to 240 (c. 114 nighttime) in the supplementary EIAR. An increase of c. 6% in 2025 and 5% in 2035 when comparing the permitted and proposed scenarios.
- The increased ATMs at night, due to the Relevant Action, have a knock-on effect on day flights (i.e., if it arrives at night and leaves the next day) therefore the day modelling (L_{den}) has been updated to reflect the change in scheduling.

A background on the legislation relevant to the assessment and the noise metrics used in the assessment are set out in this chapter. The noise modelling details are contained in Appendix 14B (Ground Noise Methodology) and 14C (Ground Noise

modelling results and figures) and the noise modelling excludes any start of roll or reverse thrust activities as this is considered in with the air noise and vibration.

Noise surveys were undertaken in 2016, to establish the prevailing ambient and background noise conditions. These were taken at 11 locations around the airport using a noise metric of $L_{Aeq,T}$ so as to include the ambient noise levels. Noise levels of both aircraft and traffic are included in the ground noise assessments. The impact of the noise emitted at ground level on the future receiving environment is detailed. The actual noise monitoring results from 2018 have been used to assess the impacts on the current noise environment. These include the actual recorded road traffic noise as recorded by Transport Infrastructure Ireland (TII) in 2018.

The results indicate that the ambient noise level around Dublin Airport lies in the range of 50 to 70 dB $L_{Aeq,16h}$ during the daytime with an underlying background noise level in the range of 45 to 55 dB L_{AF90} during the same period.

Operational procedures currently at the airport are designed to minimise aircraft ground noise and include:

- Engine test runs only permitted at certain times,
- Engine test site located at the northern end of the airfield, away from populated neighbouring areas,
- Fixed Electrical Ground Power (FEGP) is a ground power system that allows aircraft to plug directly into a fixed, electrical power source while they are parked at the airfield and has noise benefits.

Aircraft Ground Noise: The increase in L_{den} from the permitted scenario to the proposed scenario in 2025 is between 1 and 2 dB (A) with the highest noise levels experienced at Ridgewood and St Margret's. The increase in L_{night} will be an increase in between 3 and 5 dB (A), with the highest change at Ridgewood. The results indicate 6 people will experience a significant negative impact from the aircraft ground noise. The increase in ground noise levels in the assessment year 2035 will be the same as in 2025 for both L_{den} and L_{night}, i.e., at representative locations although the number of people significantly adversely effected will be 35 when considering the L_{night} thresholds.

Road Traffic Noise: There will be no difference in the noise levels for the road traffic levels between the permitted and proposed scenarios in both the 2025 and 2035 assessment years as it is not envisaged that the additional movement of traffic will increase the noise levels above existing levels.

13.11.2. Submissions

- FCC in its submission to supplementary information submitted by the applicant have questioned the methodology employed for assessing the ground noise levels and note they do not appear to consider L_{AFmax} noise events.
- The HSE and SDCC submissions refer to the WHO guidelines of 45 dB L_{night} and 40 dB L_{den} which should have been used for ground noise assessments.
- Other third-party submissions also query the noise metrics included in the ground noise assessment and consider that 40 dB L_{night} should have been used rather than 50 dB L_{night} in the EIAR.
- It is noted that there remains a significant number of people exposed to 50 dB Lden or above in the 2023 scenario.
- Apron 5H (separate application to the northeast of the site) is included in the scenario for 2025. This states there will be an increase in persons exposed to at least a high level of ground noise (up from 6 to 35).

13.11.3. Impacts

No significant residual impacts are predicted from either the road traffic noise or the additional movement of aircraft within the airport site.

13.11.4. Mitigation

Mitigation measures the same as aircraft noise are proposed – i.e., the sound insulation for eligible dwellings.

No specific mitigation for the ground noise impacts is proposed.

13.11.5. Residual effects

The Residual effects from aircraft noise considering the night situation (40 dB L_{night} metric), the predicted number of people with significant residual adverse effects in 2025 and 2035 is 6.

13.11.6. Assessment of issues and significance of effects.

Noise Metrics

Submission on the ground noise assessment raise the appropriate use of noise contours to assess the impact of the ground noise on the existing community. The use of the noise metrics recommended in the WHO Guidance has been detailed in my planning assessment, which concluded that although levels of 40 dB L_{night} recommended in the WHO guidelines, these levels would prohibit virtually all aircraft noise and a more relevant level of 55 dB L_{night} can be used to assess the significant impact on the population. Also, the recommended insulation levels at 55 dB L_{night} can adequately mitigate against noise disturbance internally, at night. This aside, I note the residual effects in Section 14.9.9 of the EIAR concludes that there will be persons exposed to at least 40 dB L_{night} in the proposed scenario. There will be no people exposed to a high residual aircraft ground noise level. The EIAR also states that the 55 dB L_{night} noise contours relating to ground noise will not extend outside the airport site.

Apron 5H

Apron 5H was granted permission ABP 312476-22 (Reg Ref F20A/055) and has been included in the modelling for ground noise. No cumulative impacts are identified or considered relevant for impacts on ground noise and vibration. I am satisfied that the applicant has considered relevant future developments in the assessment for noise impacts.

Noise Action Plan for Dublin Airport 2019-2023

Section 5.3 of the Noise Action Plan for Dublin Airport 2019-2023 includes a list of noise abatement operating procedures as made to IAA and updated regularly by Daa. These include best practice for lower noise operating procedures as summarised below:

- Noise preferential runway usage.
- Noise Preferential Routes (NPRs) and Track Keeping

- Environmental Noise Corridors
- Continuous Decent Approach (CDA)
- Noise Abatement Departure Procedures (NADP)
- Engine Ground Running

I note this approach to managing aircraft noise can aid the reduction in ground noise, as far as practicable and although not a policy of the development plan, these measures can assist the reduction of noise impact on existing communities.

Difference since the 2021 EIAR: The supplementary EIAR includes a breakdown of the significant differences since the revised EIAR in 2021. No significant difference inconclusions have been identified, the L_{den} forecast remains broadly the same and the number of people with significant residual adverse effects in 2025 and 2035 is down to 6 in the supplementary EIAR (2023) from 9 in the Revised EIAR (2021).

13.11.7. Conclusion

I have considered all the written submissions made in relation to ground noise and vibration, in addition to those impacts specifically identified in this section of the report. I am satisfied the impacts have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.12. Terrestrial Biodiversity

13.12.1. Introduction

Chapter 15 deals with the impact on terrestrial biodiversity.

A desktop analysis and ecological walkover provided information for the baseline assessment. The Zone of Influence (ZoI) was taken as all European Sites which will be subject to maximum noise level (L_{max}) of greater than 60 dB (A) from passing aircraft which have animal species as QI/SCI. As a precautionary basis those European Sites around Dublin Bay have also been included.

The ecological walkover did not record any site of significant ecological interest and the area is mostly surrounded by either improved grassland or other agricultural grassland. The Relevant Action has been subject to a screening for Appropriate

Assessment, detailed below in Section 11, which concluded no significant effect on any habitats or species within the ZoI.

13.12.2. Submissions

Issues raised in third party submissions include the following:

- The number of bird strikes involving aircraft reported should also be assessed.
- No Data was produced, nor mitigation measures provided for increased aircraft movements, or any assessment undertaken for the new take-off and landing corridors for North Runway.
- Some residents have pigeons on the new flight paths. The proposal will have a devastating effect on pigeon racing the area.

13.12.3. Impacts

The main impacts include noise disturbance and potential collisions which could result in killing or injury on important bird species because of additional nighttime flights.

13.12.4. Mitigation

Dublin Airport currently operates a Wildlife Management Plan to prevent any collisions with flocks of birds on safety grounds. No mitigation measures to prevent any impacts on terrestrial species are proposed.

13.12.5. Assessment

The impact on birds has been dealt with extensively in the AA Screening below. An assessment of the impact on bird strike has been undertaken based on the international guidance on bird strikes (ICAO) and bird strike information from Dublin Airport from 2010 and 2019. 40 species were involved in bird strikes during this period with the most common species being woodpigeon. Although total number of bird strikes have not been presented , based on a detailed Wildlife Management Plan (WWP) in place to manage the risk to aircraft operations from wildlife, the internal guidance in relation to the take-off and landing range of aircraft and the limited increase aircraft numbers during the night (c. 27) I am satisfied that there would be no significant impact on birds as a result of the Relevant Action .

13.12.6. Conclusion

I have considered all the written submissions made in relation to terrestrial biodiversity, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.13. Aquatic Biodiversity

13.13.1. Introduction

Chapter 16 deals with the impact on aquatic ecosystems. The proposed Relevant Action is not considered to include any physical or other infrastructural works.

The existing watercourse network around the site is detailed under the water section above (10.8) which notes the water quality status of rivers and tributaries in the water basins.

13.13.2. Impacts

No impacts are identified.

13.13.3. Mitigation

No mitigation measures proposed.

13.13.4. Assessment

The impact on the seven European Sites within 15km of the runway have been assessed and no hydrological connection has been identified.

De-icing from the additional aircraft at night is not considered to be significant and due to the absence of any physical works, no impact is envisaged. The proposal will in no way impact Aquatic Biodiversity.

13.13.5. Conclusion

I have considered all the written submissions made in relation to Aquatic biodiversity, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.14. Landscape and Visual

13.14.1. Introduction

Chapter 17 deals with the impact on landscape and visual amenity. The proposed Relevant Action is not considered to include any physical or other infrastructural works.

The areas within 4km of Dublin Airport include areas designated as “Highly Sensitive Landscapes (HSL)” in the Fingal County Development Plan 2017-2023. These landscapes have a high landscape value. In addition, part of Swords, to the north of the site, is included in an area identified as a “Historic Landscape Characterisation”.

It is proposed that there would be 60% increase in flights at night under the proposed scenario (65 per night currently which equals c. 105 flights in total). There will be no more than 100 flights between 23:00 and 00:00, therefore there will not be a significant visual effect of the additional flights.

13.14.2. Impact

No impacts have been identified.

13.14.3. Mitigation

No mitigation measures have been proposed.

13.14.4. Assessment

The proposal does not include any changes which will impact the Landscape or Visual amenity. The Relevant Action does not include any physical works and only relates to the operation of the airport. The impact is negligible and of no significance.

13.14.5. Conclusion

I have considered all the written submissions made in relation to landscape and visual, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.15. Land and Soils

13.15.1. Introduction

Chapter 18 deals with the impact on Land and Soils. A background to the soil formation around the vicinity of the airport is provided. The topography is flat with an elevation of 80m (OD).

The classification of the groundwater bodies in the vicinity of the airport has been provided where two of the three (Swords Groundwater body & Dublin Groundwater body) are “not at risk”, whilst a small groundwater body near the hangers (Industrial Facility Groundwater) is classified as “poor” and being “at risk”.

Soils are detailed on the EPA website as the Elton series, fine loamy drift with limestone and moderate drainage.

13.15.2. Impacts

Potential for pollution of land and soils from the additional flights.

13.15.3. Mitigation

No mitigation measures have been proposed.

13.15.4. Assessment

De-icing of additional flights will not have a significant impact on the land and soils due to the limited increase in flights and the current stormwater and attenuation system in place to prevent any pollution of those watercourses in the vicinity of the site.

13.15.5. Conclusion

I have considered all the written submissions made in relation to land and soils, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.16. Material Assets

13.16.1. Introduction

Chapter 19 deals with the impact on material assets.

A background of the gas, electricity, potable water, and waste use for Dublin Airport is provided in the EIAR. The gas used to heat the airport will not be significantly altered as the need to heat the building remains the same irrespective of the number of passengers.

The use of electricity has declined between 2018 and 2020 and solar panels have been installed in 2018 over the airports reservoirs systems. Like the gas supply, no significant alteration to the use is proposed from the Relevant Action.

The water is supplied from the Ballycoolin Reservoir via a 36" diameter trunk main. The water use declined from 392,404m^3 in 2018 to 186,897m^3 which indicates the water use is more sensitive to passenger numbers than gas and electricity use.

The waste management at Dublin Airport complies with the Eastern -Midlands Regional Waste Management Plan 2015-2021 (EMRWMP) and includes waste prevention and recycling. It is expected that waste generated from additional passengers will rise although Dublin Airport operates a "Zero Waste to Landfill" policy.

13.16.2. Impacts

The impacts on the use of water and wastewater will be greater under the proposed scenario due to the increase in aircraft movements.

13.16.3. Mitigation

No mitigation measures proposed.

13.16.4. Assessment

The number of passengers under the Relevant Action will remain the same as the 2018 numbers (c. 32mmpa), although there will be an increased use of water and wastewater due to the increase movement of aircraft. Notwithstanding this the impact is not considered to be significant.

13.16.5. Conclusion

I have considered all the written submissions made in relation to material assets, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.17. Cultural Heritage

13.17.1. Introduction

Chapter 20 deals with Cultural Heritage.

The study area incorporates the airport site and its surrounding lands. No national monuments are within the defined EIAR study area and the closest national monument is HA2 Dunsoghly Castle (NM 230) located 1,460m west of the site.

There are four Record of Monuments and Places (RMP) on the airport site. The HA6 Corballis Caste (DU014-011), and enclosure (DU014-008), HA8 a house (DU014-040) and a ring fort (DU011-046). There are other churches, graveyards, holy wells and enclosures identified on the boundaries of the site.

There are four protected structures on the site. The HA 14 Old Central Terminal (RPS 612), the Church of our Lady Queen of Heaven (RPS 864), the Castlemoate House (RPS 611) and a thatched dwelling (RPS 604). A number of these are also recorded on the NIAH with four buildings around the airport site included on the NIAH.

13.17.2. Submissions

The impact on the attendant grounds of protected structures, ACAs and those areas with important landscapes has not been fully considered.

13.17.3. Impacts

No impact on those cultural heritage receptors.

13.17.4. Mitigation

No mitigation proposed.

13.17.5. Assessment

The Relevant Action does not include any alteration to any structures or built heritage. There will be an increase in aircraft movements, initially in 2025 which will remain unchanged to 2035, when comparing the proposed scenario to the permitted scenario. The number of passengers will not exceed 32mppa, a slight increase from the current stated passenger numbers. I do not consider the

Relevant Action will have any effect on the cultural heritage receptors in the vicinity of the site and there will be no significant adverse impact on Cultural Heritage.

13.17.6. Conclusion

I have considered all the written submissions made in relation to cultural heritage, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

13.18. Interactions and Cumulative Effects

Chapter 22 deals with interactions and cumulative impacts. Table 21.1 provides an overview of interactions and the potential for cumulative and residual effects.

Two types of cumulative effects have been assessed, interaction of several impacts arising from the Relevant Action which may collectively cause an overall significant impact, detailed below, or cumulative effects of the Relevant Action with other existing, permitted, or planned projects.

The Board will note a proposal for the expansion of the Airport currently with Fingal County Council (F23A/078) and ANCA for the growth of the airport to operate to 40mppa. The supplementary information was received before F23A/078 was lodged to the planning authority.

Section 22.1 of the supplementary EIAR includes a detailed breakdown of the potential environmental effects of the Infrastructure Application (F23A/078). The increase in passengers through the airport is expected to increase by 25%. Impacts on population and human health, traffic and transport, air quality, cultural heritage, lands and soils, biodiversity water and material assets are all considered possible if this application is granted. These have not been quantified and the application has not been determined.

I have considered the interrelationships between the key receptors and whether this might as a whole affect the environment, even though the effects may be acceptable when considered on an individual basis. In particular, the potential arises for the following interactions and interrelationships:

Table 10: Interactions, Residual and Cumulative Impacts

	Interactions	Residual	Cumulative Effects
Population & Human Health	Air Noise & Vibration Ground Noise & Vibration	Moderate effects on amenity and human health due to the increased noise during the night are included in Table 21-1 although the effects are states as significant in Chpt 7 Additional mitigation measures proposed as alterations to the RD should adequately address these residual effects.	Yes, cumulative impacts of air noise and ground noise have been identified.
Major Accidents & Disasters	Terrestrial Biodiversity	Slight increase of impact to potential hazards including aircraft crashes, bird strike, wake vortex (aircraft turbulence) and fuel dumping	No, unlike the potential residual impacts these hazards would not give rise to cumulative impacts
Traffic & Transport	Ground Noise & Vibration	Increase traffic flows on road links to the airport during the night are less than 5% and considered to have a slight, medium to long term, impact.	No, the assessment is based on a Local Area Model and although growth is based on the road network there is no cumulative impacts
Air Quality	Climate Change & Carbon Population & Human Health	No, residual impacts from the release of pollutants.	No cumulative impacts are considered relevant as part of the proposal.

Climate Change & Carbon	Population & Human Health Air Quality	Slight increase in CHG gases in the medium term from the increase movements of aircraft at night in 2025 when compared to the permitted scenario although no further increase after this initial rise.	No. Whilst the increase would add to CHG emissions from other development although would be inconsequential.
Water	Land & Soils	No residual impacts.	No impacts on an environmental receptor.
Air noise & Vibration	Population & Human Health Ground Noise & vibration	An increase in persons HA in 2035 and increase in HSD in both assessment years. Increase in residual effects of 28 persons in 2035.	Yes, cumulative impacts of ground noise and aircraft noise have been identified.
Ground Noise & Vibration	Population & Human Health Air Noise & Vibration	Increase in residual effects on 6 persons in 2025 and 2035.	Apron 5H (Reg Ref F20A/055) has been included in the modelling for ground noise although no cumulative impacts are considered relevant for impacts on ground noise and vibration.
Terrestrial Biodiversity	Major Accidents & Disasters	No residual impacts on terrestrial biodiversity.	No cumulative impacts have been identified and my AA screening has considered the impact on the European Sites.
Aquatic Biodiversity		No residual impacts on aquatic biodiversity.	No cumulative impacts.
Landscape & Visual		No residual impacts on landscape & Visual amenity	No cumulative impacts.

Land & Soils	Water	No residual impacts on land & soils	No cumulative impacts.
Material Assets		No residual impacts on material assets	No cumulative impacts.
Cultural Heritage		No residual impacts on cultural heritage	No cumulative impacts.

13.19. Summary of Impacts and Mitigation

Impacts

There will be an increase in the number of people Highly Annoyed and Highly Sleep Disturbed in the proposed scenario in both 2025 and 2035 when compared to the permitted scenario.

There will be an initial increase in CHG emissions (tCO2e) in 2025 (1.16% in the proposed scenario compared to the permitted scenario) which will be minor significance.

Mitigation measures

- An Annual Noise Quota (ANQ) system to replace the limit of 65 flights per night.
- A preferential runway use system at night with activity on the North Runway limited to a total of two hours (between 06:00 and 08:00).
- A detailed framework for monitoring the noise performance of Dublin Airport.
- A night noise insulation scheme.

Recommended additional Operational restrictions and Mitigation measures.

- Aircraft Movement Limit
- Preferential use of the North Runway assuming that segregated mode is in use from 06:00 to 08:00
- Additional insulation for 50 dB L_{night} with a change of 9 dB L_{night} for dwelling within these noise contours in the first year of opening of the NR.
- Additional Insulation residential dwellings subject to aircraft noise of 80 dB L_{Amax} based on the noise footprint of the airport's westerly and easterly single modes of approach and departure (not averaging the modes of operation of the airport over the 92 days of summer) between 2300 hrs and 0700hrs.

13.20. **Reasoned Conclusion and Likely Significant Effects**

Having regard to the examination of environmental information contained above, and in particular to the EIAR and the submissions from the planning authorities and prescribed bodies in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment have been identified throughout this report. In the absence of additional operational restrictions and mitigation measures it is considered that the proposed development would give rise to significant direct or indirect impacts of the population and human health, and the minor direct and indirect impacts on climate change as detailed below:

- Population and Human Health will be mainly impacted by the number of people Highly Annoyed, which will initially decrease in 2025 and then increase in 2035 in the Relevant Action when compared to the permitted scenario. The number of people Highly Sleep Disturbed will increase in both assessment years (i.e. 2025 and 2035). These figures are based on the average impact of the increased aircraft movements and do not reflect the full extent of the increased movement of aircraft during the additional two nighttime hours in the Relevant Action. The inclusion of additional mitigation measures and operating restrictions in the form of an aircraft movement limit can ensure additional awakenings are minimised and the impact on sleep disturbance is mitigated.
- Total Annual Green House Gas (CHG) emissions of the Relevant Action is projected to increase in 2025 when compared to the permitted scenario and then decrease in 2035. No specific mitigation measures have been included in the predicted emissions. The decrease in the 2035 is based on a change in forecasted aircraft scheduling which indicates there will be an increase in short-haul night flights modelled in 2035 which will decrease long-haul day flights, leading to lower Continuous Climb Departures (CCD) emissions in the proposed scenario for 2035 when compared to the permitted scenario. The scheduling has not been presented in the documentation. This aside, international aviation towards net zero will ensure the use of climate friendly fuels and having regard to minor differences of aircraft movement increases

between the permitted and proposed scenario, the long-term impact on the climate is considered of minor significance.

- The significance of effect of the impacts of Relevant Action on aircraft noise and vibration has been presented in the EIAR as an average over the entire nighttime period. Aircraft noise is not experienced as an average and the noise impacts of sleep from ATMs are intermittent and not continuous. The additional awakening results generally follow the same pattern as the HA and HSD, but the scale of the additional awakening results has a much greater significance due to the reality of the effect of one additional awakening. This result is greater due to the number of aircraft movements which is allowable under the NQS system. This impact can be mitigated through the inclusion of an aircraft movement restriction during the additional nighttime hours and the use of an insulation scheme to protect the existing community impacted by the flight paths of aircraft.

14.0 Appropriate Assessment

14.1. Introduction

14.1.1. Compliance with Article 6(3) of the Habitats Directive

14.1.2. The requirements of Article 6(3) as related to screening the need for appropriate assessment of a project under Part XAB, section 177U of the Planning and Development Act 2000 (as amended) are considered fully in this section.

14.1.3. Background on the Application

14.1.4. The proposed Relevant Action (RA) (within the meaning of Section 34C of the P&D Act 2000, as amended) seeks to amend/replace operating restrictions set out in conditions no. 3(d) and no.5 of the North Runway Planning Permission granted by the Board in 2007 (PL06.217429 Reg Ref F04A/1755), as well as proposing new noise mitigation measures at Dublin Airport, Co. Dublin.

Original grant for North Runway

14.1.5. Permission for the original North Runway was granted planning permission in August 2007 PL06F.217429 (F04A/1755) and an extension of the duration of that permission was subsequently granted in 2017 until 2022. While the 2007 permission was the subject of EIAR, neither the original application nor the extension of duration application was subject to Appropriate Assessment or to Screening for Appropriate Assessment. At the time of the application for extension of duration to Fingal County Council (Ref. 04/1755/E1), works had commenced on the site. In that case the planning authority concluded therefore that the provisions of S.42(1)(a)(ii)(IV) in respect of Appropriate Assessment did not apply. The Board should note that decision was the subject of judicial review proceedings, where the judge refused the applicants in both the proceedings.

Current Relevant Action (RA) proposal

14.1.6. The subject application was accompanied by a detailed Appropriate Assessment Screening Report (December 2020 (AECOM)) and a further updated and revised AA Screening Report (September 2021 (AECOM)) was submitted in response to a request for further information (RFI) from FCC and ANCA. Both reports concluded

that Stage 2 Appropriate Assessment was not required in respect of the proposed development. The Planning Authority RFI, with regard to impacts on the European Sites, related to the following three points:

- Potential direct effects on any SACs are explicitly ruled out under section 2.1.5 of the AA Screening report, however the EIAR in several places (e.g., Sections 12.3.1, 12.5, 15.4 and 16.3) states that the cuckoo stream flows west to east through the application site. At section 19.3.2.4 it is noted that Forrest Little, Ward and Kealy's Streams also flow through the application site. The Cuckoo Stream eventually joins the Mayne River, and the other streams eventually joins the Sluice River. Both these rivers flow into Baldoyle Bay SAC/SPA and not Malahide Estuary. The screening report should be updated to correctly identify all surface water pathways.
- The AA Screening report should be revised to take account of potential impacts on European sites caused by emergency fuel dumping as identified in chapter eight of the EIAR.
- The review of in combination effects should be reviewed and updated as necessary to take account of the responses submitted to this request for further information in relation to both the Screening for Appropriate Assessment and the Environmental Impact Assessment Report.

14.1.7. A response which addressed all the requests above was submitted to FCC by the applicant on 13th September 2021.

14.1.8. The revised AA Screening Report (AECOM, September 2021) is a comprehensive document which fully describes the source-pathway-receptor model for identifying European sites relevant to the proposed application. It also notes that there is no set distance over which effects may occur and that the zone of influence (ZOI) must be defined on a case-by-case basis. A total of 11 no. European sites (9 no. SPAs and 2 no. SACs) were considered by the applicant to be within the ZOI of the proposed application. Specifically, the following updates have been made to the revised version of the AA Screening Report:

- The rationale behind the adopted zone of influence has been clearly explained.

- Consideration has been given to the potential for disturbance of marine mammals which are the Qualifying Interests of several offshore Special Areas of Conservation. A literature review is presented under Section 2 which investigates the effects of noise and visual stimuli on these marine mammals, in particular seals and crustaceans (whales, dolphins, and porpoises).
- Consideration has been given to the potential for fuel dumping to result in likely significant effects.
- Other minor updates have been made, including reference to recently published guidance on AA Screening, and bird collision data for Dublin Airport for 2019 has been added; and
- Furthermore, in response to an AA Screening Determination prepared by ANCA in relation to the Noise Abatement Objective (NAO) for Dublin Airport (dated 18th August 2021), consideration has been given to the potential for air quality impacts from the proposed RA to have likely significant effects on any European site.

14.1.9. The Board requested FI from the applicant on several specific issues relating to the noise modelling. The applicant submitted an AA screening report (Addendum to AA Screening AECOM September 2023) to accompany the additional information. This screening further assessed the impact of the proposal, including any changes proposed on the European Sites including a new candidate SPA (North- West Irish Sea) and concluded no likely significant effects on this c SAC or any other European Site.

14.1.10. There has been no change to the applicant's conclusion of the AA Screening Report throughout any of the amendments and it was considered that, on the basis of objective information, the likely significant effects on European sites can be excluded, when considering the proposed RA both individually and in combination with other plans and projects.

Regulatory Decision (RD)

14.1.11. Following ANCAs (the Aircraft Noise Competent Authority) setting of a NAO and its making of a Regulatory Decision (RD) on 20th June 2022 and in accordance with the Habitats Directive and Birds Directive, the Planning Authority carried out an

Appropriate Assessment Screening of the Relevant Action as varied by the Regulatory Decision. Fingal County Council then made an Appropriate Assessment (AA) Screening Determination on the 'Relevant Action' application as varied by the Regulatory Decision.

14.1.12. ANCA undertook a Natura Impact Statement of the Noise Abatement Objective (NAO) and the Regulatory Decision (RD). Section 2.8 of the final NIS[60] notes that the NAO sits "*above both the present planning application and future planning applications and is designed to complement other published policies which present scenarios for the sustainable development of Dublin Airport to a 40 million passengers per annum (mppa) operation in 2030 and a c. 55 mppa operation from 2050."* The Board will note the potential impacts of the NAO and RD could reasonably be expected to be different to the RA currently before the Board (retention of passenger movements at 32 mppa). Having regard to my assessment below, I am satisfied that these two separate processes would reasonably have two different AA conclusions for the RA (Stage 1 screening assessment) and the NAO and RD (Stage 2). A report from the Board's ecologist in Appendix 3 also notes that the rationale for progression to AA by ANCA does not undermine or conflict with any findings of no likelihood of significant effects for the Relevant Action.

Conclusion

14.1.13. Having examined both the original and updated Appropriate Assessment Screening Reports and all other documentation submitted by the applicant in relation to the Relevant Action , as amended by and incorporating the Regulatory Decision, as well as the documentation associated with the Regulatory Decision and Noise Abatement Objective published by ANCA, and in light of best scientific knowledge, and in the absence of mitigation measures, Fingal County Council stated that they were satisfied that the Relevant Action , as amended by and incorporating the Regulatory Decision, is not likely to have a significant effect on any European sites, either alone or in combination with other plans or projects. Therefore, a Stage 2 Appropriate Assessment was not required.

[60] ANCA Noise Abatement Objective and Regulatory Decision relating to Aircraft Noise Management at Dublin Airport: Appropriate Assessment- Natura Impact Statement (17th of June 2022) prepared by Noise Consultants ltd.

14.1.14. The Board ecologist has provided a report which has informed my screening assessment and is appended to my report. This report provides a review of the proposed development, the documentation submitted and both ANCAs and FCC AA assessments. The ecologist has confirmed that AA screening reports have been prepared by suitably qualified expertise and there was sufficient information on file to undertake a thorough assessment.

14.1.15. Having reviewed the relevant documents, submissions received and consultation responses, I am satisfied that the information allows for a complete examination and identification of any potential significant effects of the development, alone, or in combination with other plans and projects on European sites.

14.2. Screening for Appropriate Assessment- Test of likely significant effects

14.2.1. Introduction

14.2.2. The project is not directly connected with or necessary to the management of a European Site and therefore it needs to be determined if the development is likely to have significant effects on a European site(s).

14.2.3. The proposed development is examined in relation to any possible interaction with European sites designated as Special Conservation Areas (SAC) and Special Protection Areas (SPA), including the candidate SPA, to assess whether it may give rise to significant effects on any European Site.

14.2.4. Brief description of the development

14.2.5. The applicant provides a description of the project from pages 2 to 4 of the revised AA Screening Report (September 2021) and elsewhere e.g., the EIAR and supplementary information. In summary, the development comprises an application for a proposed development comprising the taking of a 'Relevant Action (RA)' only within the meaning of Section 34C of the P&D Act 2000, as amended.

14.2.6. The proposed RA relates to the night-time use of the runway system at Dublin Airport. It involves the amendment of the operating restrictions set out in Condition no.3(d) and the replacement of the operating restriction in Condition no.5 of the North Runway Planning Permission (FCC Reg. Ref. No. F04A/1755; ABP Ref. No:

PL06F.217429 as amended by FCC F19A/0023, ABP Ref. No. ABP-305289-19), as well as proposing new noise mitigation measures. Full details of the proposed RA are outlined under Section 2.0 of this report and all amendments as result of the Regulatory Decision and the subsequently amended Relevant Action are outlined in Section 3.4.4 above. It should be noted that the proposed RA does not seek any amendment of conditions of the North Runway Planning Permission governing the general operation of the runway system (i.e., conditions which are not specific to night-time use, namely conditions no. 3(a), 3(b), 3(c) and 4 of the North Runway Planning Permission) or any amendments permitted to annual passenger capacity of the terminals at Dublin Airport.

14.2.7. The Board should also note that for the purposes of this AA Screening an examination of the amended RA including reference to the RD issued by ANCA (where necessary) has been included, this includes the amendments to the conditions as adopted by FCC. It should be noted that this subject AA screening below includes for a Noise Quota Scheme (NQS) with an annual limit of 16,260 between 23:00 and 06:59, as detailed in revised Condition no. 5. I note that FCC's assessment refers only to condition no. 5 as original proposed by the Daa, prior to any RD from ANCA or adoption of same by FCC.

14.2.8. The revised AA Screening Report submitted (dated September 2021) focuses on a comparison between the:

1. Permitted Scenario - which would be the current case i.e., operational North Runway but the airport is constrained by the restrictions on night-time use of the runway system at Dublin Airport i.e., all conditions as permitted under FCC Reg. Ref. No. F04A/1755; ABP Ref. No: PL06F.217429 as amended by FCC F19A/0023, ABP Ref. No. ABP-305289-19; and the
2. Proposed Scenario – which represents the situation with the proposed Relevant Action in place. It assumes that when the North Runway is operational it will not be constrained by the restrictions on night-time use of the runway system at Dublin Airport i.e., conditions no. 3(d) and no. 5.

14.2.9. The AA Screening Addendum (dated September 2023) notes several changes have taken place in Dublin Airport since the previous AA Screening which include:

- Actual flightpaths from North Runway upon commencement differ from the assumed flight paths used for modelling/assessment purpose.
- Updated air traffic forecast data.
- Earlier fleet modernisation.

14.2.10. The Assessment Years examined as part of the AA Screening Report (as updated in the Addendum report) are the points in time at which the likely significant effects of the proposed RA are assessed i.e., the most recent information received (September 2023) notes that the North Runway is not operational therefore 2025 and 2035 are considered as the only assessment years. 2025 is the first year of the highest use of the runway system in the proposed scenario (i.e. when 32mppa throughput is first expected to be reached but not exceeded, also the first year of predicted maximum environment effects in the proposed scenario) and 2035 – included in the assessment in response to a further information request from FCC which sought assessment of a longer term scenario (i.e. 10-15 years post opening year of the North Runway (2022)).

14.2.11. It should be noted that one of the key differences between the previous AA Screening Report and the updated report notes that post Covid-19 recovery was sooner than expected with the passenger number of 32 mppa reached 2024 rather than 2026 as previously expected. The updated AA screening (September 2023) states that for the years 2025 and 2035, under the proposed scenario, the passenger numbers (32 mppa) and the ATMs (240,000 per annum) will remain the same.

14.2.12. Section 3.4 of the submitted AA Screening report (September 2021) states that the proposed Relevant Action comprises a change in operating restrictions and will involve no construction works or changes to the consented physical infrastructure of the north runway or any other areas of the airport. There is therefore no potential for construction related impacts, including pollution.

14.2.13. Taking account of the characteristics of the proposed development in terms of its location and the scale of works, the following issues are considered for examination in terms of implications for likely significant effects on European sites:

- Habitat disturbance /species disturbance (operational).

- Water quality and habitat deterioration
- Aerial noise and visual disturbance
- Collision risk

14.2.14. **Submissions and Observations**

14.2.15. Submissions and observations received from third parties, the Local Authority and Prescribed Bodies are summarised in Section 3.0 and Section 6.0 of this Report. Matters raised that are considered to be relevant in the context of Appropriate Assessment are summarised below:

- The Relevant Action Screening Report is deficient and not fit for purpose.
- Concerns regarding impacts on SACs e.g., Malahide SAC. It is a failure of the screening process to even acknowledge this potential to affect a SAC and as a minimum, and appropriate assessment is warranted.
- Concerns regarding impacts on other European sites including Howth Head Coast SPA.
- No mention of screening for effects on the SACs and SPAs along the Irish coast potentially affected by the proposed night-time operations.
- No AA was carried out for the North Runway development (none under planning application F04A/1755, ABP PLO6F.217429 or planning extension under F04A/1755/E1).
- Effects examined only seem to deal with disturbance recognised as “flushing” when birds move or fly as a result of disturbance. There is no assessment whatsoever of the effects of noise increases on the stress behaviours of birds.
- Existing Noise monitoring around the site are recording 60% of the aircraft movements greater than 72 dB L_{Amax} and over 10% greater than 75 dB LAmax. This noise can cause an increase in stress behavior of birds.

14.2.16. Matters raised following the submission of additional information to the Board and the AA Screening Addendum (September 2023):

- The applicant’s screening report is not robust.

- The AA screening report states that it is impossible to know the location of every area of functionally linked habitat. In this instance the habitats directive required a precautionary approach and the need for a stage 2 assessment.
- The carbon impacts and warming impacts on non-animal SACs (e.g., Baldoyle Bay SAC)
- There is no assessment of wetland and water birds in Baldoyle Bay SPA
- There is no raw data on any of the bird surveys.
- Limited assessments in the AA Screening are not definitive or scientific.
- No impacts of CECs, Nitrogen, PFAS (de-icing/firefighting foam) pollution runoff has been provided for those SACs hydrologically linked to the airport.
- The increase in night flights will mean more airplanes need de-iced and therefore more PFAS contamination.
- The new flight paths will impact a number of nesting Red Kites (IUCN red list threatened species).
- A scientific documentation has been appended with one submission:

  Note from English Nature on the “Disturbance effects of aircraft on birds”

  “What effect do airplanes have on birds?”
- Long -term effects of noise pollution on the avian dawn chorus: a natural experiment facilitated by the closure of an international airport.
- Contrail minimization through altitude diversions: A feasibility study leveraging global data.

14.2.17. Those issues raised in relation to the impact on European Sites are noted and I have undertaken a full and detailed screening on the RA, including the issues raised throughout the process with the planning authority and subsequent updated supplementary information submitted to the Board.

14.2.18. **European Sites**

14.2.19. The area to which the Relevant Action and the North Runway of Dublin Airport relates is not located in or immediately adjacent to a European site. The closest European site, Malahide Estuary SPA (Site Code: 004025) is c. 4km northeast of the North Runway.

Zone of Influence

14.2.20. A summary of European Sites that occur within a potential zone of influence of the proposed development is presented in the table 11 below. In defining precisely, the ZoI consideration is paid to the source, these being, whether for noise or other emissions, the aircraft in this assessment, the pathways that exist and the receptors that could be affected.

14.2.21. In the first instance, consideration has been given to the potential impacts (the "source" in the source-pathway-receptor approach) which could arise from the proposed RA. The original AA Screening Report (AECOM 2020) includes refence to those SPAs which are overflown by arrivals and departures for the NR past heights of 10,000ft or less, using reference to the flight paths proposed which flew over 5 SPAs, all within a 15km radius of the site. Where a possible connection between the development and a European site has been identified, these sites are examined in more detail. Following the submission of FI, the revised AA Screening report extended the ZOI to 20km, this considers concerns raised within the submissions received from third parties in relation to designated sites identified under flight paths including the proposed use of the runway between segregated and mixed mode operations. Additional consideration was given to the potential for disturbance of marine mammals and emergency fuel dumping, with minor updates on the bird collision data.

14.2.22. As the proposal concerns a Relevant Action there will be no potential for construction related impacts, including pollution, however, impacts because of operational run off from the north runway have been considered where there are any source-pathway-receptor circumstances identified. It should be noted that the applicant in their AA Screening Report did not consider emergency fuel dumping a credible impact on European Sites as the probability of an event like this occurring must be considered 'likely' and in the case of this impact it was not. Fuel dumping is discussed further

below, and the Board should note that ANCAs NIS considered this as a potential impact when considering likely significant effects on designated sites.

14.2.23. The likely impacts of noise on the key receptors of water birds have been considered, these being the most abundant important features of European sites local to the Airport. Section 2 – Literature Review of the submitted AA Screening Report outlines some available research and recommendations in relation to noise impacts on bird species. In such study which looked at construction noise impacts concluded that:

- High level disturbance effects are likely with continuous noise above 72 dB or sudden noise above 60 dB;
- moderate level disturbance effects are likely with regular noise of 60 – 72 dB or sudden noise of 55 – 60 dB; and,
- there is unlikely to be any response by waterbirds to any noises below 55 dB

14.2.24. According to details submitted as part of ANCA's Natura Impact Statement for the NAO and RD (dated June 2022) when at 1,000 feet, the most common commercial passenger planes (Boeing 737 and Airbus A320) that operate from Dublin Airport may result in noise events on the ground of 85 dB L_{max} (the maximum sound level of a noise event) on departure (reducing to 77 dB L_{max} on arrival). At 2,000ft the noise levels are 75 dB L_{max} and 67 dB L_{max} for departures and arrivals respectively, whilst at 3,000ft the corresponding figures are 68 dB L_{max} and 61 dB L_{max}. Noise levels beneath 1,000ft are not applicable in this assessment as planes departing or arriving at Dublin Airport are only within the 0 – 1,000ft altitude band within 2km of the airfield boundary (i.e., away from any Natura 2000 site).

14.2.25. At the fastest climb rate an altitude of 3,000 ft will be reached in 5.54 km. At the slowest climb rate an altitude of 3,000 ft will be reached in 13.1 km. Therefore, noise emissions from aircraft may exceed the 72 dB threshold for departing aircraft (assuming the threshold and measures in L_{max} are comparable) at some altitudes between 2,000 and 3,000ft. Other research noted in the ANCA NIS[61] notes most bird strikes are on or very near to the aerodrome and death or injury is not considered as they occur under 500ft. To be precautionary, the upper limit of a plane

[61] ICAO Bird Strike Information System (EB2017/25)

reaching or descending from 15km is employed in this assessment as the ZoI for disturbance related issues.

14.2.26. As stated above future airspace design (segregated and mixed mode operations) overlayed with Natura 2000 sites within the 15km ZoI has also been considered and given the relatively low number of designated sites involved (3 no. in total) these have also been include for examination under Table 11 below. Therefore, given all this, a precautionary 20km ZoI is therefore proposed for departing aircraft from the Airport. This should ensure that both the potential for high level and moderate level noise and air quality effects (occurring continuously) will be undertaken. In addition, a 20km ZoI is also considered appropriate for arrivals.

14.2.27. The AA Addendum report (Sept 2023) did not propose any amendments to the ZOI and notes a candidate SPA now include within this zone. Whilst the flight paths have been altered to represent the current operational structures of the NR, I do not consider there are any further European Sites should be included within the ZOI.

14.2.28. It is considered that this prescribed ZoI will cover potential noise effects to birds which are the special conservation interest of the SPAs, those habitats which are qualifying interest features of the SACs, and other qualifying interest features such as mammals (including marine mammals) which might also occur.

Potential Impacts on European Sites

14.2.29. Section 4 of the submitted AA Screening Report (September 2021) outlines the current baseline condition of relevant European sites. This baseline was established through a desk-based study of the relevant conservation objectives from the NPWS website and a review of the results of ornithological vantage point field surveys carried out at Baldoyle Bay SPA and Rogerstown Estuary SPA between June 2016 and December 2017, and in April and May 2018 (See Sections 4.20 to 4.24 of AA Screening Report for further details). The conditions are not expected to change on the coming into operation of the permitted scenario. The applicant's screening assessment states that the reason for this is because the conditions described are based on information collected up to 2018 at which time Dublin airport was operating at significantly higher aircraft numbers than was the case in 2022 when the permitted scenario came into effect i.e., north runway operations – when aircraft movements are restricted at night due to the conditions at Dublin airport including north runway.

14.2.30. Having regard to the scale of alteration to the overall aircraft movements between the permitted and proposed scenarios , it is highly unlikely that there will be a significant change in coming into effect of the proposed scenario. Moreover, the applicant states that aircraft disturbance has not been identified by the NPWS as a threat or pressure to a new European site.

14.2.31. The AA Screening Addendum (September 2023) considered the North-west Irish Sea Candidate SPA (c SPA), which has been designated since the RA was decided. This SPA stretches along the east coast and has been identified as important intertidal and shallow subtidal habitats for feeding and roosting waterbirds throughout the winter and migration periods. No disturbance of species or habitats from aircraft is included in the conservation objectives.

14.2.32. I note that a wildlife management plan[62] currently being implemented by the applicant includes measures to prevent birds from roosting at or immediately adjacent to Dublin airport, including the north runway area, in the interest of public safety. It is therefore the case that significant numbers of SCI species will not occur in this area as they are actively discouraged. The applicant states that the introduction of condition 3 (d) and 5 will not change in any way the conservation objectives of the QI/SCI of European sites.

14.2.33. Surveys showed that there is no evidence that flights overflying Baldoyle Bay or Rogerstown Estuary have any effect on birds present within these sites and the wildlife management plan implemented at Dublin airport would still be implemented meaning there will be no change to the number of birds present in the vicinity of the north runway and the runway system at the airport.

14.2.34. The AA Screening report (September 2021) highlights that the only possible impacts that may occur as a result of the proposed RA on the QI/SCIs of European Sites (SACs and SPAs) would be as a result of direct noise and/or visual disturbance caused by over-flying aircraft or from collision mortality (bird strike). The impacts of potential fuel dumping were also considered as a possible impact.

[62] Bird and Wildlife Management at Aerodromes, published by the National Bird and Wildlife Hazard Committee, Irish Aviation Authority (March 2021).

14.2.35. Section 3.11 of the submitted Screening Report (September 2021) refers to the AA Screening Report prepared by ANCA which informed their decision on the NAO. This report assessed the impact of air emissions from aircraft, and states that they become negligible in terms of their ground level air quality effects once aircraft are more than 350-650 feet above ground on take-off or more than approx. 160-350 feet above the ground on landing. According to the same report, this height will be reached by aircraft using Dublin Airport within 2km or less of the airport. The closest European site to the North Runway is Malahide Estuary SAC which is c. 4km northeast of the airport and well beyond this distance.

14.2.36. Noise levels below 60dB(A) are unlikely to cause any disturbance to birds. I note that this is examined in detail by the applicant under Section 2 and 5 of the AA Screening Report (Sept 2021). In addition, it is highlighted that in the case of non-breeding waterbirds that planes flying at heights of 300 meters above ground level did not result in any significant change in the behavior of birds. Nesting seabirds (breeding birds) are generally considered to be more sensitive to disturbance (as evidenced in the literature review), although previous studies have found that this again would only be the case at levels below 300m. In some of these cases i.e., studies of cliff nesting Kittiwake conducted in Scotland even at levels of 100m there was no evidence that aircraft affected attendance of birds.

14.2.37. Only 3no. European sites show the possibility that noise levels of greater than 60dB(A) could be experienced, these are Baldoyle Bay SPA, Ireland's Eye SPA and Rockabill to Dalkey Islands SPA. However, notwithstanding this and on a precautionary basis (i.e., to account for occurrences where 60db(A) may be exceeded at other designated sites) as part of the AA screening process below I have included a wider range of European sites, those around Dublin Bay, as far south as the Dalkey islands and further north as far as Rockabill SPA have been included in the potential Zone of Influence (ZOI).

14.2.38. In relation to terrestrial species and habitats listed under the relevant SACs included for assessment under table 8.1 below, these were examined for potential impacts as a result of noise disturbance from over flying aircraft and possible pollution effects as a result of increased flight numbers. As stated previously given that there is to be no construction of any kind as part of the proposed RA then there is no possibility of any construction related impacts of any kind on any European sites. I note the location of

the Cuckoo Stream which flows west to east through the site. Section 19.3.2.4 of the EIAR outlines that the Forrest Little, Ward and Kealy's Streams also flow through the application site. The Cuckoo Stream eventually joins the Mayne River, and the other streams eventually join the Sluice River. Both of these river's flow into Baldoyle Bay SAC/ SPA and not Malahide Estuary. This potential source, pathway was raised in initial third-party submission. The revised AA screening was updated to assess the potential impact and/or potential source-pathway-receptor. No potential for water pollution has been identified from the proposed RA. The airport currently controls discharges under a trade effluent licence which is not specifically necessary to prevent any impact on any European Sites.

14.2.39. The applicant's AA Screening report included a literature review on the potential for disturbance of marine mammals which concluded than below 500m (c. 1,600ft) or lower, there was no significant impact of disturbance from such aircraft on seals and cetaceans, including harbour porpoise. Snail species have no acoustic sense.

Table 11: Summary Table of European Sites within a possible zone of influence of the proposed development.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
Special Area of Conservation (SAC)					
Malahide Estuary SAC (site code 000205)	Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] CO: To maintain or restore the favourable conservation status of the habitat. Full details of conservation objectives are available here -	c. 4km to the northeast. Easterly departures from the northern runway will reach this site after 7.75km (this site would not be crossed by arriving flights).	The Malahide Estuary SAC is located approximately 4 km northeast of North Runway and receives flows from the Ward River. The Malahide Estuary is approximately 8 km downstream of the airport boundary. The SAC encompasses the estuary, saltmarsh habitats and shallow subtidal areas at the mouth of the estuary.	No direct habitat loss, no mobile species that could frequent the site. Hydrologically connected to the SAC via Ward River however pollution retention facilities are provided for on the runways, the aprons, and the taxiways, to collect de-icing chemicals. The paved area drainage network is sealed to protect groundwater from contamination. Operational discharges at the airport are controlled under an extant trade effluent licence. Stormwater drainage network for the North	No likely significant effect- excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000205.pdf			Runway has been designed to attenuate flows and avoid water quality impacts to the receiving watercourses. Increased overflights will not result in an increase in air pollutants that would adversely and significantly impact these habitats. There are no other impacts with the potential to have a likely significant effect on this site. No possible in combination effects.	
Baldoyle Bay SAC (site code 000199)	Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	c. 6.5km east, southeast. Easterly departures from the southern runway will reach this site after 7.48km (this is also the point at which arrivals heading westward will be	The Cuckoo Steam (via the Mayne River) and the Sluice River discharge to this site at c. 7.4 km downstream of the airport boundary. The Mayne River flows into the centre of Baldoyle Estuary at Mayne	No direct habitat loss, no mobile species that could frequent the site. Hydrologically connected to the SAC via cuckoo Stream and Mayne River however pollution retention facilities	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Mediterranean salt meadows (*Juncetalia maritimi*) [1410] CO: To maintain the favourable conservation status of the habitats. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000199.pdf	at their lowest altitude relative to the site)	Bridge, while the Sluice River discharges to the head of the estuary at Portmarnock Bridge.	are provided for on the runways, The aprons, and the taxiways, to collect de-icing chemicals. The paved area drainage network is sealed to protect groundwater from contamination. Operational discharges at the airport are controlled under an extant trade effluent licence. Stormwater drainage network for the North Runway has been designed to attenuate flows and avoid water quality impacts to the receiving watercourses. The majority of the airfield, within the Cuckoo Stream sub-catchment, is treated via a flow diversion chamber and pollution control tank that	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				has been constructed at the Cuckoo stream adjacent to the underground attenuation facility. Increased overflights will not result in an increase in air pollutants that would adversely and significantly impact these habitats. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	
Rogerstown Estuary SAC (site code: 000208)	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140]	c. 8km northeast Westerly departures from the northern runway will reach this site after	No direct avenues of connectivity. No possibility of effects due to lack of connection to the	No - due to separation distance and lack of connectivity.	No likely significant effect-excluded from the need for

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] CO: To maintain or restore the favourable conservation status of the habitats. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000208.pdf	11.84km (the site will not be crossed by arriving aircraft).	habitats for which this site is designated, distance from site to qualifying interests and dilution factor of Irish Sea.	Increased overflights will not result in a decrease in air quality that would significantly impact these habitats. There are no other impacts with the potential to have any likely significant effect on the qualifying interests of this site. No possible in combination effects.	consideration in AA.
North Dublin Bay SAC (site	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210]	c. 8.1km southeast This site will not typically be overflown once the	No direct avenues of connectivity.	Increased overflights will not result in a decrease in air quality that would significantly impact these	No likely significant effect- excluded from

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
code: 000206)	Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] *Petalophyllum ralfsii* (Petalwort) [1395] CO: To maintain or restore the favourable conservation condition of the habitats listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000206.pdf	northern runway is in operation.	No possibility of effects due to lack of connection to the habitats for which this site is designated, distance from site to qualifying interests and dilution factor of North Dublin Bay.	habitats. There are no other impacts with the potential to have any likely significant effect on the qualifying interests of this site. No possible in combination effects.	the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
South Dublin Bay SAC (Site code: 000210)	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110] CO: To maintain the favourable conservation condition of the habitats listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000210.pdf	c. 10.8km south Westerly departures from the southern runway will reach this site after 15.30km (Noting this is immediately adjacent to the designation and not technically within it).	No direct avenues of connectivity. No possibility of effects due to lack of connection to the habitats for which this site is designated, distance from site to qualifying interests and dilution factor of Dublin Bay.	Increased overflights will not result in a decrease in air quality that would significantly impact these habitats. There are no other impacts with the potential to have any likely significant effect on the qualifying interests of this site. No possible in combination effects.	No likely significant effect- excluded from the need for consideration in AA.
Ireland's Eye SAC (Site code: 002193)	Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] CO: To maintain the favourable conservation condition of the habitats listed. Full details of conservation objectives are available here -	c. 11.2km east Easterly departures from the southern runway will reach the site after c.11.8km (this is also the point at which arrivals heading westward will be at their lowest altitude	No direct avenues of connectivity. No possibility of effects due to lack of connection to the habitats for which this site is designated, distance from site to qualifying interests and	Increased overflights will not result in a decrease in air quality that would significantly impact these habitats. There are no other impacts with the potential to have any likely significant	No likely significant effect- excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002193.pdf	relative to this Natura 2000 site).	dilution factor of Baldoyle Bay/Irish Sea.	effect on the qualifying interests of this site. No possible in combination effects.	
Rockabill to Dalkey Island SAC (Site code:003000)	Reefs [1170] *Phocoena phocoena* (Harbour Porpoise) [1351] CO: To maintain the favourable conservation condition of the habitat and species listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf	c. 10.7km east Easterly departures from the southern runway will reach this site after 10.78km (this is also the point at which arrivals heading westward will be at their lowest altitude relative to the SAC).	No direct avenues of connectivity. No possibility of effects due to lack of connection to the habitats for which this site is designated, distance from site to qualifying interests and dilution factor.	According to the submitted literature review relating to cetaceans most disturbance from aircraft occurred at altitudes of less than 182m and in an assessment of harbour porpoise in the UK there is no evidence for a negative impact of low flying aircraft on this species. Given the location of the SAC, flights will be at their lowest altitudes above them (on departure or arrival) at 10.78km (Rockabill and Dalkey Island SAC based on the flight paths	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				presented). Given the distance from the airfield, these flights will routinely be in excess of 500m, and sound levels will be relatively low and masked by the sound of the waves. Increased overflights will not result in a decrease in air quality that would significantly impact reefs. The dissipation of pressure waves as they travel between air and water is such that noise from increased numbers of overflying presents no potential to cause a significant effect to cetaceans. There are no other impacts with the	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				potential to have any significant effect on this site. No possible in combination effects.	
Howth Head SAC (Site code: 000202)	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030] CO: To maintain the favourable conservation condition of the habitats listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000202.pdf	c. 11.5km Natura 2000 site will not typically be overflown once the northern runway is in operation.	No direct avenues of connectivity. No possibility of effects due to lack of connection to the habitats for which this site is designated, distance from site to qualifying interests and dilution factor.	Increased overflights will not result in an increase in air pollutants that would significantly impact these habitats. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	No likely significant effect-excluded from the need for consideration in AA.
Lambay Island SAC (Site Code: 000204)	Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] *Halichoerus grypus* (Grey Seal) [1364] *Phoca vitulina* (Harbour Seal) [1365]	c. 14.8km northeast Easterly departures from the northern runway will reach this site after c. 22km (arriving flights do not cross Lambay Island).	No direct avenues of connectivity. No possibility of effects due to lack of connection to the habitats for which this site is designated, distance from site	Noise modelling results as presented in the submitted AA Screening Report (September 2021) indicates an increase of more than 2dB under the proposed RA for this site According to the	No likely significant effect-excluded from the need for

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	CO: To maintain the favourable conservation status of the habitats. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000204.pdf		to qualifying interests and dilution factor.	submitted literature review evidence of seal disturbance from aircraft at lower altitudes has previously occurred under heights of 380m and this only caused alert behaviour and did not cause 'active' disturbance. Given the location of the SAC, flights will be at their lowest altitudes above them (on departure or arrival) at c. 22km (Lambay Island SAC) based on the flight paths presented. Given the distance from the airfield, these flights will routinely be in excess of 500m, and sound levels will be	consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				relatively low and masked by the sound of the waves. Increased overflights will not result in an increase in air pollutants that would negatively impacts these habitats. No possible in combination effects.	
Rye Water Valley/Carton SAC (Site Code 001398)	Petrifying springs with tufa formation (Cratoneurion) [7220] Vertigo angustior (Narrow-mouthed Whorl Snail) [1014] Vertigo moulinsiana (Desmoulin's Whorl Snail) [1016] CO - To restore or maintain the favourable conservation condition of the habitats and species. Full details of conservation objectives are available here -	17.3km southwest This site will not be overflown by North Runway flights.	This site is outside of any zone of influence of the development due to the lack of ecological connections to the specific habitat type and species for which the site is designated.	No possible impacts on 7220 and no impacts likely on snail species given that snail species have no acoustic sense and will not be affected by passing aircraft. Increased overflights will not result in a decrease in air quality that would adversely and significantly impact these habitats. There are no	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001398.pdf			other impacts with the potential to have any significant effect on this site. No possible in combination effects.	
Special Protection Area (SPA)					
Malahide Estuary SPA (site code 004025)	Great Crested Grebe (*Podiceps cristatus*) [A005] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Pintail (*Anas acuta*) [A054] Goldeneye (*Bucephala clangula*) [A067] Red-breasted Merganser (*Mergus serrator*) [A069] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140]	c. 4km to the northeast Easterly departures from the northern runway will reach this site after 7.75km (this site would not be crossed by arriving flights).	This site is located approximately 4 km north-east of North Runway and receives flows from the Ward River. The Malahide Estuary is approximately 8 km downstream of the airport boundary.	Hydrologically connected to the SPA via Ward River however pollution retention facilities are provided for on the runways, the aprons and the taxiways, to collect de-icing chemicals. The paved area drainage network is sealed to protect groundwater from contamination. Operational discharges at the airport are controlled under an extant trade effluent licence.	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Wetland and Waterbirds [A999] CO: To maintain the favourable conservation conditions of the bird species and habitats listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004025.pdf			Stormwater drainage network for the North Runway has been designed to attenuate flows and avoid water quality impacts to the receiving watercourses. Increased overflights will not result in an increase in air pollutants that would adversely and significantly impact these species. Noise modelling results as presented in the submitted AA Screening Report (September 2021) indicates an increase of more than 2dB under the proposed RA for this site. Average noise levels from aircraft overflying the site will be below that at which	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				significant impacts are likely for a variety of reasons but including that habituation from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	
Baldoyle Bay SPA (site code 004016)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Bar-tailed Godwit (*Limosa lapponica*) [A157] Wetland and Waterbirds [A999]	c. 6.5km southeast. Easterly departures from the southern runway will reach the site after 7.48km (this is also the point at which arrivals heading westward will be at their lowest altitude relative to the SPA).	The Cuckoo Steam (via the Mayne River) and the Sluice River discharge to this site which is located approximately 7.4 km downstream of the airport boundary. The Mayne River flows into the centre of Baldoyle Estuary at Mayne Bridge, while the Sluice River	Hydrologically connected to the SPA via cuckoo Stream and Mayne River however pollution retention facilities are provided for on the runways, the aprons and the taxiways, to collect de-icing chemicals. The paved area drainage network is sealed to protect groundwater from	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	CO: To maintain the favourable conservation status of the species. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004016.pdf		discharges to the head of the estuary at Portmarnock Bridge.	contamination. Operational discharges at the airport are controlled under an extant trade effluent licence. Stormwater drainage network for the North Runway has been designed to attenuate flows and avoid water quality impacts to the receiving watercourses. Most of the airfield, within the Cuckoo Stream sub-catchment, is treated via a flow diversion chamber and pollution control tank that has been constructed at the Cuckoo stream adjacent to the underground attenuation facility. Although the Baldoyle SPA Conservation Objectives Supporting Document states	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				that “the airspace over the site is one of the main routes for air traffic coming into and out of Dublin airport”, it does not identify that this is a pressure on the site nor that it has any role in affecting the conservation status of the SCI species. Based on submitted noise contours this site may be subject to noise events with a Lmax value of 60 db(A) at least once per night on average. Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
				from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	
North-West Irish Sea Candidate SPA (site code 004236)	Red-throated Diver (Gavia stellata) [A001] Great Northern Diver (Gavia immer) [A003] Fulmar (Fulmarus glacialis) [A009] Manx Shearwater (Puffinus puffinus) [A013] Cormorant (Phalacrocorax carbo) [A017] Shag (Phalacrocorax aristotelis) [A018] Common Scoter (Melanitta nigra) [A065] Little Gull (Larus minutus) [A177] Black-headed Gull (Chroicocephalus ridibundus) [A179]	c. 7km to the east of the site	The Cuckoo Steam (via the Mayne River) and the Sluice River discharge to this site which is located approximately 7.4 km downstream of the airport boundary. The Mayne River flows into the centre of Baldoyle Estuary at Mayne Bridge, while the Sluice River discharges to the head of the estuary at Portmarnock Bridge.	Although this is candidate SPA, the AA Screening Addendum has regard to the literature available the potential impacts in the updated AA screening include: Disturbance from over-flying aircraft Collision with aircraft Emergency fuel dumping.	No likely significant effect- excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Common Gull (Larus canus) [A182] Lesser Black-backed Gull (Larus fuscus) [A183] Herring Gull (Larus argentatus) [A184] Great Black-backed Gull (Larus marinus) [A187] Kittiwake (Rissa tridactyla) [A188] Roseate Tern (Sterna dougallii) [A192] Common Tern (Sterna hirundo) [A193] Arctic Tern (Sterna paradisaea) [A194] Little Tern (Sterna albifrons) [A195] Guillemot (Uria aalge) [A199] Razorbill (Alca torda) [A200] Puffin (Fratercula arctica) [A204 CO: To maintain or restore the favourable conservation status of the habitats Full details of conservation objectives are available here -		This SPA overlaps with the majority of the east coast SAC and SPA sites listed within this ZOI and extends further out east into the Irish Sea.	Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	North-west Irish Sea SPA | National Parks & Wildlife Service (npws.ie)				
South Dublin Bay and River Tolka Estuary SPA (site Code: 004024)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] – Please note this species is proposed for removal from the list of SCIs. Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192]	c. 8km south Westerly departures from the southern runway will reach this site after 15.30km (noting this is immediately adjacent to the designation and not technically within it).	No direct avenues of connectivity. No possibility of direct effects on SCIs due to the distance from and lack of connections to site. No possibility of indirect impacts on water quality given the distances involved and the dilution factor of Dublin Bay.	Noise modelling results as presented in the submitted AA Screening Report (September 2021) indicates an increase of more than 2dB under the proposed RA for this site). Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site.	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999] CO: To maintain the favourable conservation condition of the bird species listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004024.pdf			No possible in combination effects.	
Rogerstown Estuary SPA (site code 004015)	Greylag Goose (*Anser anser*) [A043] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143]	c. 8.3km northeast Westerly departures from the northern runway will reach the site after 12.96km (the site will not be crossed by arriving aircraft).	No - Due to distance and the lack of any relevant ex-situ factors of significance to these species.	Noise modelling results as presented in the submitted AA Screening Report (September 2021) indicates an increase of more than 2dB under the proposed RA for this site . Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Redshank (*Tringa totanus*) [A162] Wetland and Waterbirds [A999] CO: To maintain the favourable conservation conditions of the species. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004015.pdf			for a variety of reasons but including that habituation from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	
North Bull Island SPA (Site code: 004006)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140]	c. 8.2km This natura 2000 site will not typically be overflown once the northern runway is in operation.	No possibility of direct effects on SCIs due to the distance from and lack of connections to site. No possibility of indirect impacts on water quality given the distances involved and the dilution factor of Dublin Bay.	Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation from the species concerned to overflying will already have occurred. There are no other impacts with the	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999] CO: To maintain the favourable conservation condition of the bird species listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004006.pdf			potential to have any likely significant effect on this site. No possible in combination effects.	

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
Ireland's Eye SPA (site code: 004117)	Cormorant (*Phalacrocorax carbo*) [A017] Herring Gull (*Larus argentatus*) [A184] Kittiwake (*Rissa tridactyla*) [A188] Guillemot (*Uria aalge*) [A199] Razorbill (*Alca torda*) [A200] CO: To maintain or restore the favourable conservation condition of the bird species listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004117.pdf	c.11.3km southeast Easterly departures from the southern runway will reach Ireland's Eye SPA after 11.78km (this is also the point at which arrivals heading westward will be at their lowest altitude relative to this Natura 2000 site).	No possibility of direct effects on SCIs due to the distance from and lack of connections to site. No possibility of indirect impacts on water quality given the distances involved and the dilution factor.	Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	No likely significant effect- excluded from the need for consideration in AA.
Howth Head Coast SPA (Site code: 004113)	Kittiwake (Rissa tridactyla) [A188] CO: To maintain or restore the favourable conservation condition of the bird species listed. Full details of conservation objectives are available here –	c. 13km southeast This Natura 2000 sites will not typically be overflown once the northern runway is in operation.	No possibility of direct effects on SCIs due to the distance from and lack of connections to site. No possibility of indirect impacts on water quality given the distances	Average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation from the species concerned	No likely significant effect- excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004113.pdf		involved and the dilution factor.	to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	
Lambay Island SPA (Site Code: 004069)	Fulmar (*Fulmarus glacialis*) [A009] Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Greylag Goose (*Anser anser*) [A043] Lesser Black-backed Gull (*Larus fuscus*) [A183] Herring Gull (*Larus argentatus*) [A184] Kittiwake (*Rissa tridactyla*) [A188] Guillemot (*Uria aalge*) [A199] Razorbill (*Alca torda*) [A200] Puffin (*Fratercula arctica*) [A204]	c. 14.8km northeast14.8km northeast Easterly departures from the northern runway will reach this site after 22.69km (arriving flights do not cross Lambay Island).	No possibility of direct effects on SCIs due to the distance from and lack of connections to site. No possibility of indirect impacts on water quality given the distances involved and the dilution factor.	Noise modelling results as presented in the submitted AA Screening Report (September 2021) indicates an increase of more than 2dB under the proposed RA for this site). However average noise levels from aircraft overflying the site will be below that at which adverse impacts are likely for a variety of reasons but including that habituation	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	CO: To maintain or restore the favourable conservation condition of the bird species listed. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004069.pdf			from the species concerned to overflying will already have occurred. There are no other impacts with the potential to have any likely significant effect on this site. No possible in combination effects.	
Skerries Islands SPA (Site code: 004122)	Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Purple Sandpiper (*Calidris maritima*) [A148] Turnstone (*Arenaria interpres*) [A169] Herring Gull (*Larus argentatus*) [A184] CO: To maintain or restore the favourable conservation condition of the bird species listed. Full details of conservation objectives are available here -	c. 18.1km northeast This Natura 2000 sites will not typically be overflown once the northern runway is in operation.	Skerries Island is located within the water body of the Irish Sea. The pathway is however significantly remote. No ecological connection via ground/surface water. No ecological connection via air due to separation distance and the lack of any relevant ex-situ factors of significance to these species.	Given the distance from the area concerned with the Relevant Action no likely significant effects are likely. No possible in combination effects.	No likely significant effect- excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004122.pdf				
Rockabill SPA (Site Code: 004014)	Purple Sandpiper (*Calidris maritima*) [A148] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] CO: To maintain the favourable conservation conditions of the species. Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004014.pdf	19.2km northeast This Natura 2000 sites will not typically be overflown once the northern runway is in operation.	Rockabill is located in the Irish Sea about 6 kilometres east-north-east of Skerries, County Dublin. The pathway is however significantly remote. No ecological connection via ground/surface water. No ecological connection via air due to separation distance and the lack of any relevant ex-situ factors of significance to these species.	No possibility of effects due to the distance from and lack of connections to the SCIs for which this site is designated. No possible in combination effects.	No likely significant effect-excluded from the need for consideration in AA.
Dalkey Islands SPA (Site code: 004172)	Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] CO: To maintain or restore the favourable conservation condition of the bird species listed.	c. 19.7km south This Natura 2000 sites will not typically be overflown once the northern runway is in operation.	This site is outside of any zone of influence of the development due to the lack of ecological connections to the specific SCIs for which the site is designated.	No possibility of effects due to the distance from and lack of connections to the habitat for which this site is designated.	No likely significant effect-excluded from the need for consideration in AA.

European Site (code)	List of Qualifying interest /Special conservation Interest	Distance from proposed area related to Relevant Action (Km)	Connections (source, pathway receptor	Test for possible significant effects	Screening conclusion
	Full details of conservation objectives are available here - https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004172.pdf		No ecological connection via ground/surface water.		

14.2.40. **Further Consideration of potential impacts and examination of any significant effects.**

Potential impacts of any future fuel dumping

14.2.41. In response to concerns raised in several third-party submissions received, as well as the Council's request for further information outlined under Item 2 (b) regarding potential impacts on European sites caused by emergency fuel dumping from the RA, the applicant revised the AA Screening Report, submitted an updated assessment (dated September 2021) and further assessed the impact of fuel dumping on the candidate SPA.

14.2.42. Fuel dumping is carried out by aircraft only in emergency situations to reduce weight, thereby improving the safety of landing. The AA Screening notes that fuel dumping is only undertaken in emergency situations and has only happened once since 2014 and that no subsequent effects on European sites were identified. The event occurred on 30th September 2018 when an aircraft which required emergency landing dumped fuel over the Irish Sea prior to landing, east of Drogheda. Section 3.5 of the AA Screening Report highlights that although fuel is dumped from an aircraft in this situation, it is understood that much if not all vaporises/disperses before reaching the sea and that any which does reach the marine environment would be subject to massive dilution effects due to dispersal over a wide area. The report highlights that exact locations of fuel dumping would not be possible.

14.2.43. Fuel dumping will be infrequent and only carried out in emergency situations. It will be subject to control measures by the Airport which will reduce the likelihood for effects albeit the potential for such will be assessed in future planning applications or similar related types of development e.g., growth or airspace redesign. Having examined the information contained within the submitted AA Screening Report, as well as consideration of the precautionary principle, I consider the likelihood of any significant effect from a fuel dump occurring on any of the above referenced designated sites (see table 8.1) which have a marine environment connection/are located under the flight paths, to be low.

14.2.44. In conclusion I am satisfied that fuel dumping will be infrequent and subject to control measures by the Airport which will not have any significant effects on designated European sites.

Functionally linked habitat

14.2.45. Section 3 of the submitted AA Screening Report (September 2021) states that it is impossible to know the location of every area of functionally linked habitat which may be overflown by aircraft using Dublin Airport. This aside, there is no evidence in the AA screening report or third-party submission to indicate any additional functional habitats outside the European Site which must be considered.

14.2.46. The AA Screening Report and NIS prepared on behalf of ANCA to inform their own assessment of the Noise Abatement Objective (NAO) (dated June 2022) states that it is customary for studies on air quality around airports to include the whole aircraft landing and take-off cycle, including operations on the ground and in the air up to 3,000 feet (~1,000 metres (m)) above ground level. However, it is generally understood by practitioners that emissions from aircraft become negligible, in terms of their effect on ground-level air quality, once aircraft are more than approximately 350-650 ft (100-200m) above the ground on departure, and when greater than approximately 160-350 ft (50-100m) on arrival. These heights are reached within 2km or less (which represents an altitude with an approximate minimum of 650ft) from the airfield boundary, which is comfortably outside of the airspace of any European sites in the Dublin area.

14.2.47. The nearest European site to the north runway is the Malahide Estuary SAC and this is c. 4km northeast of the runway. Regardless of any potential increase in flight numbers, I note the altitude of the planes crossing European sites (or being in close proximity) in the Dublin area will routinely be in excess of 500m on departure and arrival, therefore there is no potential for any impacts on those special features of interest of any European Sites.

14.2.48. Having considered the above, I do not consider there to be any likely significant effect on functionally linked habitats as a result of overflying aircraft.

Noise and Disturbance Impact

14.2.49. The AA Screening includes evidence of vantage point surveys comprising 252 hours of field survey in 2017 and 2018, in the Baldoyle Bay and Rogerstown Estuary areas. No disturbance events caused by overflying aircraft Dublin airport were observed. These surveys were carried out at a time when Dublin Airport was at its busiest with the number of ATMs similar to that predicted under the proposed RA up to 2035. The AA Screening Report states that on the basis of this evidence, it is clear that overflying commercial aircraft using Dublin Airport has no effect on bird species using these European sites.

14.2.50. The literature review presented under Section 2 of the AA Screening Report (September 2021) outlines that at noise levels below c. 60 dB(A) birds are unlikely to be disturbed. Figure 1 of the AA Screening Report illustrates noise contours covering the area within which there will be a noise event within L_{Max} value of 60 dB (A) at least once per night on average, those European sites subject to these noise events have been highlighted under Table 11 above. Table 11 of the AA Screening report which contains Noise Modelling Results in relation to European sites suggests that the L_{Max} values at multiple European sites will exceed 60 dB(A), however this may occur on average less than once per night. The noise modelling exercise also estimated the number of times noise levels of 60dB, 72 dB and 77dB would be exceeded at these European sites due to passing aircraft on an average summer night.

14.2.51. The results of the noise modeling exercise, illustrated under Table 11 of the AA Screening Report, show in 2022 under the proposed RA there would it be an increase in L_{Max} at four of the European sites when compared to the permitted scenario i.e. at Malahide Estuary SPA, South Dublin Bay and River Tolka SPA, Lambay Island SPA and Lambay Island SAC, all expected to experience a 2dB increase when compared to the Permitted scenario. This exercise was carried out for each of the permitted and proposed scenarios in 2022, 2025 and 2035. There are eight predictions of an increase of more than 2dB under the proposed RA, these are for Malahide Estuary SPA 2035, Baldoyle Bay SPA 2025, Rogerstown Estuary SPA 2022, South Dublin Bay and River Tolka Estuary SPA 2025, and Lambay Island SPA and SAC 2025 and 2035. The maximum increase in L_{Max} predicted at any of the European sites is 6dB; at Malahide Estuary SPA 2035 and at South Dublin Bay and River Tolka Estuary SPA 2025.

14.2.52. All sites where exceedance of the 60 dB(A) is outlined have been assessed for likely significant effects as outlined under Table 11 above.

14.2.53. It is acknowledged that the timing of flights will change with greater numbers of planes operating in the periods 23:00-00:00 and 06:00-07:00. For much of this time the planes will not be visible (other than with navigation lighting) to birds due to darkness. It is therefore necessary to consider whether birds will be more prone to disturbance at night, especially as the behaviour of some species will be different during hours of darkness (e.g., Whitfield, 2002). Given the separation of the European sites and the airfield (especially measured by flight path length) additional disturbance is not predicted, especially given that these European sites are currently overflown at night. However, birds moving from coastal environments to feed in agricultural fields during hours of darkness could bring themselves into closer proximity to the airport and therefore experience greater numbers of noise events than at the coast as flight numbers increase. Despite additional flights in these specific short periods across functionally linked areas, disturbance of birds present is not expected as these areas (if chosen by foraging waders) are part of a wide expanse of similar fields at varying distances and angles from the airfield. Therefore, there are opportunities to forage in less disturbed areas if the birds chose not to tolerate aircraft. This situation is analogous to the current situation – i.e., birds that are not tolerant of aircraft overflight can chose to forage across the wider area.

14.2.54. I also note that commercial aircraft using Dublin airport have not been identified in any of the conservation objectives supporting documents as being an existing pressure on the favorable conservation status of the QI or SCI are any of the relevant European sites considered.

14.2.55. Bird strike information for Dublin Airport from 2010 to 2019 is outlined under Table 12 of the AA Screening Report. I note that more than 40 species were involved in these strikes with the most involved species being the very common and widely distributed woodpigeon. The Daa has a detailed Wildlife Management Plan (WWP) in place to manage the risk to aircraft operations from wildlife. As a result of this management, no bird species, including SCI bird species of European sites, are not permitted to occur in significant numbers in the vicinity of the airport. The implementation of the WMP is to continue for operations on the north runway, serving to make it very unlikely that SCI species will be involved in aircraft strike. I am therefore satisfied that

there will consequently be no impact to SCI species from the proposed RA as conditions will remain as they currently exist under the WMP.

14.2.56. The Boards Ecologist report notes the documentation submitted with the Relevant Action, the NAO and RD and the Addendum report and concludes that based on the best available scientific knowledge in terms of surveys and assessments, significant effects such as disturbance of SCI bird species and bird collision has been excluded.

14.2.57. Following an examination of the submitted objective information, I am satisfied that likely significant effects on any European site from bird disturbance impacts associated with the proposed Relevant Action can be excluded.

14.2.58. **In-combination Effects**

14.2.59. The original AA Screening Report (December 2020) notes that in the absence of any potential source-pathway-receptor between the site and Rogerstown Estuary SPA, Baldoyle Bay SPA, Ireland's Eye SPA, Lambay Island SPA and South Dublin Bay and River Tolka Estuary SPA, there is no possibility of in-combination effects from the RA. No in combination effects were identified in the AA screening for the North-West Irish Sea c SPA in the Addendum AA Screening.

14.2.60. As stated above, the NAO and RD, were subject to both a Stage 1 and Stage 2 assessment. Both concluded that there are no predicted effects from the impacts which could arise from the proposed Relevant Action, there is no possibility of in-combination effects to arise with other projects or plans, as there can be no addition to effects which may arise from other projects or plans.

14.2.61. I note from the Board's online planning system[63] there have been several planning permissions granted on the airport site. In addition, there are currently two proposals before the Board which have not been decided yet. This RA action is for alterations to the operation of the airport and as such does not include any physical infrastructure. The addition movements of flights, etc. has been addressed above in the description of the potential impacts and considered in my assessment. Whilst I note permitted development and other proposals (detailed above in Section 4.0) I do not consider

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these are linked to the RA proposal or need to be considered for any cumulative assessment.

14.2.62. In relation to plans, I note there is a wide range relating to the development of the airport site. This RA would not give rise to any further in combination effects which have not already been considered in their own screening,

14.2.63. I am satisfied that it can be reasonably concluded that no residual in-combination effects will result from the proposed Relevant Action.

14.2.64. **Mitigation Measures**

14.2.65. No measures designed or intended to avoid or reduce any harmful effects of the project on a European Site have been relied upon in this screening exercise.

14.2.66. The AA Screening Report acknowledges the proposed new residential sound insulation measures; however, it is clear to state that these sound insulation measures are not intended to avoid or reduce significant effect on any European site.

14.2.67. I note the measure implemented as part of the WWP are standard measures to avoid or minimise any impact on wildlife and are not necessary to prevent any significant impact on the conservation objectives of any European Sites.

14.3. Screening Determination and Conclusion

Finding of no likely significant effect

14.3.1. The proposed development was considered in light of the requirements of Section 177U of the Planning and Development Act 2000 as amended. Having carried out Screening for Appropriate Assessment of the project, it has been concluded that the project individually or in combination with other plans or projects would not be likely to give rise to significant effects on European Sites

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- Baldoyle Bay SAC (site code 000199)
- Rogerstown Estuary SAC (site code: 000208)
- North Dublin Bay SAC (site code: 000206)

- South Dublin Bay SAC (Site code: 000210)
- Ireland's Eye SAC (Site code: 002193)
- Rockabill to Dalkey Island SAC (Site code:003000)
- Howth Head SAC (Site code: 000202)
- Lambay Island SAC (Site Code 000204)
- Rye Water Valley/Carton SAC (Site Code 001398)
- Malahide Estuary SPA (site code 004025)
- Baldoyle Bay SPA (site code 004016)
- North-West Irish Sea Candidate SPA (site code 004236)
- South Dublin Bay and River Tolka Estuary SPA (site Code: 004024)
- Rogerstown Estuary SPA (site code 004015)
- North Bull Island SPA (Site code: 004006)
- Ireland's Eye SPA (site code: 004117)
- Howth Head Coast SPA (Site code: 004113)
- Lambay Island SPA (Site Code: 004069)
- Skerries Islands SPA (Site code: 004122)
- Rockabill SPA (Site Code: 004014)
- Dalkey Islands SPA (Site code: 004172)

or any other European site, in view of the site's Conservation Objectives, and Appropriate Assessment (and submission of a NIS) is not therefore required.

14.3.2. This determination is based on the following:

- The distance of the proposed development from the European Sites and the demonstrated lack of any meaningful ecological connections.
- The potential for disturbance impacts from noise which, in the majority of instances L_{max} remains the same or changes only slightly under the proposed RA at all European sites considered.

- The altitudes and noise levels of aircraft when above identified European sites are outside of the ranges commonly considered, within the scientific literature, to be causes of disturbance.
- The interest features of the European sites have already become habituated to noise and overflying more generally, and any increase as a result of Relevant Action is unlikely to have further significant effects.
- That although increases in night-time flights are proposed to occur, this will lead to no significant effect to the conservation objectives of the European sites within the ZoI;
- That increased numbers of flights are low enough that changes in air quality will also be small and will not affect the habitats within the SACs (and SPAs) such that there is deterioration.

15.0 Conclusion and Recommendation

15.1.1. The Regulatory Decision (RD) and the Relevant Action (RA) propose alterations to the current permitted operating procedures at Dublin Airport to include the additional movement of aircraft during the night for 2 hrs, between the hours of 23:00 to 00:00 and 06:00 to 07:00. Theses operational changes also include the replacement of the existing aircraft movement restriction of 65 flights per night during the 92-day busy period to a Noise Quota Scheme (NQS) during the nighttime hours. These operational changes require a change to Condition No 3 d) and No 5 of the original North Runway permission PL06F.217429 (Reg Ref F04A/1755) as detailed below:

- Condition 3(d) – Runway 10L-28R (the North Runway) shall not be used for take-off or landing between 23:00 and 07:00 (i.e., the night period).
- Condition 5 – The average number of night-time aircraft movements at the Airport shall not exceed 65 per night (between 23:00 and 07:00) when measured over the 92-day modelling period.

15.1.2. Additional mitigation measures in the form of nighttime noise insulation are also included in the proposal. The outcomes of the RD and RA are the same and both are interrelated. The Planning and Development Act, 2000 (as amended) and the Aircraft Noise (Dublin Airport) Regulations Act 2019 allow an appeal to the RD where it forms part of the RA. I have had regard to all the submissions, information submitted by the applicant and the reports and submissions by the Airport Noise Competent Authority (ANCA) and the Planning Authority. I have concluded, in conjunction with the Boards Independent acoustic expert, that the information contained in the RD and the RA does not adequately demonstrate consideration of all measures necessary to ensure the increase in flights during the nighttime hours would prevent a significant negative impact on the existing population. In reaching this conclusion, regard was given to the information submitted by the applicant in relation to the Additional Awakening Assessment, the NQS and the number of air traffic movements proposed.

15.1.3. The final permitted Noise Quota Scheme of 16,260 is based on the noise classification of c. 87 flights per night. No restriction on air traffic movement is included in the Relevant Action and the EIAR states that the proposed increase of

aircraft movements will initially be 13,000 in the 2025 assessment year, with no significant increase thereafter in the 2035 assessment year. The noise classification system, for the NQS, allows substantial increases in air traffic movements being traded against marginal reductions in how noisy aircraft are. This leads to an increase in additional awakenings which can have a significant impact on sleep disturbance. The introduction of an air traffic movement restriction, in conjunction with the NQS, can ensure additional awakenings are minimised by the control of the number of aircraft movements to reasonable levels.

15.1.4. The applicant's supplementary information, submitted to the Board's in response to the first additional information request, proposes a change in fleet mix. There will be an increase in the movement of cargo flights, noisier aircraft, during the nighttime hours. This movement will impact sleep disturbance on a population. The supplementary information also includes alterations to the flight patterns departing from the North Runway. The change to flight patterns and fleet mix were not previously considered by ANCA or the Planning Authority during the RD or RA.

15.1.5. The RA includes the movement of aircraft, during the night which will impact an existing community who have not previously experienced this noise. This includes persons impacted by both the initial RA proposal and the flight paths amended by the supplementary information. It is important that those properties located in the flight paths of these noisy aircraft will qualify for additional insulation. The RA proposes additional nighttime insulation scheme for those residential properties within the 55 dB L_{night} contours. The EIA assessment relies on a second criteria (i.e., exceed 50 dB L_{night}, and are 9 dB higher than in a scenario with the operating restrictions) to prevent any significant negative impact on the existing residential amenity.

15.1.6. The Vanguardia Report includes a recommendation for additional criteria for insulation with explicit reference to the second criteria to ensure insulation for properties located within new flight paths (i.e., exceed 50 dB L_{night}, plus 9 dB) and a third stand-alone qualifying criterion for all properties subject to aircraft noise of 80 dB L_{Amax} during the night. To explicitly include these criteria and provide insulation for properties located under the flight paths of very noisy aircraft, can ensure adequate mitigation is provided to prevent any impact, from aircraft noise at night, on the existing population.

15.1.7. The alterations proposed in the supplementary information, particularly the change in flight patterns, has been a major cause of concern by third parties. The absence of public consultation on these alterations has been raised. Any grant of permission by the Board. Which considered the new flight paths in the supplementary information are acceptable, would alter the Eligibility Contours for insulation scheme in the RD and RA. Overall, engagement has been consistent throughout the entire RD and RA process, as summarised below:

- 259 submissions were received by Fingal County Council during the application stage;
- 78 observations were received by ABP in accordance with section 130 of the Planning and Development Act;
- 323 observations were received following the publication/erection of new notices on the supplementary information;
- 196 submissions were received in response to the S.131 issued on 12th March 2024.

15.1.8. Should the Board accept my recommendation to amend the noise mitigation measures or operating restrictions, there is a requirement for a further 14 weeks for public consultation is required under the Aircraft Noise (Dublin Airport) Regulations Act 2019. I consider this period of further engagement would allow further public engagement on the proposed changes to the RD and RA.

15.1.9. I am satisfied that should the recommendations for aircraft movement limit and additional insulation be implemented, the proposed changes to condition No 3 d) and No 5 is acceptable. It is widely recognised in international guidance, as supported in the Fingal County Development Plan 2023-2029, that operational restrictions at airports should be based on a Balanced Approach. The additional movement of aircraft during the nighttime hours can operate at Dublin Airport without significant adverse impact on the existing communities once the appropriate mitigation measures are in place.

15.1.10. The recommended changes to the RD, in particular the air traffic movement limit, is broadly based on the calculation of the NQS, the information contained in the applicant's supplementary information and the EIAR. As stated above, the Airport

Act, 2019 requires a period of further public consultation, should the Board be minded implementing any further operating restrictions, not previously considered in the making of the RD. I consider this period of further engagement would allow more clarity on the practical implication of an aircraft movement limit at Dublin Airport.

15.1.11. These recommended changes to the Regulatory Decision and Relevant Action are summarised below:

Aircraft Movement Limit

Set a cap on the annual aircraft movement. The airport shall be subject to an annual aircraft movement limit of 13,000 between the nighttime hours of 23:00 and 06:59 (inclusive, local time) with aircraft movements split between the Winter 3,900 and Summer 9,100 to allow for extra flights during the 92-day summer busy period.

Reason: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night-time use of the existing parallel runway.

Residential Sound Insulation Grant Scheme (RSIGS)

Regulatory Decision should be amended to explicitly state the following:

- residential dwellings situated in the 50 dB L_{night} contour in the first full year when the Relevant Action comes into operation, together with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year,
- residential dwellings subject to aircraft noise of 80 dB L_{Amax} based on the noise footprint of the airport's westerly and easterly single modes of approach and departure (not averaging the modes of operation of the airport over the 92 days of summer) between 2300 hrs and 0700hrs.

Reason: To account for the impact of noise from individual aircraft movements from, any change in flight paths, and assessed in terms of the maximum noise level at a receptor during the fly-by.

Runway Operation

Preferential use of the north runway for departures during 2 hours of the morning.

e) Runway 10L-28R shall be used for departure only during the hours of 06:00 and 08:00

except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.

Reason: In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Assessment in the interest of the protection of the amenities of the surrounding area.

16.0 Reasons and Considerations

In coming to my decision, I have had regard to the following:

16.1. Appropriate Assessment

The proposed development was considered in light of the requirements of Section 177U of the Planning and Development Act 2000 as amended. Having carried out Screening for Appropriate Assessment of the project, it has been concluded that the project individually or in combination with other plans or projects would not be likely to give rise to significant effects on European Sites

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or any other European site, in view of the site's Conservation Objectives, and Appropriate Assessment (and submission of a NIS) is not therefore required.

This determination is based on the following:

- The distance of the proposed development from the European Sites and the demonstrated lack of any meaningful ecological connections.
- The potential for disturbance impacts from noise which, in the majority of instances L_{max} remains the same or changes only slightly under the proposed RA at all European sites considered.
- The altitudes and noise levels of aircraft when above identified European sites are outside of the ranges commonly considered, within the scientific literature, to be causes of disturbance.
- The interest features of the European sites have already become habituated to noise and overflying more generally, and any increase as a result of Relevant Action is unlikely to have further significant effects.

- That although increases in night-time flights are proposed to occur, this will lead to no significant effect to the conservation objectives of the European sites within the Zone of Influence.
- That increased numbers of flights are low enough that changes in air quality will also be small and will not affect the habitats within the SACs (and SPAs) such that there is deterioration.

16.2. Environmental Impact Assessment

Having regard to the examination of environmental information contained above, and in particular to the EIAR and the submissions from the planning authorities and prescribed bodies in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment have been identified throughout this report. In the absence of additional operational restrictions and mitigation measures it is considered that the proposed development would give rise to significant direct or indirect impacts of the population and human health, and the minor direct and indirect impacts on climate change as detailed below:

- Population and Human Health will be mainly impacted by the number of people Highly Annoyed, which will initially decrease in 2025 and then increase in 2035 in the Relevant Action when compared to the permitted scenario. The number of people Highly Sleep Disturbed will increase in both assessment years (i.e. 2025 and 2035). These figures are based on the average impact of the increased aircraft movements and do not reflect the full extent of the increased movement of aircraft during the additional two nighttime hours in the Relevant Action. The inclusion of additional mitigation measures and operating restrictions in the form of an aircraft movement limit can ensure additional awakenings are minimised and the impact on sleep disturbance is mitigated.
- Total Annual Green House Gas (CHG) emissions of the Relevant Action is projected to increase in 2025 when compared to the permitted scenario and then decrease in 2035. No specific mitigation measures have been included in the predicted emissions. The decrease in the 2035 is based on a change in

forecasted aircraft scheduling which indicates there will be an increase in short-haul night flights modelled in 2035 which will decrease long-haul day flights, leading to lower Continuous Climb Departures (CCD) emissions in the proposed scenario for 2035 when compared to the permitted scenario. The scheduling has not been presented in the documentation. This aside, international aviation towards net zero will ensure the use of climate friendly fuels and having regard to minor differences of aircraft movement increases between the permitted and proposed scenario, the long-term impact on the climate is considered of minor significance.

- The significance of effect of the impacts of Relevant Action on aircraft noise and vibration has been presented in the EIAR as an average over the entire nighttime period. Aircraft noise is not experienced as an average and the noise impacts of sleep from ATMs are intermittent and not continuous. The additional awakening results generally follow the same pattern as the HA and HSD, but the scale of the additional awakening results has a much greater significance due to the reality of the effect of one additional awakening. This result is greater due to the number of aircraft movements which is allowable under the NQS system. This impact can be mitigated through the inclusion of an aircraft movement restriction during the additional nighttime hours and the use of an insulation scheme to protect the existing community impacted by the flight paths of aircraft.

16.3. **Proper Planning and Sustainable Development**

Having regard to

European legislation, including of particular relevance.

- European Communities (Relating to the Assessment and Management of Environmental Noise) (Directive 2002/49/EC)

National policy and guidance including:

- Climate Action Plan 2024,
- Project Ireland 2040- the National Planning Framework (NPF)
- A National Aviation Policy for Ireland, 2015

Regional and Local Level policy; including:

- Eastern and Midlands Regional Authority – Regional Spatial and Economic Strategy (EMRA-RSES) (2019)
- Fingal County Council Climate Action Plan 2024-2029
- the policies and objectives of the Fingal County Development Plan 2023-2029, particularly DAO16 and the introduction of a Noise Quota System,
- Fingal Noise Action Plan 2019-2023,
- Dublin Airport Local Area Plan, 2020,
- Dublin Airport Noise Action Plan, 2019-2023,

And the following matters:

- the nature, scale, and location of the proposed development,
- the planning history of the site and the surrounding area,
- the pattern of existing and permitted development in the area,
- the distance to dwellings and other sensitive receptors from the proposed development,
- the Environmental Impact Assessment Report submitted,
- the Screening for Appropriate Assessment,
- the submissions and observations received,

it is considered that, subject to compliance with the alterations to the Regulatory Decision and the conditions of the Relevant Action, the proposed development would not seriously injure the amenities of property in the vicinity by reasons of excessive noise disturbance at night and be in accordance with the proper planning and sustainable development of the area.

17.0 **Conditions**

1.	The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by the further plans and particulars received by An Bord Pleanála, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars. **Reason:** In the interests of clarity and of proper planning and sustainable development of the area.
2.	Apart from any departures specifically authorised by this permission, the development shall be carried out and completed in accordance with the terms and conditions of the permission(s), planning register reference number PL06F.217429 (Reg Ref F04A/1755) as extended, and any agreements entered into thereunder. **Reason:** In the interest of clarity and to ensure that the overall development is carried out in accordance with the previous permission(s).
3.	Revoke Condition No 3 d) of permission PL06F.217429 (Reg Ref F04A/1755): *Runway 10L-28R shall not be used for take-off or landing between 2300 hours and 0700 hours*, Replace Condition No 3 d) with the following: d) Runway 10L-28R shall not be used for take-off or landing between 0000 hours and 0559 hours except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports or where Runway 10L-28R length is required for a specific aircraft type;

	Include an additional part e) on Condition No 3 of permission PL06F.217429 (Reg Ref F04A/1755): e) Runway 10L-28R shall be used for departure only during the hours of 06:00 and 08:00 *except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports*. **Reason:** In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Assessment in the interest of the protection of the amenities of the surrounding area.
5.	Revoke Condition No 5 of permission PL06F.217429 (Reg Ref F04A/1755): *On completion of construction of the runway hereby permitted, the average number of night-time aircraft movements at the airport shall not exceed 65/night (between 2300 hours and 0700 hours) when measured over the 92-day modelling period as set out in the reply to the further information request received by An Bord Pleanála on the 5th day of March 2007* Replace Condition No 5 with the following: a) The airport shall be subject to a Noise Quota Scheme (NQS) with an annual limit of 16,260 between 23:00 and 06:59 (inclusive, local time) with noise-related limits on the aircraft permitted to operate at night. The NQS shall be applied as detailed in the Regulatory Decision, published by ANCA on the 20th of June 2022. Part 1: Definitions Part 2: Noise Quota Scheme terms and conditions Part 3: Noise Quota Scheme Reporting Requirements Part 4: Noise Performance Reporting **Reason:** To limit the impact of the aircraft noise at Dublin Airport on sleep disturbance in the interest of residential amenity and to ensure the effective

	implementation of the Noise Abatement Objective for the Dublin Airport by means of a noise-related limit on aircraft operations.
6.	The airport shall be subject to an annual aircraft movement limit of 13,000 between the nighttime hours of 23:00 and 06:59 (inclusive, local time) with aircraft movements split between the Winter 3,900 and Summer 9,100 to allow for extra flights during the 92-day summer busy period. **Reason:** To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night-time use of the existing parallel runway.
7.	The Residential Sound Insulation Grant Scheme (RSIGS) shall be amended to include the criteria for eligibility to the scheme for the following residential dwellings: • Residential dwellings situated in the 50 dB L_{night} contour in the first full year when the Relevant Action comes into operation, together with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year, • Residential dwellings subject to aircraft noise of 80 dB L_{Amax} based on the noise footprint of the airport's westerly and easterly single modes of approach and departure (not averaging the modes of operation of the airport over the 92 days of summer) between 2300 hrs and 0700hrs. **Reason:** To account for the impact of noise from individual aircraft movements from, any change in flight paths, and assessed in terms of the maximum noise level at a receptor during the fly-by.

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Karen Hamilton
Senior Planning Inspector
29th of May 2024

18.0 **Appendix**

18.1. **Appendix 1: List of Observers**

Aaron Cregan	Aaron Glynn	Adrian and Barbara Kelly
Adrian Curran	Adrian and Agneta Kavanagh	Aer Lingus
Adrian Kelly	DHL Express	
Aidan Bodkin	Aidan Conaty	Adrian Kavanagh
Alan Daniels	Alan Fitzpatrick	Airlines for America
Albert Rattigan and Catherine O'Donovan	Ambrose Jameson	Alan Lynch
ANCA	Andrew Anderson	Ana Barisnikova
Ann and Cian Kinsella	Ann McNelis	Angela Martin
Anne Martin	Anne Stack	Ann Smith
Anthony Gallagher	Aoibheann O'Hara	Annette Akinrinde
Ballyboughal Community Council	Barbara Walsh	Audrey Wilhite
Bernadette Conaty-Beyer	Bernadette Lawless & Keith Hanlon	Bart and Bernie Glover
Bernadine Dempsey	Bernard and Susan Lynch	Bernadette Mary Egan
Bob Lynam and Jeanne McMahon	Breda and Francis Murray	Bernie O'Reilly
Brenda Barry	Brendan Murphy	Breffni and Orla Conaty
Brian Crawford	Brian Dougan	Brian Carey
Carol Oppermann	Brian Prendergast	Bryan Beggan

Carolyn Crawford-McKenzie	Carol Smyth	Carol Wright
Cathy Smyth	Christina Bates	Christopher Ratcliffe
Catherine O'Brien	Cathal Boland	Cathal Haughey
Cedars Ridgewood Management GLC	Catherine Ratcliffe	Catriona Hurley
Ciaran Norton	Christopher Ratcliffe	Ciaran McCreary
Cllr Ann Graves and Louise O'Reilly TD	Claire Gubbins	Clara Stack
Cllr Dean Mulligan	Cllr Brian McDonagh	Cllr Darragh Butler and others
Ciaran Cuffe MEP	Claude Smyth	Conor Kennedy
Cllr. Hellen Meyer and Darren O'Rourke TD	Cllr Ian Carey	Cllr John Walsh
Colm and Sandra Barry	Colette Moran	Colm & Ewelina Kavanagh
Conor Skerritt	Colm Ingle	Colm Ratcliffe
Danny O'Neill	Conor Tormey	Cormac McKay
Darren Murphy	Darach Culligan	Darragh O'Neill
David Smyth	David Egan	David Hanratty
Declan Hannigan	Dawn Conaty	Dean Murphy
Deirdre McNamara	Deirdre and Paul Nolan	Deirdre Curran Kendellen
Dermot Molphy	Derek Hanlon	Derek McGowan
Dolores McGuire	Desmond Guckian	Dolores Beggan
Doreen Mooney	Dolores Murphy	Don Jermyn
Dublin Chamber	Duncan Smith TD	Eddie & Marisa Cassidy

Edel Whyte	Edward and Marisa Cassidy	Edward O'Driscoll
Eilis O'Friel	Eithna Ratcliffe	Emma Isdale
Emmett Currie	Eoghan Dockwell	Eoin Keary
Eric Duffy	Eric Fleming	Eric Healy
Esther Cassidy	Eugen Dmitras	FedEx Express
Fingal County Council	Fiona Irwin	Francesca Rossini
Frank Reidy	Fred O'Brien	FTA Ireland
Gareth O'Brien	Georgina Gaughan	George Glynn
Gerald and Miriam O'Hara	Gerald Turley	Gerard & Eilleen Coonagh
Gerard Dempsey	Gerard O'Keeffe	Gerard O'Sullivan
Gerard Warren	Gerry Fitzsimons	Gerry Sweeney and others
Gerry Treanor	Gianluca Micalella	Gillian Archer Murphy
Gillian Toole	Grainne and Michael McFadden	Grainne Carey
Grainne Redmond	Gregory Hughes	Hazel and James Maxwell
Hilary O'Broin	Hilary Shearman	Hugh Donohoe
Ibec	Irish Tourism Industry Confederation ITIC	James Harte
James Humphreys	James Ryan	James Scully
Jan Bosch	Jane and Denis O'Shea	Jason McEneaney
Jenny Mac Manus and Ray Mac Mánais	Jim Isdale	Jim Scully
Joe Bonner	Joe Cronin	Joe Cummins

Joe O'Brien TD	John Boland	John Burtchaell
John Chalkley	John Cummins	John Delaney
John Farrell	John Harmon	John Harris
John Lambert	John Lynch	John McLoughlin
John Smyth	John Stack	John Stamford
John Stynes	John Whyte	John Yeates
Jonathan McNally	Joseph and Helen Kenny	Julie Patton
Karl Cassidy	Kate Rooney	Kathleen Kelly
Keith McDermott	Keith Murphy	Ken and Marjan McCarthy
Kevin and Ann O'Meara	Kevin Fennelly	Kevin Kenny
Kevin O'Donoghue and others	Kian and Katie Cleere	Kilcoskan National School
Laura Mahony	Laurence Hickey	Laurence Skelly
Leo Reilly	Leona Cantwell	Liam and Laura Hickey
Liam and Orla McMahon	Liam Donnelly	Liam O'Gradaigh
Lily Conaty	Lily Walsh	Linus and Elaine Kavanagh
Lisa Morris	Lo Klinkenbergh	Loreto O'Byrne
Louise Keary	Louise Young	Lukasz Polanski
Mairead and Gerry Fitzsimons	Mairead O'Keeffe	Majella Keane
Malahide Community Forum	Margaret Bennett	Margaret Donnellan
Margaret O'Riordan	Maria and Shane Carolan	Marianne O'Keeffe
Marie and Barry O'Brien	Marie Archer Murphy	Marie Brennan

Mark Levins	Martin and Leah Moran	Martin and Margaret Godwin
Martin Flaherty	Mary and Jeffrey Breen	Mary Bryllert
Mary Grogan	Mary Madigan	Maurice O'Donnell
Meath County Council	Michael and Anna Malone	Michael and Frances Mulkerrin
Michael and Margaret O'Rourke	Michael Conneally	Michael Delaney
Michael Kavanagh	Michael MacCabe	Michael Moane
Myles Caulfield	Natalie Creevey	Neil and Annette Cashell
Neil Carey	Niall Farrell	Niamh Cronin
Nick Egan	Nicola O'Neill	Noel Bannon
Noel Browning	Noel Smith	Noelle Dollard
Noelle Spring	Noreen Wright	Olibhe Ni Bhraonain
Orla Roche	Pat Murtagh	Patricia A. Byrne
Patrick and Louise Goodman	Patrick Clifford	Patrick Donnelly
Patrick Hughes	Patrick Kelly	Patrick Quinn and Teresa Purtill
Paul and Alison Murphy	Paul and Patricia Mangan	Paul and Susanne Lynam
Paul Corrigan	Paul Doolan	Paul Sutton
Pauline McGuinness	Pearse and Evelyn Sutton	Peter and Deirdre Goodman
Peter Coyle	Peter McGrath	Peter Swail
Peter Wilson	Philip Davis	Phillip and Yvonne Cleere

Portmarnock Community Association	Phoebe Reilly	Rabbitte Property Group Limited
Rachel Keane	Randolph Taylor	Raphael Ardiff
Raymond Wright	Renee Barnett	Richard Brophy
Richard Corcoran	Richard Merne	Robert & Eithne Byrne
Robert J. Beyer	Robert Kennedy	Robert Murphy
Róisín Coary	Ronan Keegan	Rory Dwyer
Rory & Mary McCullagh	Samir Bejaoui	Sarah Maguire
Seamus and Ann O'Neill	Seamus and Ursula Horan	Sean Carolan
Sean McIvor	Serena Taylor	Shelly Barron
Siobhain Isdale	Rory Mc Cullagh	
Stephen Devine	Stephen Kavanagh and Others	Stephen Smyth
Sue McDonnell	Susan Crawford	Tatjana and Markus Imhof
Terence Quinlan	Teresa O'Dowd	Teresa Sweeney
Thomas & Angela Smyth	Thomas A. Keenan	Thomas Conaty
Thomas Fee	Thomas Keogh	Thomas Moxon
Tippy Toes Playschool	Tom Kelleher	Tom Winters
Tony Byrne	Tony Gray	
Vanessa Harford	Vanessa Moran	Vicky McGauley
Vincent O'Donoghue	Vladimirs Barisnikovs	Sabrina Joyce- Kemper on behalf of Wild Irish Defence CLG
William Dempsey		

18.2. Appendix 2: Proposed Changes to the Regulatory Decision

The Aircraft Noise (Dublin Airport) Regulation Act, 2019 and Section 34C of the Planning and Development Act, 2001, as amended, states that, if the Board, in its consideration of an appeal, decides to amend the Regulatory Decision, then any proposed alterations must be placed on public display for 14 weeks.

The following conditions relate to a change in either the Regulatory Decision and/or the Relevant Action as explicitly stated below.

Should the Board consider that my recommendation above is appropriate, I recommend that the following operating restriction and mitigation measures are placed on public display for a further period of consultation.

Current Condition No 3 of the Regulatory Decision

A voluntary residential sound insulation grant scheme (RSIGS) for residential dwellings shall be provided. Initial eligibility to the scheme shall apply to all residential dwellings situated within the Initial Eligibility Contour Area as shown in Figure 3.1 - regulatory decision, Third Condition. Residential Sound Insulation Grant Scheme (RSIGS) - Initial Eligibility Contour Area – June 2022.

Eligibility to the scheme shall be reviewed every 2 years commencing in 2027 with residential dwellings situated in the 55 dB Lnight contour being eligible under the scheme as detailed below.

Part 1 Definitions.

Proposed Condition No 3 of the Regulatory Decision

A voluntary residential sound insulation grant scheme (RSIGS) for residential dwellings shall be provided. Initial eligibility to the scheme shall apply to all residential dwellings situated within the Initial Eligibility Contour Area as shown in the Overview Map: Comparison between Regulatory Decision 3rd Condition and FI Response- March 2024

Eligibility to the scheme shall include:

- residential dwellings situated in the 55 dB L_{night} contour,
- residential dwellings situated in the 50 dB L_{night} contour in the first full year when the Relevant Action comes into operation, together with a change of at least +9 dB when compared with the current permitted operation in the same equivalent year,
- residential dwellings subject to aircraft noise of 80 dB L_{Amax}, measured at the exterior façade of their house, based on the noise footprint of the airport's westerly and easterly single modes of approach and departure (not averaging the modes of operation of the airport over the 92 days of summer) between 2300 hrs and 0700hrs.

Eligibility to the scheme shall be reviewed every 2 years commencing in 2027.

Part 1 Definitions shall remain the same as the Regulatory Decision

REASON: To ensure adequate mitigation against the impact of aircraft nighttime noise as a result of the use of the Airport's runways, in the interest of residential amenity and the proper planning and sustainable development of the area.

Proposed NEW Condition No. 3 e)

Preferential Use of the North Runway

e) Runway 10L-28R shall be used for departure during the hours of 06:00 and 08:00

except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.

Reason: In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Assessment in the interest of the protection of the amenities of the surrounding area.

Proposed NEW Condition

Annual Nighttime Aircraft Movement Limit

The airport shall be subject to an annual aircraft movement limit of 13,000 between the nighttime hours of 23:00 and 06:59 (inclusive, local time) with aircraft movements.

Movement limit: Winter 3,900 and Summer 9,100.

Reason: To control the frequency of night flights at the airport so as to protect residential amenity having regard to the information submitted concerning future night-time use of the existing parallel runway.

18.3. **Appendix 3: Ecologist Report**

18.4. **Appendix 4: Vanguardia Report**

18.5. Appendix 5: Vanguardia Addendum Report