S. 37

File With ____________

SECTION 131 FORM

Appeal NO:_ABP 321485

Defer Re O/H ☐

TO:SEO

Having considered the contents of the submission dated/ ~~received~~ 20/12/24

from

SMTW Environmental DAC recommend that section 131 of the Planning and Development Act, 2000 ~~be~~/not be invoked at this stage for the following reason(s):. no new issues

E.O.: [signature] Date: 2/1/25

To EO: ____________

Section 131 not to be invoked at this stage. ☐

Section 131 to be invoked – allow 2/4 weeks for reply. ☐

S.E.O.: ____________ Date: ____________

S.A.O: ____________ Date: ____________

M ____________

Please prepare BP ____________ - Section 131 notice enclosing a copy of the attached submission

to: ____________

Allow 2/3/4weeks – BP____________

EO: ____________ Date: ____________

AA: ____________ Date: ____________

S. 37

File With ______

CORRESPONDENCE FORM

Appeal No: ABP 314485

ɴ ______

Please treat correspondence received on 30/12/24 as follows:

1. Update database with new agent for Applicant/Appellant ______
2. Acknowledge with BP 23
3. Keep copy of Board's Letter ☐

1. RETURN TO SENDER with BP ______
2. Keep Envelope: ☐
3. Keep Copy of Board's letter ☐

Amendments/Comments

Keep

* USB

4. Attach to file
(a) R/S ☐
(b) GIS Processing ☐
(c) Processing ☑
(d) Screening ☐
(e) Inspectorate ☐

RETURN TO EO ☐

Plans Date Stamped ☐
Date Stamped Filled in ☐

EO: [signature]
Date: 2/1/25

AA: F. Mathews
Date: 2/1/25

SMTW Environmental DAC
c/o Liam O'Gradaigh
Ward Cross,
The Ward,
Co. Dublin

The Secretary
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902
20th December 2024

RE: SUBMISSION ON DRAFT DECISION ON THE RELEVANT ACTION CASE NO. 314485 - ZZ

Dear Sir/ Madam,

On behalf of the St Margaret's The Ward Residents Group (SMTW), we submit our response to the Draft Decision on the Relevant Action. While we recognise the importance of Dublin Airport to the Irish economy, the operation of the airport must be conducted responsibly. The daa's proposal, as confirmed by the inspector and her experts, was for unlimited flights at night. This proposal failed to account for the significant adverse impacts that would have persisted if the daa's submission had been granted without the additional measures outlined in the Draft Decision, namely the movement limit and expanded insulation scheme.

This submission will highlight the ongoing deficiencies in the daa's assessment while welcoming the additional control measures as necessary and essential steps toward addressing the community's concerns. Fundamentally, we urge the Bord to stand firm and reaffirm their initial assessment that the daa's application was inadequate in its impact assessment and failed to propose sufficient control measures.

The daa have publicly stated that they believe the Bord's decision was mistaken and that they cannot possibly accept any movement limits at Dublin Airport. Such statements, coupled with their resistance to operational restrictions, demonstrate an arrogance that exemplifies how the daa continues to disregard the significant impacts of their operations on the communities surrounding the airport.

Awakenings and Health Impacts

The assessment highlights the critical significance of awakenings as a metric for evaluating noise impacts. Single-event disturbances during the night result in immediate and tangible disruptions to residents' sleep, adversely affecting health and well-being. The daa's proposal would exacerbate this issue, resulting in significant adverse impacts due to additional awakenings at night. Expert evidence demonstrates that the current plans would subject thousands of residents to recurring nighttime disruptions, which are well-documented to

increase risks of cardiovascular disease, mental health issues, and impaired cognitive functioning.

Insulation schemes, while helpful in certain scenarios, are fundamentally inadequate for addressing the severity of noise impacts in communities directly under flight paths. The loudness and frequency of nighttime aircraft noise mean that even insulated properties often experience noise levels sufficient to cause awakenings. Additionally, insulation does nothing to mitigate the broader community-wide health impacts caused by such disruptions, especially in cases where windows must remain open for ventilation or cooling.

The only effective measure to mitigate this issue is the imposition of a strict movement limit during nighttime hours. This approach directly addresses the root cause of nighttime noise disturbances by limiting the number of events capable of causing awakenings. Retaining the 13,000 movement limit aligns with international best practices, ensuring Dublin Airport implements operational controls similar to those used at other major airports to manage aviation noise during sensitive nighttime hours. Without such controls, Dublin Airport remains an outlier, perpetuating a model where there are no effective restrictions on night noise from aviation to the detriment of affected communities.

Divergent Flight Paths and Inadequate Assessment

The use of divergent flight paths deviating from those assessed in the Environmental Impact Statement undermines public trust and compliance with planning conditions. This deviation has subjected previously unaffected communities to significant noise impacts without proper environmental reassessment. Critically, the significance of these noise impacts has never been properly assessed, a major omission that compromises the integrity of the decision-making process.

Moreover, the Irish Aviation Authority (IAA) and AirNav Ireland have confirmed in writing that there are safe alternatives to the flight paths currently being used. They also clarified that Dublin Airport Authority (daa), as the sponsor of changes to flight paths, is obligated to account for planning and environmental noise constraints when specifying the airport's concept of operations. The daa failed to fulfil this responsibilty. Instead, the flight paths currently in use prioritise operational requirements of the airport, disregarding the planning permission granted and the associated noise impacts on surrounding communities.

Recent communication from daa further confirms their unwillingness to address these concerns adequately. They have stated that they will not commence any review of the flight paths until the Relevant Action is granted permission .This approach reveals their intention to have the current flight paths rubber-stamped by the Bord as approved without undergoing the proper environmental assessment required. Such actions undermine the transparency and accountability of the planning process and disregard the significant impacts on affected communities.

Despite these critical issues, the inspector has been misled by the daa regarding the evolution of safe flight paths. The daa presented the current flight paths as being driven solely by safety considerations, while failing to disclose the availability of alternatives that balance safety with planning and environmental considerations. This failure significantly undermines the decision-making process. The inspector should have requested formal submissions from the IAA and AirNavIreland to verify the daa's claims, rather than accepting them at face value.

This lack of transparency and proper assessment raises serious concerns about the integrity of the process. The failure to explore alternatives and consider their environmental implications deprives affected communities of meaningful protection and representation in the decision-making process.

Concerns with the Right to Appeal

We are gravely concerned about the refusal of the SMTW appeal against the Aircraft Noise Competent Authority's decision. This decision, inconsistent with the Aircraft Noise Act 2019, denies communities their statutory right to challenge noise-related decisions that profoundly affect their lives. Upholding this right is critical to ensuring accountability and fairness.

To ensure the integrity of the Aircraft Noise Act and the confidence of stakeholders, it is essential that the right to appeal Regulatory Decisions (RDs) is fully upheld. SMTW's case highlights the urgent need for clarity and consistency in the appeals process to protect the rights of impacted communities and ensure fair and transparent decision-making. The refusal of SMTW's appeal undermines trust in the system and sets a dangerous precedent where critical noise mitigation measures can evade meaningful scrutiny. Guaranteeing this right is fundamental to fostering transparency, equity, and the confidence of all stakeholders affected by aircraft noise.

The Necessity of Retaining the 13,000 Movement Limit

Expansive nighttime operations at Dublin Airport are simply not feasible given the overwhelming evidence of the harm caused by nighttime noise exposure. Nighttime aircraft noise and the resulting sleep disturbance are recognised contributors to a range of serious health issues, including cardiovascular disease, hypertension, impaired cognitive development in children, and mental health challenges. These impacts are highlighted extensively in the report by Dr James Garvey, Consultant Respiratory & Sleep Physician and Medical Director of the Sleep Laboratory at St. Vincent's University Hospital. Dr Garvey's analysis underscores that noise-related sleep disturbances are not merely inconveniences but direct contributors to long-term public health crises.

The economic consequences of these health impacts are staggering. Studies consistently show that the costs of noise-related health conditions can amount to billions of euros in healthcare expenses, lost productivity, and diminished quality of life. Crucially, these costs are not accounted for when assessing the economic benefits of increased nighttime operations. Instead, the daa prioritises short-term operational gains while ignoring the immense societal costs borne by affected communities and public health systems.

A movement limit is not just a mitigation measure; it is a fundamental safeguard to ensure Dublin Airport operates responsibly. Imposing and retaining the 13,000 movement limit aligns with international best practices, where night-time operational restrictions are standard at major airports across Europe. These restrictions reflect a commitment to balance aviation needs with the well-being of nearby communities. Without such limits, Dublin Airport remains an outlier, perpetuating harmful practices that disregard the health and welfare of the surrounding population.

In conclusion, a movement limit is essential to protect public health, ensure responsible airport operations, and align Dublin Airport with the standards upheld by other leading European airports. Retaining the 13,000 movement limit is the only effective way to mitigate

the severe health impacts of nighttime noise and uphold the principles of sustainable and accountable airport management.

Expert Insights

Several expert reports support our positio n

- Suono has submitted detailed evidence on the inadequacies of the noise assessment carried out by daa, highlighting inaccuracies in the noise modelling that undermine the reliability of the results presented.

- Wave Dynamics has conducted extensive noise monitoring during the summer of 2024, providing robust data o n the actual noise levels expe ienced by affected communities, which contrast sharply with the daa's pred ictons.

- Hendrik van der Kemp provides a critica lanalysis of the planning process, identifying deficiencies in the wording of proposed conditions and the lack of consultation between An Bord Pleanála and aviation authorities. This lack of collaboration has contributed to sign ifcant gaps in addressing operationa limpacts.

- Gary Rowan, Town Planner and Director of HRA Planning, has provided a detailed opinion on the critical connection between flight paths and planning permission. He concludes that these two elements cannot be separated, as the planning permission granted is fundamentally tied to the environmental and operational impacts of flight paths. Any divergence from the assessed flight paths must therefore be reassessed within the planning framework to ensure compliance and mitigate impacts.

- Dr James Garvey, Consultant Respiratory & Sleep Physician and Medical Director of the Sleep Laboratory at St. Vincent's University Hospital, underscores the severe health impacts caused by sleep deprivation, particularly its role in long-term cardiovascular and mental health issues.

These expert cont ributions collectively emphasise the need for robust operational restrictions, such as the 13,000 movement limit, to mitigate the substantial health, environmental, and procedural deficiencies in the current proposal.

Conclusion

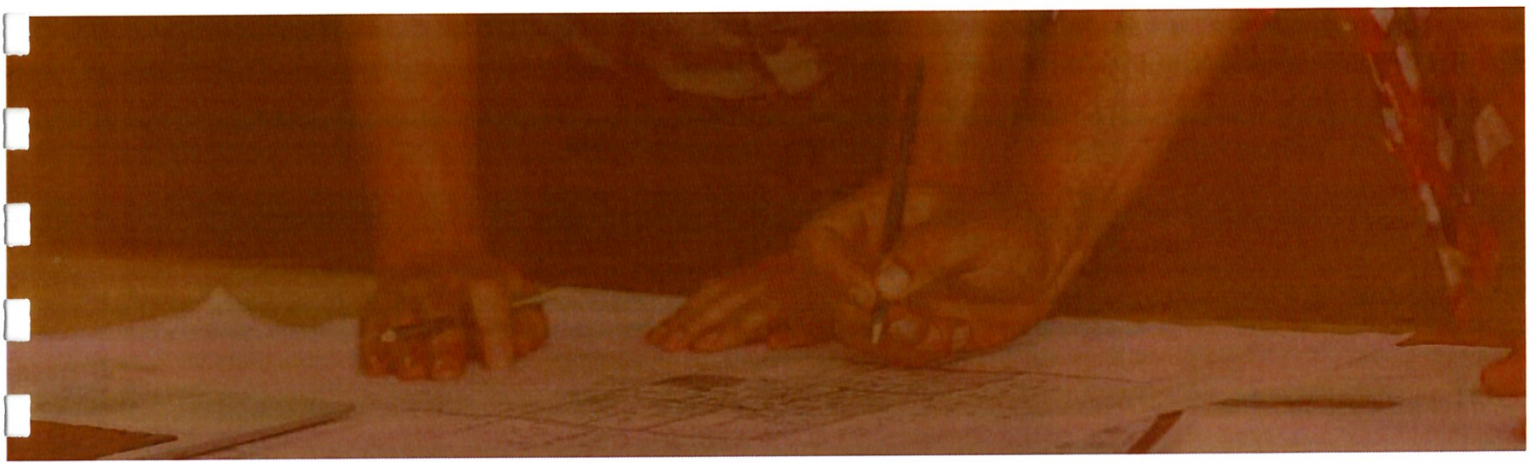
Given these unresolved issues, SMTW contends that the Draft Decision on the Relevant Action fails to meet the necessary criteria for approval. Consequently, we respectfully urge An Bord Pleanála to refuse permission. However, should permission be granted, we strongly advocate for the retention of the 13,000 movement limit as a non-negotiable condition to protect community health and well-bei ng.

We also note our disappointment that the Board didn't facilitate requests from the public to waive the fee for submissions given that the equivalent process held by ANCA did not require a fee to make a submission.

Thank you for considering our submission. We remain available to provide further clarification or evidence to support our position.

Yours sincerely,

Liam O'Gradaigh
On behalf of SMTW Environmental DAC



Submission on behalf of the SMTW ENVIRONMENTAL DAC

TO DRAFT DECISION BY AN BORD PLEANALA DATED SEPTEMBER 11TH 2024

Table of Contents

SUBMISSION ON BEHALF OF THE SMTW ENVIRONMENTAL DAC

1.0 Assessment of the Inadequacy of the DAA Application in Addressing Additional Awakenings

1.1 Introduction

The Inspector's Report critically evaluates the Dublin Airport Authority (DAA) application to extend nighttime operations and examines its potential impact on the local population. A core issue identified is the failure of the DAA to adequately address the adverse effects of additional awakenings caused by increased aircraft movements. Noise disturbances during nighttime hours, particularly those causing awakenings, are known to have significant health and well-being implications, with long-term consequences for quality of life in affected areas.

The Inspector's findings emphasise that the threshold of significance for additional awakenings is one additional awakening per night caused by aircraft noise. This seemingly small threshold reflects the acute and immediate nature of awakenings, which are more impactful than other noise metrics such as L_{night} or Highly Sleep Disturbed (%HSD). Without robust mitigation measures, the Inspector concludes that the Relevant Action (RA) would result in adverse and significant impacts on sleep disturbance. This chapter details these findings, the inadequacies in the DAA's proposals, the critical importance of retaining the proposed movement limit, and the limitations of insulation measures in addressing noise impacts.

1.2 Significance of Additional Awakenings

The Inspector's Report highlights the importance of evaluating noise impacts through the lens of additional awakenings, a metric that captures the immediate and conscious disturbance caused by aircraft noise. Unlike broader metrics such as %HSD or L_{night}, which aggregate impacts across populations or report generalised sleep disruption, the Additional Awakening Assessment (AA) focuses on tangible disruptions that affect individuals on a nightly basis.

As noted in the report, "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" (Paragraph 13.10.6). This distinction is critical because the AA method provides a more sensitive measure of noise impacts, particularly for communities near the airport where awakenings are more likely to occur due to higher noise exposure.

The projected figures for 2035 illustrate the severity of this issue. With the Relevant Action in place, it is estimated that "4,449 more people will experience an additional awakening" compared to the permitted scenario, while "7,596 more Highly Sleep Disturbed (HSD)" individuals are expected (Paragraph 13.4.9). The report underscores that "the impact of one additional awakening is considerably more significant than the impact of one person HSD", highlighting the importance of addressing awakenings as a standalone impact (Paragraph 13.4.9). This finding reflects the immediate, conscious disruption caused by awakenings, which often lead to difficulty returning to sleep and cumulative health effects over time.

1.3 Determining Representative Internal Noise Levels

For any awakenings assessment to accurately reflect the real-world impacts of nighttime noise, it must determine internal noise levels that represent an average over the year. This requires careful consideration of factors such as building insulation and the percentage of time windows are open, as these influence the degree of indoor noise reduction. The World Health Organization (WHO) Night Noise Guidelines for Europe provide a framework for this calculation and recommend an average insulation value of 21 dB.

The WHO explains that this value reflects conditions where windows may be open approximately 20% of the year, which reduces the insulation performance of even well-insulated homes. As stated in the guidelines:

"An average level difference of 21 dB has been chosen, as this takes into account that even in well-insulated houses windows may be open a large part of the year."

The logarithmic relationship between insulation and window-opening behaviour limits the effectiveness of insulation schemes in reducing annual average internal noise levels. For example:

- If windows are fully closed 100% of the time, an insulation value of 30 dB might be achieved.
- If windows are open 50% of the time, the effective insulation drops to approximately 18 dB.
- If windows are open only 20% of the time ,the effective insulation is approximately 21 dB, aligning withthe WHO's assumption.

This logarithmic relationship means that even with advanced insulation measures, the average internal noise level is capped by the proportion of time windows are open. Consequently, insulation schemes have limited effectiveness in addressing noise impacts when windows are regularly opened for ventilation, temperature regulation, or personal preference.

The reliance on an average insulation value of 21 dB in assessments underscores the need to account for realistic living conditions. While insulation measures can reduce indoor noise during specific periods, they cannot fully mitigate the impacts of additional awakenings over the year.

The decibel scale's logarithmic nature means that even with a substantial improvement, such as a fully insulated dwelling achieving a 5dB reduction compared to an uninsulated one, the overall annual insulation value may remain marginally above desired levels. Considering windows are open for 20% of the time, the total annual noise insulation value would average at 22dB. This represents only a 1dB improvement over the World Health Organisation (WHO) guideline figure, highlighting the challenge of achieving significant reductions in noise exposure when factoring in real-world variables such as ventilation requirements.

This limitation highlights the necessity of operational restrictions, such as movement limits, to address the root cause of nighttime noise disturbance.

1.4 Health Implications of Additional Awakenings

The adverse health effects of noise-induced awakenings are well-documented in international research and are cited extensively in the report. Awakenings disrupt sleep cycles, leading to fatigue, impaired cognitive function, and long-term risks such as cardiovascular disease and mental health issues. The Fingal County Development Plan 2023–2029 acknowledges this, stating that "awakening is summarised as the potential for sleep disturbance, premature awakening, and difficulty getting back to sleep" (Paragraph 12.6.92).

The World Health Organisation (WHO) also supports the use of noise metrics that account for single-event disturbances, such as L_{max} and additional awakenings, to assess the full impact of noise exposure. The Inspector notes that "the relationship between a single event noise and long-term health outcomes remains tentative", but acknowledges that the available evidence justifies a precautionary approach to minimise additional awakenings (Paragraph 12.6.92).

Without effective mitigation measures, the cumulative impact of nightly awakenings will significantly degrade the health and well-being of affected communities, particularly those near the airport. As the report emphasises, "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." (Paragraph 12.6.120).

1.5 Inadequacy of the DAA Application

The Inspector identifies several critical shortcomings in the DAA's application, which render it insufficient to mitigate the impacts of additional awakenings. These include:

1. Insufficient Consideration of Additional Awakenings: The Inspector concludes 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" (Paragraph 15.1.2). Insulation measures, while beneficial, cannot fully mitigate the recurring disruptions caused by awakenings, especially when considering the limitations of window-opening behaviour.

2. Over-Reliance on Broader Metrics: The DAA's reliance on %HSD and L_{night} metrics is criticised for failing to capture the acute and individualised impacts of additional awakenings. The Inspector notes that "the number of ATMs to induce one additional awakening on average doesn't follow the same trend as assumed by the %HSD approach", indicating that these broader metrics underestimate the disruption caused by individual events (Paragraph 13.10.6).

3. Projected Long-Term Impacts: The application projects significant increases in nighttime disruptions, with 4,449 additional awakenings and 7,596 more Highly Sleep Disturbed individuals expected by 2035 under the Relevant Action (Paragraph 13.4.9). These figures highlight the insufficiency of the proposed mitigation measures and underscore the need for operational restrictions.

1.6 Calculating the Number of Additional Awakenings

The Inspector's Report critiques the DAA's application for extending nighttime operations, noting its failure to adequately address the effects of additional awakenings caused by aircraft noise. Using data and methodologies from Basner and McGuire's systematic review in the WHO Environmental Noise Guidelines and noise monitoring reports from Dublin Airport, calculations were conducted to estimate the number of awakenings at key receptors for the 2025 Proposed Scenario. The results underscore the insufficiency of the mitigation measures proposed by the DAA.

Basner Equation: Probability of Awakening

The Basner equation provides a scientifically robust method for determining the probability of awakening due to aircraft noise. It is derived from the WHO Environmental Noise Guidelines (2018) and is expressed as:

$$\text{Prob. of Wake or S1} = -3.0918 - 0.0449 \cdot LAS_{max} + 0.0034 \cdot (LAS_{max})^2$$

For example, substituting a noise level of 40 dB into the equation:

$$\text{Prob. of Wake or S1 at 40 dB} = -3.0918 - 0.0449 \cdot 40 + 0.0034 \cdot (40)^2 = 0.5\% \text{ (rounded to 0.6\%)}$$

To calculate the cumulative number of events required to produce one awakening, divide 100 by the probability for a single event: 100/0.55≈181 ATMs.

Data Sources

- Aircraft Movements: Information on nighttime aircraft movements was taken from the Environmental Impact Assessment Report (EIAR) Supplement Appendix 13B, which specifies the 2025 Proposed Scenario under Westerly Operations.
- Noise Monitoring: To identify the L_{ASmax} noise levels at the NMTs, we used the information contained in the Quarterly Noise Monitoring Reports from the daa that are published on their website. We used the data from page 15 of the April-June 2024 report: https://www.dublinairport.com/docs/default-source/noise-reports/noise-flight-track-report-april---june-2024.pdf.
- Key Receptors: Five Noise Monitoring Terminals (NMTs) were assessed:
    - Kilcoskan National School (#26)
    - Coast Road (#20)
    - Newpark (#28)
    - St. Doolaghs (#2)
    - Bay Lane (#1)

  The five locations provide two under the North Runway on departures Westerly, two under the South Runway for arrivals from the East and one for departures on the South Runway Westerly. The winds are generally 70% from the West. We used the daa's NMTs for the receptors. Figure 0.1 is a screenshot from WebTrak (https://webtrak.emsbk.com/dub1) showing the locations of the NMTs:

Figure 0.1 Noise Monitoring Locations

Results of Awakening Calculations

Aircraft Movement Data: The distribution of nighttime movements for runways 28L and 28R under Westerly Operations is shown below:

Table 1 Aircraft Movement Data for 2025 Proposed Scenario

Time Period	28L Movements	28R Movements
00:00-00:59	13	1
01:00-01:59	6	1
02:00-02:59	2	0
03:00-03:59	2	0
04:00-04:59	12	0
05:00-05:59	11	0
06:00-06:59	3	27

Time Period	28L Movements	28R Movements
23:00-23:59	16	3
Night Total	**65**	**32**

Noise Event Distributions:

The percentage of noise events in each L_{ASmax} band for each NMT is shown below:

Table 2 Distribution of L_{ASMax} Levels at each NMT

NMT	60-64.9 dB	65-69.9 dB	70-74.9 dB	75-79.9 dB	80-84.9 dB	85-89.9 dB
26	1%	5%	39%	50%	5%	0%
20	0%	11%	81%	8%	0%	0%
28	0%	11%	21%	58%	9%	0%
2	0%	5%	47%	46%	1%	0%
1	0%	2%	22%	56%	20%	0%

Awakening Calculations: The number of awakenings was calculated by summing probabilities across all L_{ASmax} bands, converting outdoor to indoor noise levels using an insulation value of 21 dB as recommended by the WHO. Scenarios with 15 dB, representing an open window, and 22 dB representing an insulated property, as discussed in Section 1.3, were also evaluated.

Table 3 Number of Additional Awakenings for the 2025 Proposed Scenario

Insulation Reduction	KNS (#26)	Coast Road (#20)	Newpark (#28)	St. Doolaghs (#2)	Bay Lane (#1)
15 dB	1.8	2.6	1.9	3.0	0.6
21 dB	1.3	1.7	1.3	2.1	0.5
22 dB	1.3	1.7	1.3	2.1	0.5

<u>Key Findings</u>

- Four out of the five NMTs fail the "less than one additional awakening" criterion, even with insulation improvements.
- St. Doolaghs (NMT #2) and Coast Road (NMT #20) are most affected, with 2.1 to 3 awakenings per night under the proposed scenario.

- The limited improvement from enhanced insulation (22 dB) underscores the necessity of operational restrictions.
- This assessment has been done with the information available to SMTW Residents Group, however, the outcome can be applied to a much larger population who live in proximity to the NMT locations.

Recommendations

The analysis reveals that the 2025 Proposed Scenario would result in significant nighttime disruptions, exceeding acceptable thresholds for additional awakenings at multiple receptors. The findings strongly support the retention of strict operational limits as follows to safeguard public health and well-being.

1. Retain the 13,000-movement limit to minimize nighttime disruptions.
2. Revise Noise Abatement Objectives (NAO) to include a specific focus on additional awakenings, ensuring no increase in nighttime disruptions.
3. Recognize the limitations of insulation and prioritize operational measures as the primary mitigation strategy.

1.7 Necessity of a Movement Limit

The proposed movement limit is identified as the only viable solution to mitigate the impacts of additional awakenings. As stated in the report, "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" (Paragraph 15.1.9).

The inclusion of a movement limit is critical for ensuring that the frequency of nighttime flights remains manageable, minimising the disruption to residents. Without it, the impacts on sleep disturbance would remain adverse and significant, rendering the Relevant Action unacceptable.

1.8 $L_{AS\ Max}$ Insulation Criterion

The introduction of an additional qualifying criterion for noise insulation at Condition 6, specifically for residential dwellings subject to aircraft noise of 80 dB L_{Amax} is a positive step towards addressing the impacts of aircraft operations on communities. This measure acknowledges the significance of providing insulation for residents experiencing peak noise levels from airport activities during nighttime hours (2300 hrs to 0700 hrs).

However, a critical concern arises due to the absence of detailed maps outlining where this criterion will apply. The lack of such spatial information limits the ability of the public to engage meaningfully during the consultation process. Without clarity on the areas potentially impacted, stakeholders cannot accurately assess the extent of the proposed changes or voice informed

feedback. To ensure a fair and transparent consultation, it is strongly recommended that noise contour maps or equivalent visual aids be provided as part of the public consultation process.

Furthermore, the following clarifications are sought in the final decision,

1. Specification of Noise Footprint Calculation

The wording of the condition must be clarified to ensure that the 80 dB L_{Amax} noise footprint is based on the loudest aircraft that could potentially operate at Dublin Airport under the current Quota Count (QC) rules. This would ensure that the measure accounts for worst-case scenarios rather than being based solely on average or typical aircraft operations.

2. Single Mode Operations Coverage

The condition should explicitly state that it applies to single mode operations for both landings and departures in both directions on both runways. This is crucial to ensure comprehensive coverage, particularly during the periods when single mode operations are dominant.

3. Operational Scenarios for Both Runways

The criterion must include scenarios when the south runway is closed, and the north runway operates as the primary runway. This scenario, occurring for 3-4 consecutive nights every 6 weeks, has a significant impact on noise exposure for residents in specific areas. Explicit inclusion of these operational conditions will ensure that the measure remains effective and equitable for all impacted communities.

4. Accuracy of Noise Modelling

We refer the Bord to Section 4.0 of this submission which raises very valid concerns with the accuracy of noise contours produced by daa. Any qualification contour for insulation must be based on an independently verified aircraft noise model with adequate calibration against real measurements.

While the introduction of this additional qualifying criterion is a welcome development, greater transparency and clarity are needed to ensure its effectiveness. Providing detailed maps, clarifying the basis for noise footprint calculations, and ensuring coverage of all operational modes and scenarios will enhance the robustness of this condition and deliver meaningful benefits to impacted residents.

1.9 Conclusion

The Inspector's Report unequivocally concludes that the movement limit must be retained to address the significant impacts of additional awakenings on the population. As noted, "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 on the population and human health" (Paragraph 16.2).

The reliance on insulation schemes is inherently limited by the real-world behaviour of window opening, as outlined by the WHO's assumption of an average insulation value of 21 dB. This highlights the necessity of pairing insulation with operational measures, such as movement limits, to ensure effective mitigation.

The Bord is urged to consider amendments to the Noise Abatement Objective (NAO) to include specific reference to additional awakenings. A new objective should ensure no increase in additional awakenings following the implementation of the movement limit. Retaining the movement limit, alongside such amendments, will be critical to balancing operational needs with the health and well-being of the surrounding population.

2.0 Assessment of Divergent Flight Paths from Dublin Airport's North Runway

2.1 Introduction

Dublin Airport's North Runway represents one of the most significant infrastructural developments in Ireland's aviation history. It was designed to bolster Ireland's connectivity, increase capacity, and support economic growth. However, its implementation has been fraught with controversy, particularly regarding the current use of flight paths that deviate significantly from those assessed in the original Environmental Impact Statement (EIS) and planning permission process conducted between 2004 and 2007.

The controversy centres on whether these deviations were necessary for safety, as claimed by the applicant, or whether they represent a failure to adhere to critical planning conditions. The Irish Aviation Authority (IAA) and AirNav Ireland have confirmed that multiple safe options exist, including flight paths aligned with the original EIS. Appendix A includes an email from AirNav CEO Peter Kearney outlining the role AirNav has in the process of designing flight paths. Point 11 of that email states "AirNav Ireland's role is to develop IFPs which are safe and compliant with ICAO and EASA regulations. Associated environmental noise or issues to do with noise abatement procedures is the responsibility of the aerodrome operator."

IAA CEO Declan Fitzpatrick has also confirmed by email, attached at Appendix B, that "It is not the role of the regulatory authority to specify the design of the individual flight paths" and that "IAA do not take on board land use planning or environmental noise issues". The also confirm

that "As per EU Regulation 139/2014, daa are responsible for the provision of Standard Instrument Departure procedures (SIDs) and other operating procedures at Dublin Airport."

These emails confirm that the aerodrome operator, daa, have responsibility to ensure compliance with planning and environmental noise restrictions and that it is daa who are responsible for ensuring the flight paths take such restrictions into account. In our view daa have not met this responsibility.

Furthermore, a recent email from Michelle Molloy, Community Engagement Manager at daa, to Meath County Councillors is also relevant. The email, included at Appendix C, tells councillors that a change to flight paths *"is a very complicated process which involves many stakeholders, including local communities, and needs to be well-structured and planned."* Given this acknowledgement and the fact that the flight paths being used since the opening of the North Runway are vastly different to those expected it is clear that the involvement of local communities has not occurred and the introduction of these divergent flight paths were neither well-structured or planned.

What is also relevant is that in this email daa state that the situation has been made more complex *"by recent developments, namely An Bord Pleanála's (ABP's) public consultation regarding its draft decision on the North Runway Relevant Action application, which was launched in September and will remain open until December 23. ABP's final decision in these issues will have important implications for future airport operations and will need to be factored into any future considerations regarding flight paths."* Our interpretation of this statement is that ABP's approval of the Relevant Action would in fact rubber stamp the divergent flight paths which were never properly environmentally assessed. In doing so it could grant approval for flight paths without the proper assessments. In the context of the previous discussion of the IAA and AirNav positions it is clear that daa have misled the Board with regard to how thoroughly they have planned the flight paths using the North Runway.

A final point on this email from daa is that Ms Molloy states that the outcome of any review of the flight paths – which should have happened before the runway opened – *"may not be vastly different from where we are today"*. This statement provides insight into daa's approach to such matters, in their view the process will not alter the outcome. This predetermined opinion is an indication of the arrogance of the authority which is further evidenced in their refusal to review the flight paths until the Relevant Action is granted without the inconvenient movement limit that the Bord have so correctly included. The attached email confirming that daa consider it *"premature to commence this process before ABP's final decision on the Relevant Action"*.

In the context of the preceding introduction, this chapter examines the legal, procedural, and environmental issues surrounding the divergent flight paths, analyses the responsibilities of key

stakeholders, and contrasts Dublin Airport's approach with international best practices, particularly the United Kingdom's airspace change procedure.

2.2 Condition 1 and the Legal Basis for Compliance

The grant of planning permission for Dublin Airport's North Runway was based on a detailed Environmental Impact Statement (EIS) and a series of conditions designed to ensure the project's impacts were fully assessed and mitigated. Condition 1 stands out as a cornerstone of the legal framework governing the runway's operation, explicitly requiring that:

> "The development shall be carried out in accordance with the plans and particulars and the Environmental Impact Statement lodged with the application as amended by the further plans and particulars received by the planning authority on the 9th day of August, 2005, including the Environmental Impact Statement Addendum, and the 3rd day of March, 2006 and received by An Bord Pleanála on the 30th day of August, 2006, the 5th day of March, 2007 and in the oral hearing."

This condition directly links the operational use of the North Runway to the details provided in the EIS and related submissions. The EIS modelled specific flight paths and included assessments of noise contours, air quality, and other environmental impacts, along with mitigation measures. These assessments formed the basis for public consultations, planning approval, and the development of legally binding conditions. Consequently, any material deviation from these assessed flight paths constitutes a breach of Condition 1 unless a new planning permission and Environmental Impact Assessment Report (EIAR) are obtained.

The daa published a factsheet on their website titled 'Facts on Noise Management and Mitigation at Dublin Airport':

https://www.dublinairport.com/docs/default-source/airport-noise/noise-management-and-mitigations-facts-final.pdf

On page 3 of the factsheet under the heading 'Flight Paths', they state:

> *"daa was granted planning permission for the construction and operation of North Runway.*
>
> *As part of the process, indicative flight paths were used, however these did not form part of the planning approval."*

This is an unbelievable statement as can be seen from our previous submissions the original planning granted in 2007 contained an EIS with straight out flight paths and noise contours associated with these flight paths. As part of the grant of planning, Condition 1 of the 2007 planning grant clearly states that the operation of the North Runway is to be in accordance with the procedures and operations set out in the EIS and the EIS Addendum submitted.

In the Inspectors report on the Draft Decision at section 12.11.4 it is acknowledged that the flight paths being flown are divergent and not as indicated in the grant of planning for 2007.

With respect to the recent Infrastructure Application by daa to Fingal County Council Reg: Ref: F23A/0781 Part 1-B, Response to RFIs by Coakley O Neill, it is acknowledged at page 58 that with respect to the 2007 grant of permission that:

"The flight routes assumed that the North Runway tracks would replicate those on the South Runway. These assumed aircraft turned after a straight segment of around 5nm from the end of the runway."

At page 59 of this report, it is stated that:

"Modelling agreed for operation of the noise mitigation schemes (2016) that the flight routes assumed that the North Runway tracks would replicate those on the south runway. These assumed that 25% of aircraft turned after a straight segment of around 5nm from the end of the runway with the remaining 75% turning earlier, around 2nm from the end of the runway. This was based on an analysis of a sample of radar flight tracks."

We note that these alterations were not part of any planning application to alter the original 2007 grant of permission and no assessment within an EIAR was sent to Fingal County Council for a revised planning.

Again, in the same report on page 59 under the heading of 'IA EIAR December 2023' it is stated that:

"The flight routes were based on an analysis of actual radar tracks. For the south runway these were similar to previous assumptions. For the North runway this meant an initial 30 degree turn shortly after the end of the runway. After the initial turn the routes are similar to previous assumptions."

Again, this statement is unbelievable because of the 30 degrees turn the flights are on a completely different flight route than those presented in the 2007 grant of planning as are those for the Relevant Action application.

Therefore, daa are now admitting that the flight paths that are being flown are now not those that were assessed in the grant of planning of 2007.

2.3 Failure of the Relevant Action to Address Condition 1

The Relevant Action process was intended to address certain operational issues relating to the North Runway. However, it fundamentally failed to meet the requirements of Condition 1 in several critical ways. One of the most glaring omissions in the Relevant Action is the lack of any meaningful assessment of the impacts caused by the change in flight paths. Instead, the process

assumed that the currently divergent flight paths were already permitted. This assumption bypassed a crucial aspect of the environmental and planning assessment process: evaluating the relative change in impacts between the originally permitted and newly implemented flight paths.

1. Failure to Evaluate Relative Noise Impacts: Noise was a key consideration during the original EIS process, with specific flight paths modelled to predict noise levels and their effects on surrounding communities. These predictions informed noise mitigation strategies, including residential insulation programs and operational restrictions. By assuming the divergent flight paths are permitted, the Relevant Action fails to compare the noise impacts of these paths to those assessed in the EIS. This omission is especially significant for communities now experiencing increased noise under the new flight paths, who were not originally identified as being affected.

   For example, noise contours in the original EIS were based on straight flight paths. The introduction of divergent flight paths shifts these contours, exposing previously unaffected areas to higher noise levels while rendering some mitigation measures redundant. Without comparing the two scenarios, the Relevant Action provides no evidence that the new flight paths do not exacerbate environmental impacts, which should have been a fundamental part of the assessment process.

2. No Baseline for Environmental Comparisons: Environmental Impact Assessments (EIAs) rely on baseline data to measure the potential changes introduced by a project. In the case of the North Runway, the original EIS served as this baseline, with the assessed flight paths forming the foundation for evaluating noise, air quality, and other impacts. By neglecting to evaluate the divergent flight paths against this baseline, the Relevant Action process sidesteps a critical requirement of the EIA Directive, which mandates a thorough assessment of how changes to a project alter its environmental impacts.

3. Implications for Communities Under Divergent Flight Paths: Communities under the newly implemented divergent flight paths bear the brunt of this oversight. These residents were not included in the original EIS's modelling or mitigation measures and were not consulted during the planning process. The assumption that the divergent paths are permitted effectively denies these communities their legal right to have the impacts assessed and mitigated under planning law. This failure is particularly concerning given that noise and other environmental impacts are known to affect health, property values, and overall quality of life.

2.4 Relevance of Noise Impact Assessments for Planning Compliance

Noise impact assessments are central to the planning and operation of infrastructure projects like the North Runway. They provide the data necessary to balance operational needs with community protections and ensure compliance with national and EU regulations. The original EIS modelled noise impacts using specific flight paths to determine which areas would require mitigation, such as residential sound insulation programs or operational restrictions. This modelling also informed public consultations, allowing affected communities to voice their concerns and influence decision-making.

The introduction of flight paths that deviate from the EIS raises significant environmental, legal, and procedural concerns:

1. Noise and Community Impact: Noise modelling in the EIS informed mitigation measures designed to protect affected communities. The current flight paths alter the distribution of noise, potentially exposing new areas to significant disruption. Without updated noise modelling or community consultation, these impacts remain unassessed and unmitigated.
2. Compliance with the EIA Directive: The European Environmental Impact Assessment (EIA) Directive aims to ensure a high level of environmental protection by requiring assessments before projects are implemented. The introduction of new flight paths without reassessment violates the Directive's purpose, bypassing the requirement to evaluate environmental and social impacts.
3. Legal and Procedural Risks: As Gary Rowan, an expert in planning and environmental law, noted in his correspondence (Refer to Appendix D):

> *"The use of any alternative flight paths directly associated with the operational use of the North Runway which deviate from those submitted and assessed under the EIS... would result in a deviation from the terms of the existing planning permission."*

These risks include potential legal challenges from affected communities and further reputational damage to the Dublin Airport Authority (DAA).

By not evaluating the relative noise impacts of the divergent flight paths, the Relevant Action disregards this foundational principle of planning compliance. Noise contour modelling for the new flight paths was not compared to the contours in the original EIS. As a result, there has been no assessment of whether the new flight paths introduce additional impacts or require updated mitigation measures. This lack of comparative analysis represents a critical gap in the planning process, leaving communities under the divergent flight paths unprotected and uninformed.

2.5 Breach of the EIA Directive

The failure to assess the environmental impacts of the divergent flight paths is also a clear breach of the European Environmental Impact Assessment (EIA) Directive. This Directive requires that environmental impacts be assessed before a project is implemented, with the aim of ensuring a high level of environmental protection and integrating environmental considerations into decision-making processes. By assuming the divergent flight paths are permitted, the Relevant Action bypasses the requirement to assess their impacts, undermining the Directive's core objectives.

We also refer to correspondence from Ms Michelle Molloy, daa Community Engagement Manager, to Meath County Councillors whereby she confirms that the daa have not looked at alternative flight departure routes in any great detail and has confirmed that the daa has had discussions with other airports on this issue. However, it is obvious that all of the alternatives needed to be reviewed and assessed and presented as part of the Relevant Action planning submission which has not been done. It should be noted that unfortunately it can be taken from this correspondence that should the Relevant Action be granted permission that this will give permission for the revised flight paths which cannot be allowed without the alternatives being presented. Flight paths did not form a part of the change to the origina lpermission of 2007 and therefore this must clearly be stated by ABP .

This is a very serious issue regarding the Relevant Action submission as no alternatives have been considered or presented as part of this application but more importantly the daa have submitted this application stating that the chosen flight routes off the North Runway are as a result of safety concerns.

This breach is particularly egregious given that the original flight paths were a central feature of the EIS submitted as part of the Nort h Runway's planning application. The Directive explicitly requires that material changes to a project—including operational changes like flight path deviations—undergo reassessment through an updated EIA. The lack of such reassessment for the divergent flight paths violates both the spirit and the letter of the Directive, leaving significant environmental impacts unaddressed.

2.6 Co nsequences for Public T rust and Gover nance

The failure to assess the impacts of the divergent flight paths not only undermines complian ce with Condition 1 and the EIA Directive but also erodes public trust in the planning system. The communities affected by the new flight paths were not consulted, nor were they provided with evidence that the changes were necessary or that their impacts were mitigated. This lack of transparency and accountability creates the perception that operational expediency has been prioritized over environmental protection and community well-being.

We note that daa reference to consultation in 2016 on possible changes to flight paths and night operations were done on the basis that there would be a full environmental assessment carried out as part of a planning application to make the changes. This is not what happened and the North Runway opened before there was any assessment of the flight paths. Furthermore, the flight paths presented in the 2016 consultation are different to those currently in use.

Moreover, the failure to evaluate the relative impacts of the flight paths sets a concerning precedent for future infrastructure projects. If material changes can be implemented without reassessment, it raises questions about the integrity of the planning system and its ability to safeguard environmental and social interests.

2.7 The Need for a New Assessment

The assumption that the divergent flight paths are permitted represents a fundamental flaw in the Relevant Action process. By failing to compare the impacts of the new flight paths to those assessed in the original EIS, the process disregards the requirements of Condition 1 and the EIA Directive. This failure is particularly consequential for communities under the divergent paths, who now face unassessed and unmitigated impacts.

Approving the Relevant Action would facilitate approval of the divergent flight paths that the Inspector has so correctly noted to be vastly different to the original flight paths used for the EIS for the North Runway. This would be approval of environmental impacts without any proper environmental assessment of the impact of the new flight paths. If the Relevant Action is approved, it must not include approval of the new flight paths and it must condition a separate assessment to determine the actual impacts and necessary mitigation measures as a result of the flight paths. Alternatively, the approval could only be based on the same flight paths used in the EIS for the North Runway.

IAA CEO Declan Fitzpatrick has clarified that there are various methods to operate the two runways, depending on the chosen configuration. One such approach, referred to as the dependent mode, involves a coordinated operation where activities on one runway are directly influenced by what is happening on the other. Fitzpatrick highlights this mode using London's Heathrow Airport as an example, where synchronized operations ensure the two runways function efficiently despite their interconnected nature.

At a meeting with SMTW representatives, Fitzpatrick further stated that the only circumstance under which the IAA would have supported the straight-out flight paths originally proposed in the North Runway Environmental Impact Statement (EIS) was if the dependent mode of operation were implemented. This operational mode, he emphasized, would ensure that the runways'

activities were interlinked, thereby addressing any potential challenges associated with the original straight-out flight path design.

Fitzpatrick also reiterated this position during the Oireachtas Transport Committee meeting on May 17, 2023, where he discussed the complexities of operating the two runways and the IAA's considerations for supporting different operational modes. The full transcript of his remarks can be found at this link:

https://www.oireachtas.ie/en/debates/debate/joint_committee_on_transport_and_communications/2023-05-17/3/

This ongoing discussion underscores the importance of designing a robust concept of operations to ensure optimized performance and mitigate any impacts.

To address these issues, a new planning application and Environmental Impact Assessment Report (EIAR) are required. This process should include a comparative analysis of the original and divergent flight paths, providing a clear evaluation of their relative impacts and ensuring that affected communities are consulted and protected. Without such reassessment, the operation of the North Runway cannot be said to comply with its original planning permissions, and the integrity of Ireland's planning system remains at risk.

2.7 Stakeholder Roles and Responsibilities

The design and implementation of flight paths for the North Runway involve multiple stakeholders, each with distinct responsibilities. However, the ultimate accountability for compliance with planning conditions and environmental regulations lies with the Dublin Airport Authority (DAA). The process involves three main actors—DAA, AirNav Ireland, and the Irish Aviation Authority (IAA)—whose roles are intertwined but distinct. A close examination of their roles reveals critical failures in the way DAA has managed and communicated the implementation of divergent flight paths, leading to misleading claims and a lack of transparency in the process.

Dublin Airport Authority (DAA)

As the sponsor for all flight path changes, the DAA holds primary responsibility for initiating and directing changes to the operational use of the North Runway. DAA's role includes setting the parameters for flight path design and ensuring that these parameters align with the requirements of planning conditions, environmental protections, and operational safety. However, the evidence indicates that DAA has failed to fulfil these responsibilities in several key ways:

1. Failure to Assess Alternatives: The DAA has not provided evidence that alternative flight paths were considered or assessed before adopting the currently divergent flight paths. Discussions with AirNav Ireland and the IAA confirm that multiple safe options exist for

the operation of the North Runway, including options that align with the flight paths modelled in the original Environmental Impact Statement (EIS). These options would allow the runway to operate within the framework of its planning permissions and the mitigation strategies outlined in the EIS.

Despite this, the DAA did not explore or direct AirNav to consider these alternatives. No documentation or analysis has been presented to An Bord Pleanála (ABP) demonstrating that the relative impacts of alternative flight paths were evaluated. This omission represents a significant procedural failure, as the consideration of reasonable alternatives is a cornerstone of environmental and planning assessments under both Irish law and the European Environmental Impact Assessment (EIA) Directive.

2. Misrepresentation of IAA Requirements: In submissions to ABP, the DAA claimed that the divergent flight paths were "required" by the IAA. However, this claim does not hold up under scrutiny. Meetings with both AirNav Ireland and the IAA revealed that the IAA's role is limited to ensuring the safety of proposed flight paths; it does not dictate specific operational procedures. Instead, the IAA evaluates flight paths designed by AirNav based on parameters set by the sponsor—in this case, the DAA.

   The IAA and AirNav confirmed that they were not instructed to consider planning or environmental constraints when designing the flight paths. Furthermore, neither body was presented with alternative flight path options to assess. This directly contradicts the DAA's assertion that the IAA mandated the divergent flight paths and highlights a significant misrepresentation of facts to ABP. By claiming that the flight paths were required for safety, the DAA effectively shielded itself from scrutiny over its own failure to consider alternatives.

3. Lack of Transparency: The absence of any assessment of alternatives or evaluation of environmental impacts associated with the divergent flight paths undermines the transparency and accountability of the decision-making process. The DAA did not provide ABP with evidence demonstrating why the divergent paths were chosen over alternatives that would have complied with the original EIS. This lack of transparency deprives ABP of the information necessary to make an informed decision and denies affected communities the opportunity to participate meaningfully in the process.

<u>AirNav Ireland</u>

AirNav Ireland, as the body responsible for air traffic management, designs flight paths based on parameters provided by the sponsor. AirNav's role is technical in nature, focusing on operational efficiency and airspace management. While AirNav ensures that flight paths comply

with technical and operational standards, it is not responsible for considering environmental or planning constraints unless explicitly directed to do so by the sponsor.

In this case, AirNav confirmed that it received no direction from the DAA to design flight paths that complied with the original EIS or considered the environmental and planning implications of the divergent paths. Instead, the parameters provided by the DAA prioritised operational needs, such as capacity and efficiency, over compliance with planning conditions. This omission further underscores the DAA's failure to fulfil its responsibilities as the sponsor of the flight path changes. Refer to email in Appendix A.

Irish Aviation Authority (IAA)

The IAA oversees the safety and regulatory compliance of proposed flight paths. Its role is to ensure that the procedures designed by AirNav meet safety standards and do not pose risks to airspace operations. However, the IAA does not mandate specific flight paths or operational parameters. Instead, it evaluates the safety of the options presented to it.

The IAA has confirmed that it did not require the implementation of the currently divergent flight paths. Instead, it simply certified that the paths designed by AirNav were safe based on the parameters provided by the DAA. This distinction is critical, as it highlights the fact that the decision to implement the divergent paths lies solely with the DAA. The DAA's claim that the IAA "required" the paths is therefore misleading and diverts attention from the DAA's own role in initiating and directing these changes. Refer to email in Appendix B.

2.8 Failure to Provide Evidence to ABP

The DAA's failure to assess or present alternative flight paths is particularly troubling given the central role this issue played in appeals and submissions to ABP during the Relevant Action process. ABP relied heavily on the information provided by the DAA in its deliberations, yet the DAA did not provide evidence demonstrating that alternative options were considered. Key omissions include:

1. No Assessment of Relative Impacts: The DAA did not evaluate or present the environmental impacts of the divergent flight paths compared to the original paths assessed in the EIS. This omission leaves ABP without a basis for determining whether the new paths comply with planning conditions or whether they introduce unassessed impacts.
2. No Submission of Alternative Options: The DAA failed to submit alternative flight path options for consideration by AirNav, the IAA, or ABP. This omission is particularly significant given that both AirNav and the IAA confirmed the existence of safe alternatives that could align with the original EIS.

3. Misrepresentation of Constraints: By claiming that the IAA mandated the divergent paths, the DAA misrepresented the nature of the constraints it faced. This misrepresentation undermines ABP's ability to evaluate the merits of the Relevant Action application and assess whether the proposed changes comply with planning conditions.

The DAA's failure to assess alternatives and its misrepresentation of the IAA's role have far-reaching consequences:

1. Undermining Planning Integrity: The planning system relies on transparency, accountability, and evidence-based decision-making. The DAA's actions undermine these principles, setting a concerning precedent for future projects.
2. Eroding Public Trust: Communities affected by the divergent flight paths were denied the opportunity to participate in a meaningful assessment process. The lack of transparency and consultation erodes public trust in the planning system and the DAA's commitment to mitigating environmental impacts.
3. Legal and Environmental Risks: The absence of an assessment of alternatives leaves the DAA vulnerable to legal challenges and regulatory scrutiny. It also risks exacerbating unmitigated environmental impacts, particularly noise and air quality issues for affected communities.

2.9 International Comparison: The UK Airspace Change Procedure

The UK's airspace change procedure offers a robust model for managing changes to flight paths, emphasizing environmental protection and public consultation. Overseen by the UK Civil Aviation Authority (CAA), the process ensures that any proposed changes undergo rigorous assessment and stakeholder engagement. Key elements include:

1. Environmental Assessments: Proposed changes must include detailed assessments of environmental impacts, such as noise, air quality, and carbon emissions. These assessments align with the EIA Directive's principles, ensuring that environmental considerations are integrated into decision-making.
2. Public Consultation: Public engagement is mandatory, allowing affected communities to voice concerns and influence decisions. This ensures that airspace changes are socially and environmentally sustainable.
3. Regulatory Oversight: The CAA oversees the process, requiring airports to provide evidence to justify changes. Proposals that fail to meet environmental or operational criteria can be rejected.

The UK model contrasts sharply with the approach taken by DAA, where flight path changes were implemented without updated environmental assessments or public consultation. This

deviation from best practices undermines the EIA Directive's objectives and public trust in the planning system. Now as recently as December 2024, daa representatives are stating to Meath County Councillors that any future change to flight paths would require a complex process to ensure all stakeholders including affected communities would be consulted, where was this consultation on the flight paths being used today. It is daa's intention to obtain permission for the divergent flight paths via the back door by simply stating that they are "permitted" in their application and hoping the planning authorities do not question it. An Bord Pleanala must recognise this devious strategy for what it is and refuse any permission for a change in flight paths without the proper process being followed.

2.10 Relevant Action and ABP's Oversight

The rationale for adopting flight paths that differ from those permitted under the planning permission for Dublin Airport's North Runway has been attributed to safety considerations by the applicant, Dublin Airport Authority (DAA). This claim is highlighted in the Inspector's report, which states that the applicant asserted that "this new turn north is an airspace safety requirement and is reflected in the noise contour areas." However, the lack of independent verification or expert input from the Irish Aviation Authority (IAA), the statutory body responsible for aviation safety in Ireland, raises significant concerns about the robustness and validity of this justification. The following paragraphs summarise the points contained in the report by Planning Consultant Hendrik Van Der Kemp included at Appendix E.

Insufficient Verification by An Bord Pleanála (ABP) and the Inspector

Neither An Bord Pleanála (ABP) nor the Inspector demonstrated the necessary expertise to independently evaluate the DAA's safety claim. This expertise, as the Inspector's report acknowledges, rests with the IAA, defined as the "national aviation regulator, responsible for safety, security, and consumer protection functions." Despite this recognition, ABP and the Inspector failed to take critical steps under the Planning and Development Act 2000 (as amended), to obtain the required evidence from the IAA to substantiate the DAA's claims.

Legal Mechanisms Available for Verification

Sections 131 and 132 of the Planning and Development Act provide ABP with explicit powers to seek additional evidence:

- Section 131 allows ABP to request submissions or observations from any person or body regarding matters arising in the appeal.
- Section 132 permits ABP to require further submissions or documents if it deems them necessary to determine the appeal.

These provisions would have allowed ABP to formally request a technical submission from the IAA regarding the safety justification for the altered flight paths. However, no such request was made, leaving the Inspector and ABP without the factual basis required to verify the DAA's claims.

Reliance on DAA Assertions Without Challenge

The Inspector's report notes that while a "letter of support for the proposal was submitted" by the IAA, the technical need for the proposal was not addressed. Furthermore:

- No submissions from the IAA were received on the appeals, despite safety concerns being a central issue in third-party submissions.
- The IAA's role in certifying the technical necessity of the altered flight paths was not challenged by ABP or the Inspector.

Instead, the Inspector relied on the absence of further correspondence from the IAA to conclude that the applicant's claims could not be dismissed. This reliance on the applicant's assertions, without independent verification, undermines the robustness of the decision-making process.

Core Issue Overlooked in the Appeal Process

The claim that the altered flight paths are a safety requirement was a contested point in many third-party appeal submissions. These submissions raised concerns about the lack of independent verification and the potential implications of unassessed impacts. Despite this, the Inspector and ABP failed to pursue the matter as a core issue. Key deficiencies include:

1. Lack of IAA Engagement: The IAA did not provide any detailed submissions on the appeal. The Inspector's report acknowledges this absence but does not critically examine why this crucial statutory body did not substantiate or confirm the safety claims made by the applicant.
2. Acceptance of DAA's Assertions: The Inspector's report states: "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." This conclusion accepts the DAA's claim at face value without any independent corroboration, despite the contested nature of the issue.
3. Failure to Invoke Planning Act Provisions: ABP could have invoked Sections 131 and 132 of the Planning and Development Act to compel a detailed submission from the IAA. This failure represents a missed opportunity to address a critical issue in the appeals process and to ensure that the decision was based on verifiable evidence.

Implications of the Lack of Expert Evidence

The failure to obtai n expert evidence from the IAA on the technical necessity of the divergent flight paths has sig nificart implications for the validity of ABP's decision to grant permission for the Relevant Action:

1. Erosion of Decision-Making Credibility: By accepting the applicant's claims without independent verification, ABP undermines the credibility of its decision-making process. Planning decisions, particularly those involving significant environmental and community impacts, must be based on robust evidence to maintain public trust and accountability.
2. Neglect of Planning and Environmental Responsibilities: The absence of IAA input means that the potential interplay between safety requirements and planning or environmental considerations was not explored. The Inspector and ABP did not assess whether alternative flight paths could satisfy both safety and planning requirements, as no independent technical advice was sought.
3. Failure to Address Third-Party Concerns: Third-party submissions highlighted the lack of evidence supporting the safety claims. By failing to investigate these concerns, ABP effectively dismissed the objections without a proper basis, potentially leaving affected communities without recourse.

2.11 Conclusion

The current approach to managing flight path changes for Dublin Airport's North Runway has failed to meet the standards of transparency, accountability, and environmental protection required under planning law and international best practices. The deficiencies in the Relevant Action process highlight the urgent need for a more robust and evidence-based framework, one that prioritises compliance with the original EIS and the rights of affected communities.

The claim that the currently divergent flight paths were required by the Irish Aviation Authority (IAA) does not hold up under scrutiny. Meetings with both the IAA and AirNav Ireland confirmed that multiple safe options exist for the operation of the North Runway, including options that align with the original EIS. However, neither body was directed to consider environmental or planning constraints, nor were they provided with alternative flight path options by DAA.

As the sponsor, DAA bears sole responsibility for initiating and directing changes to flight paths. The parameters set by DAA failed to address the need for compliance with the original EIS, and the resulting flight paths represent a material breach of Condition 1 of the planning permission. Furthermore, the lack of engagement by An Bord Pleanála with the IAA on this critical issue undermines the validity of its decision to grant permission for the Relevant Action.

To ensure compliance with planning law and the principles of the EIA Directive, a new planning application and Environmental Impact Assessment Report (EIAR) are required. This process would allow for a thorough reassessment of the environmental and social impacts of the altered flight paths and provide an opportunity for public consultation. The integrity of Ireland's planning system depends on ensuring that projects like the North Runway operate within the framework of their approved permissions, safeguarding public trust and environmental standards.

Given the procedural, environmental, and legal deficiencies in the Relevant Action process, granting permission would set a dangerous precedent for future planning decisions. The lack of a transparent assessment of alternatives, combined with the failure to address the environmental impacts of the divergent flight paths, makes it impossible to justify the Relevant Action within the framework of planning law and the EIA Directive.

Refusing permission for the Relevant Action is the only course of action that can restore compliance and ensure that Dublin Airport's operations are managed responsibly. This refusal would compel the DAA to:

1. Undertake a comprehensive and transparent assessment of all feasible flight paths.
2. Evaluate the environmental impacts of each option, ensuring that mitigation measures are appropriate and effective.

3. Submit any proposed changes to a new planning application and EIAR, allowing for regulatory oversight and public consultation.

3.0 THE RIGHT OF APPEAL IN THE AIRCRAFT NOISE ACT 2019 AND THE SMTW APPEAL OF THE ANCA DECISION

3.1 Introduction

The Aircraft Noise (Dublin Airport) Regulation Act 2019 (hereafter referred to as the Aircraft Noise Act 2019) establishes a comprehensive framework for managing aircraft noise at Dublin Airport, balancing operational needs with the well-being of affected communities. A critical aspect of this framework is the explicit provision for appealing RegulatoryDecisions (RDs) made by the Aircraft Noise Competent Authority (ANCA), with An Bord Pleanála designated as the appeal body under Section 10 of the Act.

Despite this, the refusal of the St. Margaret's The Ward (SMTW) appeal of an ANCA decision by An Bord Pleanála raises concerns about the misapplication of this legislative framework. This chapter examines how Section 10 of the Aircraft Noise Act supports SMTW's right to appeal and why the refusal of their appeal was inconsistent with the Act's provisions. Particular emphasis is placed on Paragraph 12.1.5 of the Inspector's Report and its acknowledgment that third-party appeals of Regulatory Decisions are explicitly permitted.

3.2 Appeals Framework Under Section 10 of the Aircraft Noise Act 2019

Section 10 of the Aircraft Noise Act provides a clear framework for appealing Regulatory Decisions:

1. Appeal Body: Appeals of RDs are to be heard by An Bord Pleanála, Ireland's national planning appeals board.
2. Who Can Appeal:
   - The airport authority (Dublin Airport Authority).
   - Any relevant person who submitted observations or comments on the draft regulatory decision regarding noise restrictions.
3. Grounds for Appeal: Appeals can be made against any RD issued by ANCA on noise mitigation measures or operating restrictions.

4. Procedure and Timeline:
    - o Appeals must be lodged within 28 days of the RD's publication, along with the required fee.
    - o The Board is tasked with reviewing whether the noise mitigation measures or operating restrictions comply with the "Balanced Approach."
    - o The Board has the authority to confirm, revoke, or replace ANCA's RD.

This framework ensures that stakeholders, including impacted communities like SMTW, are afforded a clear avenue to challenge noise-related decisions that affect them.

3.3 The SMTW Appeal and the Refusal by An Bord Pleanála

SMTW's Basis for Appeal

St. Margaret's The Ward Residents Group (SMTW) and Malahide Community Forum filed an appeal against an ANCA RD on the grounds that the noise mitigation measures were insufficient to protect the local community. They argued that the decision failed to properly balance the operational needs of the airport with the health and quality of life of residents, as required under the "Balanced Approach."

Refusal of Appeal

Despite the clear provisions in Section 10 permitting appeals of RDs, An Bord Pleanála refused to hear SMTW's appeal, Case Number 314084. This refusal contradicted both the legislative intent of Section 10 and the acknowledgment in Paragraph 12.1.5 of the Inspector's Report, which explicitly states:

"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."

This refusal effectively insulated ANCA's RD from scrutiny, despite the Act's provision allowing relevant persons who participated in the consultation process to appeal.

Why the Refusal Was Incorrect

The refusal to admit SMTW's appeal was procedurally and legally flawed for several reasons:

1. Explicit Right of Appeal: Section 10 unambiguously provides for appeals of RDs by relevant persons. SMTW's participation in the consultation process qualifies them as a relevant person entitled to appeal.

2. Inspector's Report Confirmation: Paragraph 12.1.5 confirms the right of third parties to appeal RDs and RAs, making clear that these processes, though distinct, are interconnected. An Bord Pleanála's refusal disregarded this clarification.

3. Impact of RDs: Regulatory Decisions have immediate and significant consequences for affected communities. Denying SMTW the right to appeal effectively barred them from addressing key concerns about noise mitigation.

3.4 Section 10 and the Importance of Upholding the Right to Appeal

The appeals framework established under Section 10 is central to ensuring transparency, accountability, and fairness in the regulation of aircraft noise. The refusal of SMTW's appeal undermines these principles and highlights a misapplication of the legislative framework. The following points underscore why SMTW should have been afforded the right to appeal:

1. Procedural Fairness: Section 10 explicitly allows appeals by relevant persons, ensuring affected stakeholders can contest decisions that directly impact their lives. Refusing SMTW's appeal was inconsistent with this objective.

2. Legislative Intent: The Aircraft Noise Act seeks to balance operational efficiency with the rights of impacted communities. Denying SMTW's appeal disregarded this balance and insulated ANCA's decision from necessary scrutiny.

3. Interconnected Nature of RDs and RAs: As highlighted in Paragraph 12.1.5, the issues underlying RDs and RAs are the same. SMTW's concerns about noise mitigation measures should have been addressed at the RD stage, rather than postponed to an RA appeal.

3.5 Conclusion

The refusal of SMTW's appeal of ANCA's Regulatory Decision by An Bord Pleanála was inconsistent with the provisions of Section 10 of the Aircraft Noise Act 2019. This section clearly establishes the right of relevant persons to appeal RDs, a point further supported by Paragraph 12.1.5 of the Inspector's Report. By failing to admit SMTW's appeal, An Bord Pleanála not only misapplied the legislative framework but also denied a fair hearing to a community directly affected by the RD.

To ensure the integrity of the Aircraft Noise Act and the confidence of stakeholders, it is essential that the right to appeal RDs is fully upheld. SMTW's case highlights the need for clarity and consistency in the appeals process to protect the rights of impacted communities and ensure fair and transparent decision-making.

4.0 Noise Models and Contour Accuracy

4.1 Concerns Over the Accuracy of Noise Impacts Being Modelled

Accurate noise modelling is crucial in assessing environmental impacts, ensuring regulatory compliance, and addressing public concerns. However, recent analyses have highlighted significant discrepancies between modelled noise impacts and real-world monitoring results, particularly during the 92-day summer periods of 2023 and 2024. These inconsistencies raise serious questions about the reliability of noise models used by consultants engaged by the Dublin Airport Authority (daa).

These discrepancies were highlighted in our previous submissions, however, the Inspector relies on the conclusions of Dani Fiumicelli, their noise expert, who dismissed the differences between measured and modelled noise levels. However, significantly more monitoring has been carried out over the 92 day summer period in 2024 to allow further comparison to the daa modelled data.

This dismissal is very concerning to our communities, especially when the difference between monitored noise and modelled noise is as much as 40%. How can the Bord dismiss these concerns without any independent verification of the modelling done. Evidence has now been presented for significant errors in the daa noise model results. These errors cascade throughout the assessment presented to the Bord and have implications for the quantitative analysis conducted on which the Bord have based their decision.

We contend that the concerns and evidence of errors in the daa modelling have not been taken into account by the planning process to date and as a result the outcome of the noise assessment is invalid.

4.2 Discrepancy Between Modelled and Measured Noise Levels

Over the two consecutive summer periods, noise monitoring revealed that actual noise levels consistently exceeded those predicted by noise models. Noise monitoring completed in 2024 by Wave Dynamics at nine locations to the North and North West of Dublin Airport is presented in Appendix F. The monitoring has been done over the 92 day period between June 16 and September 16 which is equivalent to the modelling period used in the daa contour maps.

There is a consistent trend noticed across all monitoring locations, that is measured noise levels are higher than modelled noise. The difference, approximately 2 dB higher in monitoring data compared to modelled predictions, is not merely a minor deviation. An increase of 2 dB equates to roughly 40% more noise energy, a significant variation with implications for community annoyance, health impacts, and environmental planning.

The noise monitoring data has been reviewed by Aviation Noise expert Ben Holcombe of Suono. Appendix G presents a report from Suono and it concludes that the discrepancy between measured and modelled noise levels is significant and can underestimate the mitigation levels required.

This disparity undermines the credibility of the noise models and raises concerns about their assumptions and inputs. The 92-day summer periods, characterised by peak aviation activity, offer a critical test of the models' robustness. However, the failure to align with real-world measurements suggests fundamental shortcomings in the modelling processes or the parameters used to simulate operational conditions.

4.3 Implications of the 2 dB Discrepancy

The 40% increase in actual noise energy compared to modelled predictions has far-reaching consequences:

1. Community Trust: Residents rely on accurate noise assessments to understand and advocate for mitigation measures. A 2 dB discrepancy undermines public confidence in the daa's environmental assessments and decision-making.

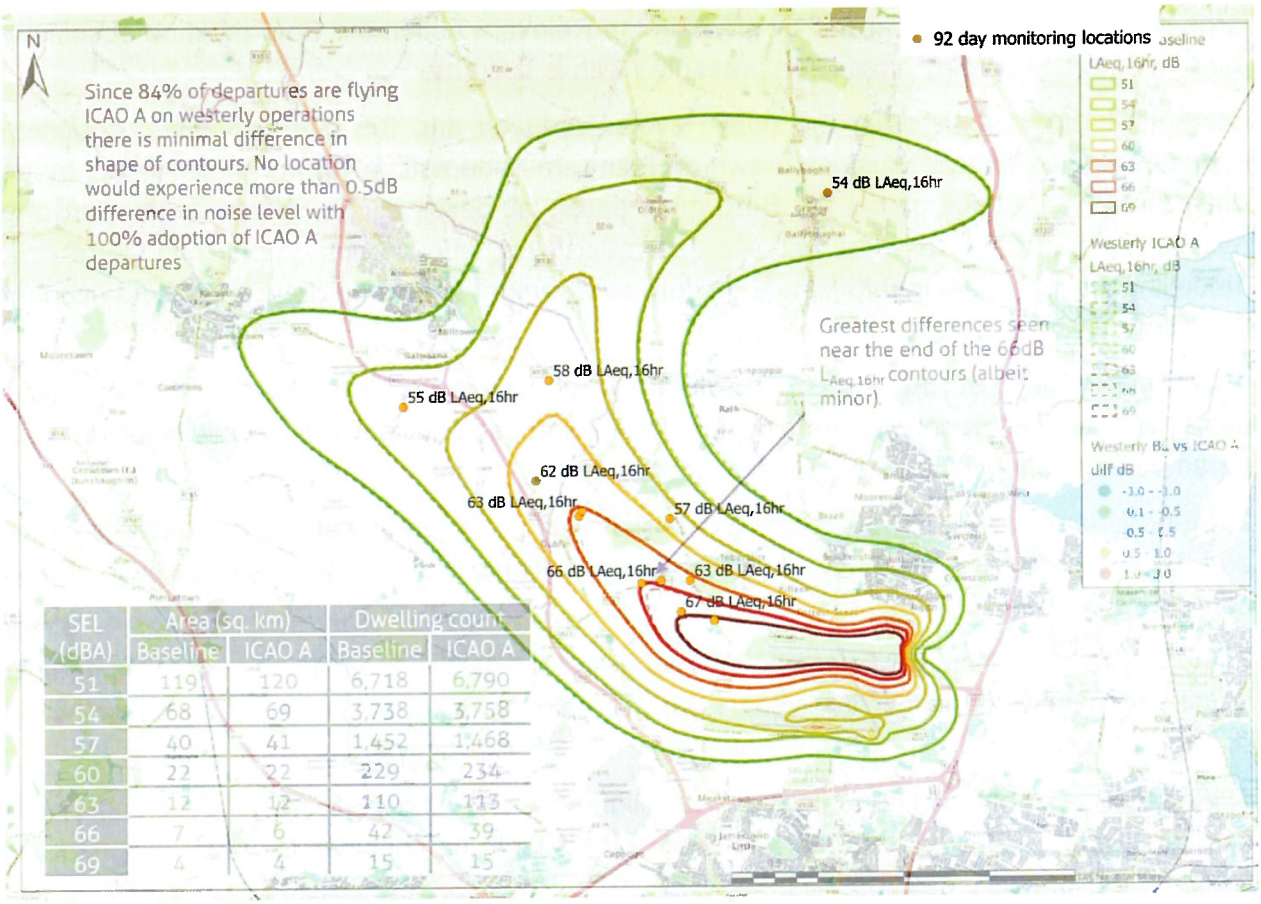
2. Policy and Regulation: Noise modelling informs compliance with environmental noise directives and local regulations. An underestimation of noise impacts could result in non-compliance or inadequate mitigation measures.

3. Health and Wellbeing: Noise pollution is linked to adverse health effects, including stress, sleep disturbance, and cardiovascular issues. Underestimating noise levels risks underplaying these impacts, leading to insufficient safeguards.

4.4 Contrasting Results from Anderson Acoustics

Adding to the complexity, an October 2024 report by Anderson Acoustics which was shared by Michelle Molloy Community Engagement Manager at daa, Appendix H, presents noise contours that closely align with real-world monitoring data. Unlike previous models, Anderson Acoustics' contours accurately reflect the 2 dB higher noise levels observed in monitoring during the 92-day periods. This report demonstrates that more accurate modelling is achievable when using the right methodologies and assumptions.

Figure 4.1 presents the single mode westerly departure contours for 15 August 2024 from the Anderson Acoustics report and overlays the noise monitoring results for that day in terms of $L_{Aeq,16hr}$.



SEL (dBA)	Area (sq. km)		Dwelling count	
	Baseline	ICAO A	Baseline	ICAO A
51	119	120	6,718	6,790
54	68	69	3,738	3,758
57	40	41	1,452	1,468
60	22	22	229	234
63	12	12	110	113
66	7	6	42	39
69	4	4	15	15

Figure 4.1 Comparison of Noise Measurements and Noise Modelling on 15 August 2024

At almost all locations there is very close agreement between the measured noise level and the modelled noise level.

The Anderson Acoustics report exposes a stark difference in outcomes between consultants, namely Bickerdike Allen Partners (BAP) who prepared the noise contours for the Relevant Action. If Anderson's models are accurate, the noise contours provided by BAP in the Relevant Action are off by approximately 40%. Such a discrepancy raises questions about the consistency of methodologies and the oversight of noise modelling practices. It also suggests that the daa's reliance on BAP might lead to systemic underreporting of noise impacts, skewing public consultation outcomes and regulatory submissions.

4.5 Key Concerns and Recommendations

Based on the evidence presented, the Bord must reassess the entire Relevant Action submission received to date as being inaccurate in terms of noise levels generated. Given the

large impacts that will be caused by granting the Relevant Action the Bord m ust be absolutely sure the information they have been presented with is accurate.

Currently there is a risk that the noise levels produced and the corresponding population exposure figures and conclusions drawn on them are underestimating the noise impact by as much as 40%. In this context the Bord must pause all deliberations, refuse permission and require the daa to resubmit the entire assessment taking into account t he knowledge of t heir modelling inaccuracies. In addition, any future assessment should be done taking into account the following,

1. Review of Modelling Practices: The daa should undertake a comprehensive review of the noise modelling methodologies employed by their consultants. This review should focus on input parameters, assumptions, and validation processes.

2. Standardisation and Transparency: Establishing standardised guidelines for noise modelling and requiring full transparency in methodologies could help ensure consistency across consultants.

3. Independent Verification: Engaging independent third parties to verify noise models against monitoring data would add an additional layer of credibility and ensure alignment with real-world conditions.

4. Adoption of Proven Methodologies: The alignment of Anderson Acoustics' contours with m onitoring data suggests that their methodologies should be considered as a benchmark for future modelling exe rcises.

5. Enhanced Monitoring Programmes: Expanding noise monitoring networks and integrating these results into modelling processes would help reduce discrepancies and improve predictive accuracy.

4.6 Conclusion

The consistent 2 dB underestimation of noise levels by daa models during the summer periods of 2023 and 2024 reveals critical flaws in the noise impact assessments provided to the Bord. With monitoring data showing 40% more noise than predicted, there is a clear need for immediate action to rectify these inaccuracies. The Anderson Acoustics report demonstrates that accurate noise modelling is possible, but it also highlights inconsistencies among the consultants engaged by the daa. Addressing these issues is not only essential for regulatory compliance but also for maintaining public trust and safeguarding community wellbeing.

5.0 Fingal & Meath Development Plans

5.1 Introduction

The Fingal Development Plan explicitly supports the introduction of a Noise Quota System (NQS) as a critical mechanism for managing and mitigating the environmental and community impacts of aircraft noise. However, this support is conditional and firmly rooted in the objective of alleviating noise-related issues rather than exacerbating them. This nuanced approach aligns with the Plan's broader objective of promoting sustainable development while safeguarding the health and well-being of the community.

Furthermore, both Meath and Fingal Development Plans adopt the Noise Zones for Dublin Airport. The noise zones related to Dublin Airport were updated in 2019 to allow for more effective land use planning for development within airport noise zones. The updated policies relating to development in noise zones were set out in Variation #1 of the Fingal Development Plan 2017-2023 and these have since been adopted by the current Fingal Development Plan 2023-2029 and Meath Development Plan 2021-2027.

However, since the opening of the North Runway and the divergent flight paths the noise contours in the Noise Zone maps in both Fingal and Meath development plans are no longer valid. This is discussed further in this chapter.

5.2 Policy Context: Fingal Development Plan Objective DAO16

Objective DAO16 of the Fingal Development Plan articulates a clear framework for the introduction of a Noise Quota System. The objective is to ensure that any such system prioritizes the reduction of negative impacts from aircraft noise, particularly in relation to sensitive time periods such as nighttime. The aim is to encourage the use of quieter aircraft, thereby reducing the overall noise footprint associated with aviation operations.

Objective DAO16 states:

> "Support the introduction of a Noise Quota System at Dublin Airport which seeks to limit and reduce the impact of aircraft noise on the local community, particularly during the nighttime period, in accordance with the principles of sustainable development and health and well-being."

This objective reflects a commitment to a balanced approach that recognizes both the economic significance of aviation and the necessity of minimizing its adverse environmental effects.

The Inspector's Report on the Development Plan, particularly paragraph 12.4.21, underscores the importance of a Noise Quota System as a tool for mitigating noise impacts. The report emphasizes that the system should promote the use of quieter aircraft and limit the long-term

exposure of the population to negative noise impacts. Importantly, the report clarifies that the success of such a system hinges on its ability to reduce, rather than exacerbate, the disturbances caused by aircraft noise.

The report notes:

> "As previously noted, the development plan policy promotes the move towards a Noise Quota 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."

This statement aligns closely with Objective DAO16 and reinforces the necessity of implementing the NQS in a manner that prioritizes community well-being.

5.3 The Need for a Movement Limit on Nighttime Aircraft Operations

To fully achieve the overarching objective of the Fingal Development Plan, the introduction of a Noise Quota System must be accompanied by a specific limit on nighttime aircraft movements. As highlighted in the Inspector's Report, the mitigation of long-term noise impacts requires not only the promotion of quieter aircraft but also a cap on the number of flights during sensitive nighttime hours. Without such a limit, the potential for cumulative noise disturbances remains significant, even with the adoption of quieter aircraft technologies.

The critical importance of a movement limit is further supported by paragraphs 12.2.47 to 12.2.49 of the Inspector's Report. These sections highlight the Noise Abatement Objective (NAO), which requires that the number of people exposed to aircraft noise above 55 dB L_{night} and 65 dB L_{den} be reduced compared to 2019. The Environmental Impact Assessment Report (EIAR) data presented in these paragraphs clearly indicates that, under the Relevant Action, the number of people exposed to aircraft noise above 55 dB L_{night} would increase in both 2025 and 2035 compared to 2019 levels. This failure to meet the NAO underscores that, without additional measures, including a movement limit, the proposed operating restrictions cannot achieve the necessary reduction in nighttime noise exposure.

Additionally, paragraphs 12.2.57 and 12.2.58 of the Inspector's Report provide a crucial conclusion on this matter. The Inspector emphasizes that the Relevant Action (RA) and Regulatory Decision (RD) do not adequately consider all necessary measures to prevent significant negative impacts from the increase in nighttime flights. Specifically, the unrestricted movement of aircraft during additional nighttime hours (23.00 to 00.00 and 06:00 to 07:00) poses a substantial risk of exacerbating noise impacts. The report highlights that neither the RD nor the RA sufficiently assessed the operational impacts of aircraft noise or evaluated all potential noise metrics, further raising concerns that the NQS alone would not adequately reduce noise exposure to acceptable levels.

The Inspector's conclusion underscores the necessity of introducing a movement limit to address these gaps. Without such a restriction, the noise abatement objectives cannot be met, and the health and well-being of the community will remain at risk. This reinforces the argument that a movement limit is not merely an enhancement but an essential component of any effective noise management strategy.

Nighttime is a particularly sensitive period when communities are most vulnerable to the adverse effects of noise, including sleep disturbance and long-term health impacts. A movement limit serves as a necessary safeguard to ensure that the benefits of the Noise Quota System are not undermined by an overall increase in nighttime operations. By controlling the number of flights during these hours, the Relevant Action would directly address the cumulative noise exposure that affects local populations.

The Inspector's conclusion in paragraph 12.4.21 implicitly supports this approach by emphasizing the importance of reducing negative impacts rather than exacerbating them. Introducing a movement limit aligns with this principle and provides an additional layer of protection for the community. It also ensures that the Noise Quota System is implemented in a way that truly reflects the objectives of the Fingal Development Plan.

Key Principles for Implementation

The effective implementation of a Noise Quota System under the Fingal Development Plan requires adherence to several guiding principles:

1. Prioritization of Quieter Aircraft: The NQS must incentivize the use of aircraft with lower noise emissions, particularly during nighttime operations when communities are most vulnerable to noise disturbances.
2. Introduction of a Nighttime Movement Limit: To mitigate cumulative noise impacts, a cap on the number of nighttime flights must be established, ensuring that the benefits of quieter aircraft are not offset by an increase in flight frequency.
3. Mitigation of Long-Term Impacts: The system should aim to reduce the cumulative noise exposure experienced by local populations, with a focus on long-term health and well-being.
4. Sustainability and Community Focus: The NQS must be implemented in a way that aligns with the principles of sustainable development and prioritizes the needs of the affected communities.
5. Compliance with Nighttime Noise Restrictions: The system should complement existing policies aimed at managing and restricting nighttime flight operations to minimize disturbances.

5.4 Material Deviation of Aircraft Noise Zones

As discussed, the development plans for Meath and Fingal refer to the Aircraft Noise Zones. The Aircraft Noise Zones are defined at Table 8.1 of the Fingal Development Plan. Zone A is the area exposed to the highest noise levels, and this is also where there are restrictions on the construction of any new noise sensitive developments. To date there has been no variation put forward to change the Noise Zones in the current Fingal Development Plan and therefore those as set out above are in force at present and were in force when the Relevant Action was submitted for planning .

We also note that during the Consultation on Variation #1 we were informed that the contours represent the worst-case scenario that will occur due to aircraft noise from Dublin Airport. These contours were developed in consultation with the daa and included a single mode of operation in order to provide realistic conservative contours for the Noise Zones for aircraft activity at Dublin Airport. All of this was relayed to the communities during the consultation process leading up to the Councillors voting in the Variation #1.

We note that there was no mention of "Very Significant" noise effects which are defined as residents exposed to greater than 50dB L_{night} and experiencing a greater than +9dB noise increase above their baseline. This is not included in the Noise Zones or Development Plan relating to aircraft noise from Dublin Airport and no eligibility contour for this situation are including in land use planning

To illustrate the impact that the divergent flight paths and resultant noise has on areas of Meath and Fingal in the context of the noise zones we have overlaid the Anderson Acoustics single mode noise contours from Summer 2024, see Appendix H, on the noise zone maps from the Meath Co Development Plan.

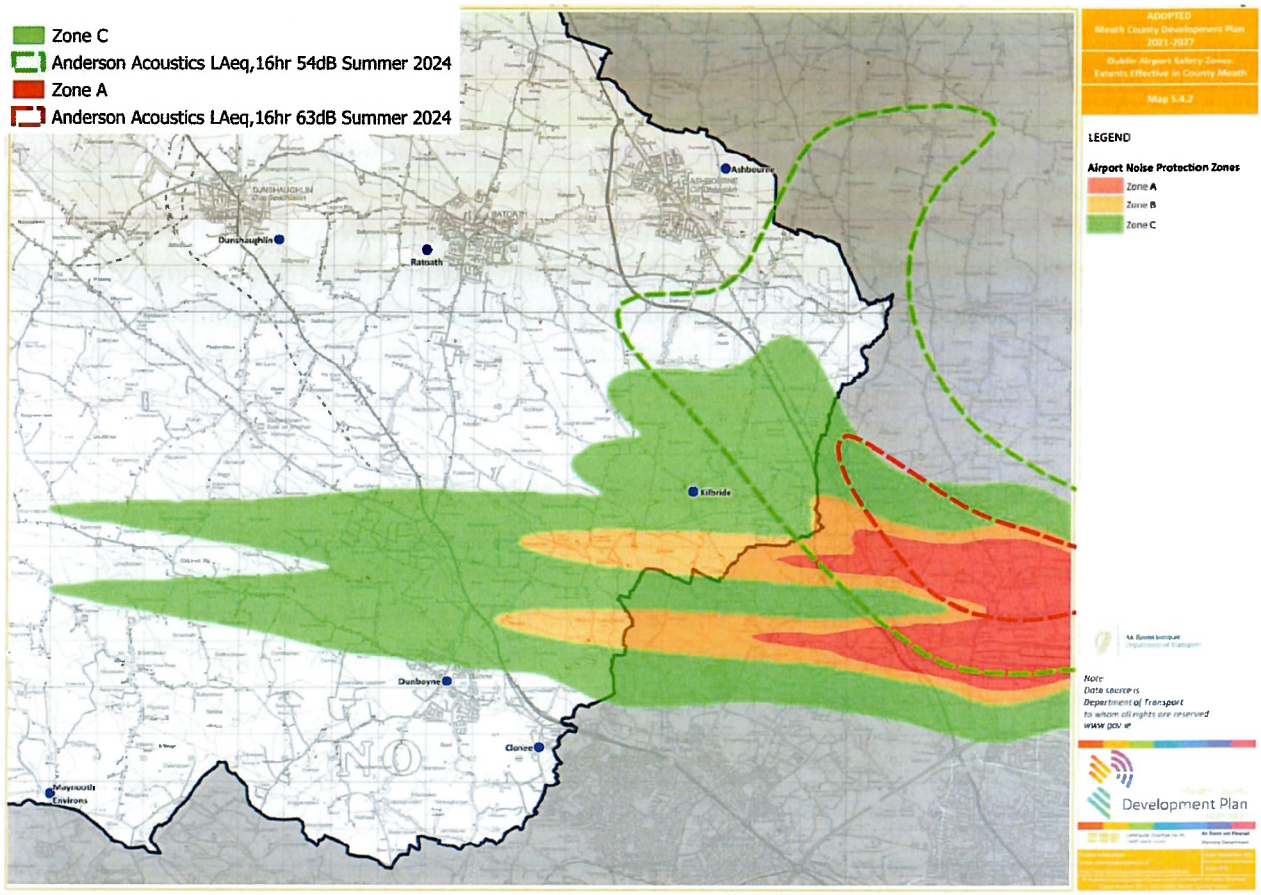


Figure 5.1 Actual Noise Levels vs Noise Zones

The 54dB $L_{Aeq,16hr}$ contour shown as a green line is equivalent to the Zone C definition. Similarly the 63dB $L_{Aeq,16hr}$ contour shown as a red line is equivalent to the Zone A definition. Only single mode contours for North Runway departures are available from the Anderson Acoustic report, however, the noise zones were produced on the basis of single mode operation from either runway.

Nevertheless, the image illustrates that due to the divergent flight paths the noise zones are much larger and cover a different area than the official Noise Zones in particular to the North and West. It is Important that the Board are aware, as shown above, that Dublin Airport operations are in material contravention of both the Meath and Fingal Development Plans as the noise levels experienced exceed the Noise Zones in both Development Plans. Planning Noise Zones now exist in areas that do not have excessive noise levels warranting any restrictions, while other areas are allowed to build in theory even though the noise levels are extreme.

5.5 Conclusion

The Fingal Development Plan's support for a Noise Quota System is conditional and strategically oriented towards alleviating the negative impacts of aircraft noise. Objective DAO16, supported by the insights from the Inspector's Report, establishes a clear mandate for implementing the system in a way that promotes the use of quieter aircraft and reduces noise exposure for the local community. Crucially, as the Inspector's analysis demonstrates, the introduction of a movement limit on nighttime aircraft operations is essential to achieving these objectives. The Inspector's conclusion further reinforces that the Relevant Action, without such a limit, would fail to prevent significant negative impacts on the existing population. By combining the Noise Quota System with such a limit, the Relevant Action can ensure a meaningful reduction in noise impacts, thereby aligning with the principles of sustainable development and community well-being.

Both Meath and Fingal Development Plans refer to Noise Zones for Dublin Airport, however, given the divergent flight paths which were never fully assessed these zones are no longer valid. Houses have been built below flight paths and in areas where noise levels are so dangerously high new development is not permitted. This is yet another example of how daa have misled the planning authorities on the impact of their operations. The Relevant Action cannot be permitted while it contravenes the development plans of both Meath and Fingal.

6.0 NIGHT FLIGHT RESTRICTIONS IN EUROPE AND THE IMPLICATIONS OF DUBLIN'S RELEVANT ACTION

6.1 Introduction

Night flight restrictions have become a critical aspect of airport operations across Europe, driven by increasing awareness of the health, environmental, and community impacts of nocturnal aviation activities. Major European airports, including Schiphol, Heathrow, and Frankfurt, have progressively implemented stringent measures to limit or ban night flights. In contrast, Dublin Airport's Relevant Action seeks a significant increase in night flights, raising serious concerns about proportionality and public health.

6.2 A Comparative Analysis of Night Flights

Passenger-to-Night Flight Ratio:

- Frankfurt Airport: With 59.4 million passengers in 2023, Frankfurt operates a roughly equivalent number of night flights to Dublin's proposal. However, its passenger base is nearly double that of Dublin.
- Schiphol Airport: Schiphol handles 61.9 million passengers—almost twice Dublin's total—while operating fewer night flights.
- Heathrow Airport: Heathrow manages 79.2 million passengers, more than double Dublin's throughput, yet operates fewer night flights annually.

Pro Rata Discrepancy:

- On a per-passenger basis, Dublin's proposal for 31,755 night flights is clearly disproportionate. If Dublin were to operate at a similar ratio to Schiphol or Heathrow, its night flights would be closer to 15,000 annually.
- The draft decision's proposed movement cap of 13,000 night flights aligns well with this proportionality, ensuring that Dublin maintains operations consistent with its passenger throughput while mitigating noise pollution and protecting public health.

Alignment with European Trends:

- European airports are actively reducing night flights to balance operations with health and environmental concerns. Schiphol has set clear limits and is planning further reductions, Heathrow enforces strict caps, and Frankfurt maintains its curfew. In this context, Dublin's proposed increase of over 31,000 night flights would position it as an outlier.

- By adopting the draft decision's cap of 13,000 movements, Dublin would align with the prevailing European trend and avoid being seen as disproportionately prioritising operations over community well-being.

6.3 Public Health and Economic Considerations

The health impacts of night flights are well-documented and widely acknowledged in public health research, with significant consequences for sleep, cardiovascular health, and cognitive function. The 2024 Hoge Gezondheidsraad Report (HGR) on Brussels Airport (https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/20240506_hgr-9741_vliegtuiglawaai_en_andere_emissies_vweb.pdf) offers a detailed and evidence-based methodology for assessing the health costs associated with night-time aviation activity. This approach provides a robust framework for understanding the potential economic and social burdens of excessive night flights at Dublin Airport.

Key Health Impacts of Night Flights

1. Sleep Disturbances:
   - Chronic exposure to noise levels exceeding 45 dB(A) L_{night} has been shown to significantly disrupt sleep, affecting both the quantity and quality of rest.
   - The HGR Report estimates that over 163,500 residents near Brussels Airport are exposed to these levels, leading to severe health outcomes including fatigue, reduced cognitive function, and long-term mental health issues.
2. Cardiovascular Diseases:
   - The report highlights a direct correlation between night-time noise exposure and increased risks of hypertension ,ischemic heart disease, and other cardiovascular disorders. These conditions are exacerbated by chronic stress responses triggered by nocturnal noise exposure.
3. Cognitive Impairment in Children:
   - Noise pollution from night flights impacts cognitive development in children, particularly in areas such as reading comprehension and memory retention. These effects, as reported for Brussels, are long-term and detrimental to educational outcomes.

Economic Costs of Health Impacts: The Brussels Methodology

The HGR Report on Brussels Airport provides a structured methodology to quantify the health costs of night flights, offering a valuable reference for assessing the potential impacts at Dublin Airport. Key components of this methodology include:

1. Quantification of Exposed Population:
    - The report calculates the number of residents affected by specific noise thresholds, such as 45 dB(A) L_{night} and L_{Amax} > 60 dB(A). For Brussels, this analysis revealed that nearly 20% of the population in affected areas experiences multiple noise events exceeding harmful levels every night.
2. Assessment of Health Outcomes:
    - Using epidemiological data, the report identifies the prevalence of noise-related health conditions, including cardiovascular diseases and severe sleep disturbances, within the exposed population.
3. Economic Valuation of Health Impacts:
    - The costs associated with these health outcomes are calculated based on healthcare expenses, lost productivity, and reduced quality of life. For Brussels Airport, the total annual economic cost was estimated to exceed €2.5 billion, driven primarily by severe sleep disturbances (€1 billion) and cardiovascular conditions.
4. Long-term Cost Implications:
    - The methodology accounts for the cumulative effects of noise exposure over time, reflecting the increasing burden on public health systems and economic productivity.

<u>Applying the Brussels Framework to Dublin Airport</u>

Given the similarities in operational profiles and community demographics between Brussels and Dublin airports, the Brussels methodology offers a relevant and transferable framework for estimating health costs at Dublin. Key parallels include:

- Population Density Near the Airport: Both Brussels and Dublin airports are situated in densely populated areas, with thousands of residents exposed to potentially harmful noise levels.
- Volume of Proposed Night Flights: The proposed 31,755 night flights at Dublin is comparable to the current levels at Brussels, where health costs have been shown to escalate significantly with increased noise exposure.
- Economic Burdens: Applying the Brussels framework to Dublin suggests that the economic costs of health impacts could similarly reach into the billions annually,

encompassing healthcare costs, productivity losses, and the intangible costs of reduced quality of life.

Appendix H presents further detail on the health costs to the Irish economy as a result of aviation noise at Dublin Airport.

Previous Submissions by the HSE

We direct the inspector to the previous submissions by the HSE Department of Public Health and Environment Health department to the planning authority and ANCA. In the HSE Department of Public Health's submission, it highlights that:

- Noise can have negative impacts on human health and well-being.
- Environmental noise is among the top environmental risks to physical and mental health and is associated with a substantial burden of disease in Europe.
- There is a plethora of evidence that sleep is a biological necessity, and that disturbed sleep is associated with a number of health problems.
- Noise disturbs sleeps by a number of pathways, and even at very low levels of noise, physiological reactions can be measured, such as increased heart rate, body movement and arousals.
- It states that the proposed changes to the North Runway Planning Permission may have significant consequences for Public Health in the surrounding areas.

The submission then discusses the impact of lack of sleep on human health. It states that:

- Insufficient sleep and sleep disorders impact daily functioning, mood, cognition and cardiovascular health outcomes such as obesity, high blood pressure, diabetes, stroke and heart attack.
- Prevalence of poor sleep health is high, particularly amongst vulnerable populations such as racial/ethnic minorities and individuals of lower socioeconomic status. Many factors contribute to this hig hprevalence, including environmental factors.
- Noise has been shown to fragment sleep, reduce sleep continuity and reduce total sleep time.
- It is therefore important to identify and target determinants of sleep health, including environmental factors.
- Continuous exposure to airc raft noise increases the frequency of waking up during sleep and decreases slow-wave sleep (also known as deep sleep).
- The auditory system constantly scans the environment for potential threats, and humans perceive, evaluate and react to environmental sounds even when asleep.
- During sleep, night noise can be either intermittent (that is discrete noise eve nts rather than constant background noise), or single noise event.

- When noise is accompanied by vibrations the combination of noise and vibration induces higher degrees of sleep disturbance than noise alone and other factors such as situational factors (depth of sleep phase, background noise level) and individual factors (noise sensitivity), contribute to whether or not noise will disturb sleep.
- Repeated noise-induced arousals lead to impaired sleep quality and recuperation, delayed sleep onset and early wakening, less deep and REM sleep, and more time spent awake and in superficial sleep stages.
- Noise may also prevent people from falling asleep again once woken. It is currently unclear how many additional noise- induced awakenings are acceptable and without consequence for sleep and health.
- When sleep is permanently disturbed and it becomes a sleep disorder, it is classified in the International Classification of Sleep Disorders as "environmental sleep disorder".
- Noise-induced sleep disturbance is an example of an environmental sleep disorder, which is a sleep disorder that causes complaints or either insomnia or daytime fatigue and somnolence. The exact prevalence of environmental sleep disorders is not known.
- It is generally accepted that insufficient sleep and sleep loss has a great influence on metabolic and endocrine functions, as well as on inflammatory markers, and it contributes to cardiovascular risk.
- C-reactive protein, an acute inflammatory marker, a predictor or strokes and heart attacks has been shown to linearly increase with total and/or partial sleep loss.
- Leptin, which is involved in glucose regulation and weight control, decreases with sleep loss thus increasing appetite and predisposing to weight gain, impaired glucose tolerance (risk of diabetes) and impaired host response.
- Sleep loss also effects neurobehavioural function, especially neurocognitive performance.
- Noise also activates the stress response, and long-term noise exposures may lead, in persons liable to be stressed by noise, to permanently increased cortisol concentration above the normal range. Increased risk of cardiovascular disease is connected with stress.
- There is considerable evidence for a relationship between sleep and the immune system, and the immune response may be impacted by environmental noise during sleep.
- Disturbed sleep leads to daytime sleepiness in 40% of affected subjects. As well as the potential health implications, daytime sleepiness interferes with work and social function and can have consequences including cognitive problems, motor vehicle accidents, poor job performance and reduced productivity.

These submissions support the inspectors conclusion and the Bord's draft decision to apply a movement limit at Dublin Airport during the night to prevent against the significant adverse effects of additional awakenings. Appendix I includes a more detailed summary of all HSE submissions to date.

Dr Garvey Letter

A submission has been prepared by Dr. John F. Garvey, Consultant Respiratory and Sleep Physician, on behalf of St. Margaret's The Ward and this is attached in Appendix J. Dr. Garvey's expertise in respiratory and sleep medicine, combined with his role as Medical Director of the Sleep Laboratory at St. Vincent's University Hospital, ensures a robust and evidence-based assessment of the health implications of noise exposure from Dublin Airport's operational changes.

Dr Garvey concludes that the proposed amendments to planning conditions for Dublin Airport's North Runway pose significant health risks due to night-time aircraft noise. He references calculations showing that four out of five monitored areas exceed acceptable thresholds for noise-induced awakenings, even after accounting for noise insulation. Despite responses from the Dublin Airport Authority (DAA), essential spatial contours detailing the geographic distribution of noise effects remain absent, highlighting critical gaps in the assessment process.

He notes that North Dublin faces disproportionately high stroke incidence and cardiovascular vulnerabilities, with contributing factors like hypertension, atrial fibrillation, and smoking. Night-time noise disruptions are expected to exacerbate these pre-existing health challenges. Elderly residents, a significant demographic, are particularly susceptible due to fragmented sleep patterns and increased arousal responses, which elevate cardiovascular risks. These disruptions are further linked to circadian rhythm disturbances, adversely impacting physical and mental health, especially in high-stress populations such as caregivers and individuals with chronic conditions.

Furthermore, noise-induced sleep fragmentation worsens glucose metabolism, exacerbates mental health conditions, and increases mortality risks in vulnerable populations. Economic analyses from similar cases, like Brussels Airport, underscore the substantial healthcare costs associated with noise exposure, including sleep disturbances, cardiovascular diseases, and general annoyance. These costs significantly outweigh the purported economic benefits of increased airport activity.

Proposed noise mitigation measures, such as soundproofing schools and bedrooms, present practical challenges. Issues of ventilation, humidity, and indoor air quality arise, potentially negating the benefits of reduced noise. Such measures fail to holistically address the multifaceted impacts of noise exposure on health and well-being.

To mitigate these risks, the following steps are recommended:

1. **Retain the Movement Cap**: Limiting night-time movements is crucial for minimising disruptions.
2. **Detailed Noise Mapping**: The DAA should provide comprehensive noise contour maps to evaluate affected areas accurately.
3. **Health Surveillance**: High-risk groups require targeted monitoring for long-term effects.
4. **Community Engagement**: Transparent and collaborative approaches are essential to address public concerns and rebuild trust.
5. **Incorporate Health Economics**: The financial impact of health-related costs should inform decision-making frameworks.

The proposed changes present severe health risks, particularly for North Dublin's vulnerable populations. Ongoing omissions in data and insufficient mitigation strategies underscore the need for a more robust, health-centred approach to planning and community engagement. Comprehensive actions are necessary to balance economic interests with the preservation of public health and well-being.

6.4 The Case for the 13,000 Movement Cap

Introducing and retaining the 13,000 movement cap at Dublin Airport is essential to mitigating these health impacts. By limiting night flights, the airport can significantly reduce the population exposed to harmful noise levels, directly addressing public health concerns and aligning with evidence-based recommendations from the Brussels methodology.

Ensuring Proportional and Sustainable Growth

The proposed 13,000 movement cap aligns Dublin Airport's operations with its passenger volume while addressing the public health and environmental challenges posed by night flights. This limit ensures:

1. Proportionality:
    - o A movement cap keeps Dublin's night flight operations consistent with its scale and passenger throughput. For example, under the cap, Dublin would handle night flights at a per-passenger rate comparable to Schiphol and Heathrow, rather than exceeding these much larger hubs.
2. Compliance with European Best Practices:

- The cap would align Dublin with the broader European trend of restricting night flights, avoiding its designation as an outlier that prioritises operational growth at the expense of public health and sustainability.

3. Community Well-being:
   - By limiting night flights, the airport can reduce noise exposure for residents, mitigating sleep disturbances and related health impacts, and maintaining trust with local communities.
4. Operational Sustainability:
   - Adopting the movement cap provides a framework for sustainable growth, balancing the needs of the airport with the health and environmental considerations of its stakeholders.

6.5 Conclusion

Dublin Airport's proposed night flight numbers are disproportionately high and misaligned with both its passenger numbers and European trends. The 13,000 movement limit in the draft decision is not only justified but essential for ensuring that the airport operates within sustainable and proportional limits.

Failing to retain this cap would place Dublin Airport in a misaligned category with much larger hubs like Frankfurt, Schiphol, and Heathrow, while exposing the surrounding communities to significant noise pollution and health risks. Conversely, adhering to the 13,000 cap ensures the airport aligns with best practices, respects public health objectives, and supports sustainable growth. This limit must remain a cornerstone of the Relevant Action to safeguard Dublin's future as a responsible and community-focused airport.

7.0 INADEQUACY OF INSULATION IN MITIGATING AIRCRAFT NOISE-INDUCED AWAKENINGS AT NIGHT

7.1 Introduction

Aircraft noise at night has a profound impact on the quality of life and well-being of individuals residing near airports. Night-time awakenings caused by aircraft noise not only disrupt sleep patterns but also lead to significant health and psychological consequences. These disturbances are particularly detrimental given the cumulative effects on physical health, mental well-being, and overall quality of life.

The draft decision of An Bord Pleanála (ABP) must adequately address the insufficiency of insulation as a standalone mitigation measure for such scenarios. Insulation measures, while reducing internal noise levels to some extent, fail to eliminate the disruptive effects of sharp noise peaks and night-time awakenings. This inadequacy becomes especially evident when assessing properties exposed to noise levels that exceed the one awakening per night threshold, a critical benchmark for protecting residents' sleep and health.

To address this issue effectively, the extension of the voluntary purchase scheme must be considered the only viable mitigation measure. Such an approach ensures that residents in the most severely impacted areas are provided with equitable and sustainable relief from night-time noise exposure.

The policies and objectives of the Fingal Development Plan (FDP) 2023-2029 emphasize the importance of sustainable development, aligning with the Regional Spatial and Economic Strategy (RSES) 2019-2031. The RSES outlines the region's challenges, including sustaining economic growth while transitioning to a low-carbon society and aligning population growth with the location of homes and jobs. Crucially, the strategy highlights the creation of healthy, attractive places and an enhanced quality of life as essential goals.

The RSES is underpinned by three cross-cutting principles:

1. Healthy Placemaking
2. Climate Action
3. Economic Opportunity

Health is a fundamental theme running through all policies and objectives, reflecting its status as a key Sustainable Development Goal of the FDP.

To protect the health of the Fingal community, the Development Plan includes explicit policies and objectives addressing environmental adverse health effects, such as aircraft noise. At Section 14.20.17: Noise, the FDP emphasizes that noise assessments must adhere to the principles of good acoustic design, in line with the Professional Practice Guidance on Planning & Noise: New Residential Developments (ProPG) 2017. Furthermore, predicted internal and external noise levels must comply with BSI Standard BS 8233:2014, specifically Table 4: Indoor Ambient Noise Levels for Dwellings.

The FDP recognizes the critical need to balance economic growth with public health protection. Aircraft noise mitigation strategies must align with the FDP's vision of sustainable development and its emphasis on healthy placemaking. Insulation alone fails to meet the health protection standards outlined in the FDP and related guidance. For properties exposed to severe night-time noise, extending the voluntary purchase scheme emerges as the only effective and equitable solution. This approach not only aligns with the sustainable development goals but also ensures the well-being of affected communities.

7.2 The Ineffectiveness of Insulation in Addressing Aircraft Noise-Induced Awakenings

Insulation measures, including enhanced glazing, acoustic seals, and mechanical ventilation, are commonly proposed as mitigation strategies for noise. However, while insulation may reduce internal noise levels, it does not address critical factors such as:

1. Open Window Scenarios: Many residents prefer to sleep with windows open for ventilation, especially during warmer months. In such cases, the effectiveness of insulation is entirely negated.
2. Low-Frequency Noise Penetration: Aircraft noise contains significant low-frequency components that are less effectively attenuated by standard insulation methods. These frequencies can still result in sleep disturbances even in insulated properties.
3. High Noise Peaks: Insulation does not eliminate the perception of sharp noise peaks, which are a primary trigger for awakenings. Even with insulated properties, the sudden onset of aircraft noise during quiet night-time periods can lead to involuntary awakenings.

Insulation is frequently proposed as a mitigation measure to reduce the internal impacts of external noise sources, including aircraft. However, the inherent characteristics of vernacular housing types in Fingal, particularly dormer bungalows and 1½-story houses, present significant challenges in effectively insulating against noise intrusion. This architectural limitation is highly relevant to the Dublin Airport scenario, where overhead aircraft noise is the primary concern.

The Residential Noise Insulation Scheme (RNIS) and Home Sound Insulation Programme (HSIP)

It should be noted that the Residential Noise Insulation Scheme (RNIS) and the Home Sound Insulation Programme (HSIP) listed at Section 2.3 Part 2 of Condition 6 of the Draft Decision are sound insulation schemes required under ABP planning reference PL 06F.217429 to deal with daytime noise.

However, due to the change in flight paths from those presented as part of that grant of planning, the Dublin Airport Authority (DAA) has continually altered the eligibility contours for these schemes. They are presently extending these schemes to deal with the adverse noise situation occurring in areas far beyond the submitted planning compliance contours for daytime noise.

It is most unusual that ABP considers it appropriate to provide the statement at Section 2.3 regarding daytime noise without clearly assessing the adequacy of such noise insulation for nighttime noise, given the vast differences in the effects and mitigation requirements for nighttime versus daytime noise.

As per the FDP guidance, at Table 4 of BS 8233, the internal ambient noise levels for nighttime noise should be considered in three parts:

1. Internal Ambient Noise Levels: At night, internal bedroom noise should not exceed 30 dB $L_{Aeq\ 8\ hours}$, which equates to an external noise exposure of 51 dB $L_{Aeq\ 8\ hours}$ (internal noise level plus 21 dB, as per Section 1.3 of this report).
2. Maximum Noise Events: Table 4 Note 4 of BS 8233, expanded in the FDP-referenced ProPG guidance, specifies that L_{AmaxF} of 45 dBA should not be exceeded more than 10 times per night, corresponding to an external noise level of 67 dB L_{AmaxF}. The current criteria for RNIS and HSIP eligibility, set at 63 dB $L_{Aeq\ 16\ hours}$, are insufficient. Monitoring results for the North Runway confirm that 67 dB L_{AmaxF} is being exceeded in many locations within current noise Zones A and B, as defined in the FDP. This demonstrates the inadequacy of existing insulation schemes for nighttime noise.
3. Nighttime Awakenings: Frequent awakenings caused by noise peaks during the night further exacerbate the adverse health impacts, as discussed in Section 6.3 of this report.

Given that the RNIS and HSIP fail to meet the criteria for good acoustic design as outlined in ProPG and BS guidance, these measures are deemed unacceptable for addressing the current noise challenges. If such standards are considered insufficient for new residential developments, it follows that they are equally unsuitable for existing residents exposed to the adverse impacts of unplanned flight paths.

Vernacular Housing in Fingal and the Challenge of Dormer Windows

Dormer bungalows and 1½-story houses are a common architectural style in Fingal. These homes often feature sloped roofs with dormer windows that extend outward, providing natural light and additional headroom in upstairs living spaces. While aesthetically appealing and practical for the local climate and landscape, dormer windows introduce specific vulnerabilities to noise intrusion:

1. Proximity to Noise Source: Dormer windows are typically located closer to the roofline and are oriented in such a way that they are directly exposed to overhead noise sources, such as aircraft. This direct exposure increases the transmission of sound into living spaces.
2. Complex Geometry: The geometry of dormer windows—sloping roofs, angled walls, and window protrusions—creates challenges for standard insulation methods. The soundproofing measures that may be effective for flat walls and ceilings often fail to achieve similar results for these irregularly shaped features.
3. Material Limitations: Dormer windows frequently use lightweight construction materials, including timber frames and glazing, which are less effective at attenuating noise compared to thicker, heavier materials such as solid walls or reinforced roofs.
4. Multiple Noise Paths: Noise can enter through multiple pathways, including the glazing of the dormer windows, the roof structure, and the junctions between the dormer and the main roof. Addressing all these paths simultaneously with insulation is technically complex and often cost-prohibitive.
5. Ventilation Requirements: To maintain adequate ventilation, particularly in warmer months, residents often leave dormer windows partially open. This practice renders any installed insulation ineffective, as open windows provide a direct pathway for noise intrusion.

<u>Pertinence to the Dublin Airport Noise Scenario</u>

The limitations of insulating dormer-style housing are particularly acute in the context of Dublin Airport, where:

1. Overhead Aircraft Noise: The primary source of noise is directly overhead, meaning dormer windows are positioned at the most vulnerable angle for sound intrusion. The sloping roofs and elevated position of dormer windows exacerbate the impact of aircraft noise compared to other housing types.
2. Night-Time Noise: During night-time hours, when ambient background noise is minimal, aircraft noise events are more perceptible and more likely to cause sleep disturbances.

The inability to effectively insulate dormer windows amplifies this problem, leaving residents exposed to higher-than-acceptable noise levels even in their bedrooms.

3. Cumulative Impact: Residents of dormer bungalows and 1½-story houses often experience multiple aircraft flyovers per night, leading to cumulative effects on sleep quality and overall well-being. The failure of insulation to adequately address this issue further compounds the adverse impacts.

Implications for Noise Mitigation Policy

The inherent difficulty in insulating dormer bungalows and 1½-story houses has several critical implications for noise mitigation policy in the Dublin Airport context:

1. Inadequacy of Insulation as a Standalone Measure: For these housing types, insulation cannot be relied upon as a primary mitigation measure against aircraft noise. The structural limitations of dormer windows mean that internal noise levels will remain high even with significant investment in insulation.
2. Need for Alternative Mitigation Strategies: Given the ineffectiveness of insulation, alternative measures must be prioritized, such as extending the voluntary purchase scheme to include properties exposed to significant night noise levels. This approach directly addresses the root cause by removing residents from the noise-affected environment.
3. Equity in Mitigation: Dormer-style homes are a hallmark of vernacular architecture in Fingal, and their residents should not be disproportionately disadvantaged by the inherent limitations of their housing design. Mitigation policies must reflect the unique challenges posed by these housing types and ensure equitable treatment for affected residents.

The unique architectural features of dormer bungalows and 1½-story houses in Fingal render them particularly vulnerable to aircraft noise intrusion, especially from overhead sources like those associated with Dublin Airport. Insulation, as a standalone measure, is inherently ineffective in addressing the specific noise challenges posed by these homes. As a result, alternative mitigation strategies, including the extension of the voluntary purchase scheme, are essential to adequately protect the well-being of affected residents. The limitations of insulation in this context must be explicitly recognized in the ABP draft decision to ensure that the needs of these communities are properly addressed.

7.3 Properties Exceeding the One Awakening Per Night Threshold

The Environmental Impact Assessment (EIA) acknowledges that properties exposed to noise levels resulting in more than one additional awakening per night experience a significant adverse effect. For these properties, mitigation is not just desirable but a necessity. However, the ability

to accurately identify these properties hinges on the quality and granularity of the data presented by the Dublin Airport Authority (DAA). In this context, it is deeply concerning that the DAA has not generated or presented noise contours corresponding to critical thresholds of 1, 2, and 3 additional awakenings per night. This omission represents a significant shortfall in the DAA's analysis and has critical implications for assessing and mitigating the impacts of aircraft noise.

Importance of Generating Awakening Threshold Contours

Noise contours showing the expected number of additional awakenings per night are an essential tool for assessing the severity of noise exposure and its impact on sleep disturbance. These contours provide the spatial delineation of areas where noise exposure results in specific awakening probabilities, enabling:

1. Precise Identification of Affected Properties: Contours for 1, 2, and 3 additional awakenings per night are crucial for pinpointing residential areas and properties most affected by noise. Without these contours, it is impossible to identify with accuracy the zones where significant mitigation measures are required.
2. Quantification of Population Impact: By overlaying these contours with population data, it becomes feasible to estimate the number of residents exposed to harmful noise levels. This information is essential for evaluating the scale of the problem and prioritizing interventions.
3. Transparent Decision-Making: The absence of such data undermines the transparency of the planning process, making it difficult for stakeholders, including regulatory bodies and affected residents, to fully understand the extent of noise impacts and the justification for proposed mitigation measures.
4. Compliance with International Best Practices: Generating awakening contours aligns with best practices in noise impact assessments, such as those recommended by the World Health Organization (WHO) and other international bodies, which emphasize the need to evaluate noise impacts in terms of health outcomes, including sleep disturbance.

Deficiencies in the DAA's Noise Assessment

The failure of the DAA to present awakening contours is a significant omission that weakens the robustness of the Environmental Impact Statement (EIS). Specific critiques include:

1. Lack of Spatial Granularity: The DAA's reliance on generalized noise metrics such as L_{night} or L_{Aeq} fails to account for the episodic nature of aircraft noise and its specific role in causing awakenings. The absence of awakening contours means that the spatial extent of areas exceeding the one awakening per night threshold remains unknown.
2. Underestimation of Impact: By not providing contours for 2 and 3 awakenings per night, the DAA's analysis does not adequately address the cumulative effects on residents who experience multiple awakenings within the same night. These individuals face heightened risks of chronic sleep disruption and its associated health consequences.
3. Limited Basis for Mitigation: Without awakening contours, there is no clear basis for determining which properties should qualify for mitigation measures, including insulation or inclusion in the voluntary purchase scheme. This lack of specificity undermines the effectiveness and fairness of any mitigation strategies proposed.
4. Opaque Methodology: The omission raises questions about the comprehensiveness and transparency of the noise assessment methodology employed by the DAA. It is unclear whether the DAA has failed to generate these contours or whether they have been omitted from the documentation. Either scenario reflects poorly on the credibility of the analysis.

Implications for Mitigation and Policy Recommendations

The lack of awakening contours directly undermines the ability to fulfil the requirements of the EIA, which mandates the identification and mitigation of significant effects. To rectify this shortfall, the following actions are recommended:

1. Immediate Generation of Awakening Contours: The DAA must generate and present contours for 1, 2, and 3 additional awakenings per night as part of a revised and comprehensive noise assessment. These contours should be made publicly available to ensure transparency and enable informed decision-making.
2. Integration of Awakening Data into Mitigation Planning: The contours must be used to identify properties and communities exposed to significant levels of nighttime noise-induced awakenings. These properties should then be prioritized for mitigation, including inclusion in the voluntary purchase scheme.
3. Strengthened Oversight by ABP: An Bord Pleanála should require the DAA to address these deficiencies as a condition of the draft decision. This would ensure that the assessment aligns with best practices and adequately protects affected residents.

The omission of awakening contours from the DAA's submission is a critical failing that significantly undermines the ability to assess and mitigate the impacts of nighttime aircraft noise. Without these contours, the spatial and population-level understanding of noise-induced awakenings remains incomplete, and affected residents are left without the necessary protections. The draft decision must require the immediate generation and inclusion of awakening contours to ensure that the impacts of aircraft noise are fully understood and appropriately mitigated. This step is essential to meet the obligations of the EIA and to safeguard the health and well-being of the communities affected by nighttime aircraft noise .

7.4 The Need for an Extension of the Voluntary Purchase Scheme

Given the inadequacy of insulation to effectively address night-time awakenings, the only viable mitigation measure for these properties is the extension of the voluntary purchase scheme. This scheme should be extended to include all properties exposed to noise levels resulting in more than one additional awakening per night .The justification for this approach includes:

1. Direct Elimination of Impact: Purchase and relocation remove residents from the affected noise environment, directly eliminating exposure and the associated adverse effects.
2. Equity and Health Protection: Providing affected residents with the option to relocate ensures that the significant health and well-being effects of noise are adequately addressed. It demonstrates a commitment to equity and social responsibility.
3. Alignment with EIA Recommendations: The EIA mandates the identification and mitigation of significant effects. Extending the voluntary purchase scheme aligns with these requirements and ensures compliance with regulatory and ethical obligations.

The draft decision must recognise that insulation alone is insufficient to mitigate the significant adverse effects of night-time aircraft noise, particularly in properties exposed to noise levels leading to more than one additional awakening per night. These properties require targeted identification, and mitigation must go beyond insulation. The most effective and viable solution is the extension of the voluntary purchase scheme to include such properties, thereby ensuring that residents are not subjected to chronic noise-induced sleep disruption. This approach not only fulfils the obligations outlined in the EIA but also prioritises the health and well-being of affected communities.

7.5 Inconsistencies with Dani Fiumicelli's Expert Report

In the Bristol Airport Planning Appeal[1], noise expertise was provided by Mr. Fiumicelli on behalf of North Somerset Council, where he made the following recommendations for noise insulation schemes:

"Eligibility for Noise Mitigation Grants

Residential properties located within the 54 dB, 57 dB, 60 dB, and 63 dB (A) LAeq, 16hr (07:00–23:00) contours, as well as the 45 dB (A) LAeq, 8hr (23:00–07:00) contour, should be eligible for grants covering 100% of the noise mitigation costs.

Noise Insulation Scheme Design

The noise insulation scheme should be tailored to each affected property based on a survey and must aim to achieve the recommended internal day and night LAeq,t noise levels specified in BS 8223:2014, without any additional 5 dB uplift. Additionally, the scheme must ensure that LAmax levels from aircraft noise in bedrooms do not exceed 45 dB(A) more than 10 times between 23:00 and 07:00."

These recommendations starkly contrast with Mr. Fiumicelli's testimony to the Board, where he characterized the daa's (Dublin Airport Authority's) noise schemes as generous. In reality, the daa's schemes fall far short of those he proposed for Bristol Airport.

At Dublin Airport, the full insulation scheme only applies to dwellings within the 63 dB $L_{Aeq,16hr}$ contour, compared to the 54 dB $L_{Aeq,16hr}$ contour recommended for Bristol.

For nighttime noise, the daa scheme applies to dwellings exposed to levels above 55 dB L_{night}, whereas Mr. Fiumicelli recommended insulation for levels above 45 dB $L_{Aeq,8hr}$ at Bristol.

This disparity raises questions about the consistency of Mr. Fiumicelli's recommendations for Dublin and Bristol.

Mr. Fiumicelli also advises that Bristol Airport adopt a revised Noise Quota Count (QC) system, similar to the one used at London City Airport, which classifies aircraft noise in 1 dB bands rather than 3 dB bands. He explains:

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[1] https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/6e/64/6e641c8f-7029-4283-8793-b3cc7956a715/nscw21_proof_of_evidence_of_dani_fiumicelli_-_noise.pdf

"A difference of 3 decibels represents a doubling or halving of noise energy. The current QC system, based on 3 dB bands, assumes an aircraft rated QC/1 has half the noise energy of one rated QC/2 and twice the energy of QC/0.5. However, this approximation can be misleading. For example ,an aircraft rated 90.1 EPN dB (at the lower end of QC/1) and another rated 95.9 EPN dB(at the upper end of QC/2) would differ by 5.8 dB, representing nearly a four-fold difference in noise energy. Yet, the QC difference between these aircraft is only 1. This discrepancy can lead to an underestimation of the nighttime noise contours and the number of affected people, despite aircraft complying with the QC system."

Despite making these recommendations for Bristol, Mr. Fiumicelli did not propose similar changes for Dublin Airport. The inconsistencies in his recommendations are troubling and warrant further scrutiny.

This raises a critical question: why should Dublin Airport not receive the same level of consideration and recommendations from Mr. Fiumicelli as Bristol Airport? In 2024, any expanding airport, including Dublin Airport, should be mandated to implement the fullest mitigation measures possible to reduce the impacts on affected communities. Fairness and equity demand that all affected populations are provided with adequate protection from the adverse effects of airport noise.

7.6 Conclusion

Condition 3 of the draft decision proposes extending the operating hours for departures from the North Runway. Originally restricted between 23:00 and 07:00, the new proposal limits departures only between 00:00 and 06:00, leaving just a six-hour nightly window without flights.

We must highlight to the board that members of our community living under the unlawful, divergent flight paths—whose homes have been insulated under the RNIS and HSIP schemes—are currently unable to use their bedrooms between 07:00 and 23:00 due to the intense noise levels caused by aircraft. This makes their bedrooms uninhabitable. The issue is significant and, under the EPA EIAR guidelines, is classified as having a profound impact on these homes, even with insulation in place .

Such conditions are unacceptable, as they severely harm residents' health and well-being, depriving them of the basic human right to restful sleep in their own homes. If the noise levels are already intolerable under the current operating hours, extending these hours will only exacerbate the problem.

Despite these critical impacts, the DAA has failed to assess or evaluate this issue in its application. Moreover, no information on this matter has been presented to the board or made available for public consultation. Why has this been overboked?

The draft decision under Condition 6 of the proposed development introduces critical shortcomings in its approach to mitigating the adverse impacts of aircraft noise, particularly during night-time hours. The use of conditional language such as "where possible" in reference to achieving BS 8233:2014 internal ambient noise levels dilutes the intent and effectiveness of the proposed noise insulation measures. This deviation from established standards is inconsistent with the Fingal Development Plan (FDP) 2023-2029, which unambiguously requires that noise levels "be in keeping with" BS 8233:2014 and is contrary to best practices as outlined in ProPG guidance.

Furthermore, Condition 6, Part 5, Step 5(e), which ties the identification of mitigation measures to financial assistance grants, undermines the ability to achieve the required Target Performance. The implication that financial constraints could justify non-compliance with the mandated standards is incompatible with the FDP's emphasis on public health, proper planning, and sustainable development. A standard must be upheld in full to protect the health and well-being of residents, both within and outside the areas covered by the HSIP and RNIS.

Given the inadequacy of the proposed insulation schemes to address the specific challenges posed by night-time noise, particularly for traditional Irish domestic constructions, alternative mitigation strategies must be prioritised. As outlined in Section 6.2, extending the voluntary purchase scheme emerges as the only effective and equitable solution for residents exposed to severe noise impacts. This measure directly addresses the root cause of noise exposure, providing sustainable and meaningful relief to affected communities.

Ultimately, adherence to the standards and guidelines set out in the FDP is essential for safeguarding public health and ensuring proper planning and sustainable development. Any deviation from these standards compromises the well-being of residents and the credibility of the planning process. The proposed draft decision must be revised to fully align with the FDP and recognised best practices, ensuring that noise mitigation measures are not only adequate but also equitable and sustainable.

8.0 Appropriate Assessment

8.1 Introduction

The Appropriate Assessment (AA) process undertaken for the proposed planning amendments to Dublin Airport's operations, particularly for the North Runway, has raised substantial concerns about its adequacy and compliance with relevant environmental regulations. This chapter outlines the critical gaps and deficiencies observed in the AA process, emphasizing the implications of outdated data, incomplete assessments, and insufficient adherence to EU directives. Further detailed information is contained in Appendix J.

8.2 Appendix to Main report

The draft decision by the Board relies heavily on two documents reviewed by its ecologist: the "Appropriate Assessment Screening Report" by AECOM (2021) and an Addendum to the same report from 2023. However, this narrow scope excludes significant appeal submissions and other documentation that challenge the adequacy of the AA process. This exclusion undermines the comprehensiveness and robustness of the assessment.

One of the most glaring issues is the reliance on bird survey data collected between 2016 and 2018. These surveys are over six years old, rendering them invalid under the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance, which states that surveys older than three years are unlikely to remain valid. This oversight compromises the validity of the conclusions drawn about the impacts of airport operations on sensitive species and habitats.

Furthermore, the AECOM report fails to address critical noise impacts on sensitive species, such as Brent Geese. Research indicates that these birds are highly sensitive to both noise and visual disturbances, with up to 92% reacting to aircraft noise initially, though habituation reduces this to 64%. Despite such evidence, the AA's noise impact assessment is insufficiently detailed and omits key literature, including studies cited in the European Environment Agency's "State and Outlook 2020" report. The Board's ecologist's reliance on outdated data and the exclusion of appeal submissions highlight a fundamental flaw in the AA process, leaving it open to judicial review.

8.3 Field Surveys

Field surveys form the foundation of any ecological assessment, providing the critical data needed to evaluate potential impacts on habitats and species. However, the field surveys cited in the AECOM reports are outdated and insufficient in scope, raising significant concerns about their reliability and relevance. The surveys, conducted between 2016 and 2018, focus on

Baldoyle Bay SPA and Rogerstown Estuary SPA. While these areas are relevant, the data fails to account for the North Runway's operational impacts, which only commenced in 2022.

The surveys' limitations extend beyond their age. They were conducted primarily during daytime hours and did not evaluate the impacts of night-time aircraft operations, which are a central concern given the runway's 24-hour usage. Additionally, the surveys were confined to non-breeding seasons, excluding critical breeding periods where noise and disturbance may have heightened effects on bird populations. This gap is particularly significant given the well-documented sensitivity of species such as Brent Geese and Bar-tailed Godwits.

Illumination effects from night-time operations are another neglected factor. Artificial light can disrupt avian circadian rhythms and lead to behavioural changes, yet this aspect is absent from the assessment. The vantage point surveys referenced by AECOM were limited to disturbance monitoring and did not encompass broader ecological indicators like habitat degradation or changes in species reproduction rates.

The lack of thorough field surveys during North Runway operations exacerbates these deficiencies. Without data reflecting the runway's actual impacts, it is impossible to make accurate determinations about the project's ecological consequences. This incomplete approach undermines the AA's compliance with the precautionary principle, which mandates action to prevent potential harm when scientific certainty is lacking.

8.4 NPWS Guidance

The National Parks and Wildlife Service (NPWS) provides clear guidelines on conducting Appropriate Assessments, emphasizing the need to evaluate all potential significant effects on European sites. Despite these guidelines, the AECOM report's scope is unduly narrow, focusing primarily on noise and visual disturbance impacts while neglecting other critical factors such as air and water quality.

The NPWS lists several indicators of significant effects, including reductions in habitat area, damage to the physical environment, and interference with species' reproductive abilities. AECOM's failure to consider these indicators represents a significant oversight. For example, the impact of aircraft emissions on air quality and the potential contamination of waterways through de-icing chemicals and PFAS (per- and polyfluoroalkyl substances) is not addressed. These pollutants could have profound effects on habitats like Baldoyle Bay SPA, which are hydrologically connected to the airport's drainage systems.

The precautionary principle, central to EU environmental law, requires that any doubt about potential significant effects necessitates a full AA. AECOM's report, however, appears to prioritize convenience over thoroughness, dismissing potential impacts without robust evidence.

This approach directly contravenes the safeguards established under Article 6(3) of the Habitats Directive.

In addition to these deficiencies, the report's reliance on outdated surveys further weakens its credibility. The NPWS's guidelines explicitly state that assessments must be based on current and reliable data. By failing to adhere to these standards, the AA process not only risks ecological harm but also exposes the project to legal challenges.

8.5 Cumulative / In-combination Projects

Under the EU Habitats Directive, Appropriate Assessments must evaluate the cumulative and in-combination effects of a project alongside other plans and developments. This requirement ensures that incremental impacts do not collectively compromise the integrity of European sites. However, the AECOM report's failure to conduct such an evaluation represents a serious breach of this obligation.

Cumulative impacts are particularly relevant given the scale of development at Dublin Airport, which includes ongoing and planned projects like the increase in passenger capacity to 40 million (F23A/0781) and major drainage works (F23A/0636). Both projects have clear potential to affect nearby SPAs and SACs, either through increased noise, habitat disturbance, or pollution. Yet, these developments are not considered in the AA screening process.

AECOM's rationale for excluding cumulative assessments—that the proposed action has no significant standalone effects—is fundamentally flawed. EU case law, including the landmark Waddenzee judgment, emphasizes that even minor impacts must be assessed in combination with others to account for their aggregated effect. The omission of this analysis violates Article 6(3) of the Habitats Directive and undermines the AA's conclusions.

The NPWS's guidance explicitly calls for a thorough evaluation of all completed, approved, and proposed projects within the relevant area. This includes not only direct impacts but also ex situ effects, such as pollution or habitat fragmentation caused by increased aircraft movements. AECOM's report fails to meet these standards, leaving significant gaps in the assessment process.

Without a comprehensive cumulative impact analysis, the AA cannot rule out significant effects on European sites. This deficiency not only jeopardizes the ecological integrity of these sites but also renders the project's approval vulnerable to legal challenge.

8.6 Conservation Objectives

Conservation objectives for designated European sites, such as Baldoyle Bay SPA, are established to ensure the protection of species and habitats. These objectives include maintaining the population stability of species like Brent Geese, Bar-tailed Godwit, and Golden

Plover, which are of particular conservation interest. However, the AA process has failed to adequately consider how the proposed development aligns with these objectives.

Population trends at Baldoyle Bay SPA highlight significant challenges. According to NPWS data, some species, such as the Bar-tailed Godwit, are classified as "Highly Unfavourable," indicating a population decline of over 50%. Others, like the Golden Plover, are "Unfavourable," showing declines of 25% to 50%. These trends suggest that the site is already under considerable stress and that further disturbances, such as increased noise and habitat degradation, could exacerbate these declines.

The AECOM report's narrow focus on noise impacts does not sufficiently address the broader range of threats to these species. For instance, habitat loss due to pollution from aircraft operations, including PFAS contamination and de-icing chemicals, has not been assessed. Additionally, the potential effects of increased night-time aircraft movements on species' reproductive behaviours and feeding patterns have been overlooked.

The precautionary principal mandates that where there is uncertainty about potential impacts, decision-makers must err on the side of conservation. The AA's failure to robustly assess the risks to Baldoyle Bay's conservation objectives undermines compliance with this principle and leaves the site vulnerable to further ecological degradation. Ensuring that the proposed actions align with these objectives is not only a legal requirement but also critical to safeguarding the long-term viability of the SPA's biodiversity.

8.7 ANCA Reports

The Aircraft Noise Competent Authority (ANCA) has conducted its own AA in relation to noise impacts from the North Runway. However, this assessment is limited in scope and fails to address several critical factors, raising significant concerns about its reliability and adequacy.

ANCA's AA focuses exclusively on noise impacts and does not consider other potential effects, such as air and water pollution. This narrow approach ignores the interconnected nature of environmental impacts and fails to meet the comprehensive standards required under the Habitats Directive. For example, the potential for PFAS contamination from increased de-icing operations, as well as its impact on hydrologically connected SPAs and SACs, is not addressed in ANCA's report.

Additionally, ANCA's reliance on continuous noise thresholds rather than single-event noise impacts undermines the robustness of its assessment. Research indicates that single noise events, such as aircraft takeoffs, can have more significant effects on species like Brent Geese, which are highly sensitive to sudden disturbances. ANCA's dismissal of these impacts contradicts findings from both the Board's noise expert and independent studies.

The omission of cumulative and in-combination effects further weakens ANCA's assessment. Despite acknowledging the potential for such impacts during its screening process, ANCA's final report fails to evaluate them comprehensively. This oversight contravenes Article 6(3) of the Habitats Directive, which requires consideration of all relevant factors in determining the likelihood of significant effects.

In summary, ANCA's AA is insufficiently rigorous and fails to provide the comprehensive analysis needed to ensure compliance with EU environmental law. Its narrow scope and reliance on outdated data leave significant gaps in the assessment process, rendering its conclusions questionable at best.

8.8 AA Screening by Planning Authority

The AA screening process conducted by the Planning Authority, as outlined in the Brady Shipman Martin report, suffers from similar deficiencies to those identified in the AECOM and ANCA assessments. The report, dated August 2022, fails to adequately address in-combination effects and relies on outdated data, raising questions about its compliance with EU directives.

One key issue is the report's failure to evaluate in-combination impacts from other projects. For example, major developments like the airport's infrastructure application (F23A/0781) and drainage works (F23A/0636) have not been considered. These projects, which are directly linked to the airport's expansion, have clear potential to exacerbate noise, pollution, and habitat degradation in nearby SPAs and SACs. The omission of these factors renders the screening process incomplete and inconsistent with Article 6(3) of the Habitats Directive.

The Brady Shipman Martin report also relies heavily on bird surveys conducted between 2016 and 2018, without acknowledging their age or lack of relevance to current runway operations. This oversight ignores guidance from the CIEEM, which recommends that ecological data older than three years be considered invalid unless explicitly validated by new assessments.

Additionally, the report's discussion of noise impacts is based on outdated monitoring data that does not reflect current noise levels. For example, recent monitoring reports from the Dublin Airport Authority (DAA) indicate significantly higher noise levels than those cited in the screening report. This discrepancy undermines the validity of the report's conclusions about the potential impacts on sensitive species and habitats.

Finally, the report's lack of engagement with third-party submissions further weakens its credibility. By failing to consider public and expert input, the Planning Authority has neglected a critical component of the AA process, as mandated under the Aarhus Convention. This exclusion not only contravenes procedural requirements but also risks overlooking valuable insights that could enhance the robustness of the assessment.

In summary, the Brady Shipman Martin report's reliance on outdated data, failure to evaluate in-combination effects, and lack of stakeholder engagement represent significant shortcomings in the AA screening process. These deficiencies undermine the report's compliance with EU environmental law and raise serious questions about the validity of its conclusions.

8.9 Red Kite

The Red Kite (*Milvus milvus*), a majestic bird of prey, has been successfully reintroduced into parts of Ireland after being absent for over 100 years. This reintroduction was part of a conservation programme led by the Golden Eagle Trust and the National Parks and Wildlife Service (NPWS). One of the key sites chosen for this initiative was Newbridge House in Donabate, Fingal.

Listed on Annex 1 of the EU Birds Directive (79/409/EEC) and protected under the Wildlife Act 1976 (as amended), the Red Kite is of significant conservation importance. The bird's return to Fingal represents a success story for biodiversity conservation, with local sightings of breeding Red Kite chicks recorded for the first time in a century. This underlines the importance of suitable habitats, such as woodlands and hedgerows, to the survival and growth of their population.

Despite the progress in reintroducing the Red Kite, concerns have been raised regarding the potential impact of proposed developments on this protected species. Recent planning applications have made no reference to the Red Kite or assessed the potential impacts of construction on its habitat. This omission is evident in the revised Appropriate Assessment (AA) Screening report addendum, which fails to address the reintroduction of Red Kites to the area. This oversight is a significant dereliction of AA requirements and contradicts established conservation obligations.

The proposed developments in Fingal may result in the loss of trees and hedgerows, which serve as vital habitats for the Red Kite. Previous planning cases have recognised these impacts. For example, in Strategic Housing Development case ABP-306182-20, the Chief Executive's Report from Fingal County Council raised concerns about the loss of trees and its detrimental impact on the Red Kite. The planning authority ultimately recommended refusing permission for several reasons, including:

- The excessive loss of trees and hedgerows,
- The resulting reduction in Red Kite habitats, and
- The inconsistency of the development with local conservation objectives.

The inspector's report on this case highlighted that Red Kites are known to nest in the area, and any degradation of their habitat would be contrary to the conservation objectives outlined in the County Development Plan.

Article 4(4) of the EU Birds Directive (Directive 2009/147/EC) explicitly requires Member States to avoid pollution, habitat deterioration, and disturbances that could significantly affect birds protected under Annex 1. This applies both within Special Protection Areas (SPAs) and beyond their boundaries. The Directive stipulates:

- "Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats."

The current development application in Fingal fails to meet these requirements, as it does not include an assessment of potential impacts on the Red Kite or take measures to prevent habitat degradation.

Maps from Biodiversity Ireland provide a clear record of Red Kite sightings in Fingal, demonstrating an increasing presence of this species in recent years. These maps, accessible via Biodiversity Ireland's data portal, underscore the importance of the area as a habitat for the Red Kite. When compared to older records, the data highlights the success of conservation efforts but also stresses the need to safeguard these gains from the impacts of development.

The omission of the Red Kite from ecological assessments in Fingal's development proposals is a serious concern. The bird's reintroduction represents a milestone in Irish biodiversity conservation, and its protection is both a legal obligation under EU law and a moral responsibility. Without proper impact assessments and mitigation measures, development risks undermining years of conservation work and jeopardising the future of this iconic species in Ireland.

Recommendations for Action:

- **Inclusion of Red Kite Impact Assessments**. DAA should prepare a detailed ecological impact assessments, specifically addressing the Red Kite, similar to the addendum prepared in the ABP-306182-20 case.
- **Habitat Protection**: Preservation of trees, hedgerows, and other critical habitats should be prioritised to support Red Kite populations.
- **Alignment with Conservation Objectives**: All planning applications must align with EU Birds Directive obligations and local conservation objectives to avoid legal and ecological conflicts.
- **Monitoring and Mitigation**: Ongoing monitoring of Red Kite populations should inform mtigation measures, ensuring that developments do not compromise the species' reintroduction success .

10 Collision Impact

The potential for increased bird strikes because of the North Runway's operations poses significant ecological and safety concerns. Bird strikes have been identified as one of the most pressing aviation safety issues, with the Irish Aviation Authority (IAA) reporting over 1,800 incidents between 2017 and 2019. Despite these risks, the AA process has failed to adequately assess the implications of increased bird strikes on both aviation safety and the conservation objectives of affected SPAs.

The Birds Directive mandates Member States to take measures to protect bird populations, including preventing deliberate disturbance and habitat destruction. However, the AA process has not provided a comprehensive evaluation of the potential impacts of bird strikes on key species. For instance, the lack of up-to-date bird population surveys, particularly for the Western Irish Sea SPA, limits the assessment's ability to accurately evaluate collision risks.

Additionally, the AA process has not addressed the potential cumulative impacts of increased air traffic on bird populations. The rise in night-time flights and associated habitat disturbances could exacerbate the risks of bird strikes, further threatening the conservation status of species such as Brent Geese and Bar-tailed Godwit. These cumulative impacts must be evaluated to ensure compliance with the precautionary principle and the requirements of the Birds and Habitats Directives.

In summary, the failure to comprehensively assess bird strike risks and their ecological implications represents a significant gap in the AA process. Addressing this issue is critical to safeguarding both aviation safety and the conservation objectives of affected SPAs.

8.11 No AA for North Runway Development

The absence of an Appropriate Assessment during the original planning and development of the North Runway represents a critical oversight that undermines the validity of subsequent assessments. Despite significant changes to environmental conditions and regulatory frameworks since the runway's initial approval, no comprehensive AA has been conducted to evaluate the project's full ecological impacts.

EU case law, including the Friends of the Irish Environment v. An Bord Pleanála judgment, establishes that any extension or modification of a project must be preceded by a full AA if the original consent did not include one. This principle is particularly relevant to the North Runway, as its initial approval predated the transposition of the Habitats Directive into Irish law. Consequently, the current AA process cannot rely solely on assessments conducted during the original planning stages, as these are both incomplete and outdated.

The lack of an initial AA has also compounded the challenges of evaluating cumulative and in-combination impacts. For example, significant changes to the airport's operations, including increased air traffic and night-time flights, have not been adequately assessed in light of their

pote rtial effects on SPAs and SACs. This omissio n contravenes Article 6(3) of the Habitats Directive, wh ich requires that any plan or project likely to have significant effects on European sites be subject to a comprehensive assessment.

h summary, the failure to conduct an AA during the North Runway's initial development represents a fundamental breach of EU environmental law. Addressing this oversight through a robust and comprehensive AA is essential to ensuring the project's co mpliance with legal and ecological standards.

8.12 Brea chesof Planni ng Conditions

The applicant's non-compliance with planning conditions related to the North Runway's operations further unde rmines the validity of the current AA process. Key breaches include exceeding the permitted number of night-time flights and operating outside designated flight paths. These violations not only contravene specific planning conditions but also raise broader concerns about the project's adherence to environmental and safety standards.

Condition 3(d) of the original planning permission prohibits the use of the North Runway between 23:00 and 07:00, except under exceptional circumstances. However, monitoring data indicates t hat this condition has been routinely violated, with night-time flights occurring regularly. Similarly, Condition 5, whi chlimits the average number of night-time movements to 65 per night, has also been breached. These violations have significant implications for noise pollution and habitat disturbance, particularly for SPAs located under the flight paths.

The breaches of planning conditions are compounded by the applicant's failure to address these issues in the current AA process. For instance, the AA does not evaluate the cumulative impacts of increased night-time flights on species sensitive to noise and disturbance, such as Brent Geese. Additionally, the applicant's decision to prioritize economic considerations over environmental compliance raises questions about the project's alignment with sustainable development principles.

In summary, the applicant's breaches of planning conditions highlight significant shortcomings in both the operational management of the North Runway and the AA process. Addressing these violations is critical to ensuring the project's compliance with legal and environmental standards.

9.0 Po pul ati on D atasets

9.1 Population Data sets

In ANCA's Noise Abatement Objective Report (https://www.fingal.ie/sites/default/files/2023-08/Noise%20Abatement%20Objective%20Report_0.pdf), Section 7.3 states:

> *"The calculation of the number of people exposed to aircraft noise shall have regard for the most recent population data available and assessed against the population exposed to aircraft noise in 2019."*

It further clarifies:

> *"The measures shall be calculated using population estimates representative of the current year or year of interest as well as against a baseline population representative of the year 2019. This shall be undertaken having regard for guidance published by the Environmental Protection Agency (EPA).*
>
> *For example, when measuring the NAO in 2030, a population dataset should be used which is representative of the population in 2030. If the current year is 2030, then the population dataset for the current year shall be adopted. If a forecast is being prepared for the year 2030, then a forecast population dataset for 2030 shall be adopted when measuring the NAO.*
>
> *The inclusion of population growth data in the measurement of the NAO will ensure that land-use planning is considered. Whilst Dublin Airport will need to make efforts to reduce its noise impacts, by accounting for population growth, this will also ensure that land-use planning is effective."*

ANCA reiterated the importance of using up-to-date population figures during consultations for the Noise Mitigation Effectiveness Review Report for 2022. The daa's consultants, BAP, used the 2022 census population dataset for noise modelling. This dataset showed that the NAO thresholds for >65dB L_{den} and >55dB L_{night} were breached in 2022. The report is available on ANCA's website: Noise Mitigation Effectiveness Review Report for 2022.

In Section 13B.4.1 of Appendix 13 of the Relevant Action Supplementary EIAR (September 2023), it states:

> *"Dwelling data has been acquired from GeoDirectory for 2019 Q2, which was the dataset utilised in the original EIAR. The same dataset has been used for all assessment scenarios in this EIAR Supplement for consistency."*

This confirms that the 2019 Q2 population dataset was used for the Relevant Action EIAR Supplement.

In contrast, Section 9-2.4.1 of Appendix 9-2 of the Infrastructure Application EIAR (December 2023) states:

"Dwelling data has been acquired from GeoDirectory for 2023 Q3, which was the latest dataset available at the time of the assessment. Data has previously been acquired for 2019 Q2, which was the dataset utilised in the original EIAR. The 2023 dataset has been used for all assessments other than those used to compare with the NAO."

This indicates that the Relevant Action Supplement (September 2023) and the Infrastructure Application (December 2023) used different population datasets to calculate exposure to >55dB L_{night}.

Given this discrepancy, it is essential for the Board to refuse permission and request that daa reanalyse populations exposed to >55dB L_{night} using the 2023 Q3 dataset in any future application. Using the outdated 2019 Q2 dataset has resulted in artificially lower figures. The figures presented in the Infrastructure Application for 2027 Without PD With NRRA are more accurate, though they may still underestimate impacts due to projected increases in nighttime flights and noisier aircraft in 2025 compared to 2027.

9.2 Population > 55dB Lnight (Relevant Action)

The population exposed to >55dB L_{night} is critical as ANCA has set the 2019 figure for >55dB L_{night} as a benchmark in the Noise Abatement Objective (NAO) for Dublin Airport.

The table below, compiled from the Relevant Action EIAR September 2023 Supplement, compares populations exposed to >55dB L_{night} under various scenarios (existing population, permitted developments, and zoned developments) for past and future years. The data is derived from Appendix 13C of the EIAR Supplement, submitted as part of daa's response to An Bord Pleanála's information request for planning application F20A/0668.

EIAR Supplement (F20A/0668)	2018	2019	2025 Permitted	2025 Proposed	2035 Permitted	2035 Proposed
Existing Population >55dB Lnight	753	1533	315	1463	212	1 197
Permitted developments >55dB Lnight	197	825	0	1011	0	591
Zoned developments> 55dB Lnight	0	1800	0	3600	0	2400
Totals with growth >55dB Lnight	950	4158	315	6074	212	4188

Key observations:

- The 2025 Proposed Scenario exceeds the 2019 benchmark by 4,541 people (6074 vs 1533), breaching the NAO.
- Even without zoned developments, the existing population and permitted developments alone surpass the 2019 benchmark.

9.3 Population > 55dB Lnight (Infrastructure Application)

In December 2023, daa submitted an Infrastructure Application (F23A/0781) to Fingal County Council to increase passenger numbers from 32 mppa to 40 mppa.

A comparison of the Relevant Action Supplement and the Infrastructure Application is instructive, given their close submission dates (September 2023 vs. December 2023).

- The "Proposed" scenario in the Relevant Action aligns with the "Without Proposed Development and With the NRRA" in the Infrastructure Application.
- The "2025 Proposed" scenario in the Relevant Action aligns with the "2027 Without Development and With the NRRA" in the Infrastructure Application, with potential differences only in flight schedules and aircraft types.

The table below compares >55dB L_{night} populations for these sce narios:

	2018	2019	2025 Proposed	2027 No PD With NRRA
Existi ng Popu ation>55d BLnight	753	1533	1463	2763
Permitted developments >55dB Lnight	197	825	1011	0
Zoned devdo pments>55dB Lnight	0	1800	3600	2400
Totals with growth >55dB Ln ight	950	4158	6074	5163

Notable findings:

- The 2027 No PD With NRRA scenario shows nearly double the number of existing people exposed to >55dB L_{night} compared to the 2025 Proposed scenario from the Relevant Action.
- Including permitted and zoned developments, the total population exposed to >55dB L_{night} in 2027 is more than three times the 2019 NAO benchmark (5163 vs 1533).

9.4 Conclusion

The analysis highlights critical discrepancies in the population datasets used to assess exposure to aircraft noise at Dublin Airport. ANCA's Noise Abatement Objective emphasises the importance of using the most up-to-date and representative population data to ensure accurate and effective evaluation of noise impacts. However, inconsistencies between the Relevant Action EIAR Supplement (September 2023) and the Infrastructure Application EIAR (December 2023) reveal a reliance on outdated data (2019 Q2) in some scenarios, leading to potentially underestimated figures for populations exposed to noise levels above 55dB L_{night}.

Key findings include:

1. **Breaches of the Noise Abatement Objective (NAO):**
    - The 2025 Proposed scenario in the Relevant Action significantly exceeds the 2019 benchmark, breaching the NAO by 4,541 people.
    - Even without zoned developments, the combined impact of existing and permitted developments surpasses the 2019 baseline.
2. **Higher Exposure Levels in 2027:**
    - The 2027 No PD With NRRA scenario in the Infrastructure Application shows nearly double the number of existing residents exposed to >55dB L_{night} compared to the 2025 Proposed scenario in the Relevant Action.

- Including permitted and zoned developments, the total exposure in 2027 is more than three times the 2019 benchmark.

These findings underscore the urgent need for consistent use of the most current datasets to provide accurate noise exposure estimates. The outdated 2019 Q2 dataset underestimates the true population impact, leading to misleading conclusions and potential inadequacies in noise mitigation planning. To address these shortcomings, it is recommended that:

- The application is rejected on the grounds that inaccurate information has been used by daa.
- In any future application the daa be required to reanalyse the population exposed to >55dB L_{night} using the 2023 Q3 dataset for all relevant scenarios.
- Future assessments strictly adhere to ANCA's guidance, using datasets representative of the year of interest.

This approach will ensure that the analysis accurately reflects current and forecasted population impacts, aligns with land-use planning principles, and supports effective noise mitigation strategies for Dublin Airport.

10.0 Learning from the History of DAA's Broken Promises

The history of Dublin Airport Authority (DAA) reveals a pattern of broken promises that has eroded trust with local communities. Over the years, commitments regarding noise control, operational limits, and meaningful community engagement have often been disregarded, leaving residents feeling disillusioned and neglected.

One significant issue has been the promises to mitigate noise impacts through restrictions on nighttime flights and other measures. These assurances have frequently been weakened or abandoned, prioritizing airport growth over the well-being of surrounding communities. Similarly, while DAA has pledged to engage with stakeholders, the consultations have often been perceived as perfunctory, with little evidence of community concerns influencing key decisions.

These repeated failures highlight the necessity of instituting enforceable agreements and independent oversight to ensure accountability. By learning from this history, stakeholders can work toward a more transparent, collaborative future—one where promises made to communities are not just words but actions that uphold trust and mutual respect.

10.1 Quieter Planes = Less Noise? Not at Dublin Airport

The Dublin Airport Noise Action Plan (2019) highlights a significant shift in aircraft technology over recent decades, with fleets increasingly adopting quieter aircraft models. In 2003, only 46% of aircraft operating at Dublin Airport were Chapter 4 and Chapter 14 compliant. By 2008, this figure had increased to 83%, and by 2017, 90% of aircraft met these quieter standards. Despite these advancements, noise exposure levels have not decreased as anticipated. Instead, they have grown exponentially in line with the increase in aircraft movements.

This data underscores a critical flaw in relying solely on fleet replacement as a noise mitigation strategy. Historical evidence demonstrates that quieter aircraft do not counteract the effects of increasing flight volumes. For example, from 2016 to 2019, the 45dB L_{den} noise contour area doubled from 370km² to 745km², while the 40dB L_{night} contour grew by 50% over the same period. These expanding noise footprints occurred even as the fleet replacement to quieter models progressed.

Further historical data highlights a troubling trend:

- L_{den} Contour Growth (2006 to 2019): The >=45dB L_{den} contour expanded from 370km² in 2016 to 745.7km² in 2019. Contours at higher noise levels, such as >=55dB and >=60dB, also saw substantial increases.
- L_{night} Contour Growth (2006 to 2019): The >=40dB L_{night} contour expanded from 212km² in 2016 to 328.4km² in 2019, while the >=50dB contour grew from 38.8km² to 52.3km².

These figures demonstrate that the introduction of quieter aircraft has not translated to reduced noise impacts on surrounding communities. Instead, the growing number of movements has amplified the overall noise exposure, negating the benefits of newer aircraft technology.

The role of the Aircraft Noise Competent Authority (ANCA) in facilitating this trend through policies such as the Night Quota System must also be scrutinized. ANCA's reliance on fleet replacement as the cornerstone of noise mitigation disregards historical data showing its ineffectiveness when coupled with ever-increasing movements. Without addressing this imbalance, noise exposure will continue to escalate, further impacting communities around Dublin Airport.

The lack of a credible explanation for the substantial growth in contour areas from 2006 to 2019 raises serious concerns about the reliability of noise modelling and projections. Recorded noise levels from Chapter 14 aircraft at ground monitors around Dublin Airport remain comparable to those of Chapter 4 aircraft ,further challenging the claim that fleet replacement alone can deliver meaningful noise reductions. How can DAA's promises that fleet renewal will result in noise reduction be believed when past performance and factual evidence clearly show the opposite?

10.2 When a Passenger Cap Is Not a Passenger Cap

The 32 million passenger cap at Dublin Airport is a planning condition intended to manage growth and mitigate its impacts on surrounding communities. However, despite this condition being a formal requirement, its enforcement appears non-existent. The DAA has publicly acknowledged that it will exceed this cap in the current year, yet there have been no apparent consequences or corrective actions. Appendix L presents statistics gathered to demonstrate the disregard for the passenger cap. It also discusses the clear evidence that the passenger cap is an operating restriction at Dublin Airport that pre-dates the EU 598 legislation.

This situation raises fundamental questions about the value and purpose of planning conditions if they are not enforced. A passenger cap is meant to serve as a hard limit, ensuring that growth is balanced against the needs of local communities and environmental concerns. Yet in practice, this cap has become a symbolic gesture rather than a binding constraint. If Dublin Airport can breach the cap with impunity, it undermines not only this specific planning condition but also the broader credibility of the planning and regulatory system.

Communities impacted by the airport's operations are left wondering: what is the point of having a passenger cap if it is treated as optional? Without enforcement, the cap fails to provide the protections it was designed to ensure, leaving residents exposed to the unchecked consequences of over-expansion, including increased noise, congestion, and environmental degradation.

This lack of accountability sets a troubling precedent. If breaches of planning conditions are tolerated, what assurance do communities have those other commitments—such as noise abatement measures or operational limits—will be honoured? The 32 million passenger cap, rather than being a planning limit to be complied with, has become an empty promise, further eroding trust in the DAA and the regulatory framework meant to oversee its operations.

10.3 A 65 Flight Per Night Limit That Was Never Achieved

The 65-flight-per-night limit at Dublin Airport was intended to control nighttime operations and protect local communities from excessive disruption. However, from the outset, this planning condition has been systematically breached without meaningful accountability. Despite being a clear requirement, Dublin Airport has consistently exceeded the cap, operating well above the agreed threshold.

Fingal County Council, the authority responsible for overseeing compliance, acknowledged these breaches and took the significant step of initiating enforcement proceedings. Rather than attempting to comply with the condition, however, the DAA chose to challenge the enforcement action. In their defence, the DAA argued that the 65-flight-per-night restriction was ambiguous, suggesting that the condition was not sufficiently clear to require compliance.

This defence raises a troubling question: how can a straightforward planning condition—one that explicitly limits flights to 65 per night—be deemed unclear? The ambiguity argument appears to be a tactic to avoid enforcement rather than a genuine interpretation of the condition. Such a move not only delays resolution but also undermines the purpose of planning conditions, which are intended to set enforceable boundaries on operations.

The consequences of this challenge extend beyond the specific issue of nighttime flights. If a simple, numerical planning condition like this one can be deemed ambiguous, it casts doubt on the enforceability of all planning restrictions .This sets a dangerous precedent where compliance becomes a matter of interpretation rather than obligation, leaving affected communities unprotected from the impacts of operational excesses.

For residents living under Dublin Airport's flight paths, the impact is immediate and severe. Night after night, they endure the noise and disruption that the 65-flight cap was supposed to prevent. The failure to enforce this condition not only erodes trust in the regulatory process but also highlights the imbalance of power between the DAA and the authorities meant to hold it accountable. Without decisive action and clear enforcement mechanisms, planning conditions risk becoming meaningless, further enabling unchecked expansion at the expense of community well-being .

10.4 Insulate Homes Before the North Runway Is Operational? Not at Dublin

A core commitment during the planning of Dublin Airport's North Runway was to insulate homes affected by its operations. However, this promise has been rendered ineffective due to a critical issue: the flight paths currently being used by the North Runway are unauthorised and differ significantly from the flight paths that were assessed to determine noise impacts during the planning process. As a result, homes under these unauthorised flight paths—now experiencing significant noise—were not included in the insulation programme, while homes outside the actual noise-affected areas received insulation instead .

This divergence represents a fundamental failure in the planning and mitigation process. The noise impacts and associated insulation schemes were based on specific flight paths approved during the planning stage. These approved routes were used to justify the project's compliance with noise limits and to allocate mitigation resources. However, the decision to use unauthorised flight paths has undermined this process, exposing communities to unexpected and unmitigated noise impacts without the protections they were promised.

Mitigation measures like insulation must be based on the actual flight paths that will be used, not hypothetical or planned routes that are ultimately disregarded. By operating on unauthorised flight paths, the DAA has not only invalidated the original noise impact assessments but also breached the trust of affected communities and the integrity of the planning conditions.

This situation raises urgent questions: Why are unauthorised flight paths being used, and why has this deviation been allowed? How can the mitigation measures designed for one set of flight paths be considered adequate when entirely different routes are being flown?

For the residents now bearing the brunt of noise impacts from unauthorised routes, the consequences are severe and unjust. To address this, there must be immediate action to return to the approved flight paths or, at the very least, expand the insulation programme to include all homes affected by the current routes. Allowing unauthorised flight paths to continue without enforcing mitigation renders the entire planning process meaningless and leaves impacted communities to suffer the consequences of decisions they were never consulted about.

10.5 How Will Noise Quota Systems, Movement Limits, And Legal Challenges Be Addressed?

Noise quota systems and movement limits are critical tools designed to manage the impact of Dublin Airport's operations on surrounding communities. The Noise Quota System allocates a finite number of "quota points" to flights based on their noise levels, while movement limits restrict the number of flights during sensitive periods, such as nighttime hours. However, the effectiveness of these measures depends entirely on rigorous enforcement, which to date has been inconsistent. Moreover, the Dublin Airport Authority (DAA) has previously demonstrated a willingness to challenge planning conditions in court, raising concerns about the enforceability of these systems.

A notable example of this behaviour is the DAA's response to the 65-flight-per-night limit. Rather than complying with the condition, the DAA argued that the restriction was ambiguous and challenged enforcement proceedings in court. This tactic delayed action and allowed operations to continue unchecked, setting a precedent that planning conditions can be contested instead of followed.

This history raises pressing questions about how the DAA will approach future enforcement of noise quotas and movement limits:

- Will Noise Quota Systems Be Enforced? Without independent, transparent monitoring and meaningful penalties for breaches, there is little assurance that the noise quotas will be respected.
- Will Movement Limits Be Adhered To? Historical breaches of flight limits suggest the DAA may attempt to exceed restrictions, potentially claiming ambiguity in the wording of the conditions.
- Will Legal Challenges Undermine Enforcement? The DAA's past reliance on legal arguments to contest conditions raises the possibility that it will challenge noise quotas and movement limits in court, further delaying enforcement.

- Is Ambiguity a Deliberate Strategy? The repeated use of claims that conditions are unclear suggests a pattern that prioritises operational flexibility over regulatory compliance, leaving communties vulnerable.

For affected residents, the implications are significant. If noise quota systems and movement limits can be contested in court, communities are left exposed to increased noise and disruption without meaningful protections. Legal challenges also create delays during which airport operations continue unchecked, compounding the impacts on local areas.

To ensure that noise quotas and movement limits are effective, planning conditions must be unambiguous, enforceable, and backed by a regulatory framework that does not allow for loopholes or legal manoeuvring. Additionally, there must be robust penalties for breaches and a com mtment to independent oversight to hold the DAA accountable. Without these safeguards, the promises of mitigation and operational limits risk becoming meaningless, leaving communities to bear the full burden of unchecked airport growth.

10.6 Conclusion

The inspector's draft decision represents a critical opportunity to address the growing concerns about the impact of nighttime operations at Dublin Ai rport. However, the central question remains: how will this decision be upheld to ensure that the airport's operations do not cause significant adverse effects on surrounding communities?

The earlier discussion has made it clear that a movement limit of 13,000 flights at night is essential to mitigating noise and protecting residents. Yet, the effectiveness of this limit hinges entirely on robust enforcement. Without clear mechanisms for monitoring compliance and imposing meaningful penalties for breaches, the limit risks becoming yet another unenforced planning condition.

This raises further concerns:

- Who will be responsible for ensuring compliance with the movement limit? Will there be an independent body to monitor operations and verify adherence to the conditions set out in the inspector's decision?
- What penalties will be imposed for breaches? Without sig nificant consequences, there is little incentive for operators to respect the limits.
- How will transparency be ensured? Communities must have access to data on flig ht movements and noise levels to hold Dublin Airport accountable.

The inspector must address these questions in the final decision to provide clarity and assurance. An unenforced movement limit would not only fail to protect communities but also undermine trust in the planning and regulatory process. Ensuring enforcement requires detailed,

actionable measures to monitor compliance, penalise breaches, and provide transparency for impacted residents.

Ultimately, how will the inspector ensure that the decision has real-world impact, safeguarding communities against the significant adverse effects of nighttime operations at Dublin Airport? Without a clear answer, the conditions, no matter how well-intentioned, may fail to deliver the protections they promise.

11.0 PFAS Contamination and Deficiencies in Relevant Action Draft Decision

11.1 Introduction

This chapter addresses the substantial issue of PFAS (Per- and Polyfluoroalkyl Substances) contamination at Dublin Airport and the lack of consideration for its impacts in the Relevant Action draft decision. Despite known contamination risks dating back to at least 2016, cumulative assessments and in-combination effects have not been undertaken, creating significant deficiencies in environmental screenings and compliance with regulatory frameworks.

11.2 PFAS Contamination Background

PFAS contamination at Dublin Airport stems primarily from historical firefighting activities, particularly at the former training ground and adjacent facilities. Recent investigations identified alarming PFAS concentrations across groundwater, surface water, and soil:

- **Groundwater**: Concentrations up to 4,111 ng/l detected at the former fire training site.
- **Surface Water**: PFOS concentrations of 1,430 ng/l recorded near the North Apron, significantly above acceptable levels.
- **Soil/Concrete**: Maximum concentrations of PFAS constituents measured at 568 µg/kg.

These findings highlight severe environmental contamination posing risks to nearby Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and critical water abstraction points, including those used by Keelings, a major Irish fruit producer.

11.3 Regulatory Deficiencies and Project Splitting

The Relevant Action draft decision fails to:

1. Address PFAS contamination in any Environmental Impact Assessment (EIA) or Appropriate Assessment (AA).

2. Acknowledge cumulative impacts arising from multiple interlinked projects at Dublin Airport, including the North Runway, Airfield Drainage Application, and underpass construction.
3. Adhere to obligations under European and Irish legislation, including:
    - **EPA National Hazardous Waste Management Plan** (2021-2027), which mandates EIA and AA for projects involving hazardous contaminants.
    - **Aarhus Convention**, breached due to the absence of public consultation and transparency.

The daa's practice of piecemeal applications constitutes "Project Splitting," concealing the full environmental impact of interconnected developments.

11.4 Implications for Environmental and Human Health

The contamination has significant implications for water quality and food safety:

- **Water Quality**: PFAS has migrated into surface water bodies, including the Ward River and Barberstown water features, which flow towards designated SACs/SPAs.
- **Food Safety**: Keelings' fruit production facilities, relying on groundwater abstraction, are at risk of PFAS contamination. Immediate testing and regulatory intervention are required to ensure produce safety for public consumption.
- **Public Health**. Monitoring data indicate a concerning upward trend in PFAS concentrations, with values for the Sum of Total PFAS increasing from 1,509 ng/l (2021) to over 10,000 ng/l (2023).

11.5 MetroLink and Cumulative Impact Assessment

AIE records from Transport Infrastructure Ireland (TII) related to the MetroLink project underscore the necessity for cumulative and in-combination assessments. TII recognises PFAS risks and acknowledges that their activities may exacerbate contamination. This level of diligence contrasts sharply with the daa's approach in the Relevant Action application.

11.6 Conclusion and Recommendations

The daa's long-standing awareness of PFAS contamination since 2016, coupled with its failure to undertake comprehensive environmental assessments, constitutes a serious breach of regulatory obligations. The following actions are recommended:

1. **Full EIA and AA**: A comprehensive assessment addressing PFAS contamination across all Dublin Airport projects.

2. **Cumulative Assessment**: Inclusion of interconnected projects to assess total environmental impacts.
3. **Regulatory Oversight**: Engagement with relevant authorities, including the HSE, Food Safety Authority, Inland Fisheries Ireland, and NPWS.
4. **Immediate Testing**: Rigorous testing of water and food products in adjacent areas, particularly at Keelings, to safeguard public health.
5. **Reclassification of North Runway**: Given the daa's concealment of PFAS contamination, the North Runway development should be reviewed as potential unauthorised development.

The absence of PFAS screening in the Relevant Action draft decision renders the application deficient. An Bord Pleanála is mandated to refuse permission until full compliance with environmental legislation and public safety requirements is demonstrated. Further detail is available in Appendix M.

12.0 Climate Assessment on the Relevant Action Draft Decision

12.1 Introduction

This chapter provides a detailed analysis of the climate impacts and greenhouse gas (GHG) emissions associated with the Relevant Action in the context of the Inspector's Report, the Environmental Impact Assessment Report (EIAR), and relevant climate policies. The assessment demonstrates that the conclusions drawn in the Inspector's draft decision fail to reflect the true magnitude and significance of GHG emissions from the Relevant Action. Critically, this chapter examines the project's alignment (or lack thereof) with national and international climate targets, such as Ireland's legally binding Climate Action and Low Carbon Development Act 2021 and the global commitments under the Paris Agreement. Further detail is provided in Appendix O.

12.2 Key Issues in the Inspector's Report

The Inspector's Report addresses the projected increase in aircraft movements (ATMs) and the corresponding rise in GHG emissions; however, there are fundamental errors and omissions that undermine its conclusions. These include:

- The Inspector misreported the scale of ATM growth. Instead of an increase of 13 ATMs between the Permitted and Proposed scenarios, the actual increase is 13,000 additional ATMs by 2025. This significant error skews the understanding of the overall environmental impact.
- In Section 13.8.6, the Inspector focuses narrowly on the 0.09% increase in emissions for 2025 while ignoring the total emissions from the Proposed scenario. This is misleading because the cumulative impact of emissions is critical when evaluating climate significance.
- The Inspector acknowledges the potential for increases in emissions but relies heavily on speculative and unsubstantiated factors, such as the modernisation of aircraft technology and the reduction of night flights. However, there is no credible evidence that such changes will result in meaningful reductions in GHG emissions over time.
- The report fails to incorporate key principles from the Institute of Environmental Management and Assessment (IEMA) guidelines. The IEMA states that projects must be evaluated against a baseline trajectory aligned with net zero targets and any "business-as-usual" scenario represents a major adverse effect.

In light of these issues, the Inspector's conclusion that the Relevant Action will not have a "significant adverse impact" on the climate is fundamentally flawed and inconsistent with the available evidence.

12.3 Significance of GHG Emissions

The IEMA guidance is central to assessing the climate impact of large-scale projects such as Dublin Airport's Relevant Action. The guidance outlines that:

GHG emissions from all projects contribute to climate change, regardless of magnitude.

The significance of GHG emissions is determined by whether the project aligns with a trajectory consistent with achieving net-zero emissions by 2050.

The EIAR analysis of GHG emissions reveals alarming results when assessed against national and sectoral targets:

2025 Proposed emissions are projected at 4,167 ktCO2e, representing:

- 7.6% of Ireland's projected national emissions inventory for 2025 (54,657 ktCO2e).
- 36.6% of the future transport emissions target (11,390 ktCO2e).
- 2035 Proposed emissions are projected at 4,187 ktCO2e, representing:
- 10.8% of Ireland's national emissions inventory for 2035 (38,855 ktCO2e).
- 58.7% of Ireland's transport emissions target (7,127 ktCO2e).

These figures far exceed the 5% significance threshold outlined in the IEMA guidelines for large-scale projects. As such, the emissions arising from the Relevant Action qualify as major adverse effects.

Furthermore, the IEMA guidance highlights that "business-as-usual" or minimal compliance approaches, which fail to align with decarbonisation targets, result in significant adverse effects. The Relevant Action does not meet the required standards of decarbonisation and actively hinders Ireland's progress toward its 2030 and 2050 targets.

12.4 GHG Emissions Data and Discrepancies

The EIAR's GHG emissions projections are undermined by multiple inconsistencies and unexplained discrepancies:

The revised EIAR presents significantly higher emissions values than the original EIAR, without justification:

- 2025 Permitted emissions increased from 314,268 tCO2e to 397,835 tCO2e.
- 2025 Proposed emissions increased from 326,482 tCO2e to 414,489 tCO2e.

The emissions data does not align with the modest increase in aircraft movements (4,000 ATMs). A one-third increase in GHG emissions cannot be attributed solely to a 17% increase in ATMs, raising serious concerns about the reliability of the data.

The Inspector's reliance on unverified scheduling assumptions further distorts the analysis. For example, claims that short-haul night flights will be replaced by long-haul day flights lack evidence and contradict existing flight demand patterns.

These discrepancies undermine the credibility of the EIAR's findings. An independent assessment of the emissions data is required to ensure transparency and accuracy in evaluating the project's climate impact.

12.5 Large-Scale Development and Carbon Budgets

Dublin Airport qualifies as a large-scale development under the IEMA guidelines, given its substantial contribution to Ireland's carbon budget. When compared to Ireland's legally binding carbon budgets:

- The 2025 Proposed scenario represents 7.1% of Ireland's annual carbon budget for 2021-2025 (59 MtCO2e).
- The 2035 Proposed scenario represents 10.5% of Ireland's annual carbon budget for 2026-2030 (40 MtCO2e).

These contributions exceed the IEMA's 5% significance threshold, meaning the project's emissions alone have the potential to derail Ireland's carbon budget targets.

The Inspector's failure to account for this threshold further highlights the inadequacies of the draft decision.

12.6 International Obligations and the Paris Agreement

The Paris Agreement requires signatory countries, including Ireland, to implement economy-wide emission reductions to limit global warming to 1.5°C. Aviation emissions are explicitly included under the Agreement, and there is no legal basis for excluding them from national emissions targets.

- The EU and UK already include aviation emissions in their carbon accounting and have implemented measures to curb emissions.
- Ireland's exclusion of aviation emissions from its first two Carbon Budgets contravenes the Paris Agreement's objectives and demonstrates a policy failure.

The Relevant Action, by significantly increasing aviation emissions, directly undermines Ireland's obligations under the Paris Agreement.

12.7 Conclusion

The Relevant Action fails to meet the standards required for projects to align with national and international climate targets. Specifically:

- GHG emissions arising from the Relevant Action are of major adverse significance, as defined by IEMA guidelines.
- The project contributes disproportionately to Ireland's national carbon budget, exceeding the IEMA's 5% threshold for large-scale developments.
- The project is inconsistent with Ireland's legally binding emission reduction targets and the global commitments under the Paris Agreement.
- The EIAR contains significant data inconsistencies, undermining the credibility of the emissions projections.
- The Inspector's conclusion fails to account for the cumulative impacts of emissions and the significance of non-CO_2 effects on climate change.

The findings confirm that the Relevant Action represents a business-as-usual approach that locks in emissions and hinders Ireland's transition to a net-zero economy. The Board must reject the application or require significant revisions to ensure compliance with climate policy obligations and environmental assessment standards.

13.0 HA & HSD Numbers

13.1 NAO for Dublin Airport

In ANCA's Noise Abatement Objective for Dublin Airport[2], the expected outcomes are based on the number of people Highly Annoyed and Highly Sleep Disturbed and the number of people exposed to aircraft noise above 55dB L_{night} and 65dB L_{den}.

The calculation of the number of people Highly Annoyed (HA) and Highly Sleep Disturbed (HSD) is defined by the Commission Directive 2020/367. This was transposed into Irish Law by S.I. No. 663/2021 – European Communities (Environmental) (Amendment) Regulations 2021, https://www.irishstatutebook.ie/eli/2021/si/663/made/en/print.

[2] https://www.fingal.ie/sites/default/files/2023-08/Noise%20Abatement%20Objective%20for%20Dublin%20Airport.pdf

The Absolute Risk (AR) of a harmful effect due to High Annoyance and High Sleep Disturbance can be calculated by the following formulae:

$$AR_{HA,air} = \left(-50.9693 + 10168 * L_{den} + 0.0072 * L_{den}^2\right)/100 \quad \text{(Formula 6)}$$

$$AR_{HSD,air} = \left(16.7885 - 0.9293 * L_{night} + 0.0198 * L_{night}^2\right)/100 \quad \text{(Formula 9)}$$

The total number of people (N) affected by the harmful effect due to High Annoyance and High Sleep Disturbance is:

$$N_{x,y} = \sum_j [n_j * AR_{j,x,y}] \quad \text{(Formula 12)}$$

13.2 Noise Mitigation Effectiveness Review Report 2023

In ANCA's Noise Mitigation Effectiveness Review Report for 2023, https://www.fingal.ie/sites/default/files/2024-08/noise-mitigation-effectiveness-review-report-for-2023.pdf, it provides a comparison of the HA and HSD numbers between 2019 and 2023. 2019 is the comparison year used in the NAO. The expected outcomes in the NAO are:

- The number of people highly sleep disturbed and highly annoyed shall reduce so that compared to conditions in 2019:
  - The number of people highly sleep disturbed and highly annoyed in 2030 shall reduce by 30% compared to 2019;
  - The number of people highly sleep disturbed and highly annoyed in 2035 shall reduce by 40% compared to 2019
  - The number of people highly sleep disturbed and highly annoyed 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.

In ANCA's 2023 report, Figure 7 shows the comparison for number of people Highly Annoyed:

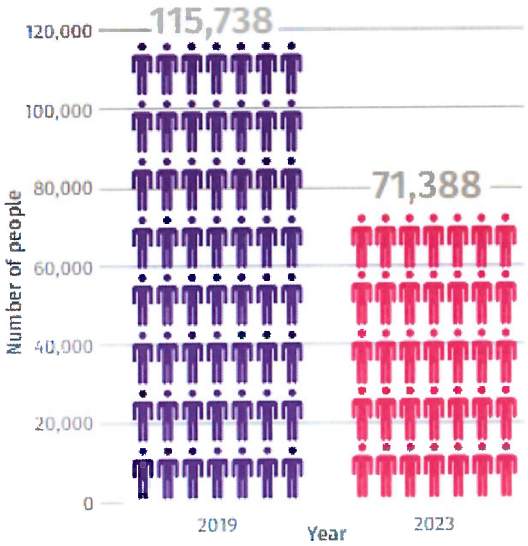


Figure 7 - Number of people highly annoyed by year

And Figure 12 shows the comparison for number of people Highly Sleep Disturbed:

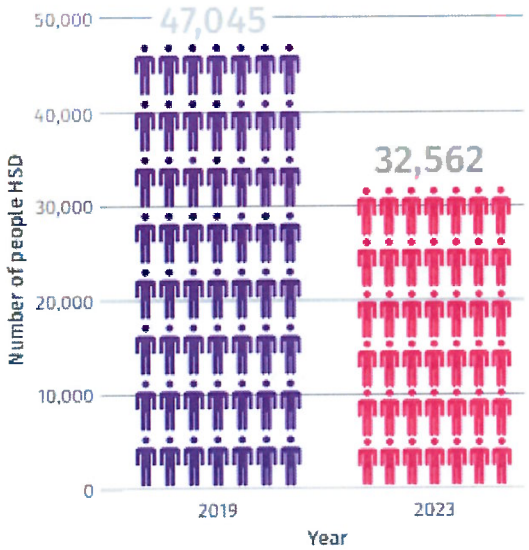


Figure 12 - Number of people highly sleep disturbed by year

By the above figures, the HA and HSD numbers are on track to meet the 30% reduction in 2030.

However, the numbers on their own are not that meaningful. The formulae above for HA and HSD are based on Exposure Response Functions that are described in the WHO 2018 Guidelines.

Table 30. The association between exposure to aircraft noise (L_{den}) and annoyance (%HA)

L_{den} (dB)	%HA
40	1.2
45	9. 4
5'0	17 9
5'5	2 67
60	36.0
65	45.5
70	5'5.5

At 40dB L_{den}, 1.2% of the exposed population are highly annoyed, rising to 55.5% of the population exposed at 70dB L_{den}. The % increases as the noise increases.

Table 32. The association between exposure to aircraft noise (L_{night}) and sleep disturbance (%HSD)

L_{night}	%HSD	95% CI
40	11.3	4.72–17.81
45	15.0	6.95–23.08
50	19.7	9.87–29.60
55	25.5	13.57–37.41
60	32.3	18.15–46.36
65	40 .0	23.65–56.05

At 40dB L_{night}, 11.3% of the exposed popula to n are highly sleep disturbed, rising to 40% of the population exposed at 65dB L_{night}. Again the % increases as the noise increases.

The formulae for HA and HSD can be simplified as the su m of the population in each band multiplied by the % HA or %HSD for each band.

The ANCA 2023 report breaks down the number of people in each band for both HA and HSD:

HA:

	45-49 dB	50-54 dB	55-59 dB	60-64 dB	65-69 dB	70-74 dB	>75dB
2 019	74,9 05	29,814	8,546	2,328	126	15	4
2023	3 7959	20,983	8,753	3532	148	13	0

HSD:

	40-44 dB	45-49 dB	50-54 dB	55-59 dB	60-64 dB	65-69 dB	>70 dB
2019	36,339	7,622	2,665	380	34	5	0
2023	20,101	7,252	4,003	1,147	55	4	0

From 2019 to 2023, the number of people classified under **HA** decreased in the **45-49 dB** and **50-54 dB** bands, but increased across all other bands. Similarly, for **HSD**, the numbers decreased in the **40-44 dB** and **45-49 dB** bands but increased in higher noise bands.

This indicates that while the numbers in the lowest noise-level bands have reduced, there has been an increase in those exposed to higher noise levels.

ANCA remains focused on reducing overall **HA** and **HSD** numbers without addressing the distribution of these figures. Although the total numbers are declining, there is a concerning rise in the number of people exposed to the highest noise levels.

This demonstrates that the overall reductions in **HA** and **HSD** mask the fact that higher noise levels are affecting a growing number of individuals.

It is useful to calculate the HA and HSD figures based on the END reporting limits of 50 dB L_{night} and 55 dB L_{den}. By summing the values from the 50-54 dB L_{night} band upwards and the 55-59 dB L_{den} band upwards using the tables from the ANCA 2023 report:

Year	HA	HSD
2019	11,019	3,084
2023	12,446	5,209

These results tell a different story, showing that HA and HSD numbers actually increased between 2019 and 2023 when assessed from the END threshold limits. The figures relied upon by ANCA in their NAO are skewed by the inclusion of populations in the lowest noise bands.

It is important to note that the lowest noise bands are where the largest populations in Dublin reside. Consequently, even a small reduction in noise exposure within these bands can significantly impact the overall HA and HSD figures.

From data extracted from the ANCA Reporting Templates for the Relevant Action and a Reporting Template for 2023, a comparison can be made of the population in the Lden and Lnight contours for 2019 and 2023:

dB Lden	2019	2023
>=45	754135	419796
>=50	174146	132890
>=55	34097	37037
>=60	6279	9102
>=65	285	320
>=70	31	22
>=75	6	0

dB Lnight	2019	2023
>=40	344912	220460
>=45	59307	65227
>=50	13838	22417
> =55	1 533	4339
>=60	110	159
>=65	13	8
>=70	0	0

From the L_{den} figures, 579,989 people were in the 45-49dB L_{den} band in 2019 which is 77% of the total population exposed to greater than 45dB L_{den}.

From the L_{night} figures, 285,605 people were in the 40-44dB L_{den} band in 2019 which is 83% of the total population exposed to greater than 40dB L_{night}.

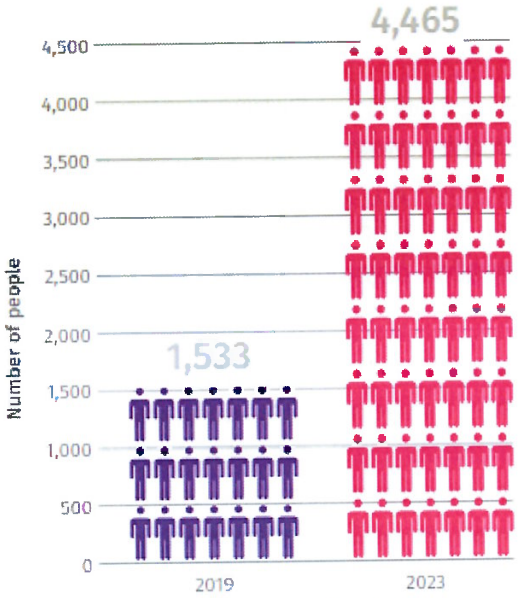
Therefore, it's evidently clear that the quietest bands have a disproportionate number of people residing in the bands and therefore have a huge effect on the HA and HSD numbers if the noise contours change ever so slightly at the lowest bands.

From the tables above, based on the END reporting limits, 37,037 were exposed to >55dB L_{den} in 2023 compared to 34,097 in 2019 and 22,417 were exposed to >50dB L_{night} in 2023 compared to 13,838 in 2019.

This is the reason that the HA and HSD figures above based on the END reporting limits are higher in 2023 tha nin 2019.

This issue is critical because airport operators strongly oppose the imposition of WHO noise limits of 40 dB L_{night} and 45 dB L_{den}, arguing that these levels are marginal and would force the closure of all airports if strictly applied. However, both daa and ANCA rely on these same low noise bands to present an image that the noise situation at Dublin Airport is improving. In reality, this is not the case, as more people are now being exposed to higher noise levels, which are far more harmful to public health and should be prioritised when assessing significance.

The impact of higher noise levels is particularly evident in the greater than 55 dB L_{night} metric, which is part of ANCA's NAO. Between 2019 and 2023, the number of people exposed to greater than 55 dB L_{night} rose from 1,533 to 4,465—a staggering 191% increase – see F igure below. This sharp rise highlights the damaging effects of nighttime operations on the South Runway alone. Allowing additional populations to be subjected to similar extreme nighttime noise levels under the North Runway flight path is unacceptable.



When compared to the situation in 2019, the number of people exposed to the NAO priority limit of 55 dB L_{night} was higher in 2023 by 2,932 (191%)

Figure 14 – Number of people exposed to aircraft noise above 55db L_{night}

Despite clear evidence of this 191% increase, which constitutes a significant breach of the NAO, ANCA has taken no action. Furthermore, the recently published Dublin Airport Noise Action Plan lacks any measures to address these escalating levels of harmful noise.

Both ANCA and Fingal County Council have failed to safeguard the health of residents in Fingal and East Meath. The only viable solution is the complete ban on nighttime flights or, at a minimum, the implementation of very restrictive movement limits, as proposed in the draft report.

I 4.0 Co nclusion

We overwhelmingly oppose the expansion of night-time operations at Dublin Airport due to the significant adverse impacts on public health, community well-being, and environmental sustainability. T he evidence presented underscores that such an expansion is neither justified nor consi stert with planning, environmental, or legal obligations. The current proposals exacebate noise pollution, contravene established mitigation objectives, and fail to align with Ireland's climate commitm ents.

The findings reveal significant shortcomings in Dublin Airport's operations and planning processes, with critical implications for public health, environmental compliance, noise management ,legal i rtegrity, and Ireland's climate commitments. Each aspect is underscored by systemic deficiencies that demand urgent and robust corrective action. The conclusions and recommendations provide a roadmap to address these issues while safeguarding public trust, community well-being, and environmental sustainability.

1. Noise Management and Movement Limits

The movement limit of 13,000 flights at night is an essential regulatory measure to mitigate the adverse effects of noise pollution on surrounding communities. Without this cap, the noise impact from nighttime operations would disproportionately harm residents, particularly those living under the newly divergent flight paths. The findings also highlight the inadequacy of existing insulation measures, which cannot fully protect residents from the health risks associated with nighttime awakenings. The World Health Organization's guidance underscores that insulation schemes alone are insufficient; operationa lrestrictions such as movement limits are critical to achieving meaningful noise reduction.

To ensure the effectiveness of this cap, robust enforcement mechanisms must be put in place. These include independent monitoring systems, clearly defined penalties for breaches, and transparency in reporting flight movements and noise levels. Transparency is vital for community members to hold Du blin Airport accountable and ensure the movement limit delivers real-world protections.

2. Transparency and Compliance

The processes unde rlying flight path changes and noise impact assessments lack transparency and accountability, undermining public confidence and regulatory integ rity. The deviation from the original Environmental Impact Statement (EIS) for the North Runway, without appropriate assessment or consultation, constitutes a material breach of planning conditions. Meetings with the Irish Aviation Autho rty (IAA) and AirNav Ireland revealed that alternative flight path options consistent with the EIS were not adequately considered, exposing the deficiencies in planning

oversight. Furthermore, reliance on outdated population datasets, such as the 2019 Q2 data, has led to significant underestimations of the true number of residents affected by noise. These inaccuracies have resulted in inadequate noise mitigation measures and misleading conclusions in the Environmental Impact Assessment Report (EIAR).

To address these gaps, all future assessments must utilise the most current and representative datasets, adhering to guidance from the Aircraft Noise Competent Authority (ANCA). A new planning application and EIAR process are essential to ensure compliance with planning laws, provide an accurate evaluation of impacts, and allow for meaningful public consultation.

3. Health and Well-being

The intense noise levels experienced by residents under the unlawful flight paths have rendered bedrooms uninhabitable during the day and night, even in homes with insulation installed under the RNIS and HSIP schemes. The Environmental Protection Agency (EPA) guidelines classify such impacts as "profound," and the lack of proper mitigation measures exacerbates the violation of residents' basic rights, including the right to restful sleep. Extending operating hours for departures from the North Runway would worsen these conditions, causing severe harm to public health and well-being. Despite the critical nature of these impacts, the daa has failed to adequately address or assess them in its planning applications.

A more equitable solution, such as extending the voluntary purchase scheme, must be prioritised to provide sustainable relief to severely affected residents. Noise mitigation strategies must be tailored to address the specific challenges of traditional Irish domestic constructions, ensuring that all residents benefit from effective and equitable protections.

4. Environmental and Legal Failures

The daa's consistent underestimation of noise levels, as demonstrated by the Anderson Acoustics report, reflects a broader pattern of regulatory non-compliance. The failure to engage in transparent planning processes, comply with the original EIS, and provide accurate noise modelling data undermines public trust and contravenes legal obligations. Additionally, the absence of PFAS contamination assessments since 2016 represents a serious breach of environmental and public safety responsibilities. Comprehensive Environmental Impact Assessments (EIAs) and Appropriate Assessments (AAs) are urgently required to evaluate the cumulative effects of all projects and ensure compliance with environmental legislation.

5. Climate Impact

The Relevant Action poses a significant threat to Ireland's climate goals. The project's greenhouse gas (GHG) emissions, as outlined in the EIAR, exceed acceptable thresholds and are inconsistent with both national and international climate commitments. Non-CO_2 effects, such as aviation-induced cirrus cloud formation, further amplify the project's climate impact. The

findings confirm that the Relevant Action adopts a "business-as-usual" approach that locks in emissions and hinders Ireland's transition to a net-zero economy. A rejection of the current application is necessary to align the project with legally binding emission reduction targets and the Paris Agreement.

6. Community Engagement

The planning process has failed to protect the rights of affected communities, particularly by denying SMTW's appeal under the Aircraft Noise Act 2019. This denial undermines the legislative framework and deprives communities of a fair and transparent appeals process. The findings underscore the need for clarity and consistency in planning decisions, ensuring that impacted residents have access to mechanisms that safeguard their rights and provide meaningful opportunities for consultation.

While we remain opposed to the expansion of Dublin Airport at night should permission forthe expansion be granted, it is imperative that the following recommendations are fully implemented to minimise harm and ensure compliance with regulatory and environmental standards:

1. **Noise and Operational Limits**: Retain the night movement cap of 13,000 flights and enforce it through independent monitoring, clear penalties, and transparent reporting systems.
2. **Comprehensive Assessments**: Conduct a new planning application and EIAR that utilises the most current datasets, evaluates cumulative environmental and social impacts, and includes public consultation.
3. **Equitable Mitigation**: Extend voluntary purchase schemes for severely affected residents and implement tailored noise mitigation strategies for traditional constructions.
4. **Environmental Compliance**: Undertake rigorous EIAs and AAs to address PFAS contamination and other environmental risks, ensuring full compliance with legislation.
5. **Climate Responsibility**: Revise the project to align with Ireland's climate goals, incorporating meaningful measures to reduce GHG emissions and address non-CO_2 effects.
6. **Community Rights**: Ensure fair and transparent decision-making processes that uphold the rights of affected communities, including access to appeals and consistent application of planning laws.

These measures are critical to safeguarding public health, environmental sustainability, and the integrity of Ireland's planning system. Refusing the Relevant Action in its current form is necessary to compel Dublin Airport Authority (daa) to adopt more responsible and sustainable operational practices.

SUBMISSION ON BEHALF OF THE SMTW ENVIRONMENTAL DAC

Appendix A – AirNav Email

Gmail B BEYER <bbeyer2021@gmail.com>

Meeting request with Peter Kearney

Annmarie Brogan <Annmarie.Brogan@airnav.ie>
To: B BEYER <bbeyer2021@gmail.com>

Fri, Nov 15, 2024 at 11:37 AM

Hi Bernadette,

Your amendments have been reviewed by AirNav attendees and the below is proposed.

Thank you

Attendees AirNav: Peter Kearney, Paul Johnson, Gwen Morgan, Paul McCann

Attendees SMTW: Bernadette Conaty-Beyer, Serena Taylor, Niamh Maher, Sean O'Carolan, Stephen Smyth, Pearse Sutton

1. AirNav Ireland explained that its responsibilities are set out by ICAO and relate to (1) Preventing collisions (2) Expediting and maintaining an orderly flow of air traffic and (3) Providing relevant information and instructions to pilots.
2. AirNav explained that there is a requirement in line with EU 2014/139 (*laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council*) that the aerodrome operator is required to provide the Instrument Flight Procedures (IFPs) for the airport and may delegate this responsibility, with daa delegating this task to AirNav Ireland in the past as permitted under the regulation. AirNav Ireland, as the Air Traffic Service Provider, will always have a role to play in relation to new operating procedures at Dublin Airport.
3. In line with the above, Dublin Airport (daa) has previously provided AirNav Ireland with the specification and brief to provide the design of the flight paths (under a delegation agreement) and procedures to meet the relevant brief and the requirements of ICAO and EASA.
4. AirNav Ireland does not have the competence in IFP design and therefore has engaged approved aviation procedure designers (i.e., approved by EASA) to design these procedures to meet the relevant regulatory standards (e.g. ICAO and EASA). These procedures are then presented to Irish safety regulator (IAA) who consider them for approval from an Aviation Safety point of view.
5. AirNav noted that there are a number of requirements by ICAO and EASA regarding dual runway operations which include for flight path divergence if a runway is to be operated in Independent Mode.
6. AirNav noted however that divergence is not required if the runway is operated in dependent mode.
7. When asked by SMTW if the dual runway system was to be operated in Dependent mode without divergence (as is the case in some other airports around the world) would AirNav Ireland then provide operating procedures to accommodate same, AirNav replied that they have not looked at dependent modes, nor have they been asked to.
8. AirNav noted that the procedures for go arounds at Dublin Airport had to take into account all other air space operators surrounding Dublin Airport.
9. AirNav Ireland confirmed that they do not have an approved designer and the procedures put forward to them, as requested by DAA, for the operation of the North Runway when it opened in August 2022 were provided by AirNav Ireland to a third party regulatory approved designer. This was in turn considered by the IAA as part of its approvals process.
10. Similarly, the revised procedures which came into effect in February 2023 followed the same process.
11. AirNav Ireland's role is to develop IFPs which are safe and compliant with ICAO and EASA regulations. Associated environmental noise or issues to do with noise abatement procedures is the responsibility of the aerodrome operator.
12. AirNav Ireland noted the concerns of SMTW and noted its preference for a comprehensive airspace review that considers all the possible flight paths and modes of operation.
13. AirNav Ireland noted it was of the understanding that daa is intending to initiate a comprehensive airspace review, which would of course have stakeholder involvement.

Regards,

Annmarie

Annmarie Brogan | EA to CEO AirNav Ireland

From: B BEYER <bbeyer2021@gmail.com>
Sent: Wednesday 13 November 2024 22:22
To: Annmarie Brogan <Annmarie.Brogan@airnav.ie>
Subject: Re: Meeting request with Peter Kearney

[This message originated from outside AirNav. Please treat hyperlinks, attachments and instructions in this email with caution.]

Thank you AnnMarie,

The following amendments have been made as requested. See updated version now below.

Again, I really appreciate your assistance on this.

Appendix B – IAA Email

Gmail B BEYER <bbeyer2021@gmail.com>

Meeting with St Margaret's The Ward Residents Group

Declan FITZPATRICK <declan.fitzpatrick@iaa.ie> Tue, Dec 10, 2024 at 10:16 AM
To: B BEYER <bbeyer2021@gmail.com>

HI Bernadette

Apologies for the slow response.

I suggest the following as a summary:

1. The IAA's primary role is to ensure the safety and security of Aviation in Ireland, and that the IAA is the single aviation regulator for civil aviation in Ireland. Our regulatory roles, statement of strategy, etc is available on our website.
2. As per EU Regulation 139/2014, daa are responsible for the provision of Standard Instrument Departure procedures (SIDs) and other operating procedures at Dublin Airport. They currently do this by designating AIRNAV Ireland to provide the service at Dublin Airport.
3. AirNav and other ANSP providers in Ireland engage approved aviation procedure designers (approved by EASA) to draw up these procedures to meet relevant ICAO and EASA safety standards. These procedures are then presented to IAA who will review them from an aviation safety perspective and when satisfied all regulatory safety requirements are met, the IAA approve the procedures.
4. It is not the role of the regulatory authority to specify the design of the individual flight paths and flight procedures but is purely a regulatory role as noted above.
5. IAA do not take on board land use planning or environmental noise issues as these are outside the scope of IAA competent authority role.
6. IAA highlighted there are a number of requirements by ICAO and EASA regarding dual runway operations which include the need for flight path divergence for simultaneous operation independent runways (SOIR). IAA confirmed that divergence is not required if the runway is operated in dependent mode.
7. IAA highlighted that straight our parallel runway operations can be approved on the basis of dependent mode operations in order to meet ICAO requirements or through a suitable safety case demonstrating an equivalent level of safety.
8. IAA highlighted that the procedures for go arounds at Dublin Airport had to take into account other airspace operators in the vicinity of Dublin Airport.
9. IAA confirmed that if procedures are provided to them for the operation of flight paths at Dublin Airport by AirNav (as instructed by DAA) IAA would carry out a regulatory safety assessment of the procedures and if satisfied would approve them.
10. IAA confirmed that they approved the procedures put forward for the operation of the North Runway when it opened in August 2022 as submitted to them.
11. IAA also confirmed that they approved revised procedures which came into effect in February 2023 for the North runway as submitted to them.

Regards

Declan

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[Quoted text hidden]

Appendix C – daa Email

From: Michelle Molloy <michelle.molloy@daa.ie>
Sent: 13 December 2024 08:01
To: Francis Regan <FRegan@meathcoco.ie>
Subject: Action from Ratoath and Ashbourne MD Councillors Meeting.

Dear Francis,

It was lovely to meet with you in person yesterday, and I would like to thank you and Kathryn for facilitating the meeting which we believe was very beneficial from our perspective; we hope the Councillors are of the same view too.

You will recall that Councillor Bonner asked that Dublin Airport provide a statement regarding the flight path review. In that regard, we wish to advise the following:

Any change in flight paths is a very complicated process which involves many stakeholders, including local communities, and needs to be well-structured and planned. The situation has been made more complex by recent developments, namely An Bord Pleanála's (ABP's) public consultation regarding its draft decision on the North Runway Relevant Action application, which was launched in September and will remain open until December 23. ABP's final decision in these issues will have important implications for future airport operations and will need to be factored into any future considerations regarding flight paths.

Nonetheless, we initiated steps by contacting airports who have conducted similar processes already to get a greater understanding of what would be involved and the best way to implement such a process. We are developing a plan around how this is best structured and it is our intention to keep you and the public updated as we move forward. It should, however, be considered that the outcome may not be vastly different from where we are today and may not make everyone happy, but it is virtually

impossible for us to satisfy everybody in this matter as we cannot remove aircraft noise entirely. There are a wide range of factors that must be considered in the design of flight paths ,and proposals from local groups - which may run contrary to each other - need to be considered in a structured and coherent manner and not in isolation.

As discussed during our meeting, whilst we have been making preparations, it would be premature to commence this process before ABP's final decision on the Relevant Action. We committed to providing you with an update as soon as that determination is available, and we also reconfirm our commitment to ensure that all communities , including Meath East, are afforded the opportunity to fully participate in the consultation and express their views and preferences.

We are looking at the other actions from our meeting, and I will revert to you early next week with an update on same. As an immediate action, though, please find a link to the summer edition of our Dublin Airport News publication. Our winter edition is going to print shortly and we are working to expand the distribution to households in Ashbourne and Ratoath – I will update you further on that next week.

In the meantime, please do not hesitate to contact me if you or the Councillors have any queries.

All the best,

Michelle.

Michelle Molloy | COMMUNICATIONS

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Appendix D – Gary Rowan Letter

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Our ref: 22011/100322/GR

Mr. Stephen Symth and others
By email

23rd December 2022

Re: Your Query regarding Dublin Airport north runway and whether or not flight paths require planning permission.

Dear Stephen,

I refer to your query raised in relation to whether or not flight paths require planning permission.

In the first instance, I am mindful that consideration of flight paths or alteration to flight paths may not in their ordinary sense construe or meet the definition of 'development' as set out in the planning code which would trigger an obvious requirement for planning permission. In this regard I refer to, and am guided by the definition of 'development' as set out in Section 3 of the Planning and Development Act 2000 (as amended):

> *3.—(1) In this Act, "development" means, except where the context otherwise requires, the carrying out of any works on, in, over or under land or the making of any material change in the use of any structures or other land.*

Thus based on the aforementioned definition, it could be logical to assume that flight paths or alteration to flight paths in an ordinary sense, do not require planning permission.

That said, given that you query relates to flight paths associated directly with the operations of Dublin airport, and more specifically, the operations of the recently constructed north runway, I would consider that any operational change to the flight paths must be considered in the context of that permission and whether any such change in flight paths gives rise to any material change to the permitted terms of runway development and its operations. This view is based on the understanding that the flight paths in question relate directly to the operational land use activity of the Dublin airport north runway which itself was subject to planning permission.

Whilst the flight paths did not and does not form part of the physica ldevelopment of the runway ,it relates to the operational use of the permitted runway where the operational use of that development, forms part of the planning permission. The operational use of the runway and specifically flight paths, is notan ancillary functio nof the p hysical development of the runway, but rather fo rmsa component part of the development use of the runway authorised. Furthermo re, that use has conditional re strictions attached to it as set under the terms of the planning permission. If this was not the case, then the consideration of associated effects of the movement of aircraft upon landing and take-off would not have formed such a component part of the information prepared and lodged with the planning application and would not have formed such an instrumental part of the assessment of the proposal by An Bord Pleanála or the subsequent inclusion of the same planning conditions by Fingal County Council in granting an extension of duration to that planning permission.

Upon a high-level review of the planning permission granted by An Bord Pleanála ("the Board") for construction of the north runway (ABP ref: PL06.217429 and Fingal County Council ref: F04A/1755) it is clearly evident that the relevance of the flights paths in terms of their location, the predicted noise of aircraft usi ngthem, and the predicted effects of same was a material consideration in the decision making process. The significance of operational use of the runway was so evident clearly by the fact that the Board overturned the recommendation of its own planning inspector who recommended a refusal based the predicted impacts of noise on the surrounding amenity (arising from the operational manoeuvres of aircraft using the proposed north runway). Whilst that recommendation was overturned, the Board sought it approp riate, in the interests of protection of amenity and residential amenity, to attach 10 planning conditions to the permission which related to the control of noise through various measures including timing of permitted flight operations, and the application of specific noise mitigation measures within geographical locations determined by noise contours generated by modelling (by Dublin Airport Authority) of aircraft noise upon landing and takeoff at the new north runway. The operational activity of aircraft in terms of its flightpath did and thus does form pa rtof the terms of the plan ning permission for the north runway. I will explain the logic and reason for this further .

In the absence of availability of the or iginal planning application documents for the north runway (Fingal County Council planning ref: F04A/1755 ("the parent permission"), I am guided by the reporting of the application documents conducted by An Bord Pleanála in its understanding and its assessment of that proposal (PL06.217429). In its understanding of the 'proposed development' and its consideration of the material lodged with the planning application and in response to the further information sought by the Board (pursuant to the Section 132 request), the planning inspectorate referenced the modelling for the preferred mode of operation - Option 7B - given in the further information submission and in Figures 16.1 and 16.2 of the EIS Addendum. In considering that information, the inspector was satisfied that the intention of that submitted (development) approach "*has the aim of limiting the numbers of people affected by operations on the proposed northern parallel runway".* In doing so, the Board made express reference to noise contour lines identified as part of the proposal in the surrounding areas of the proposed north runway including; *"The 57dB contour [that] would extend over the southern part of Portmarnock. St. Margaret's and the area to the north around Kilreesk will be within the 69dB contour*" with furt her reference being made to the systems in place to measure noise levels generated by a ircraft and *"identified flight paths taken to and from the airport for each individual aircra ftmovement".* These noise contour lines were devised from noise modelling of flight paths consequent to the operational phase of the permitted north runway.

In its assessment of the planning application made to it first, Fingal County Council sought to attach a planning condition ('Condition 5') to its decision to grant planning permission. Condition 5 provided an express and logically association as part of the planning permission, between the development of the north runway, and the flightpaths pursuant to the use of that runway. Condition 5 stated: "*Flight paths, aircraft approaches and preferential use of runways in different weather conditions to be as per submitted details*". Thus, insofar as Fingal County Council was concerned, the flight paths and the development of the runway were indivisible.

Whilst the decision of the Board did not attach a condition in relation to 'flight paths' as expressly as that attached initially by Fingal County Council, it is clearly evident that the decision of the Board does make an indirect association between the development of the runway and the operational flightpaths detailed in the planning application lodged. This includes for example: Condition 1 which states:

> *"The development shall be carried out in accordance with the plans and particulars and the Environmental Impact Statement lodged with the application as amended by the further plans and particulars received by the planning authority on the 9th day of August, 2005, including the Environmental Impact Statement Addendum, and the 3rd day of March, 2006 and received by An Bord Pleanála on the 30th day of August, 2006, the 5th day of March, 2007 and in the oral hearing."*
>
> (underline emphasis added)

Further to condition 1, conditions 3, 4, 5, 6, 7, 8, 9, 10, and 11 all relate in some manner to; the control of noise levels; noise emissions and satisfactory application of mitigation measures (including noise mitigation) in order to protect amenities in the area from adverse noise effects.

In the subsequent decision by Fingal County Council in respect to the application made to it by the Dublin Airport Authority for an extension of duration of the 'parent permission', I note that Condition 1 of that permission (ref: F04A/1755/E1) extends the life of the parent permission for 5 years, and condition 2 states that;

> *"the terms and conditions of permission granted by An Bord Pleanála under PL06F.217429 (FCC Reference F04A/1755) shall be complied with in full in the course of the development herein permitted for application".*
>
> (underline emphasis added)

My reference to the conditions attached to the extension of duration permission is made to confirm that there was no change to the terms of the parent permission and that the conditions imposed under the parent permission (save for the life of the permission) remained unchanged and extant.

The purpose of the planning conditions are considered reasonable, and are considered expedient for the purpose of, and in connection with the development authorised for the reasons stated, and for the reasons that noise mitigation measures were proposed with the planning application. Thus the use of any alternative flight paths directly associated with the operational use of the north runway which deviate from those submitted and assessed under the EIA upon which noise mitigation was identified as being necessary and which was subsequently proposed and conditioned as part of that decision, would result in a deviation from the terms of the existing planning permission.

I suspect however that any such argument could be subject to challenge if/where it was found that the alternative flightpaths used, would result in an improved situation for example, vis-à-vis, lower or

improved noise emissions than those predicted, and which have been mitigated and conditioned in the permission. Conversely, any such change, where it would result in a different effect not considered as part of the planning application may, depending on the nature and extent of such change, give rise to a *material change* to the development authorized or may even result in an 'intensification of use' (due in part to the potential effects on local residents') where such change could constitute 'development' in its own right for which planning permission for that intensification may be required. This scenario could apply even, where there is no change in the landuse category of the runway. From a practical perspective, any such *material change* can and should be made by way of planning permission seeking modification to the terms of the existing planning permission which it intends to alter – much in the way in which the current application for 'relevant action' is proposed.

Whilst the test for consideration of 'intensification of use' might be less obvious in this case and might be a matter of degree, I would not consider that the change in operation arrangements of the constructed runway - in terms of altered flight paths from those which would have been identified and assessed as part of the planning application - could have, or can be easily reasonably considered or contemplated by the Board when it was drafting the planning conditions or by ordinary members of the public who are reliant upon the ordinary meaning of the conditions in their interpretation of the planning permission. In other words, I would consider relatively little scope for flexibility within the confines of the existing permission that would enable alternative flight paths to be operated which have not been fully assessed and considered acceptable already as part of the parent permission.

I would not therefore consider that the flight paths in this instance are indivisible from the terms of the existing planning permission governing the development and use of the north runway. Furthermore, I suspect this is understood by the Dublin Airport Authority and that its current application for 'relevant action' seeks to secure approval for its preferred flight path arrangements.

I trust this presents sufficient clarity at this time.

Yours sincerely,

Gary Rowan MRTPI MIPI
Director HRA | PLANNING

Appendix E – Henrik Van Der Kemp Report

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Observation on a draft decision by An Bord Pleanála under section 37R of the Planning & Development Act, 2000 (as amended) in relation to appeals against the decision by Fingal County Council in relation to the application for a Proposed Relevant Action under Section 34C of the Planning and Development Act, 2000 (as amended).

This observation is in response to the invitation for submissions or observations in relation to the draft decision.

The application has pl. ref. no. **F20A/0668**, appeal reference **ABP-314485-22**.

December 2024

Contents

1 Introduction

This observation is in response to the invitation for submissions or observations in relation to the draft decision that has been made by An Bord Pleanála on the appeal by Friends of the Irish Environment and by Others against the decision by Fingal County Council to grant permission to Dublin Airport Authority for taking a 'relevant action' within the meaning of Section 34C of the Planning and Development Act, 2000 (as amended).

The draft decision of An Bord Pleanála indicates that the Board is considering adopting *noise mitigation measures* and *operating restrictions* which were not the subject of previous consultations between the local planning authority and the competent authority under the Aircraft Noise Regulation. In such circumstances, An Bord Pleanála is now required to publish its draft decision and invite submissions or observations on it for its consideration prior to it proceeding to make a final decision on the case .

This observation is made on behalf of the St Margarets The Ward Residents Group and should be considered in conjunction with previous observations made in relation to the appeal.

2 Background

The North Runway Relevant Action application was lodged on 18/12/20 and comprises ..."*a proposed development comprising the taking of a 'relevant action' only within the meaning of Section 34C of the Planning and Development Act 2000, to amend/replace operating restrictions set out in conditions no. 3(d) and no. 5 of the North Runway Planning Permission (...) as well as proposing new noise mitigation measures*".[1]

Condition 3d states effectively that the Northern Runway shall not be used between 23 00 and 7.00 hours. Amendment is sought to change the restriction to between midnight and 6.00 in the morning.

Condition 5 states effectively that the average number of nighttime air traffic movements (ATMs) shall not exceed 65. Amendment is sought by replacing this restriction on the number of ATMs by a noise quota.

A decision to grant permission was made by Fingal County Council on 8/8/22. This decision is currently on appeal with An Bord Pleanála.

Although the Relevant Action only relates to conditions 3 and 5 of the planning permission, an updated EIAR was submitted with the Relevant Action application. The Northern Runway opened in August 2022. However, since the Northern Runway has been in use, the flight paths that are used are not straight out but instead curved in northern direction. Such flight paths produce different noise contours and these different noise contours are clearly visible from the current Relevant Action Application.

[1] Planning application form pl. ref .F20A/0668, section 9, datestamped 18/12/20.

3 Acceptance by the Inspector of the Changed Flight Paths

A core issue in the appeal submission on behalf of the St Margarets The Ward Residents Group has been the fact that the flight paths that are used since the Northern Runway was opened, are different from the flight paths that were permitted under the planning permission.

The actual flight paths are not straight out but instead curved in northern direction. Such flight paths produce different noise contours than the ones that were predicted in the EIAR that was submitted as part of the planning application for the runway. As condition 1 of that planning permission explicitly refers to the need to comply with the EIAR that formed part of the planning application documentation, concerns were expressed about this change.

It is noted that the Inspector has accepted that flight paths that were shown as part of the relevant action application are different from the flight paths that formed part of the northern runway planning permission and that no planning permission has been sought or granted to seek permission for this alteration in flight paths.

This is clear from the following sections in the Inspector's report.

- Section 1.11.3 – In this section the Inspector concludes that the new flight paths (referred to as a 15 degree divergence throughout the report) is not an alteration to the mode of operation of the runway.
- Section 1.13.2 – In this section the Inspector notes that the new flight paths were circulated to observers for comment. This suggests that the new flight paths were in fact considered by the Board to form a significant alteration to the mode of operation of the runway.
- Section 9.2.4 – In this section the Inspector notes the submission by the applicant (in response to a further information request from the Board) of different noise modelling scenarios resulting from the revised flight paths. This suggests that the Inspector treats the different flight paths as a significant in terms of noise impacts on the area.
- Section 12.2.3 – In this section the Inspector notes that the new flight paths were not previously considered during the RD or RA.

It is considered inappropriate to revise conditions of a planning permission without reviewing the planning permission. Attaching condition 1 was a critical aspect of the decision by An Bord Pleanála to grant planning permission for the Northern Runway.

The draft decision by An Bord is based on flight paths (and resulting noise contours) that have not been granted planning permission. As a consequence, it remains the view of the St Margarets The Ward Residents Group that the *noise mitigation measures* and *operating restrictions* that the Board is considering adopting in its draft decision, are inappropriate and without planning authorisation.

4 Lack of Expert Evidence from IAA

The reason or reasons for adopting different flight paths from the ones permitted under the planning permission for the northern runway, is related to safety considerations. This is clear

from the following sentence in the Inspector's report: . ."*The applicant has stated that this new turn north, is an airspace safety requirement and is reflected in the noise contour areas.*"[2]

However, neither the Board nor the Inspector have the necessary expertise to determine that this safety claim by the Dublin Airport Authority as the applicant, has a factual basis and would be justified in planning terms. This expertise and responsibility rests with the Irish Aviation Authority. The Inspector makes reference to the IAA which is defined as: "*The national aviation regulator, responsible for safety ,security and consumer protection functions.*"[3]

Under Section 131 of the Planning and Development Act, 2000 (as amended) the Board can request and person or body to . ."*make submissions or observations in relation to any matter which has arisen in relation to the appeal.*"[4] Under Section 132 the Board can require such a submission ..."*Where the Board is of opinion that any document, particulars or other information* ***may be necessary for the purpose of enabling it to determine an appeal.***"[5] (author's emphasis).

Such a submission was not sought from the IAA. While the Inspector notes that .. .."*a letter of support for the proposal was submitted*",[6] the technical need for the proposal was not challenged.

In a further section of the Inspector's report reference is made to the fact that the IAA made no submissions on the appeal: ..."*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.*"[7]

Later in the report the Inspector again notes the fact that the IAA madeno submissions on the appeals to the Board: ..."*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.*"[8]

Most serious is the following section in the Inspector's report which seems to accept on face value the claim from the applicant that the change in flight paths is necessary, despite the fact that this is disputed or at least questioned in many of the appeal submissions and as such should have formed a core issue in the consideration of the appeals that should have been pursued by the Inspector and the Board. The following section shows that this was not done and the conclusion by the Inspector lacks a factual basis:

..."*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.*"[9]

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[2] Inspector's report ABP 314485-22, p. 20.
[3] Inspector's report ABP 314485-22, p. 25.
[4] *Planning and Development Act, 2000 (as amended)*, Section 131.
[5] *Planning and Development Act, 2000 (as amended)*, Section 132.1.
[6] Inspector's report ABP 314485-22, p. 46.
[7] Inspector's report ABP 314485-22, p. 235.
[8] Inspector's report ABP 314485-22, p. 260.
[9] Inspector's report ABP 314485-22, p. 261.

The Inspector and the Board have accepted the applicant's claim that the changes in flight paths are necessary for safety reasons without verifying this with the appropriate statutory body regulating aircraft safety in Ireland.

5 Change in Flight Paths May Not Be Necessary

It is accepted by the Inspector and the Board that the changed flight paths are necessary for safety reasons. However, there is evidence to suggest that this claim may not be correct and that the changed flight paths may result from other than safety considerations. This conclusion is based on the fact that Air Nav Ireland as the body responsible for air traffic management for Dublin Airport did not look at any other possible departure routes than the ones provided by the DAA. The IAA in turn as the regulator checked the information as produced by AirNav Ireland to ensure that they met International Civil Aviation Organisation safety standards and guidelines.

As a result, no alternative flight paths were discussed or reviewed by the relevant bodies with statutory responsibility for air traffic safety. The flight paths that were reviewed by these bodies were simply the flight paths produced by the commercial operator of the airport, i.e. the Dublin Airport Authority. It is understood that it is possible to facilitate different flight paths if the runway is operated in what is known as 'dependent mode'. Under that regime it would be possible for both the North and South runways flying straight out as per the original EIAR for the northern runway planning permission.

No factual evidence has been produced by the applicants to support the claim that the changed flight paths are necessary on safety grounds and this claim may be spurious.

6 Reason for Condition 6 of the Draft Decision is Inappropriate

Condition 6 of the Draft Decision requires the applicant to provide a 'voluntary residential sound insulation grant scheme'. This scheme, referred to with the acronym RSIGS shall comply under the planning condition in the draft decision, with a lengthy and detailed range of requirements that are listed as part of the condition on pages 18-28 of the draft decision order. The reason for the condition states the following:

..."*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. Also to mitigate the impact of aircraft night-time noise as a result of the use of the Airport's runways.*"[10]

The wording of the reason for the condition is ambiguous for several reasons. First of all, the word '*account*' is not understood. The word '*mitigate*' seems more correct as the scheme is clearly necessary to avoid or at least reduce the impact of the use of the runway on noise levels in the area and protect residential amenity in the interest of proper planning and sustainable development of the area.

Of greater concern is the use of the words '*any change in flight paths*'. It is possible that the intention is to refer to the change in flight paths that has occurred since the northern runway was opened compared with the flight paths on which the planning was based. However, it may

[10] Draft decision order ABP 314485-22, p. 28.

also be interpreted to refer to any future changes in flight paths that may occur and possible changes in noise impacts that may result from such changes in flight paths. The latter interpretation seems possible although it may not be intended in the draft decision. This ambiguity should be removed.

It should be noted that under Ministerial Guidelines planning authorities including An Bord Pleanála on appeal should adopt the principle in attaching conditions to planning decisions that such conditions should be precise: . ."*Conditions proposed to be attached to permissions, and the reasons for them, should be carefully drafted so that their purpose and meaning are clear. Conditions must always be precise and unambiguous, particularly since the effectiveness of subsequent enforcement action may depend on the wording.*"[11]

The reason for condition 6 attached to the draft decision is ambiguous. Any reference to future possible further changes in flight paths should be removed from the draft decision.

7 Conclusions

- **The *noise mitigation measures* and *operating restrictions* that have been adopted in the draft decision by attaching conditions 4 and 6 are inappropriate because they relate to flight paths and resulting noise contours that conflict with the planning permission for the north runway and are therefore without planning authorisation.**

- **The draft decision is based on a claim by the applicant that a change in flight paths is necessary for safety reasons. This claim has not been verified with the IAA and without this verification the draft decision is premature and contrary to the proper planning and sustainable development of the area.**

- **No factual evidence has been produced by the applicants to support the claim that the changed flight paths are necessary on safety grounds and this claim may be spurious.**

- **The reason for condition 6 attached to the draft decision is ambiguous. Any reference to future possible further changes in flight paths should be removed from the draft decision.**

[11] *Development Management – Guidelines for Planning Authorities*, June 2007, p .63.

Appendix A – Relevant sections from the Inspector's report

Section 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.

Section 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 Lnight. 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.

Section 9.2.4 (part of)

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.

Section 12.2.3 (part of)

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.

Appendix F – Wave Dynamics Report

WAVE DYNAMICS
ACOUSTIC CONSULTANTS

Technical Note

Project:	Airport Noise Monitoring Summary	**Title:**	Noise Assessment
Job Number:	WDA240601	**Prepared By:**	Sean Rocks
Date:	18/12/2024	**Reviewed By:**	James Cousins
Reference:	WDA240601TN_A_02	**Client:**	St. Margaret's and The Ward Residents Group

1 Introduction

Following the commencement of operations at the North Runway at Dublin Airport in August 2022, Wave Dynamics, in partnership with Suono, were commissioned by St. Margaret's and The Ward Residents Group whose properties currently reside under the active flight paths to carry out a noise impact assessment. This involved long-term noise monitoring (over 92 days) at 9 individual properties, where the locations are outlined in Figure 1 to measure aircraft flyover noise levels.

The survey aimed to measure the noise levels at the individual residences following the commencement of flights from the North Runway. Since its opening, the North Runway has seen an increase in operational capacity from its initial soft opening. This assessment focuses on the operational procedures of summer 2024, which allow departures from the North Runway between 07:00hrs and 23:00hrs.

This report outlines the $L_{Aeq,16hour}$ (07:00hrs – 23:00hrs) noise levels measured over the 92-day summer period of 2024 at each of the 9 locations assessed and a comparison to the DAA's predicted current state provided in the Infrastructure Report of the current ABP application to extend the North Runway's operation.

The full extent of the monitoring undertaken at each residence and analysis can be found in the individual reports:

- WDA240601TN_1_A_01 Noise Impact Assessment (Ratcliffe)
- WDA240601TN_2_A_01 Noise Impact Assessment (Taylor)
- WDA240601TN_3_A_01 Noise Impact Assessment (Cantwell)
- WDA240601TN_4_A_01 Noise Impact Assessment (Walton)
- WDA240601TN_5_A_01 Noise Impact Assessment (Sutton)
- WDA240601TN_6_A_01 Noise Impact Assessment (Carey)
- WDA240601TN_7_A_01 Noise Impact Assessment (Dreaper)
- WDA240601TN_8_A_01 Noise Impact Assessment (O Conner)
- WDA240601TN_9_A_01 Noise Impact Assessment (Maher)

2 Site Locations

The residences are spread out across northwest Dublin and southeast Meath to the west, northwest, all located to the north and northwest of the North Runway as shown in Figure 1 below.

The surrounding area generally consists of mostly agricultural land at each dwelling with sporadic one-off housing. Table 1 below outlines the approximate distances each monitoring location is from the western tip of the north runway.

Table 1. Monitoring locations and distance to North Runway

Location / Residence	Approximate Distance to North Runway (m)
Christopher Ratcliffe	2660
Serena Taylor	6070
Leona & Patrick Cantwell	4210
David Walton	9700
Colm Barry & Sandra Sutton	2015
Neil Carey	9430
Claire Dreaper	7360
Mick O'Connor	4950
Niamh Maher	2130

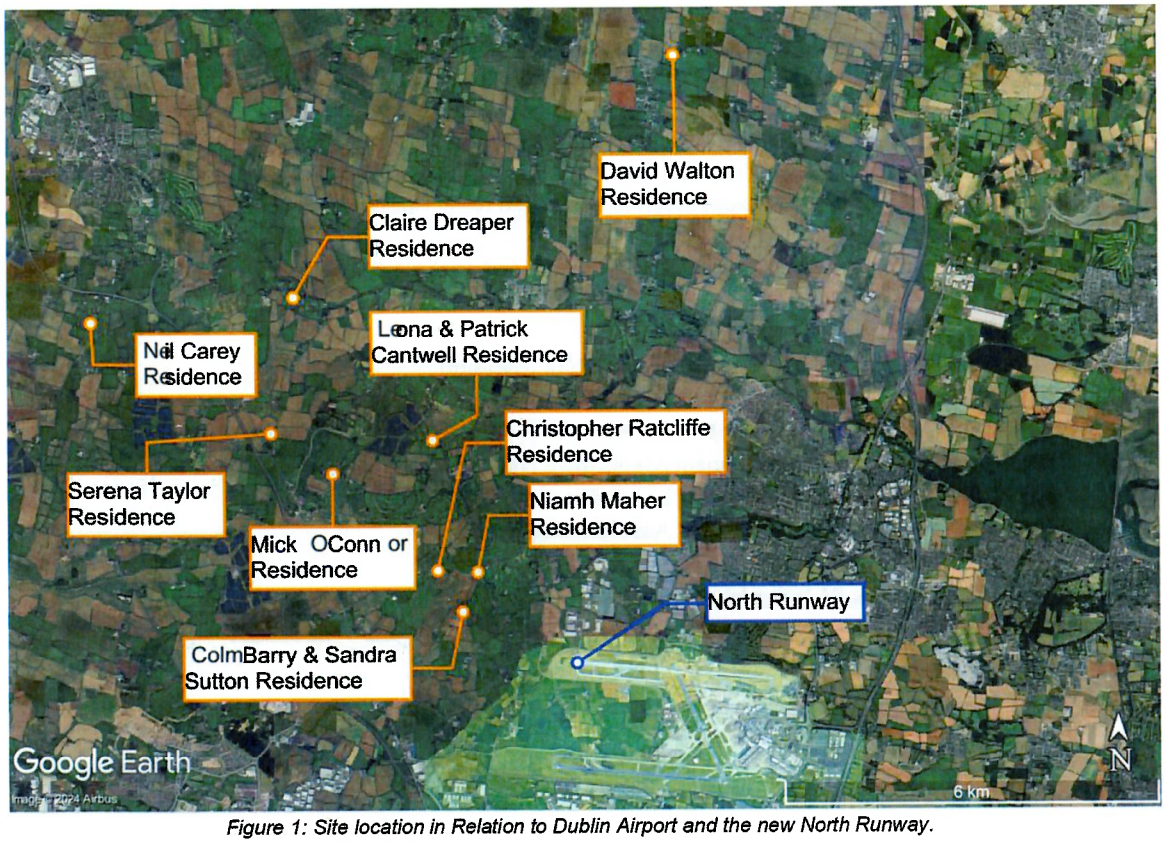


Figure 1: Site location in Relation to Dublin Airport and the new North Runway.

Unattended Noise Measurements

Details of the full unattended noise monitoring undertaken, including methodology, equipment details, calibration, monitor height and location, subjective noise environment and impact of weather can be seen in the individual monitoring reports referred to and listed to in Section 1.

3 $L_{Aeq,16hour}$ Noise Monitoring Results

This section sets out the results of the noise monitoring at all locations over the 92-day measurement period.

3.1 DAA Predicted Noise Levels

The DAA have provided $L_{Aeq,16hour}$ (07:00hrs – 23:00hrs) noise contours within the recent Infrastructure application to Fingal Co Co to increase the passenger cap at Dublin Airport to 40 million. The DAA provided contours are for the current operating procedure of the North Runway, based on the 92 day summer period, that being 00:00hrs on 16th June to 00:00hrs on 16th September.

All of the relevant properties where monitoring has been undertaken can be seen below in Figure 2 in relation to the DAA $L_{Aeq,16hour}$ current state noise contours.

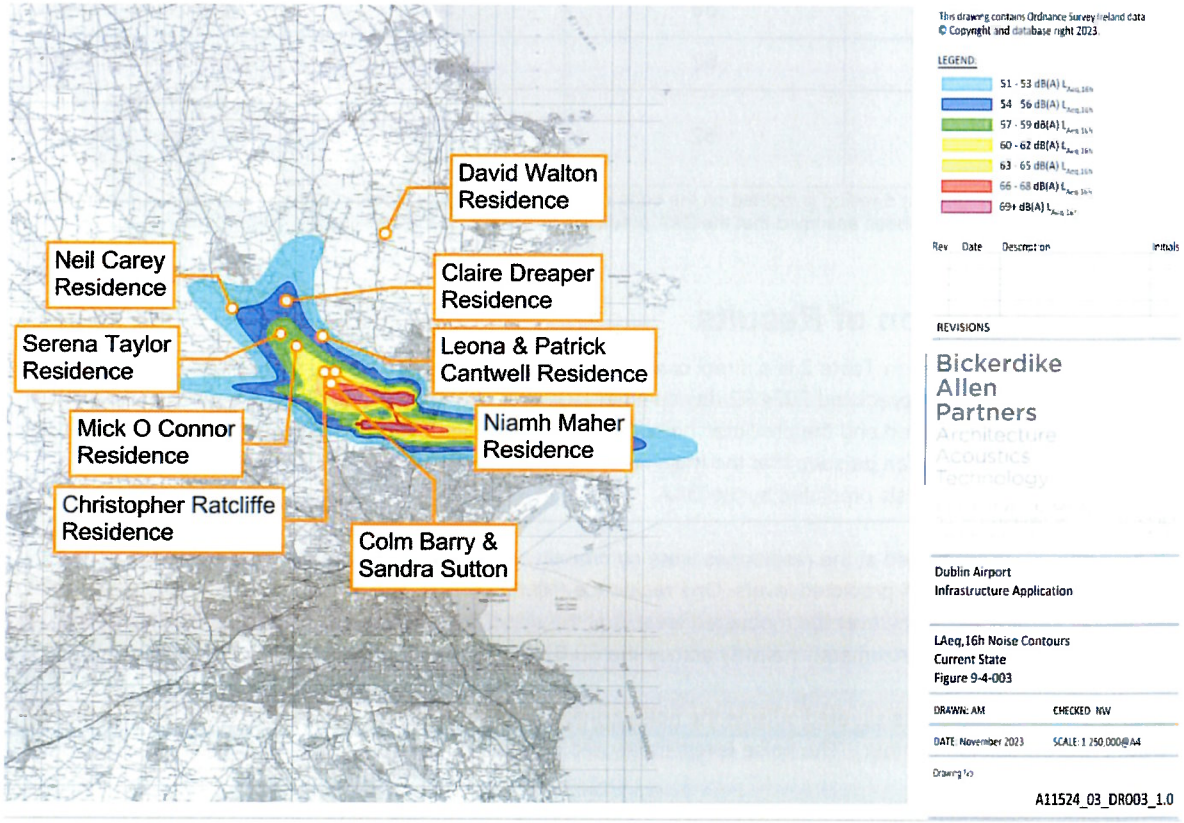


Figure 2: DAA current state noise contour.

3.2 Measured Noise Levels

The DAA current state noise contours have been compared to the measured noise levels at each residence to assess the accuracy of the DAA's data. The measured noise levels outlined in Table 2 are the 92 day logarithmic average $L_{Aeq,16hour}$ noise level, recorded over the same 92 day period (00:00hrs on 16th June 2024 to 00:00hrs on 16th September 2024) the DAA predictions are based on.

The full set of unattended noise levels measured at each dwelling every day are outlined in Appendix A.

Table 2: Comparisorof measured noise levels and the DAA predicted noise levels .

Measurement Location	Measured 92Day Logarithmic Average $L_{Aeq,16hour}$ dB	DAACurrent Procedure Predicted $L_{Aeq,16hour}$dB	Comments
Christopher Ratcliffe	65	60-62	Exceedance of 3-5dB
Serena Taylor	61	57-59	Exceedance of 2-4dB
Leona & Patrick Cantwell	55	51-53	Exceedance of 2-4dB
David Walton	51	<51	No specific prediction at this residence
Colm Barry & Sandra Sutton	67	63-65	Exceedance of 2-4dB
Neil Carey	55	51-53	Exceedance of 2-4dB
Claire Dreaper	58	54-56	Exceedance of 2-4dB
Mick O'Connor	62	59-60[1]	Exceedance of 2-3dB
Niamh Maher	62	60-62	Approximately in line with upper predicted interval level

1) Mick O'Connor's dwelling is locatedon thee dge of the 57-59dB$L_{Aeq,16hr}$ contour and the 60-62dB $L_{Aeq,16hr}$ contour , therefore it has been assumed that the DAA predicted noise level at the dwelling are 59-60dB $L_{Aeq,16hour}$.

3.3 Discussion of Results

The comparison outlined in Table 2 is a direct comparison of the measured 2024 92 day summer $L_{Aeq,16hour}$ noise levels versus the DAA's predicted 2024 92 day summer $L_{Aeq,16hour}$ noise levels, therefore it would be expected that the both the measured and the predicted noise levels are equivalent to each other. As outlined in the results in Section 3.2 above, it can be seen that the majority of the noise levels measured across the dwellings were higher than the noise levels predicted by the DAA.

The noise levels measured at the residences were commonly underpredicted by approximately 3dB in comparison with the DAA predicted levels. One residence (Niamh Maher) was in line with the predicted noise levels at the residence however the measured level is at the upper level of the contour prediction despite the house being located approximately halfway across the 60-62dB $L_{Aeq,16hour}$ contour.

David Walton's dwelling is situated outside the noise contours, and therefore are predicted to be less than 51dB (the lowest predicted contour). The noise levels measured over the 92 day period were 51dB $L_{Aeq,16hour}$.

At all other locations monitoring was undertaken, the measured noise levels exceed the DAA's predictions by an average of 3dBA. This highlights the existing differences between the DAA s predicted noise levels and he real-life measured noise levels at these dwellings and that the DAA noise contours are potentially underpredicting the noise impact.

4 Conclusion

Following the commencement of operations of the new Dublin Airport North Runway in August 2022, Wave Dynamics were commissioned by St. Margaret's and The Ward Residents Group whose properties currently reside under the active flight paths to carry out a noise impact assessment. This involved long-term noise monitoring (over 92 days) at 9 individual properties.

Based on the measured noise levels recorded at the 9 dwellings, one dwelling had measured noise levels which matched the DAA's predicted noise levels for $L_{Aeq,16hour}$ for the current operating procedure of the North Runway. One other dwelling was situated notably outside the lowest predicted noise contour level however it was in line with the lower end of the contour interval.

A total of 7 properties recorded exceedances of the $L_{Aeq,16hour}$ noise levels over the DAA's predictions, ranging from 2dB-5dB above predictions. This would infer that the DAA's predicted $L_{Aeq,16hour}$ noise contours in the 'Current Procedure' contour map that has been provided to ABP as part of the application to extend the North Runway's operating procedure are underpredicting the noise impact.

Appendix A - Unattended Noise Monitoring Results

Table 3 below outlines the noise levels recorded at each of the 9 monitoring locations over the period 16th of June 2024 to 15th of September 2024 (inclusive). The results are averaged over the following period.

- $L_{Aeq,16hour}$ 07:00hrs – 23:00hrs

Table 3: Unattended Measurement Results

Start Date	Measured $L_{Aeq,16hour}$ 07:00 - 23:00 dB								
	Christopher Ratcliffe	Serena Taylor	Leona & Patrick Cantwell	David Walton	Colm Barry & Sandra Sutton	Neil Carey	Claire Dreaper	Mick O Conner	Niamh Maher
16/06/2024	66	61	56	58	69	56	59	63	63
17/06/2024	66	61	56	50	68	56	59	63	62
18/06/2024	66	61	56	50	68	58	58	63	63
19/06/2024	65	59	53	50	66	55	57	61	61
20/06/2024	65	60	54	50	66	54	56	61	61
21/06/2024	66	62	55	51	69	55	58	63	64
22/06/2024	66	61	55	57	68	56	58	63	62
23/06/2024	63	57	52	49	65	54	54	59	60
24/06/2024	64	59	53	49	66	53	56	61	61
25/06/2024	65	59	53	50	68	54	57	62	62
26/06/2024	63	58	53	49	65	52	55	60	59
27/06/2024	65	63	58	57	67	56	58	62	64
28/06/2024	66	62	56	56	67	56	57	62	63
29/06/2024	65	60	54	49	68	55	57	63	62

Start Date	Measured $L_{Aeq,16hour}$ 07:00 - 23:00 dB								
	Christopher Ratcliffe	Serena Taylor	Leona & Patrick Cantwell	David Walton	Colm Barry & Sandra Sutton	Neil Carey	Claire Dreaper	Mick O Conner	Niamh Maher
30/06/2024	66	61	56	49	68	56	57	63	63
01/07/2024	66	61	56	50	68	55	58	63	63
02/07/2024	66	61	55	51	68	55	59	63	63
03/07/2024	66	62	56	54	67	55	60	63	63
04/07/2024	66	62	57	57	67	56	59	63	64
05/07/2024	66	61	56	49	68	57	60	63	63
06/07/2024	66	61	56	50	67	56	59	63	63
07/07/2024	66	61	55	50	68	55	58	63	62
08/07/2024	60	55	53	56	62	50	54	58	56
09/07/2024	52	51	49	50	50	51	53	52	51
10/07/2024	66	62	56	51	68	56	58	63	63
11/07/2024	65	60	56	51	67	55	58	62	62
12/07/2024	66	61	56	50	68	58	58	63	62
13/07/2024	63	59	53	48	66	54	56	61	60
14/07/2024	59	54	50	47	61	49	51	56	56
15/07/2024	57	52	49	46	61	50	50	54	57
16/07/2024	66	61	55	49	68	55	57	62	63
17/07/2024	65	61	54	54	67	57	57	62	62
18/07/2024	65	59	54	49	67	52	56	62	62
19/07/2024	65	61	55	50	68	58	58	63	62
20/07/2024	66	61	55	50	68	54	58	63	63
21/07/2024	66	61	56	50	68	55	58	63	63
22/07/2024	65	60	54	50	67	55	57	62	62

Start Date	Measured $L_{Aeq,16hour}$ 07:00 - 23:00 dB								
	Christopher Ratcliffe	Serena Taylor	Leona & Patrick Cantwell	David Walton	Colm Barry & Sandra Sutton	Neil Carey	Claire Dreaper	Mick O Conner	Niamh Maher
23/07/2024	64	59	53	49	66	54	56	61	61
24/07/2024	64	59	55	50	66	53	56	61	61
25/07/2024	66	62	59	51	68	55	58	63	63
26/07/2024	66	61	56	52	68	54	60	63	63
27/07/2024	66	61	55	49	68	57	58	63	62
28/07/2024	61	56	52	57	63	50	54	58	57
29/07/2024	66	61	57	50	68	56	57	63	62
30/07/2024	64	59	54	48	66	55	56	61	61
31/07/2024	62	57	51	47	64	52	54	59	58
01/08/2024	66	61	55	50	68	55	58	63	63
02/08/2024	66	61	55	51	68	55	58	62	63
03/08/2024	66	61	56	54	68	56	59	63	63
04/08/2024	66	61	56	50	68	56	57	62	63
05/08/2024	65	60	55	51	68	54	58	62	62
06/08/2024	66	61	58	52	67	54	58	63	63
07/08/2024	66	62	56	52	67	56	57	62	63
08/08/2024	65	60	55	51	67	53	57	62	62
09/08/2024	65	62	56	54	67	54	58	62	63
10/08/2024	65	61	55	51	67	55	58	62	62
11/08/2024	53	47	47	46	55	52	49	48	51
12/08/2024	66	61	55	51	67	54	58	62	62
13/08/2024	65	61	55	51	67	54	58	62	62
14/08/2024	65	61	55	50	67	55	58	63	62

Start Date	Measured $L_{Aeq,16hour}$ 07:00 - 23:00 dB								
	Christopher Ratcliffe	Serena Taylor	Leona & Patrick Cantwell	David Walton	Colm Barry & Sandra Sutton	Neil Carey	Claire Dreaper	Mick O Conner	Niamh Maher
15/08/2024	66	61	56	51	67	54	58	62	63
16/08/2024	66	61	55	56	67	56	58	62	63
17/08/2024	66	61	55	50	67	55	58	62	62
18/08/2024	66	61	55	50	67	55	57	62	62
19/08/2024	64	60	56	55	65	55	57	62	61
20/08/2024	66	62	57	54	67	56	57	62	63
21/08/2024	66	61	57	55	67	55	58	62	63
22/08/2024	66	62	56	51	68	54	59	63	63
23/08/2024	66	62	57	53	68	55	59	63	63
24/08/2024	66	62	56	51	68	55	58	63	63
25/08/2024	66	61	57	54	67	55	57	62	63
26/08/2024	69	62	55	50	68	54	58	63	62
27/08/2024	66	61	55	52	68	56	58	63	63
28/08/2024	67	62	55	51	68	55	58	63	63
29/08/2024	67	67	56	51	68	55	58	63	63
30/08/2024	63	58	52	47	64	53	54	59	59
31/08/2024	55	47	48	45	55	46	53	49	51
01/09/2024	57	46	46	46	55	44	49	47	51
02/09/2024	66	61	54	49	68	55	57	62	62
03/09/2024	66	62	56	50	68	55	58	63	63
04/09/2024	66	62	57	51	68	60	58	63	63
05/09/2024	53	53	51	51	55	54	57	49	52
06/09/2024	52	50	47	57	55	49	56	49	50

Start Date	Measured $L_{Aeq,16hour}$ 07:00 - 23:00 dB								
	Christopher Ratcliffe	Serena Taylor	Leona & Patrick Cantwell	David Walton	Colm Barry & Sandra Sutton	Neil Carey	Claire Dreaper	Mick O Conner	Niamh Maher
07/09/2024	59	54	50	45	61	52	53	56	55
08/09/2024	65	61	54	51	67	55	56	62	62
09/09/2024	65	62	56	51	67	55	58	62	63
10/09/2024	65	63	56	53	67	55	59	62	63
11/09/2024	65	62	57	53	67	56	64	62	63
12/09/2024	66	62	56	50	67	56	59	63	62
13/09/2024	66	62	55	50	68	57	58	63	63
14/09/2024	66	62	56	55	68	57	59	62	63
15/09/2024	66	61	55	50	68	56	58	63	62

Appendix G – Suono Report

Note

Title	Northern Runway Draft Decision Response		
Project	Dublin Airport		
Reference	283C.NT.4.2	**Author(s)**	BHo
Date	19 December 2024	**Reviewer**	VC; AS

1.0 Overview

Introduction

1.1 Revisions to an Environmental Impact Assessment Report (EIAR) were submitted for Dublin Airport's Northern Runway Night Flying application in September 2023. Submissions were made on the noise chapter and associated documents by Suono (Note *283C.NT.1.1 EIAR 2023 Document Review* dated 12th December 2023; Suono Note 1), as well as a number of interested parties.

1.2 A Draft Decision (DD) has been issued by *An Bord Pleanála* (ABP), reference *ABP-314485-22,* alongside a Draft Inspector's Report (DIR) with the same reference.

1.3 This note contains a response to matters raised on the subject of noise within the DD and DIR.

Rationale

1.4 Suono are engaged by St. Margarets The Ward Environmental DAC [SMTW], who are a resident's group living predominately to the west and northwest of Dublin Airport. The dwellings in this area are overflown by aircraft using the northern runway, which currently only operates during the daytime save for limited exceptions such as emergencies. It is this location that is most affected by the changes associated with the Northern Runway Night Flying application.

1.5 Since the northern runway became operational, several different flightpaths have been flown, none of them being included within the original northern runway noise assessment. At no stage have the residents represented by SMTW been specifically consulted on new flightpaths, nor have they been consulted on the associated noise impacts. Rather, these noise changes have been incorporated into the "baseline" operating case, meaning that they are likely not eligible for any mitigation measures.

1.6 SMTW have been undertaking extensive noise monitoring at multiple positions using a qualified acoustic consultancy (*Wave Dynamics*) to demonstrate the extent of the noise impacting upon them. The aim of this monitoring has been to assist to assist in coming to a resolution with Dublin Airport Authority (daa).

1.7 It would appear most pragmatic for any resolution to be part of a Relevant Action (RA), to enable all parties to fully utilise the levers of the planning system and to minimise costs and time.

1.8 Should the Northern Runway application be granted, it would result in SMTW residents continuing to be subject to daytime noise levels substantially above anything they have been consulted on, as well as night-time noise levels of similar impact. They are not likely to be provided any mitigation.

2.0 Draft Decision

Proposed Movement Cap

Mechanisms of a Movement Cap

2.1 The premise of a night-time movement cap has been raised by multiple parties, including within Suono Note 1. We support ABP's proposed movement cap, particularly the reasoning within the DD of:

> *"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."*

2.2 We note that it is sometimes raised by others that movement caps are 'blunt instruments' which do not incentivise bringing in quieter aircraft. We would only consider this the case when a movement cap is used in isolation. This is not the case here, as it would be used in tandem with the Annual Noise Quota (ANQ) and is therefore a more powerful and necessary control to balance the benefits of a noise quota system weighted in favour of an airport.

Movement Cap Value

2.3 ABP have proposed using a value of 13,000 for the night-time movement cap (2300-0700), splitting to 3,900 winter movements and 9,100 summer movements. As we set out in section 9.9 of Suono Note 1:

> *"The existing limit for the core night is an ANQ of 7,990, which it is proposed be increased to 16,260 over the whole night period. Given that the proposed change is from an average of 65 flights per night on one runway (maximum 23,725 movements per year), there is clearly no consideration given to limiting flights."*

2.4 ABP's proposal would remove this concern and the value suggested is therefore supported by Suono on this basis.

2.5 We also note that such a limit concurs with ABP's desire to minimise additional awakenings. Using publicly available information and five proxy positions located under the different flightpaths, the proposed movement cap of 13,000 night flights would result in under one additional awakening per night at all five proxy locations. This compares to up to 3 additional awakenings per night with the daa's effectively unconstrained 'limit'.

2.6 These awakening numbers have been calculated using Equation 2 from *WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep*; this document was directly referenced by ABP in their original Request for Information (RFI). A more detailed calculation methodology is set out in **Appendix A**.

2.7 As set out in Suono Note 1, we acknowledge (along with ABP) that there are no specific criteria by which to judge the significance of the number of awakenings. It is clear that the proposed movement limit ensures additional awakenings are minimised.

Mitigation Scheme

Newly Proposed Criteria

2.8 ABP propose to introduce a new criterion for the sound insulation grant scheme of 80 dB L_{Amax}. Such a threshold is supported by Suono.

2.9 As set out in Appendix 5 of the DIR, the criterion is already in use at Heathrow, Gatwick and Stansted Airports. It is sometimes presented as a 90 dB SEL threshold, with there being a strong rule of thumb that a dB L_{Amax} value of an aircraft event is approximately 10 dB lower than its SEL. Such a criterion is also in use at other airports, such as Luton.

2.10 As noted in the DD (first bullet on page 19 of 29), we also support the methodology for calculating the area that this threshold covers:

> *"Residential dwellings subject to aircraft noise of 80 dB LAmax 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 2300hrs and 0700hrs."*

2.11 , We would recommend that reference is added to make clear that the above applies to the noisiest aircraft operating at Dublin (QC 4 for night-time arriving aircraft and QC 2 for night-time departing aircraft).

Further Improvements

2.12 The alteration to the night-time movement cap and introduction of the above maximum event level threshold goes some way to address our concerns around the shortcomings of the noise insulation scheme as set out in Suono Note 1. Should there be any change in these conditions, our previous criticisms of the scheme would still stand.

2.13 Given the ongoing disagreement over flightpaths and the substantial changes that daa are implementing and further proposing to the noise climate to the west of the airport, it would be pragmatic for daa to expand their voluntary Dwelling Purchase scheme.

2.14 There are numerous and cumulative noise changes that have resulted from daa actions, as well as a large and growing evidence base that substantial noise impacts are occurring on residents to the west and northwest of the airport.

2.15 We understand that there is no Irish equivalent to the UK's Part I Claims under the Land Compensation Act 1973, which is a means for residential owners to be compensated for increases in noise from an airport. Were such a process in place in Ireland, substantial payments could be sought by the residents and there would be a clear pathway for the ongoing flightpath dispute to be settled.

2.16 In the absence of a clear pathway, it would be pragmatic for all parties to seek to resolve the dispute within existing processes, such as in an RA.

2.17 SMTW wish to see the flightpaths used in the 2007 Northern Runway EIAR adopted, as this is what was sought from ABP. It could be conditioned that if this is not feasible, such as for evidence-based safety reasons, an extended voluntary Dwelling Purchase Scheme is to be introduced alongside an increased sound insulation grant scheme.

2.18 As is set out in Suono Note 1, the sound insulation grant scheme should be expanded to seek to mitigate all significant effects predicted using the Developer's magnitude of effects scale, as a minimum. Suono Note 1 also sets out specific instances where the magnitude of effects scale is taken to be underestimating. It therefore should be updated.

2.19 The voluntary Dwelling Purchase Scheme could then be extended out to the current insulation grant scheme (50 dB L_{night} + 9 dB), so that 'very significant' and 'profound' effects are more appropriately mitigated. We note these dwellings could then be insulated and re-sold to potential purchasers who are fully aware that they may to be subject to medium to very high levels of noise.

2.20 Such an approach would be in keeping with EIAR Guidelines to avoid, prevent and reduce identified significant adverse effects.

DIR Appendix 4 Response

2.21 Section 6.7.1 of Appendix 4 of the DIR states the following:

> *"It is no surprise that there are substantial numbers of complaints about flights now taking off from the western end of the northern runway. This is a consequence of the northern runway opening and being permitted to allow departures in a westerly direction (typically for 70% of the year under prevailing westerly winds) and directly overflying people who had no or very little overflight previously. There is a substantial body of work that shows that when change in noise occurs rapidly i.e. when a new runway opens, the adverse community response to noise is greater i.e. more people are annoyed/disturbed, compared to the response of communities exposed to the same noise levels but under steady state conditions for a number of years."*

2.22 The number of complaints about flights taking off from the western end of the runway could also be related to an unexpected noise impact from flightpaths that were not consulted on.

2.0.1 While numerical noise levels can only be mitigated through physical intervention, noise impacts (i.e. those of a physiological and psychological nature) can be reduced by other means. Evidence for such a principle includes the statements within BS 5228-1[1], for example, on the value of liaison between noise-generating sites and noise-sensitive receptors. We acknowledge that BS 5228 relates to noise from construction sites and we are not equating construction noise with noise from an airport. Rather, we are referring to the principle that is used within the standard.

2.23 In BS 5228, it is clear that the standard concludes that the noise impact of substantial building works are lessened when the receptors are expecting the noise to occur, compared to a situation with poor liaison.

2.24 The point appears to be accepted as 9.2.3 of Appendix 5 of the DIR states (our emphasis):

> *"The flight paths now in use for the northern runway after it opened in August 2022 were used in the noise modelling for the supplementary 2023 EIAR. These latest flight paths are based on radar data and are only slightly different from the theoretical flight paths used for the revised 2021 EIAR.* ***However, both these sets of flight paths are considerably different to those assumed in the noise modelling for the original EIAR for the northern runway (2007).*** *Although the noise contour area covered by the different flight paths is probably similar i.e. the noise is approximately the moves the location where impacts. Similarly, the impact is broadly the same i.e. fewer people are significantly adversely affected in 2025 and 2035 compared to 2019 (or 2018), although in terms of %HSD more people are significantly adversely effected in 2025 and 2035 if the RA is permitted compared to if it is not.* ***But those who suffer these effects are in different areas to those who were identified in the 2007 EIAR.***

2.25 It is therefore entirely possible that the substantial numbers of complaints are coming from people who were not identified as being overflown and are now subject to substantial noise impacts.

Noise Monitoring

2.26 Multiple Noise Monitoring Reports written by Wave Dynamics are submitted alongside this response, and have already been submitted. These cover 2023 and 2024 monitoring and describe a consistent narrative; numerous dwellings are subject to noise levels substantially above what they

[1] BS 5228-1:2009+A1:2014 (Code of practice for noise and vibration control of construction and open sites – Part 1: Noise)

have been consulted on. It is therefore clear that the proposed pathway set out above must be adopted.

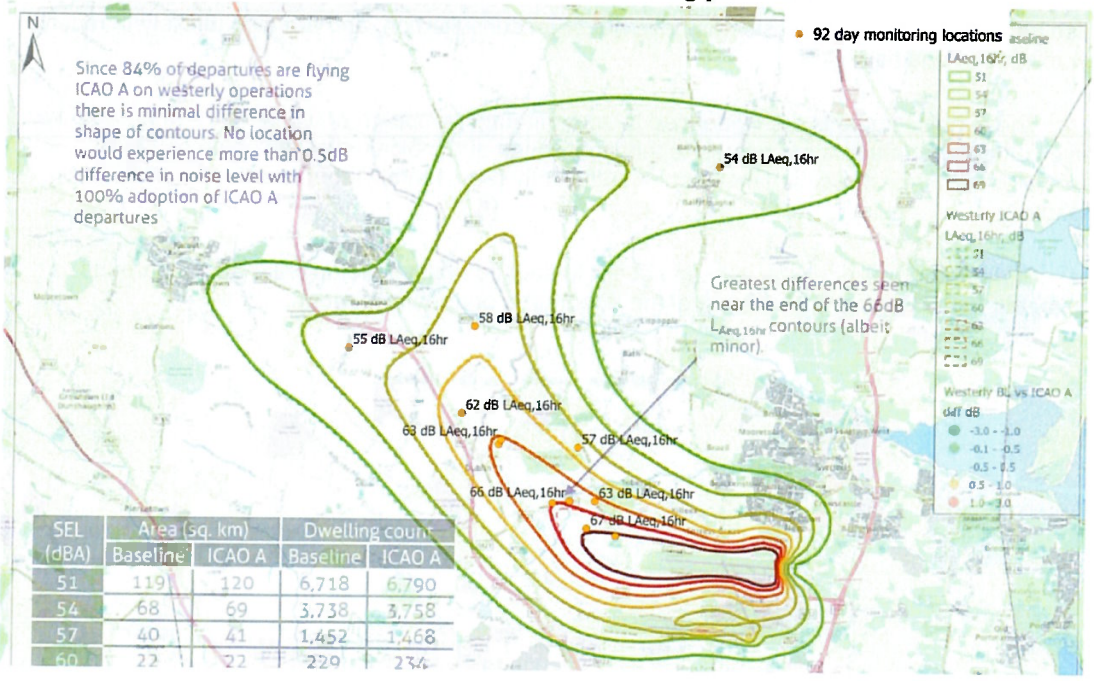
2.27 We would dispute the summary provided at the end of section 9.2 of Appendix 5 of the DIR:

> *"Overall, much of the alleged disparity between what has been measured and information provided by the airport is probably due to the comparison not being like for like. A significant reason for this is that the DAA noise data on which the comparisons are based was calculated using assumptions regarding aircraft flight paths and profiles that did not reflect how aircraft now flight* [sic] *to and from the northern runway since it opened in August 2022.*
>
> *None of the issues raised by 3rd parties relating to surveyed noise data change the outcome of the supplementary EIAR that fewer people will be significantly adversely affected in 2025 and 2030 compared to 2018 (or 2019), although more people will be significantly adversely affected in 2025 and 2035 if the RA is permitted compared to if it is not."*

2.28 The noise monitoring campaign has been designed to ensure that it is possible to undertake a like-for-like comparison of the measured and calculated noise levels. While it may not change the overall outcomes set out in the supplementary EIAR, it does demonstrate that insufficient mitigation options are being provided by daa to residents and the RA has the ability to remedy this.

2.29 We also note that the Wave Dynamics monitoring results concur with the AEDT noise modelling undertaken by Anderson Acoustics[2]. Wave Dynamics have calculated the single mode (westerly) noise levels at all measurement positions, and these can be directly compared against the Anderson Acoustics noise model, which details noise contours under the westerly single mode condition on the same day. This comparison can be seen in the image below:

Image 1 – Westerly single mode noise levels at monitoring positions



[2] Dublin Airport Departure profiles noise investigation, October 2024 (*Reference 7669_001R_1-0_JN*)

2.30 The alignment of the two datasets demonstrates that it is reasonable to use the noise monitoring data when undertaking comparisons of measured and calculated noise levels, with appropriate caution.

2.31 The noise monitoring by Wave Dynamics indicates that daa's noise calculations are approximately 2 dB below the measured levels at some locations, which indicates that the mitigation proposals may not be sufficiently representative of the actual area of noise impacts. This difference goes beyond the 1 dB sensitivity checks undertaken at ABP's request, while providing some information as to the scale of the potential issue.

2.32 The additional monitoring undertaken therefore reinforces the previously made points in Suono Note 1.

Conclusions

2.33 The proposed introduction of a night-time movement cap is supported on the basis that as part of a balanced set of noise controls. We note that the proposed value of this cap would ensure that additional awakenings are minimised, while granting the airport additional flights.

2.34 The proposed introduction of an additional threshold for noise insulation to residences is also supported, noting that such a threshold is in use at multiple UK airports already, and is specifically targeted at night-time flying.

2.35 These proposals go some way to address our concerns around the shortcomings of the noise insulation scheme as set out in Suono Note 1. Should there be any change in these conditions, our previous criticisms of the scheme would still stand, and residents would be subject to substantial adverse noise impacts.

2.36 As noted, these night-time noise impacts would be in addition to similar adverse daytime noise impacts, for which the residents have not been consulted on, and are also unlikely to receive any mitigation against.

2.37 These noise impacts are evidenced by a monitoring campaign which concurs with daa's own noise contours for matters not related to this application and indicate that the noise contours associated with this application may not be sufficiently representative of the actual area of noise impacts.

2.38 Further improvements have been set out to seek to resolve the ongoing dispute around flightpaths to the north and northwest of the airport in a pragmatic manner.

Appendix A: Awakenings Calculation

Section 4.2 of Appendix 4 of DIR states:

> *It is important to realise that two different types of sleep outcomes have been examined. Self-reported subjective sleep disturbance which is linked to metrics which average the noise from all noise events over an 8 hours night period such as Lnight , and described as being "Highly Sleep Disturbed"; and objective sleep disturbance which uses polysomnography (PSG) to record biophysiological changes that occur during sleep and changes in sleep stages linked to the maximum noise level of individual noise events such as LAmax, and described as "Additional Awakenings".*
>
> *Reports of self-reported sleep disturbance and objective sleep disturbance can differ as individuals are not always aware of or recall awakenings.*
>
> *Averaging metrics such as Lnight may not be best for assessing the impacts of ATMs noise on sleep disturbance, on their own, as these noise events are intermittent rather than continuous, which means that the same Lnight value can result from differing numbers of events of varying maximum noise level e.g. a smaller number of ATMs louder than a larger number of less noisy ATMs. Consequently, the two types of sleep disturbance should both be considered in an assessment.*

As is set out in Suono Note 1, the airport's noise assessment does not include an assessment based on location and therefore there could be an underestimation of effects for those living in close proximity to the northern runway.

The ABP's RFI referenced "*WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep*", by Basner and McGuire. Equation 2 of this document is as follows:

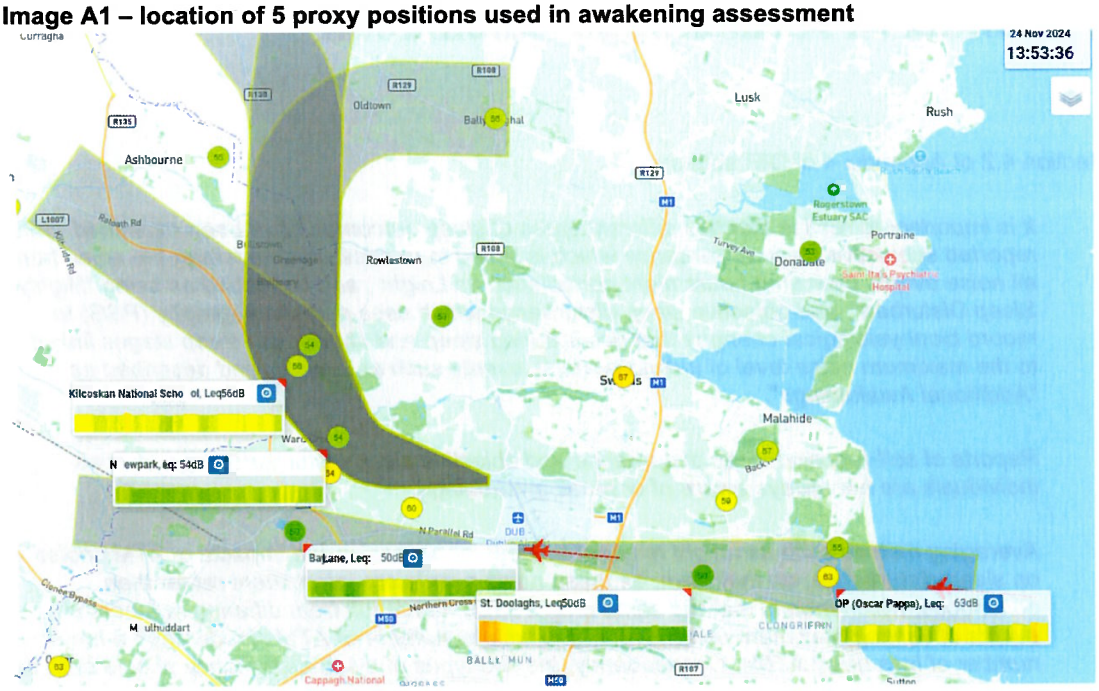
> *The equations for the probability of additional awakenings due to … aircraft noise are:*
>
> *Aircraft: Prob. Of Wake or S1 = -3.0918 - 0.0449 * $L_{AS,max}$ + 0.0034 * $(L_{AS,max})^2$ (2)*

From this equation, it is possible to calculate the number of times that one $L_{As,max}$ value would need to occur for the probability of an additional awakening to be 1. We expect it is this method that ABP were requesting within their RFI, based on the information within Appendix 5 of the DIR.

This exercise has been undertaken at 5 locations, all of which are represented by a daa noise monitoring position, as can be seen in the list and image below:

- Kilcoskan National School (daa reference NMT26);
- Newpark (daa reference NMT28);
- Bay Lane (daa reference NMT1);
- St Doolaghs (daa reference NMT2);
- Oscar Pappa / Coast Road (daa reference NMT20).

Image A1 – location of 5 proxy positions used in awakening assessment



The number of aircraft during the night-time period have been taken from Table 13B-8 of EIAR supplement Appendix 13B, which are for 2025, should the application be granted. The table also sets out that the same number of movements would be expected in 2035, with the table seen below.

Image A2 – Table 13B-8

Table 13B-8: Average Annual Day Runway Usage By Hour – Westerly Operations, Proposed Scenarios

Ho ur	2025 Proposed		2035 Proposed	
	28L (South)	28R (North)	28L (South)	28R (North)
00:00-00:59	13	1	13	1
01:00-01:59	6	1	6	1
02:00-02:59	2	0	2	0
03:00-03:59	2	0	2	0
04:00-04:59	12	0	12	0
05:00-05:59	11	0	11	0
06:00-06:59	3	27	3	27
07:00-07:59	10	30	10	30
08:00-08:59	19	16	19	16
09:00-09:59	17	16	17	16
10:00-10:59	15	16	15	16
11:00-11:59	17	16	17	16
12:00-12:59	18	15	18	15
13:00-13:59	22	20	22	20
14:00-14:59	19	16	19	16
15:00-15:59	14	26	14	26
16:00-16:59	12	19	12	19
17:00-17:59	20	19	20	19
18:00-18:59	19	17	19	17
19:00-19:59	17	25	17	25
20:00-20:59	13	15	13	15
21:00-21:59	13	14	13	14
22:00-22:59	25	9	25	9
23:00-23:59	16	3	16	3

Note: All values rounded to nearest whole number

By summing the night-time movements (2300-0700), it can be seen that there are 65 movements on 28L (southern runway). These would be split into 55 arrivals and 10 departures when the airport is operating under westerlies on a segregated runway mode.

The same approach for 28R provides a value of 32 movements, which would all be departures on the northern runway under westerlies.

Departures would be captured at noise monitoring positions NMT26, NMT28 and NMT1 and arrivals would be captured at NMT2 and NMT20.

In order to understand the noise levels that these aircraft would generate at the 5 proxy positions, data has been taken from page 15 of the airport's Quarterly Monitoring Report[3] (QMR).

Image A3 – aircraft noise levels at proxy positions

Q2 2024 Lmax and SEL Percentages in 5-decibel bands (3 months) DublinAirport

NMT	Location	Percentage of Aircraft Noise Events in each Lmax Range (dBA)						# Aircraft N Events /DAY	Percentage of Aircraft Noise Events in each SEL Range (dBA)						# Aircraft N Events
		60-64.9	65-69.9	70-74.9	75-79.9	80-84.9	85-89.9	(Av day Q1)	70-74.9	75-79.9	80-84.9	85-89.9	90-94.9	95-99.9	(Total in Q1)
1	Bay Lane		2%	22%	56%	20%	0%	56.3	0%	3%	23%	68%	5.8%	0.1%	5123
2	St. Doolaghs	0%	5%	47%	46%	1%	0%	344.1	1%	8%	68%	23%	0.8%	0.0%	31316
3	Bishopswood		21%	53%	25%	1%	0%	200.0	1%	25%	58%	15%	1.4%	0.1%	18204
4	Feltrim	22%	50%	18%	9%	0%		31.6	34%	39%	22%	4%	0.3%		2880
5	Balcultry	1%	17%	12%	21%	49%	1%	1.7	3%	14%	14%	62%	6.8%		154
6	St.Davids	0%	31%	39%	26%	2%	1%	3.1	4%	43%	21%	28%	3.6%	0.4%	280
7	Swords	10%	31%	29%	15%	14%	1%	1.0	6%	29%	31%	25%	6.9%		91
8	Malahide	27%	9%	1%	0%	0%		5.6	42%	9%	1%			0.2%	507
10	St.Margarets NS	2%	2%	39%	51%	5%	0%	215.7	2%	7%	43%	45%	2.3%	0.0%	19632
20	Coast Rd (OP)		11%	81%	8%	0%	0%	321.3		11%	81%	8%	0.1%	0.0%	29235
26	Kilcoskan NS	1%	5%	39%	50%	5%	0%	208.2	1%	5%	37%	51%	6.2%	0.0%	18948
27	Summerhill	23%	61%	15%		1%		2.4	38%	38%	7%	4%	4.1%		217
28	Newpark	0%	11%	21%	58%	9%	0%	211.9	4%	8%	19%	62%	6.8%	0.2%	19287
29	Ashbourne	14%	62%	22%	2%			10.3	36%	48%	12%	2%	0.1%	0.1%	934
30	Roundwood				100%			0.0				100%			1
31	Dunboyne	16%	70%	14%	0%	0%	0%	24.4	26%	61%	12%	1%	0.1%		2223
32	Donabate		61%	25%	14%			0.3	14%	43%	36%	7%			28
33	Ardgillan	21%	46%	29%	4%			0.4	38%	29%	17%	8%			33
206	Ratoath	25%	60%	13%	2%	0%		59.9	24%	57%	14%	2%	0.0%	0.0%	5447

The World Health Organisation (WHO) Night Noise Guidelines for Europe 2009 (NNG 2009) provide information on the average annual noise reduction provided by a window, assuming it is partially open for 20% of the year. This allows for a comparison of awakenings before and after the proposals, as was requested by ABP.

Three values for the annual average glazing noise reduction have been used. These are 21 dB (taken to represent non-acoustic glazing) and 22 dB (taken to represent upgraded acoustic glazing). A third value of 15 dB has been used, taken from Mr Fiumicelli's evidence for the Bristol Airport expansion appeal. These three reductions provide the following number of awakenings at each proxy position as set out within **Table 1**.

[3] Quarterly Noise and Flight Track Monitoring Report April - June (Q2) 2024

Table 1 Calculated additional awakenings per night

Annual Average Glazing Reduction	NMT26	NMT28	NMT1	NMT2	NMT20
15 dB	1.8	1.9	0.6	3.0	2.6
21 dB	1.3	1.3	0.5	2.1	1.7
22 dB	1.3	1.3	0.5	2.1	1.7

For SMTW residents who were not previously overflown at night, the above values (at NMT26 and NMT28) represent an increase from zero additional awakenings.

Appendix H – Anderson Acoustics Report

Anderson Acoustics

Dublin Airport

Departure profiles noise investigation

October 2024

Jack Naumann MIOA

Ref: 7669_001R_1-0_JN

Contents

Objective of this study

To provide an understanding of the implications for noise exposure of flights using ICAO A or ICAO B for local communities relative to today's operation and relative to one another.

The approach (using AEDT 3G throughout):

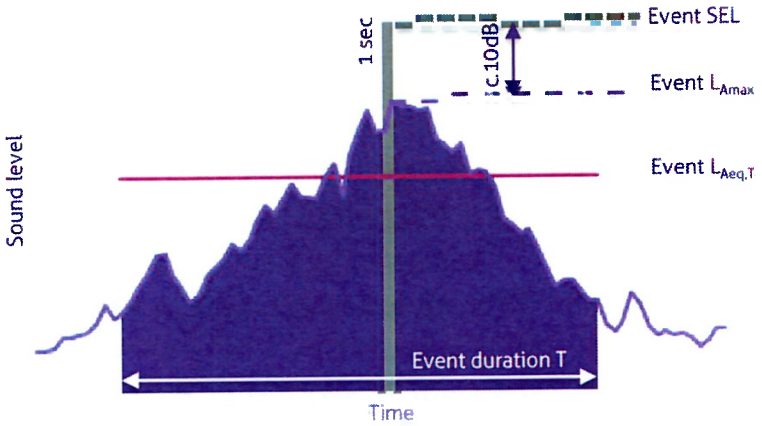
1. To identify and understand the sound level differences between the ICAO A and ICAO B procedures for individual aircraft types.
   - We have selected the 737-800 and A320 as the two most common aircraft operating at Dublin Airport in addition to the 777-300ER as the loudest aircraft.
2. To model today's baseline scenario on one full day of easterly and one full day of westerly operations in summer 2024 to generate single day $L_{Aeq,16hr}$ sound levels;
   - Westerly day: 15/08/2024
   - Easterly day: 31/08/2024
3. To use track analysis tools to understand the degree to which ICAO A and ICAO B are used across the days provided;
4. Apply the ICAO A procedures to the full day selected, and apply the ICAO B procedures to the full day selected;
5. Throughout the above identify communities where change may occur.

Metrics:

Long-term average ($L_{Aeq,16hr}$) and event based (SEL) descriptors of noise exposure.

Noise events

As an aircraft passes over a location, noise levels slowly increase from ambient levels, reach a maximum and decrease back down to ambient levels. An example flyover is shown below.



There are a number of metrics that can then be used to characterise a noise event and are generally present in measurements and can also be derived from modelling:

- The L_{Amax} is the highest sound pressure level during the event, it is an instantaneous value, this is used typically with noise limits;
- The $L_{Aeq,t}$ is the continuous sound pressure level that would generate the same energy as that of the fluctuating noise level during the event of period T. It is in effect the average noise level over the time of the event;
- The SEL (sound exposure level or single event level), is the sound pressure that would arise for if all the energy of the event were to be delivered in 1 second it is useful for comparing events.
- The SEL for individual aircraft events has been derived using modelling for this analysis. This analysis has not used measured data.

Long term noise exposure

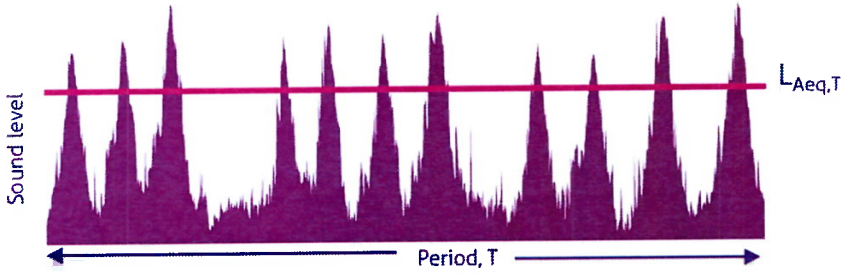
The standard approach for describing noise exposure is to use the Equivalent Continuous Sound Pressure Level ($L_{Aeq,T}$).

The $L_{Aeq,T}$ is used to describe the equivalent continuous and steady sound level which would contain the same sound energy as the time varying sound over that time T.

An example, showing typical sound levels over time under a busy flight path is given in the figure below.

This metric can be applied to any period. In UK aviation policy the average 92 day Summer Contours are the $L_{Aeq,16hr}$ average over the official summer period. It is also used with the L_{den} metric.

In the work reported herein the $L_{Aeq,16hr}$ has been derived for single westerly and easterly 16hr days (07:00-23:00) and is used to describe overall/average noise exposure on a single day.



Contents

Methodology.

Modelled not measured:

The differences between the procedures are likely to be experienced over a wide area. This investigation has therefore used modelling techniques to understand theoretical differences between the two procedures.

AEDT model:

AEDT 3G has been used for the analysis (see the following slide for a summary of our approach to modelling). AEDT is the US FAA's commercially available noise model tool. It is the most commonly used noise modelling software.

Aircraft Events:

We have derived and reviewed differences between SELs for events of specific aircraft types with ICAO A and ICAO B comparing them on the same easterly and westerly tracks. The differences between each procedure will vary depending on stage length and aircraft type, typical examples have been used to illustrate.

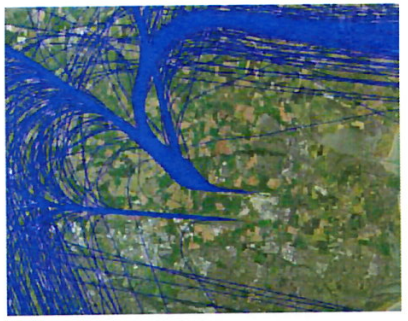
On the day average noise levels:

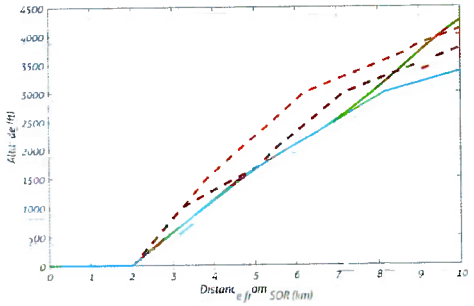
$L_{AEq,16hr}$ noise levels for one day of westerly and one of easterly operations have been modelled. The "as-is" (using the "best-fit" approach) has been compared with two scenarios – one where all departures have been shifted to be on an equivalent ICAO A procedure & another if all tracks were using ICAO B.

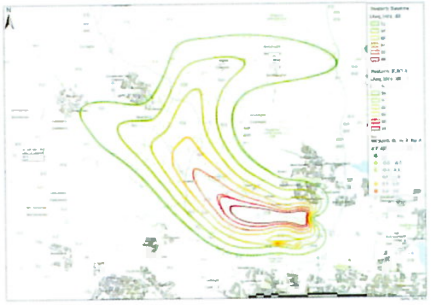
Best fit climb profiles:

Flight track analysis tools have been used to infer which is the best fit climb profile from the actual track.

Note: This is not, nor is it intended to be, an exhaustive analysis – it is to provide indicative understanding of potential differences between departure procedures.





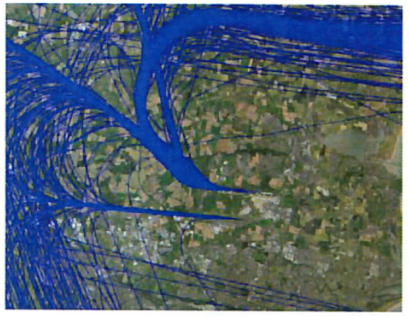


Our approach to noise modelling.

Traditional approach:

Noise modelling of departures is based on a set of "backbone" tracks and climb profiles derived from the distance to the destination (city-pair distance).

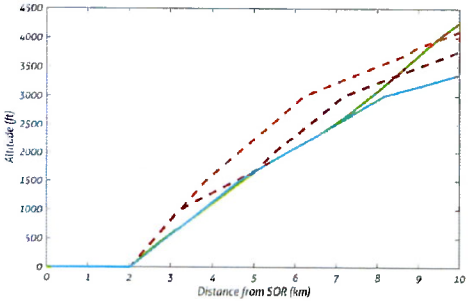
Aircraft are distributed across the backbone tracks based on analysis of NTK system data to derive dispersion; and, climb profiles (which determine thrust characteristics) are determined based on city-pair distances to derive groups of stage length, (used as a proxy for weight) - the selection of ICAO A or B is based on assumptions understanding an airline's procedure.



Our track-based modelling:

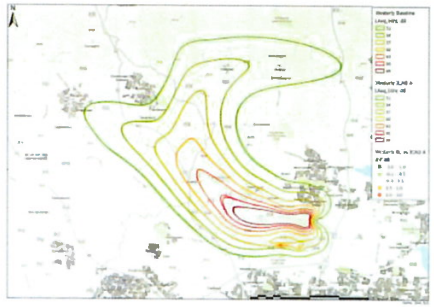
Every departure track is modelled – dispersion "backbones" are not used. Our tools enable us to identify the AEDT climb profile that best fits the actual and determine whether the procedure was closest to ICAO A or ICAO B.

This provides, on average, significantly more reliable and accurate noise level for each aircraft.



Independently verified:

Our track-based approach has been verified in our work at Heathrow and has been found to reliably reflect average measured noise levels at a variety of distances from the airport.



"Best-fit" profile matching enables us to derive the procedure adopted and, on average, much more reliable noise level prediction.

A key element in the process of predicting noise levels is to select the right stage length and procedure.

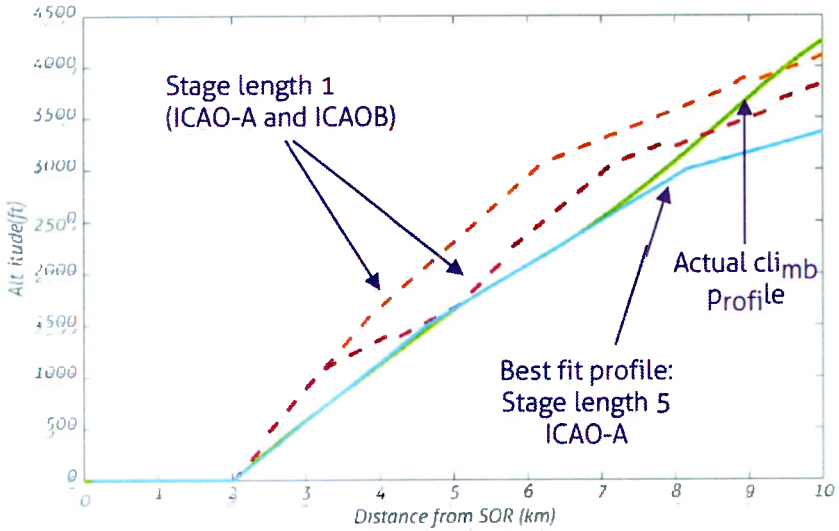
The traditional approach has generally been found to underestimate noise levels as the profile selected is often a lower stage length - aircraft are higher and therefore modelled noise levels lower.

An example of the improved reliability of our "best fit" profile matching is presented here using a 737-800 flying to Edinburgh.

The green line is the actual climb profile from the radar track data. The orange and red lines are the climb profiles that would have resulted from traditional city-pair distance approach (Stage length 1).

The selected "best-fit" profile was the ICAO A SL5 which can be seen to be a much better fit than the standard city-pair profile.

It should be noted that whilst this process is not 100% accurate (in this example the two profiles deviate beyond 8km from SOR) it significantly improves noise level predictions on average.



Contents

What are NADP-1 and NADP-2?

There are two standard families of noise abatement departure procedures developed by ICAO:

- The NADP-1 family is designed to reduce noise levels for those communities considered close-in;
- The NADP-2 family is designed to reduce noise levels for those communities further out.

The principal difference is the order in which thrust is cutback to climb thrust relative to flap/slat retraction and acceleration.

NADP-1 – 'close in'

- Based on the application of thrust cutback before flaps and slats retraction. Climb thrust is selected at reaching a certain altitude (typically around 1,000-1,500 ft).
- At another altitude (often around 3,000 ft), pitch angle is reduced such that the aircraft will climb and accelerate simultaneously. As speed increases, flaps and slats are retracted on schedule.
- Aims to deliver noise reduction for areas located close to the airport.

ICAO A

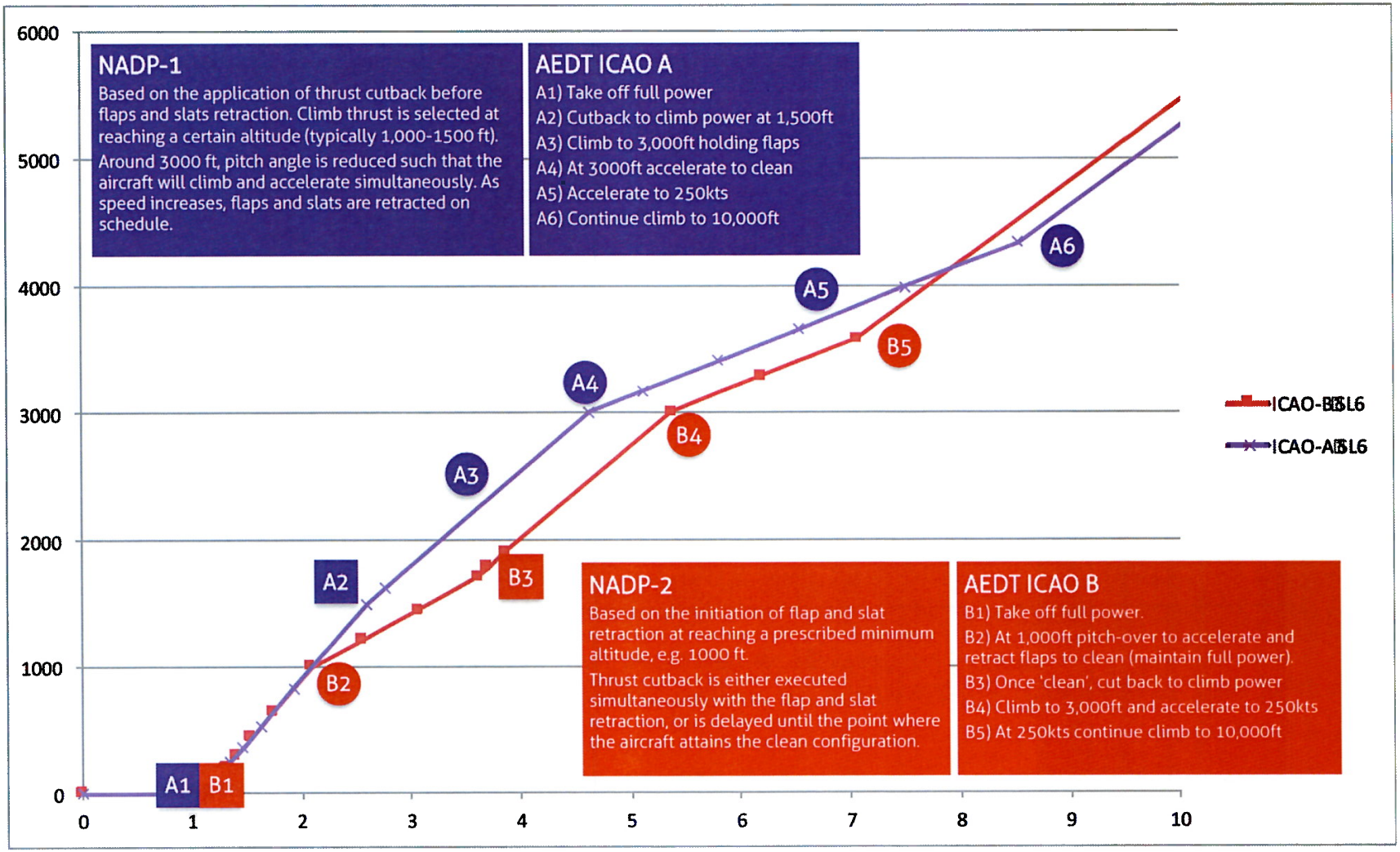
NADP-2 – 'further out'

- Based on the initiation of flap and slat retraction at reaching a prescribed minimum altitude, e.g. 1,000 ft.
- Thrust cutback is either executed simultaneously with the flap and slat retraction, or is delayed until the point where the aircraft attains the clean configuration.
- This procedure intends to provide noise reduction areas further from the airport.

ICAO B

What do these procedures look like?

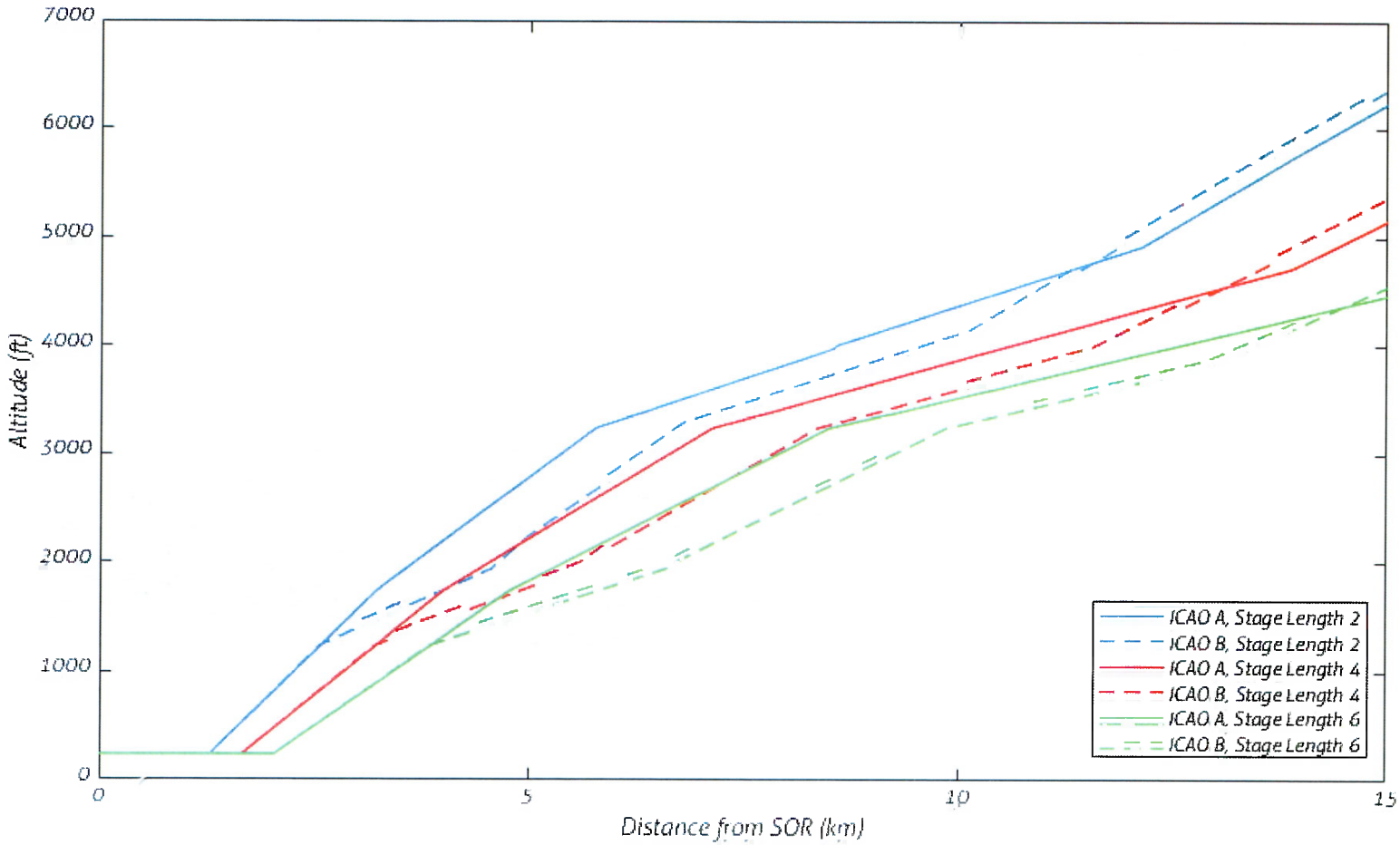
Two typical profiles for the same aircraft and flight distance are presented below for ICAO-A and ICAO-B



Climb profile and Stage Length.

AEDT uses the concept of a Stage Length (SL) as a proxy for the weight of the aircraft – higher SL, greater distance, heavier aircraft, reduced climb gradient.

The figure below presents the effect of SL on the climb profile for the ICAO A and ICAO B procedures. For a given SL the profile is the same to 1,000ft and they broadly come back together again around 4,000ft .



What difference does procedure make to aircraft event noise levels? Presentation of results using GIS.

Aircraft events: SEL contours:

On the following pages we present typical 90 dBA (pink) and the 80 dBA SEL contour (blue) for the ICAO A (solid) and ICAO B (dashed) procedures for specific aircraft types on a NW heading, derived from our model (an example is shown to the right).

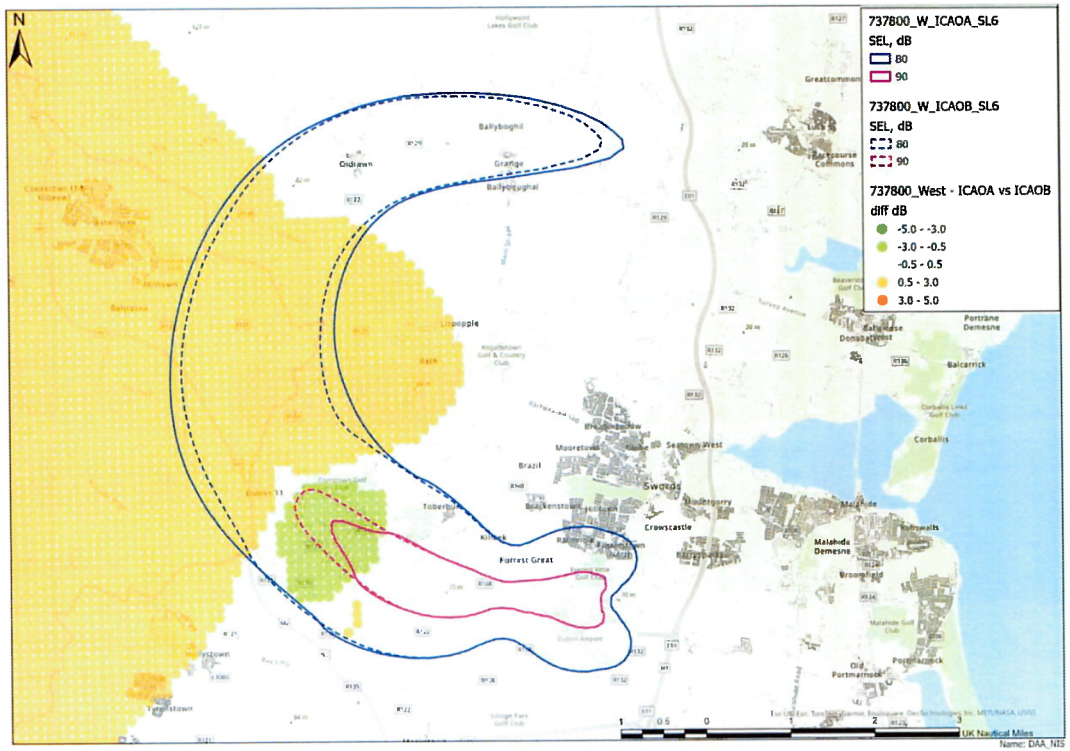
SEL difference:

The difference in the SEL between the ICAO-A and ICAO-B procedures is presented as a "heat" map. This indicates the differences over a wider area than those just that presented by the contours

The orange area indicates where the SEL for ICAO-A is higher than that for ICAO-B; the green area indicates areas where the SEL from ICAO-A is higher than that for ICAO-B.

Population density:

The grey spots provide an indication of areas of population



What difference does procedure make to aircraft event noise levels?

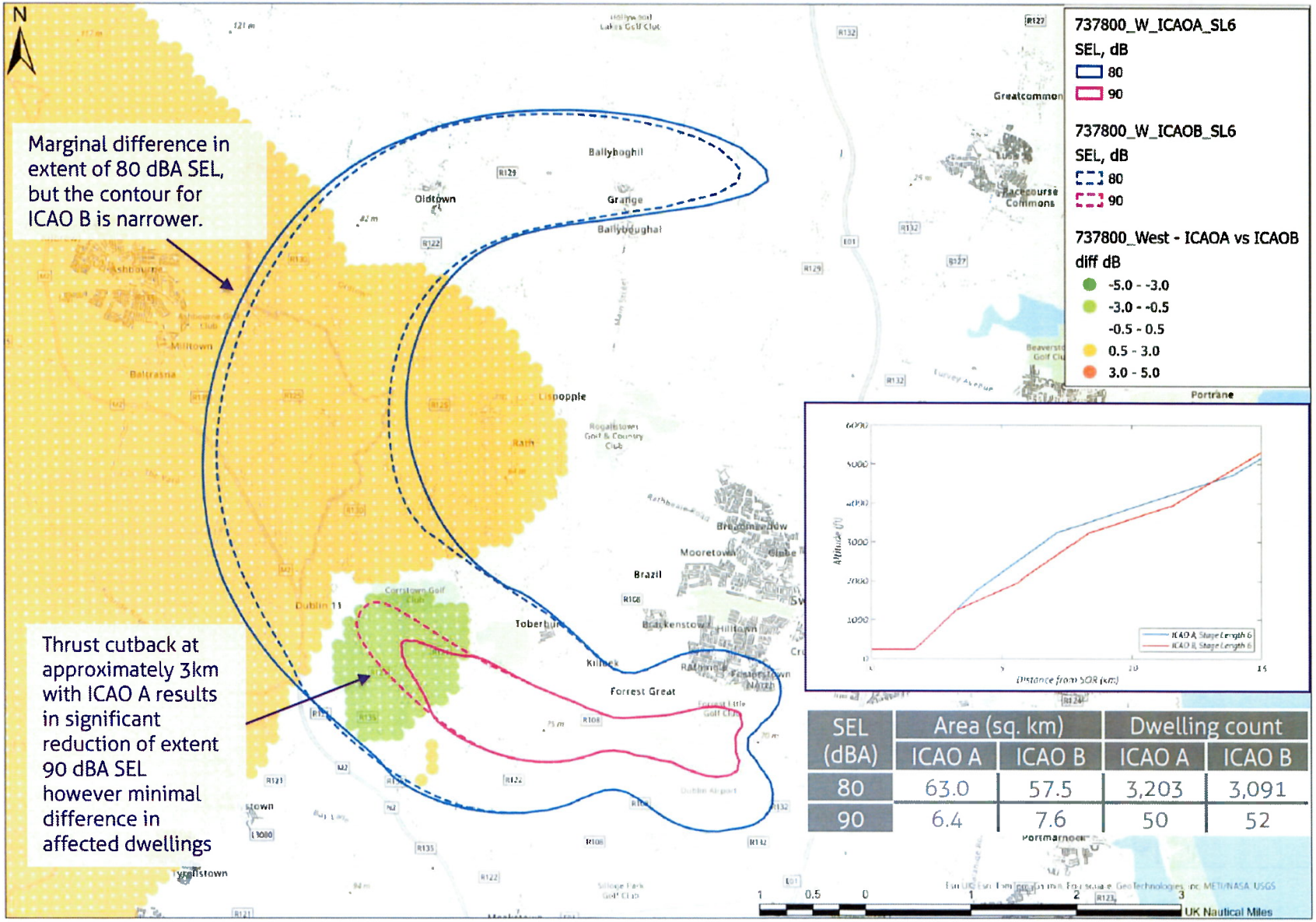
Summary

The images to the right present the difference and SEL contours for specific examples of the 737-800, A320, and 777-300ER aircraft. The selected stage length was based on the most common stage length (based on profile matching) flown by each aircraft type. The following pages present these in larger form.

- It is noted that the magnitude and pattern of difference for each aircraft type is different.
- Depending on the location relative to the flight path, there is between an approximately 4dB difference between the ICAO A and ICAO B procedures.
- Generally, the most substantial benefits of using the ICAO A procedure are directly below the flight path around the end of the 90dB SEL contour. The benefits of using the ICAO B procedures are further out across a wider swath either side of the flight path
- There is, broadly speaking, a common area that experiences benefits with all the types that is approximately 5-8km from start of roll .

What difference does procedure make to 737-800 event noise levels?

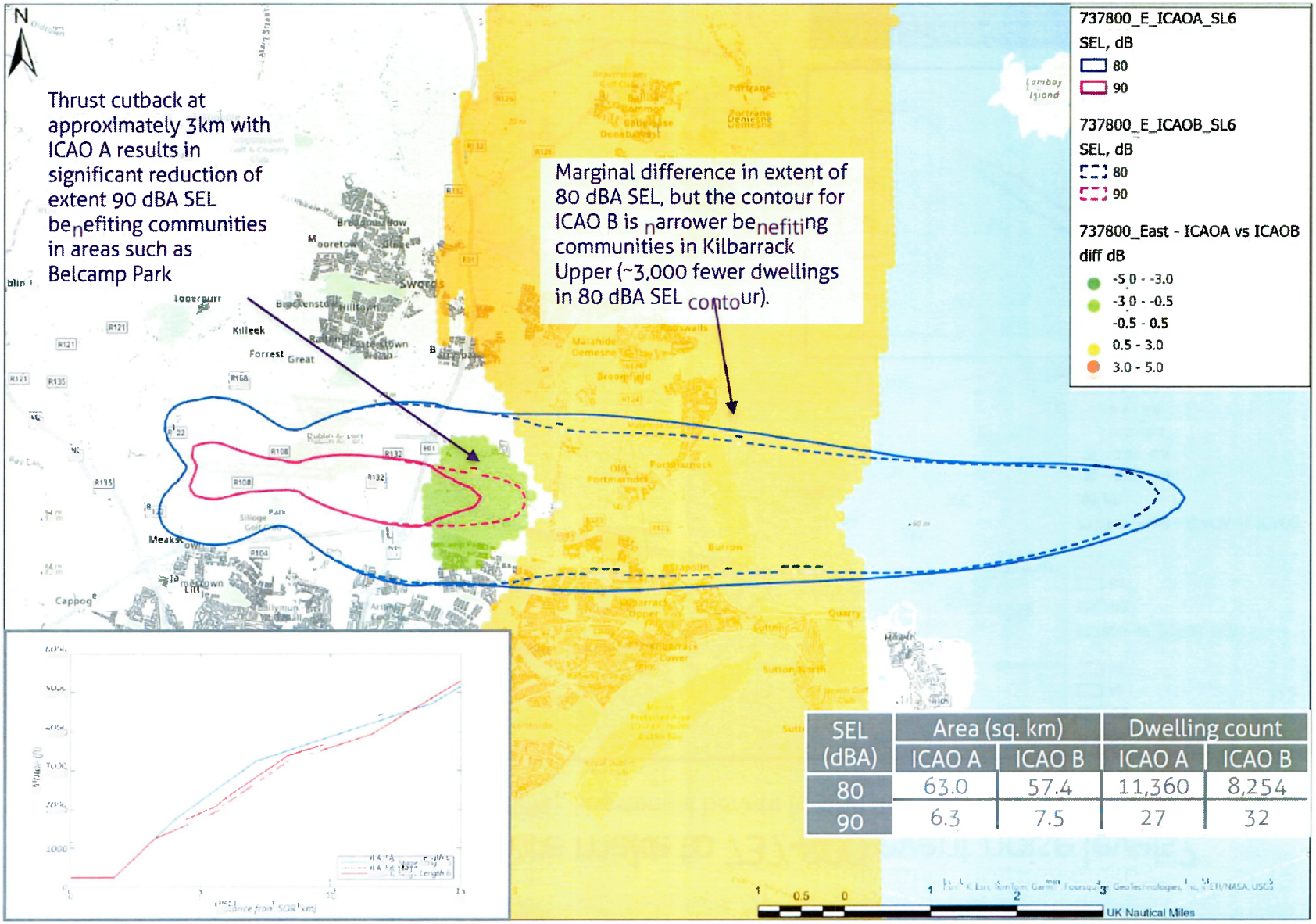
Data indicates ICAO A currently dominates (~82%). Substantial benefit (c.3dB) from ICAO A around 90 dBA SEL, 5.5km from start of roll.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
80	63.0	57.5	3,203	3,091
90	6.4	7.6	50	52

What difference does procedure make to 737-800 event noise levels?

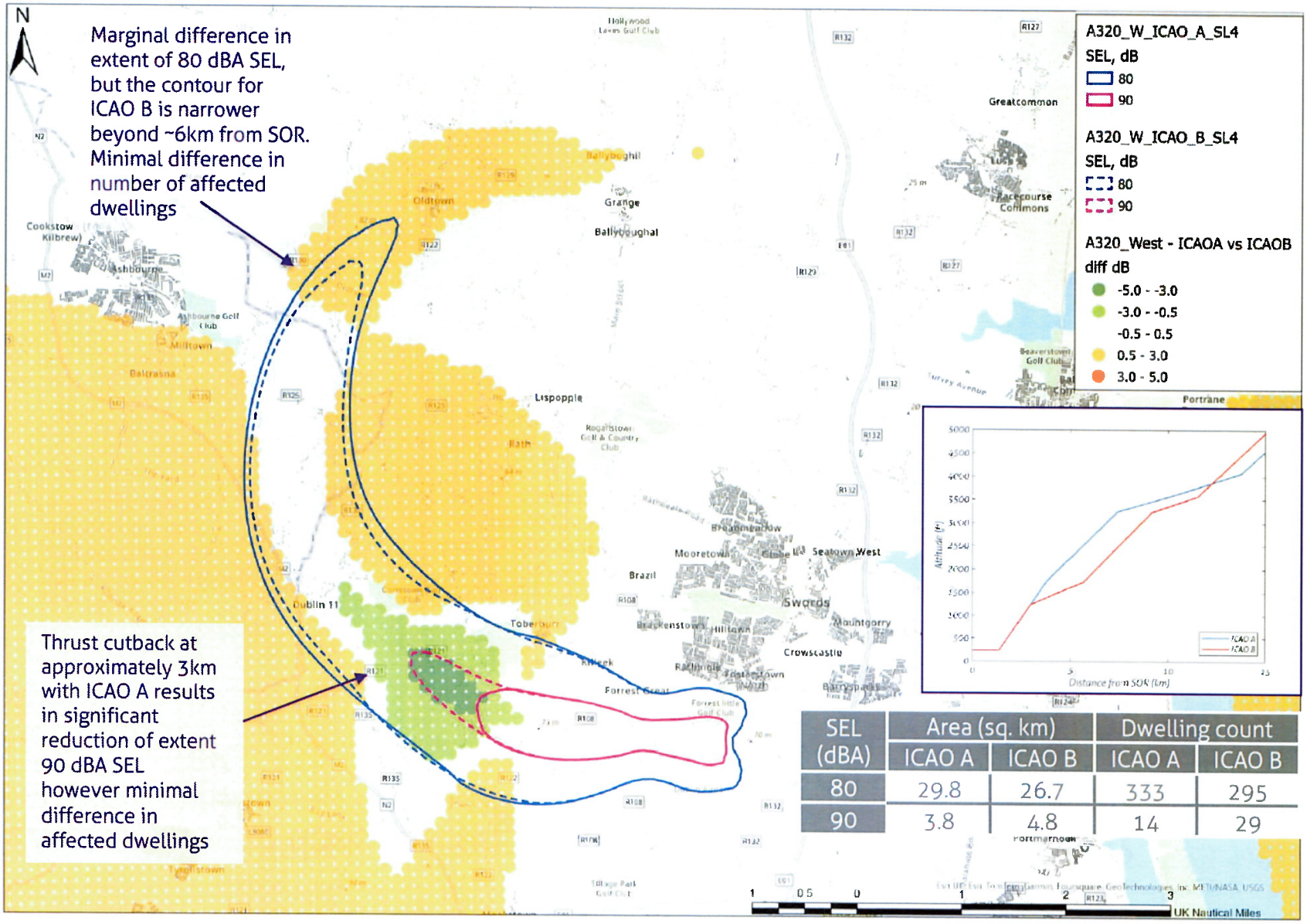
Data indicates ICAO A currently dominates (~82%). Substantial benefit (c.3dB) from ICAO A around 90 dBA SEL, 5.5km from start of roll.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
80	63.0	57.4	11,360	8,254
90	6.3	7.5	27	32

What difference does procedure make to A320 event noise levels?

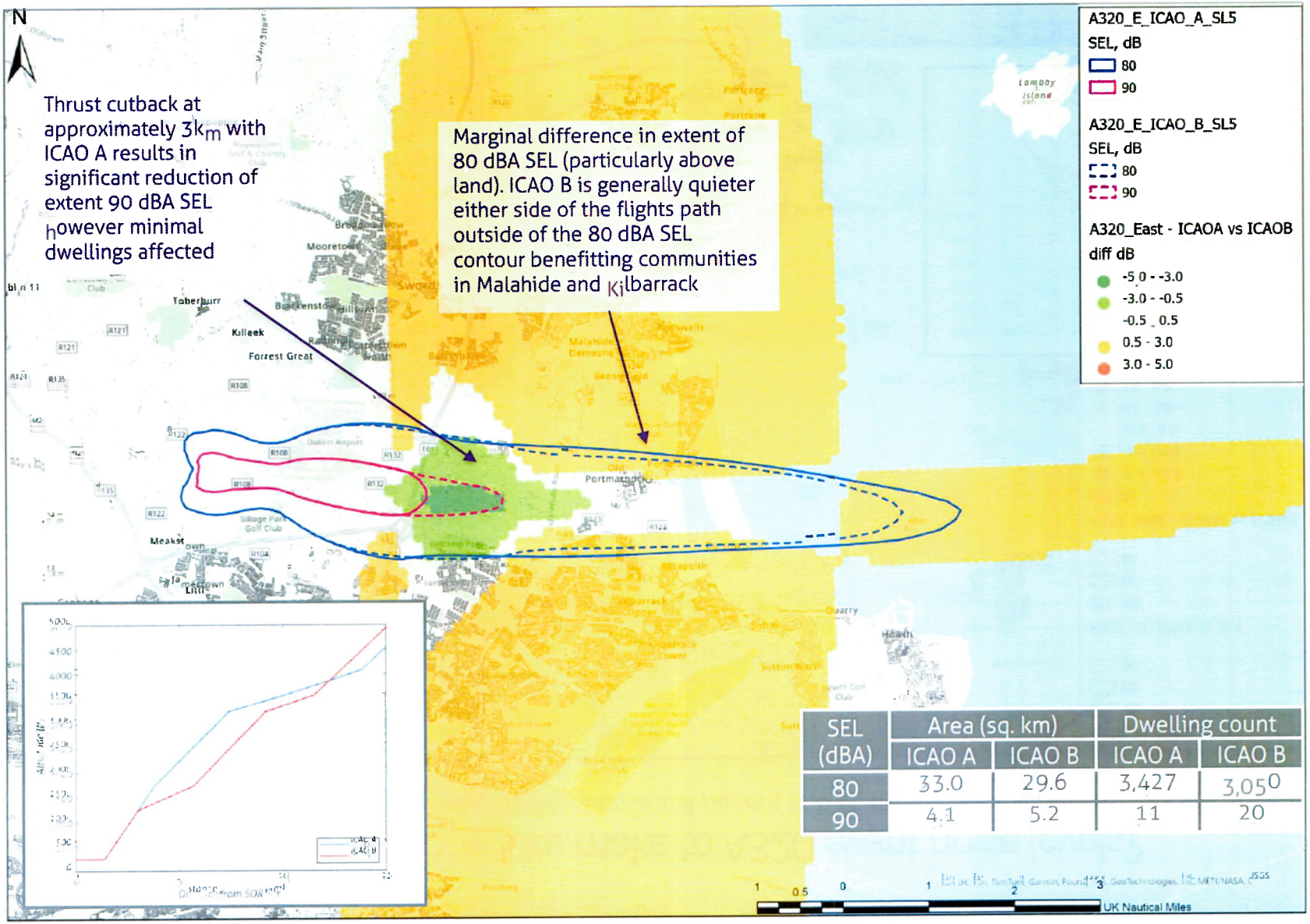
Data indicates ICAO A currently dominates (~96%). Substantial benefit (c.4dB) from ICAO A around 90 dBA SEL, 5km from start of roll.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
80	29.8	26.7	333	295
90	3.8	4.8	14	29

What difference does procedure make to A320 event noise levels?

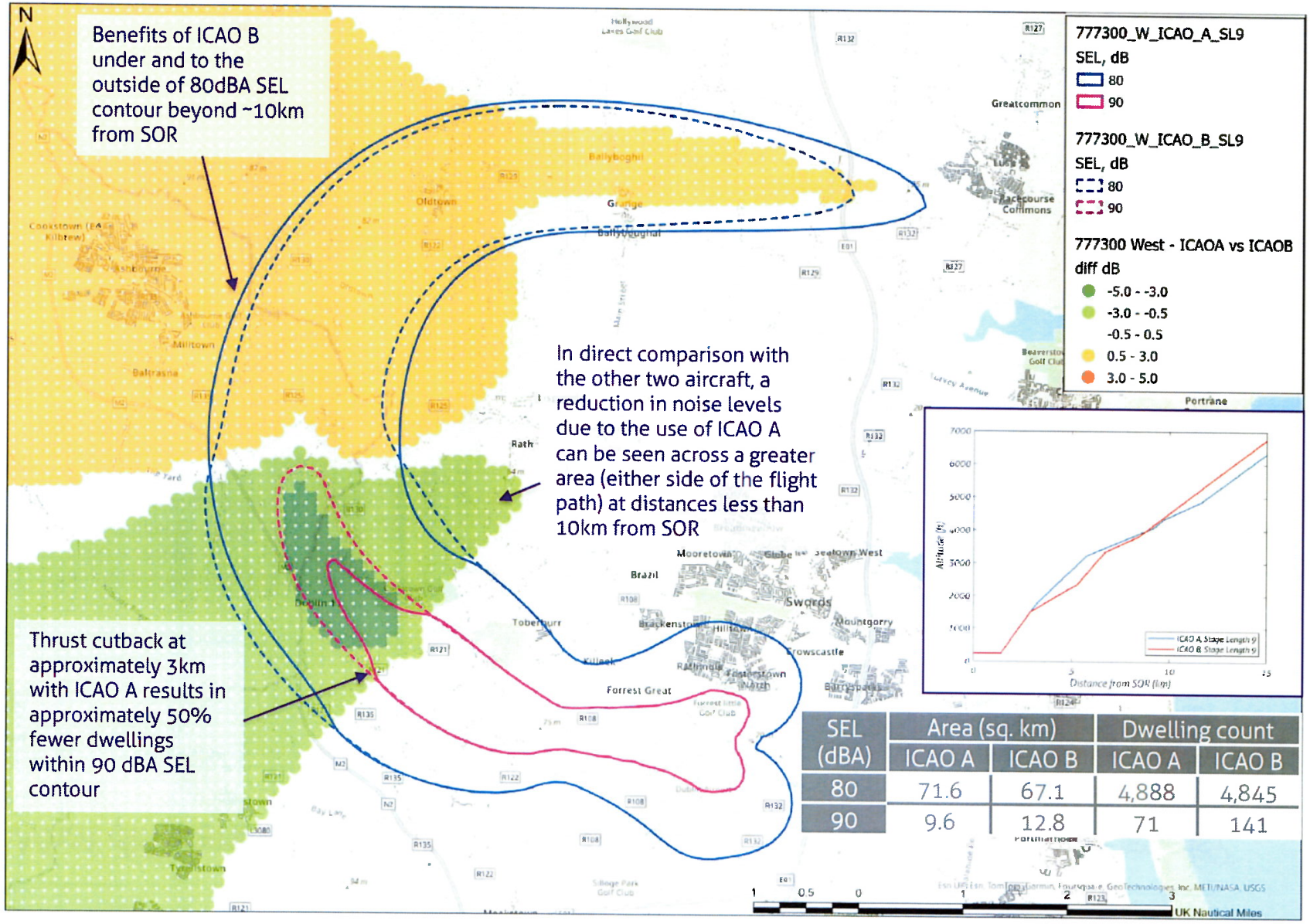
Data indicates ICAO A currently dominates (~96%). Substantial benefit (c.4dB) from ICAO A around 90 dBA SEL, 5km from start of roll.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
80	33.0	29.6	3,427	3,050
90	4.1	5.2	11	20

What difference does procedure make to 777-300ER event noise levels?

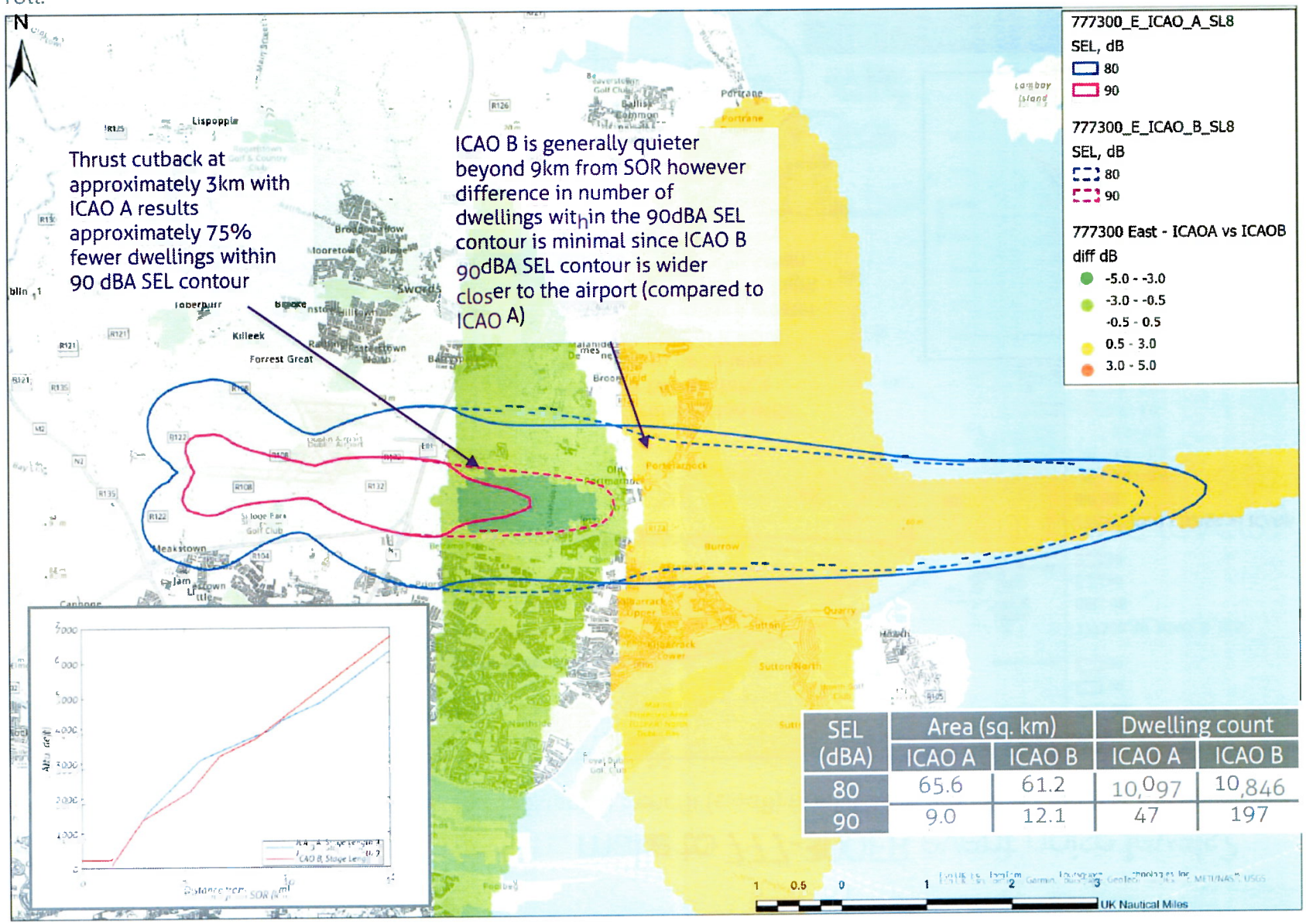
Data indicates ICAO A currently dominates . Substantial benefit (c.4dB) from ICAO A around 90 dBA SEL, 7kmfrom start of roll.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
80	71.6	67.1	4,888	4,845
90	9.6	12.8	71	141

What difference does procedure make to 777-300ER event noise levels?

Data indicates ICAO A currently dominates . Substantial benefit (c.4dB) from ICAO A around 90 dBA SEL, 5.kmfrom start of roll.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
80	65.6	61.2	10,097	10,846
90	9.0	12.1	47	197

What effect does stage length (i.e. height) have on aircraft event noise levels?

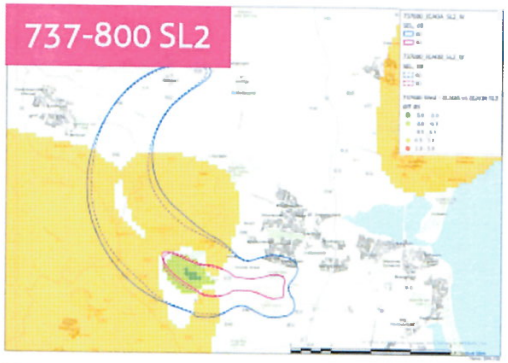
Summary

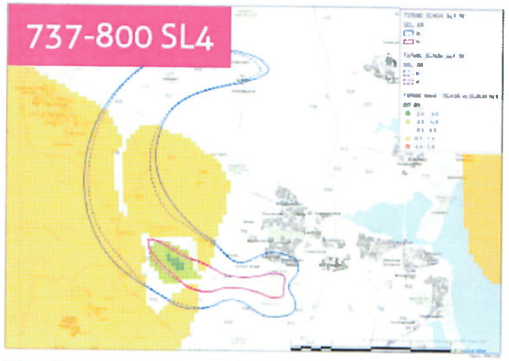
Stage length is the proxy that AEDT uses for the height element of the climb profile. A lower stage length number implies a shorter flight resulting in a higher aircraft.

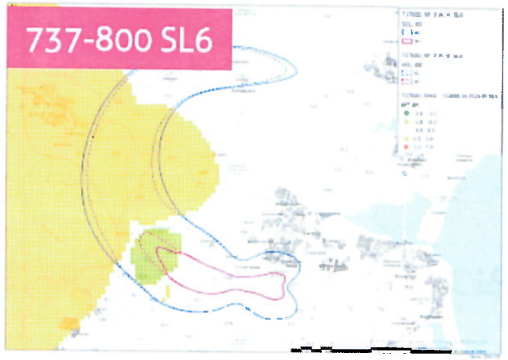
The images to the right present the difference and SEL contours for Stage Lengths (SLx) 2, 4 and 6 for an 737-800 aircraft. The following 3 pages present these in larger form.

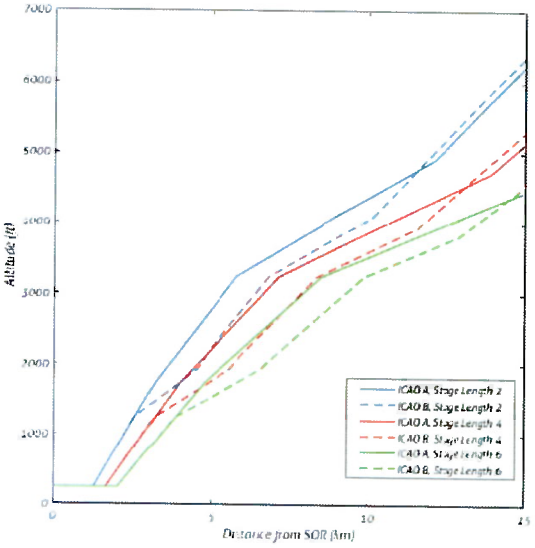
It can be seen that the noise levels are lower within the 90dBA SEL contour directly under the flight path on ICAO A departures. This area moves away from the airport with increasing stage length.

On ICOA A departures, the 737-800 is substantially higher than with ICAO B at a given distance and stage length – especially in the 4-6km range. This additional height (resulting in a more direct line of sight and less ground attenuation) contributes to the worsening of sideline noise.



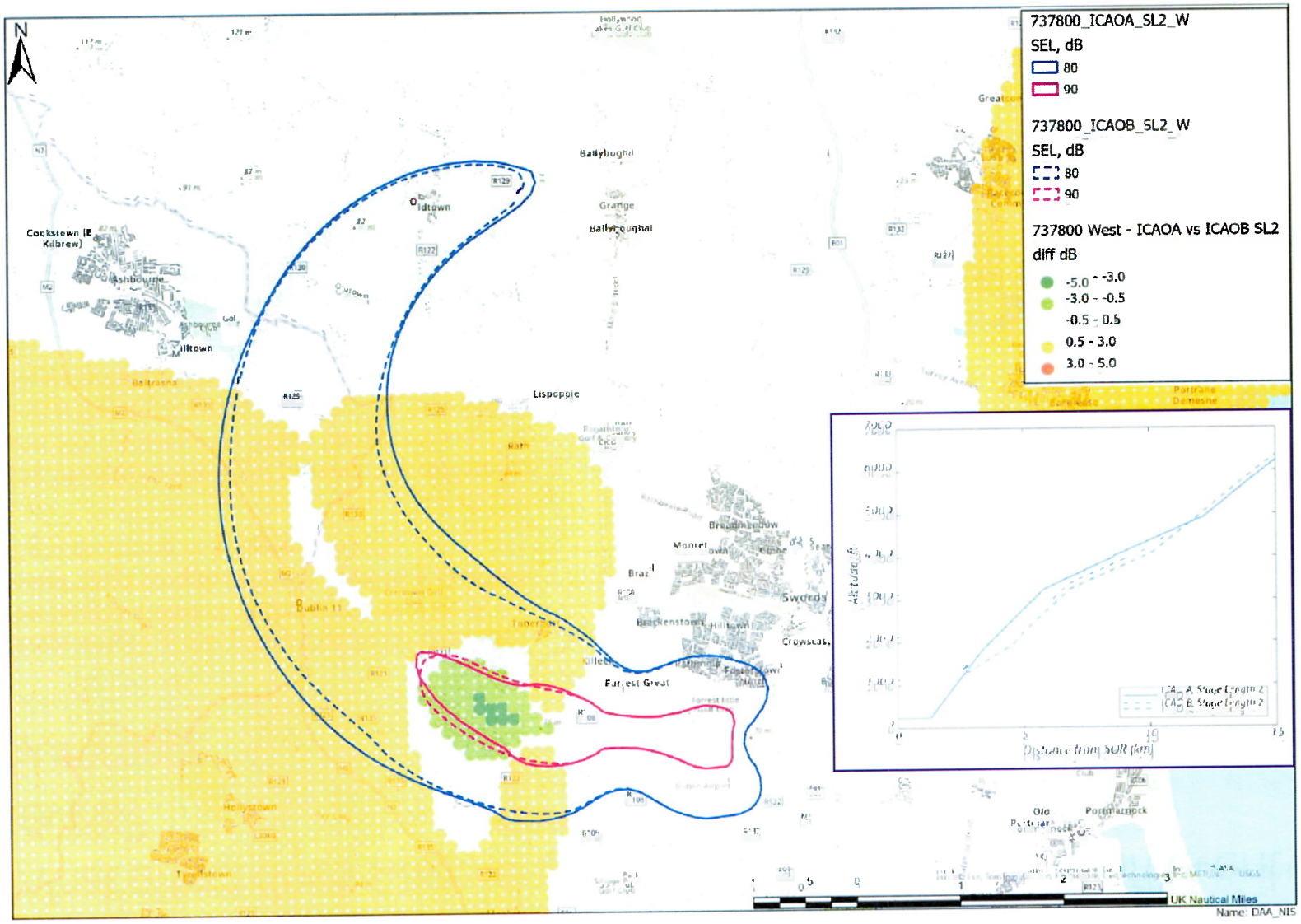






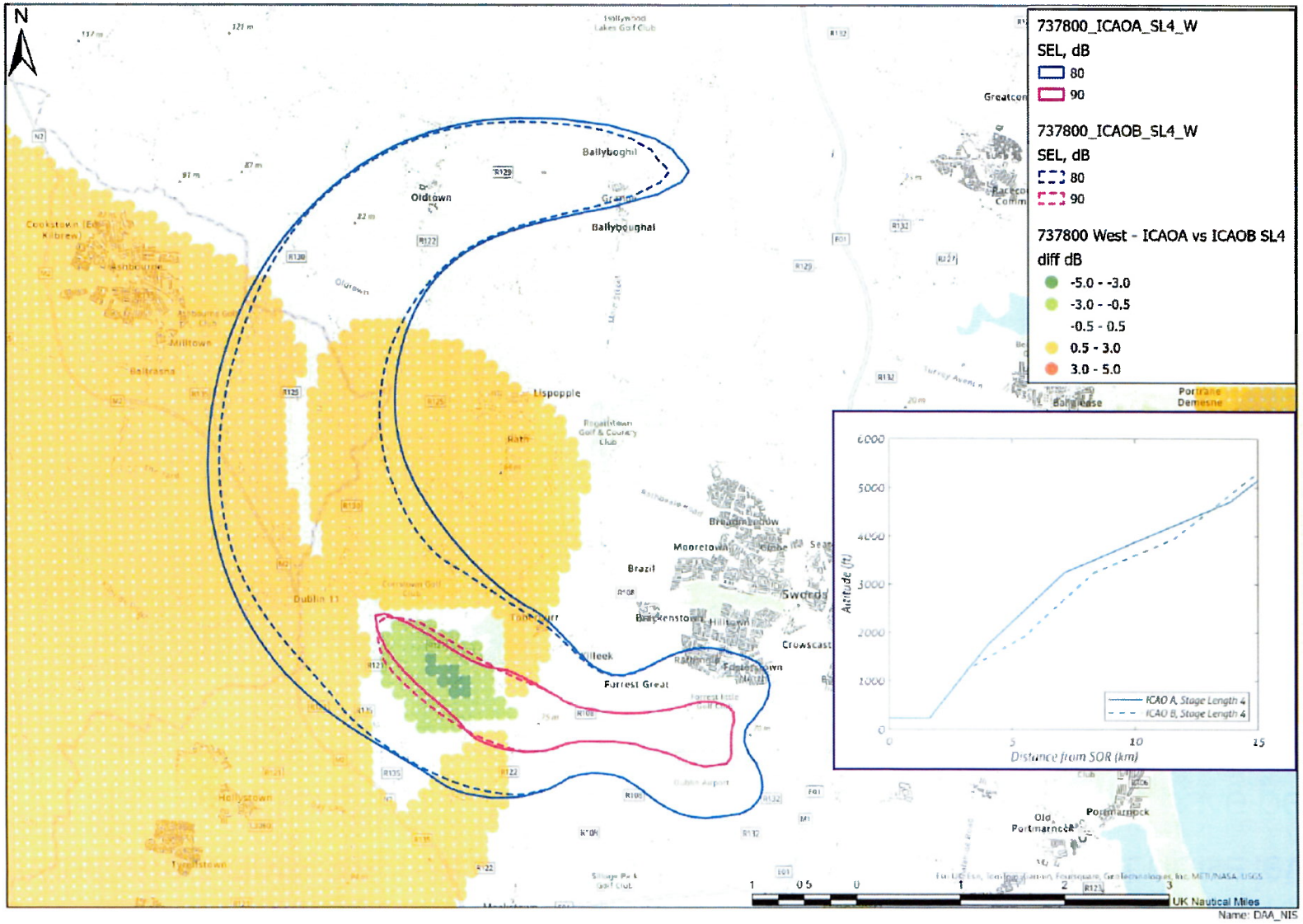
What effect does stage length (i.e. height) have on aircraft event noise levels?

737-800 Stage Length 2



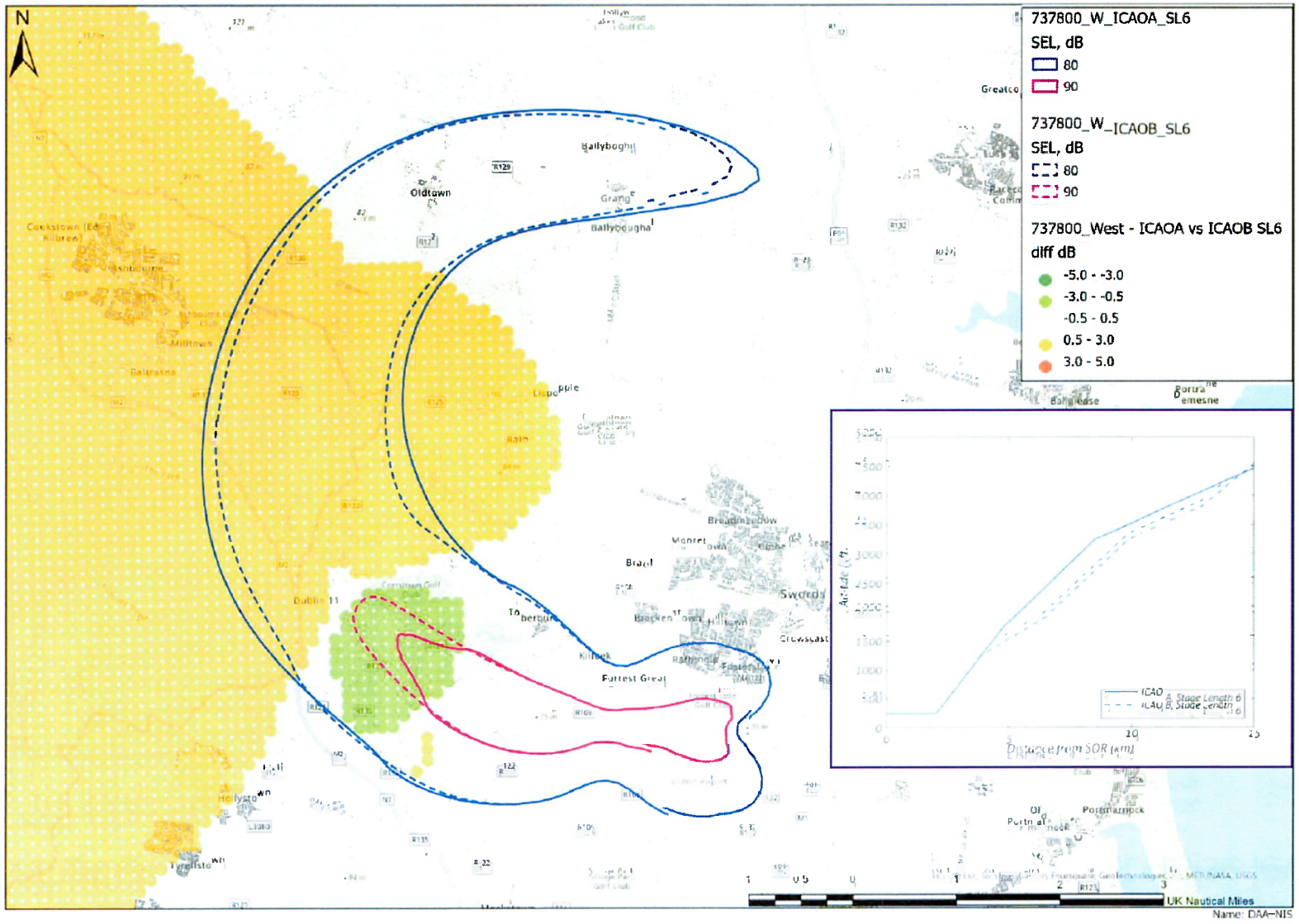
What effect does stage length (ie height) have on aircraft event noise levels?

737-800 Stage Length 4



What effect does stage length (ie height) have on aircraft event noise levels?

737-800 Stage Length 6



Contents

Procedure analysis indicates ICAO-A (or equivalent) is dominant

- Of more than 650 departure tracks analysed, around 73% are ICAO-A or an equivalent, the remainder are ICAO-B or an equivalent.
- The proportion of ICAO A departures appears to be greater (84%) when the airport is on westerly operations.

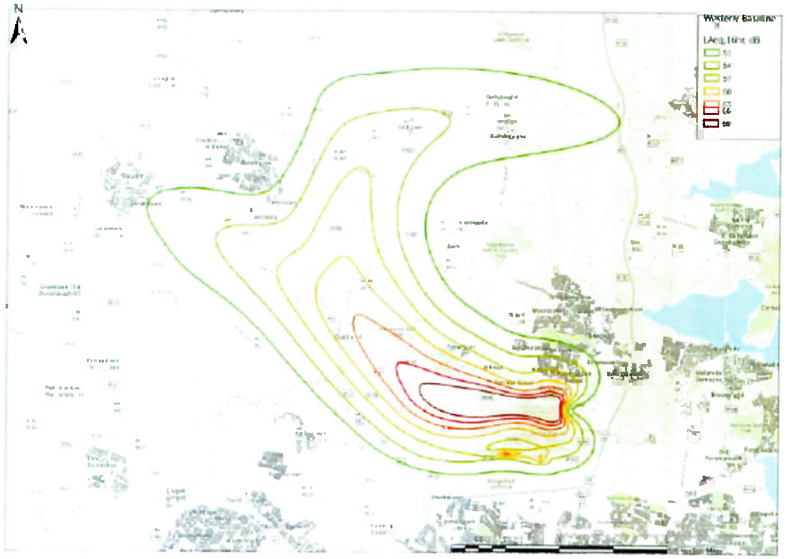
Departure Procedure	Westerly	Easterly	All
ICAO A	84%	61%	73%
ICAO B	16%	39%	27%
Total	100%	100%	100%

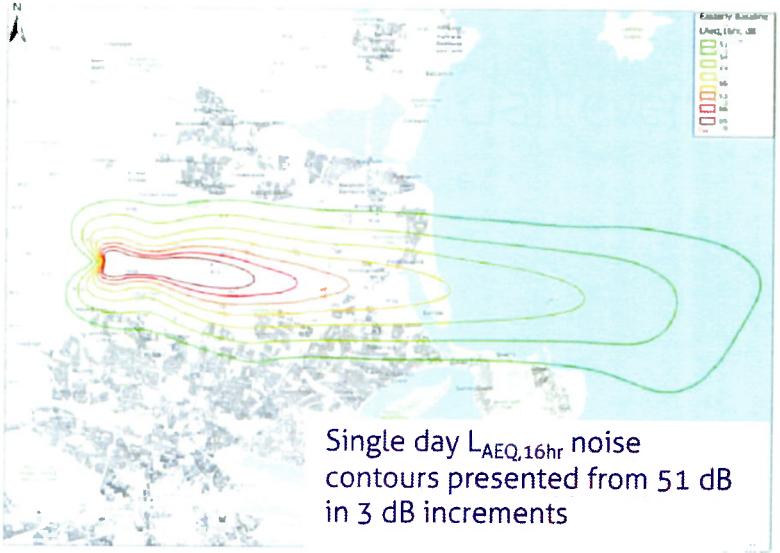
- [redacted] appear to have preference for flying for ICAO A on westerly departures and ICAO B on easterly departures
- [redacted] tend to fly ICAO A regardless of wind direction

Airline	Westerly			Easterly			Total			Total %		
	ICAO A	ICAO B	Total	ICAO A	ICAO B	Total	ICAO A	ICAO B	Total	ICAO A	ICAO B	Total
[redacted]	111	25	136	42	88	130	153	113	266	58%	42%	100%
[redacted]	74	7	81	76	12	88	150	19	169	89%	11%	100%
[redacted]	36	0	36	32	0	32	68	0	68	100%	0%	100%
[redacted]	3	4	7	3	4	7	6	8	14	43%	57%	100%
[redacted]	4	1	5	3	1	4	7	2	9	78%	22%	100%
[redacted]	3	1	4	3	2	5	6	3	9	67%	33%	100%
[redacted]	2	2	4	5	0	5	7	2	9	78%	22%	100%
[redacted]	4	0	4	4	0	4	8	0	8	100%	0%	100%
[redacted]	2	3	5	1	1	2	3	4	7	43%	57%	100%
[redacted]	1	2	3	2	2	4	3	4	7	43%	57%	100%
Other	47	9	56	28	16	44	75	25	100	75%	25%	100%
Total	287	54	341	199	126	325	486	180	666	73%	27%	100%

Contents

Daytime average noise levels: Average noise ($L_{Aeq,16hr}$) contours have been derived for one easterly day and one westerly day.





Single day $L_{AEQ,16hr}$ noise contours presented from 51 dB in 3 dB increments

Contents

Investigating the difference change of procedure would make to overall average noise levels.

Average $L_{Aeq,16hr}$ noise contours have been developed for a **single westerly and a single easterly day** using the "best fit" profile method described previously – this had approximately 84% ICAO A, 16% ICAO B on westerly operations and 61% ICAO A and 39% ICAO B on easterly operations.

The implications for these westerly and easterly days have been investigated using the following two cases:

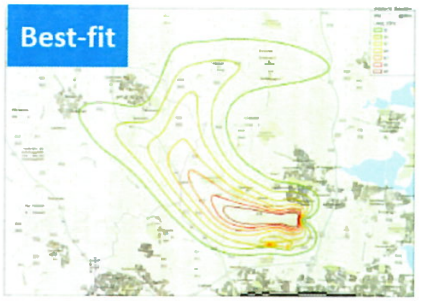
- All flights with an ICAO A profile; and
- All flights with an ICAO B profile.

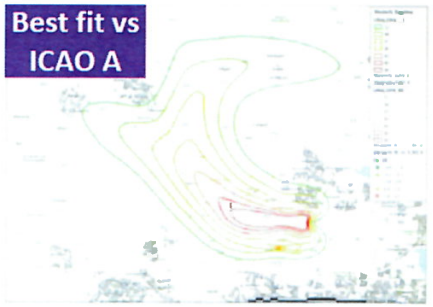
Differences have been derived and mapped using GIS:

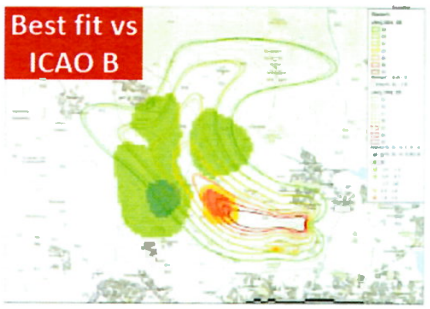
- between the current best fit and ICAO A result;
- between the current best fit and ICAO B result;
- between a case where all flights ICAO A and where all flights were ICAO B.

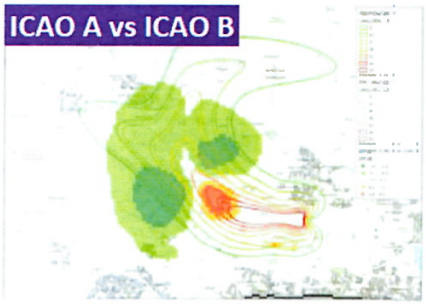
In summary, the results indicate that the choice of departure procedure would have a minimal impact on the number of dwellings within key contours on westerly operations however on easterly operations communities around Dublin Airport may experience a modest benefit from the adoption of an ICAO-B type procedure.

This analysis has made an implicit assumption that the average climb profile stage-length would be the same if flying ICAO-A or ICAO-B, ie a SL5 ICAO-B departure would move to an ICAO-A SL5 departure.

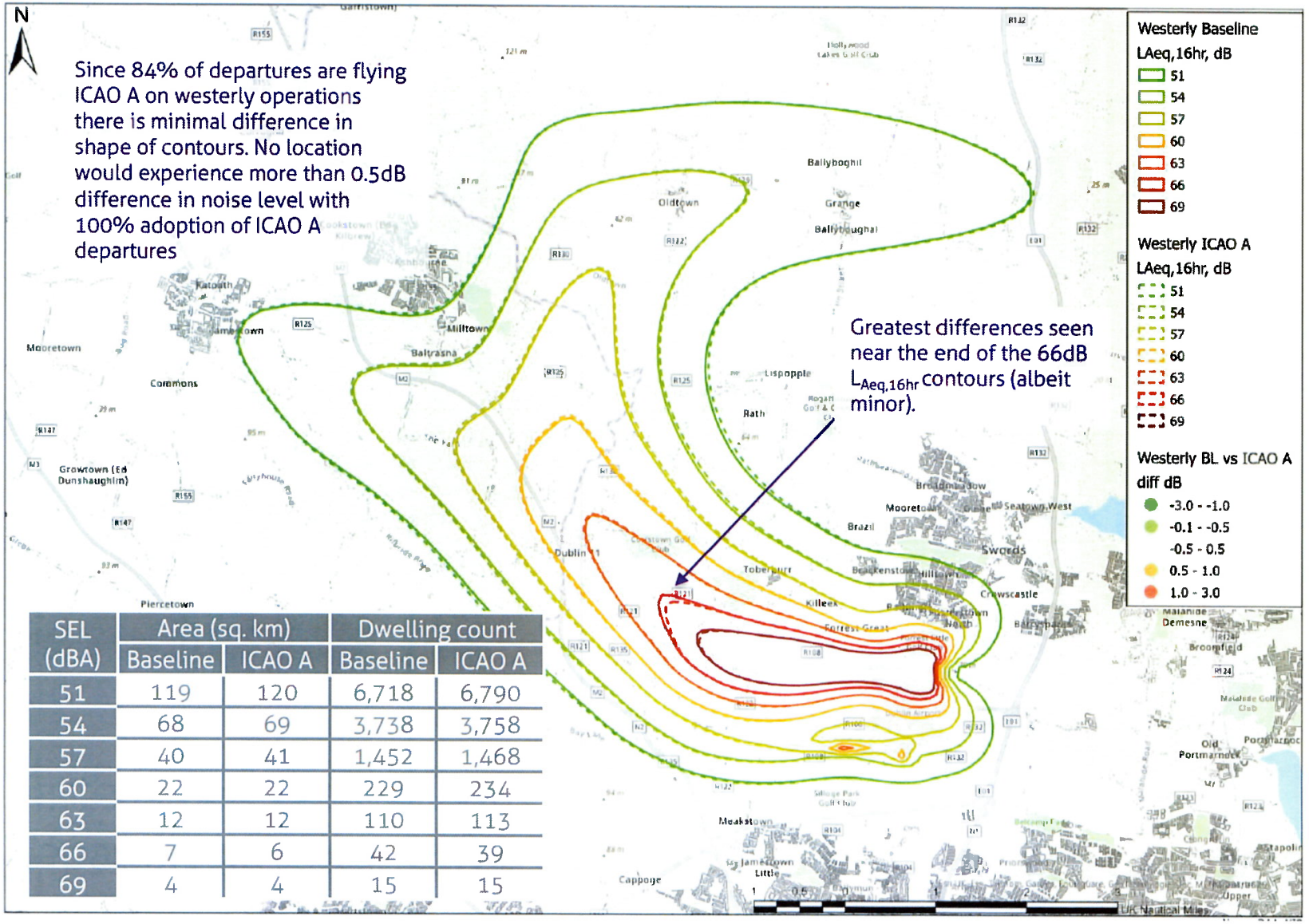






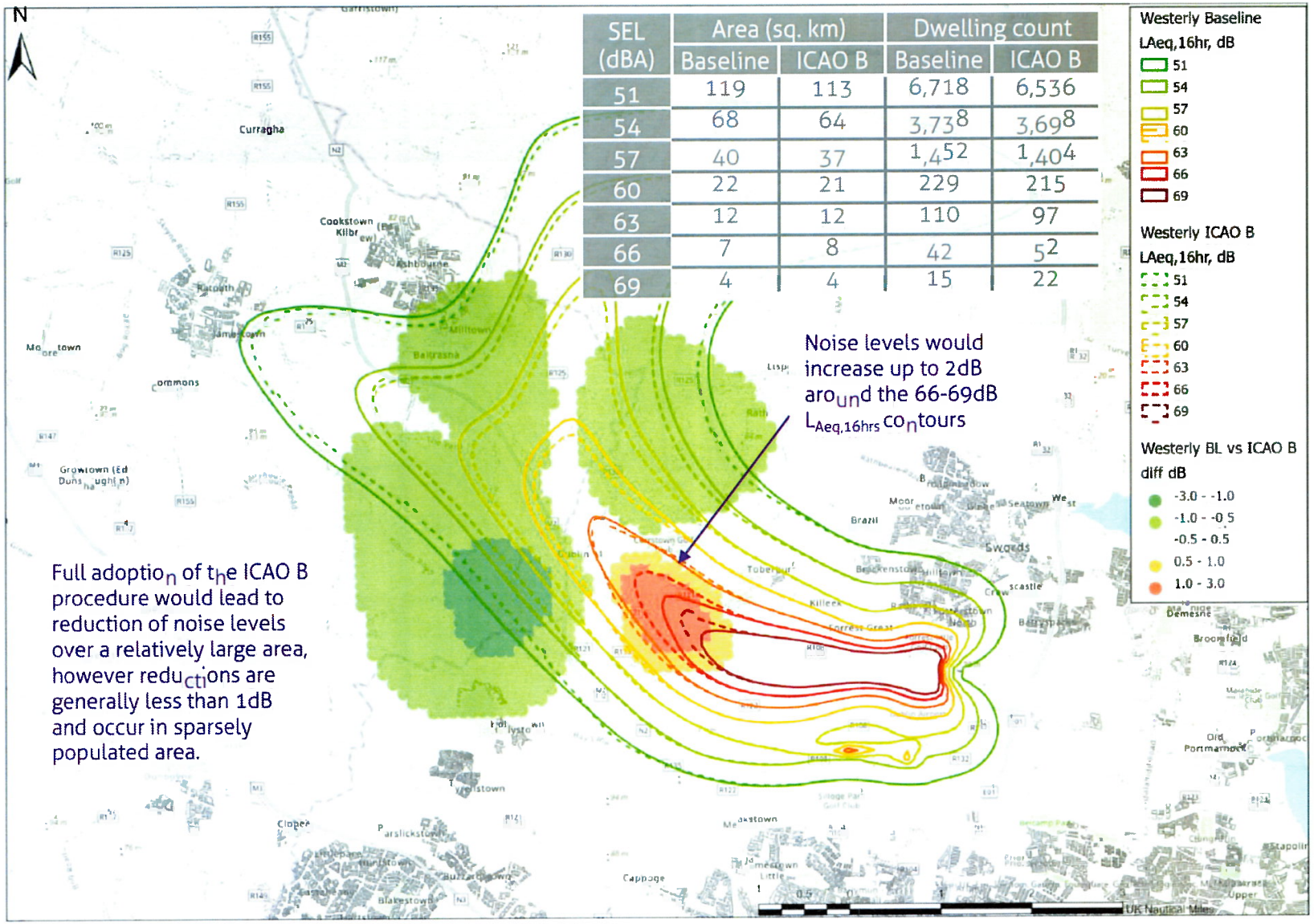


Westerly day. Comparison of baseline to 100% ICAO A departures.



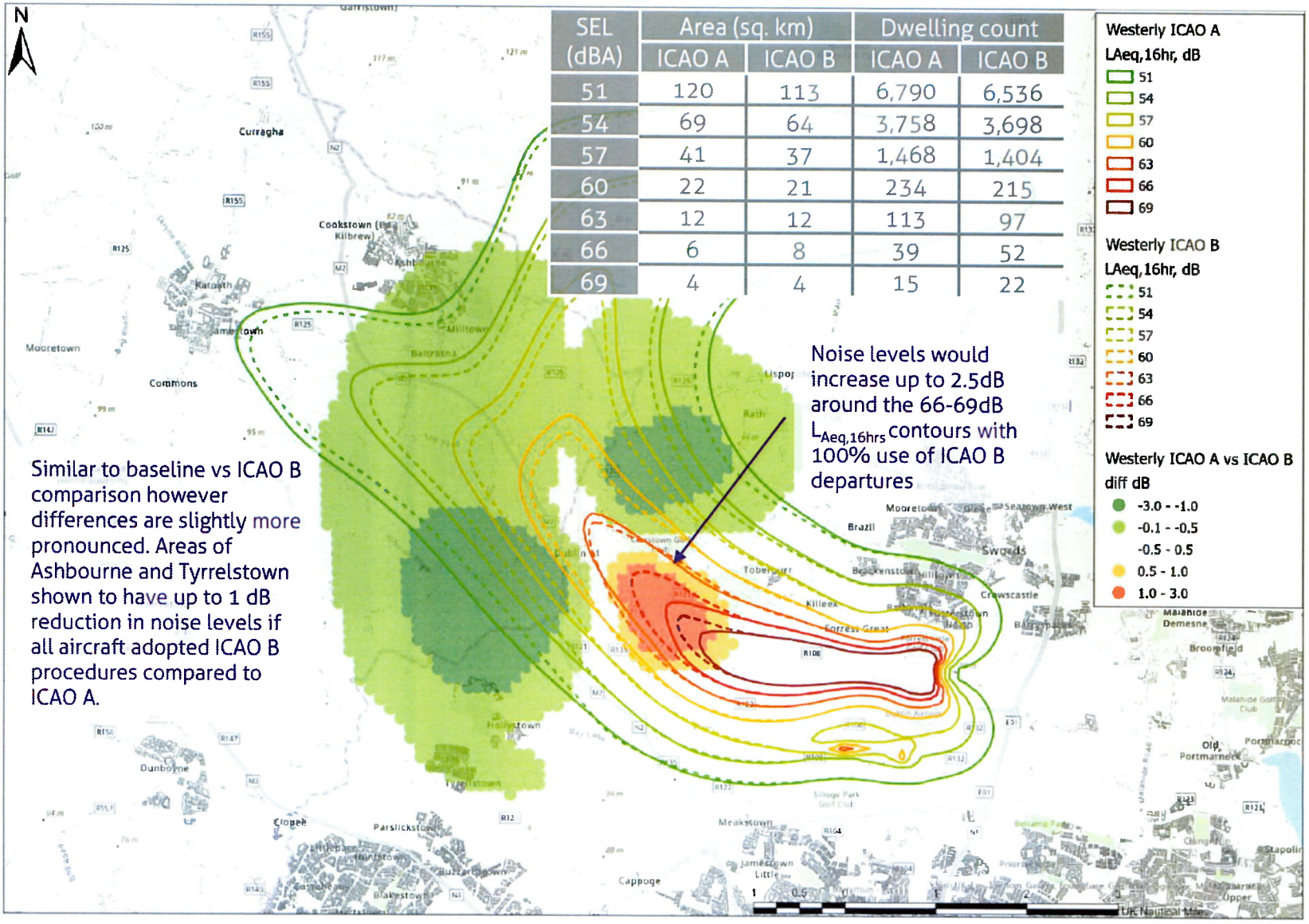
SEL (dBA)	Area (sq. km)		Dwelling count	
	Baseline	ICAO A	Baseline	ICAO A
51	119	120	6,718	6,790
54	68	69	3,738	3,758
57	40	41	1,452	1,468
60	22	22	229	234
63	12	12	110	113
66	7	6	42	39
69	4	4	15	15

Westerly day. Comparison of baseline to 100% ICAO B departures.



SEL (dBA)	Area (sq. km)		Dwelling count	
	Baseline	ICAO B	Baseline	ICAO B
51	119	113	6,718	6,536
54	68	64	3,738	3,698
57	40	37	1,452	1,404
60	22	21	229	215
63	12	12	110	97
66	7	8	42	52
69	4	4	15	22

Westerly day. Comparison of 100% ICAO A to 100% ICAO B departures.

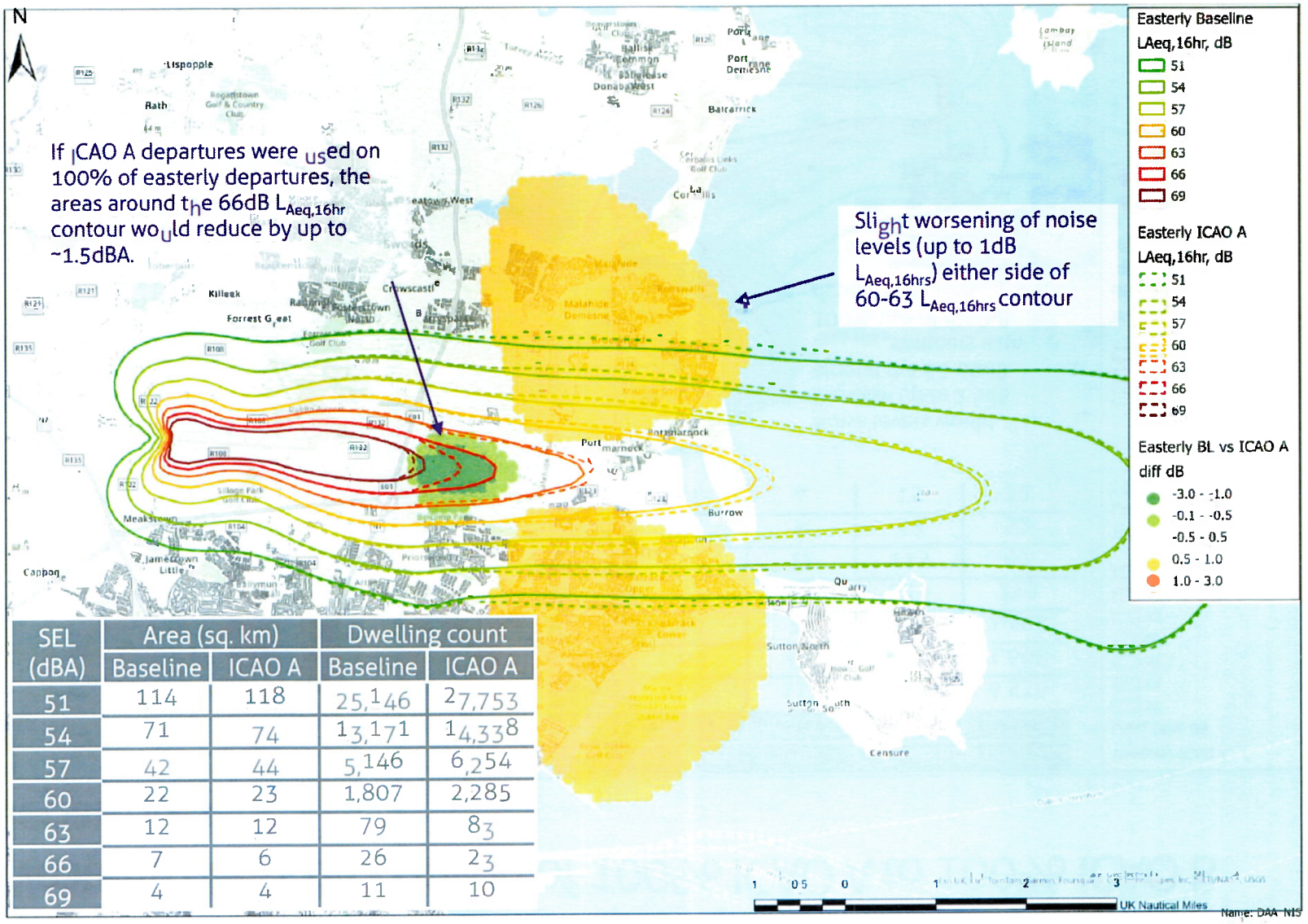


SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
51	120	113	6,790	6,536
54	69	64	3,758	3,698
57	41	37	1,468	1,404
60	22	21	234	215
63	12	12	113	97
66	6	8	39	52
69	4	4	15	22

Noise levels would increase up to 2.5dB around the 66-69dB $L_{Aeq,16hrs}$ contours with 100% use of ICAO B departures

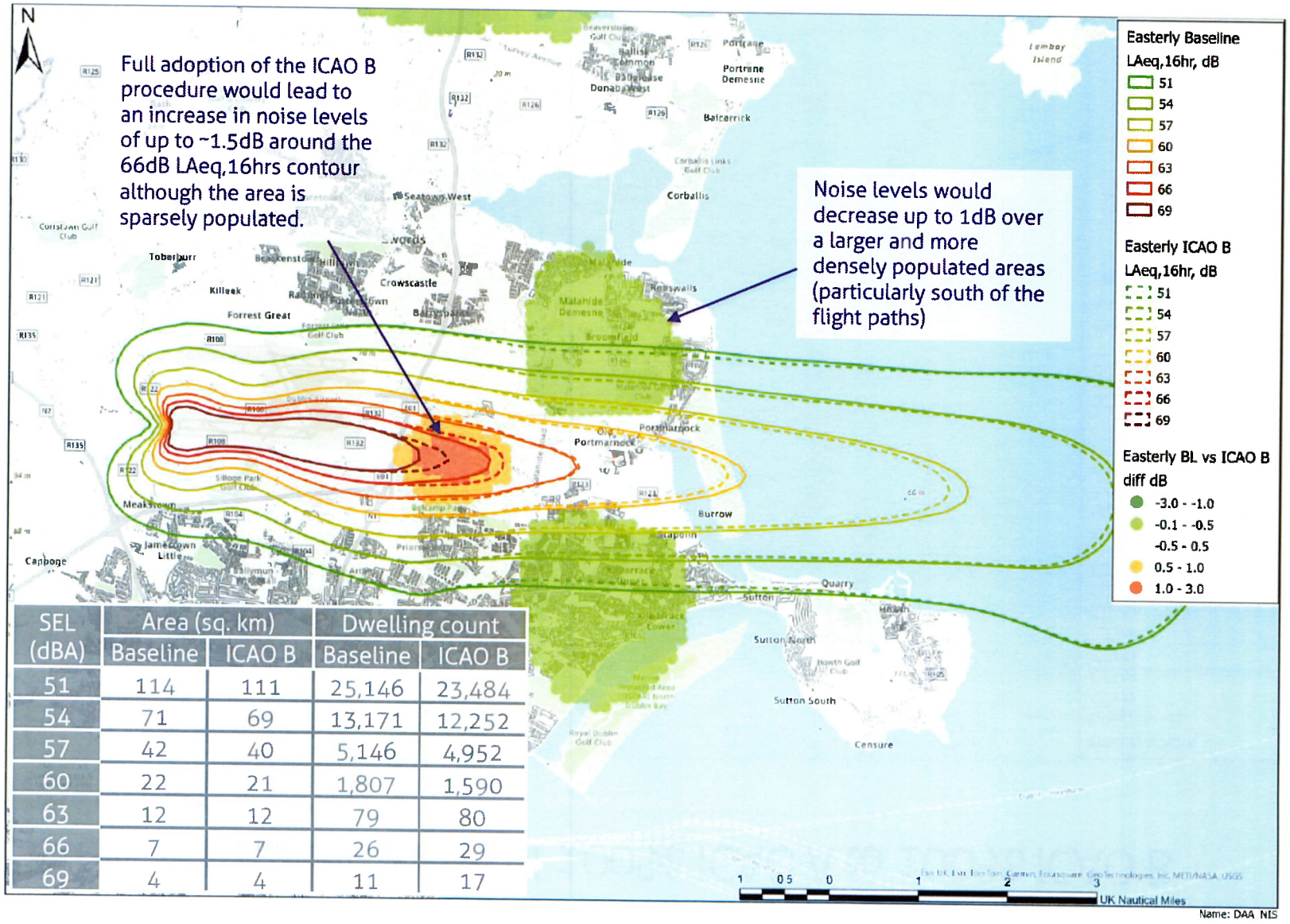
Similar to baseline vs ICAO B comparison however differences are slightly more pronounced. Areas of Ashbourne and Tyrrelstown shown to have up to 1 dB reduction in noise levels if all aircraft adopted ICAO B procedures compared to ICAO A.

Easterly day. Comparison of baseline to 100% ICAO A departures.



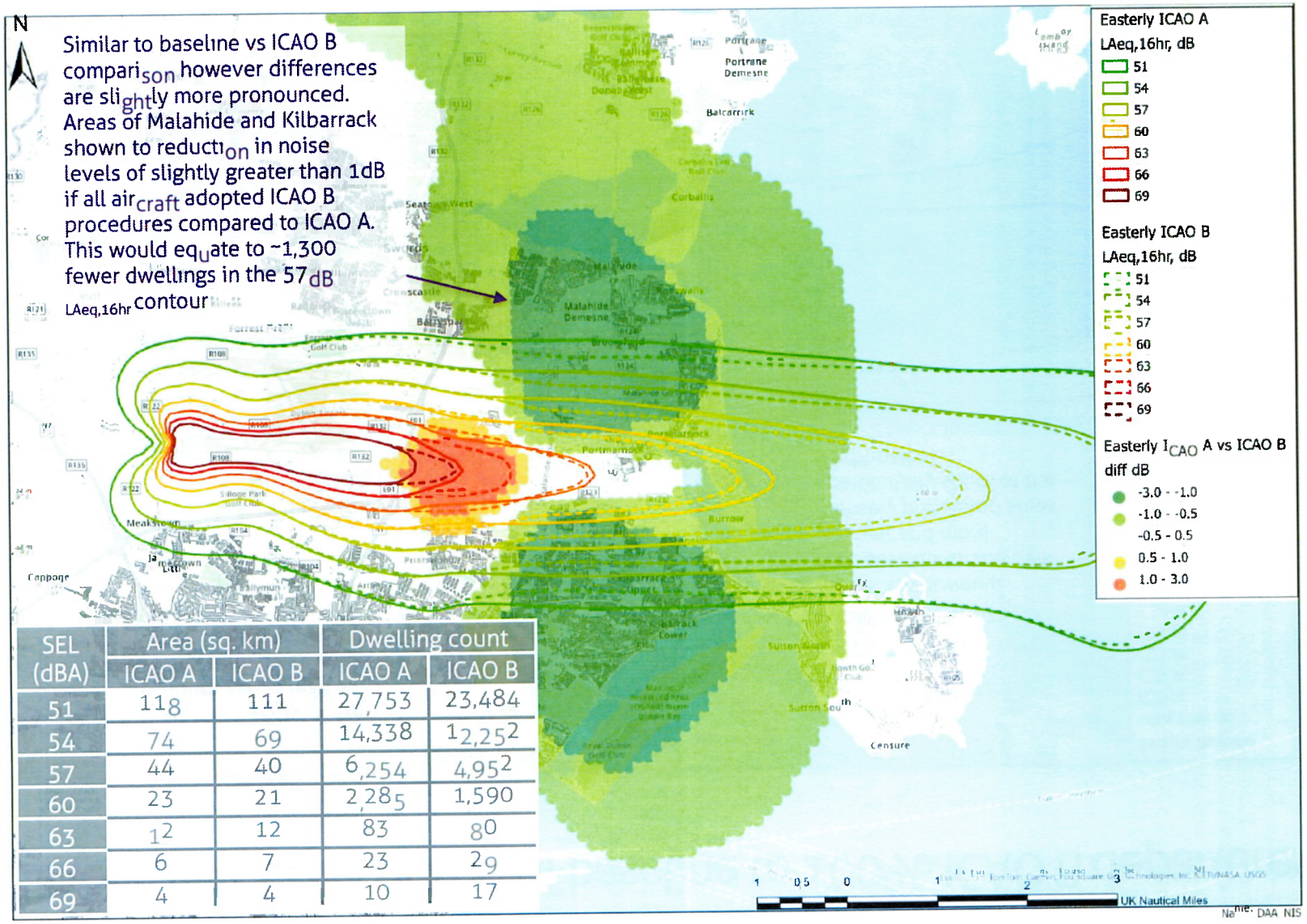
SEL (dBA)	Area (sq. km)		Dwelling count	
	Baseline	ICAO A	Baseline	ICAO A
51	114	118	25,146	27,753
54	71	74	13,171	14,338
57	42	44	5,146	6,254
60	22	23	1,807	2,285
63	12	12	79	83
66	7	6	26	23
69	4	4	11	10

Easterly day. Comparison of baseline to 100% ICAO B departures.



SEL (dBA)	Area (sq. km)		Dwelling count	
	Baseline	ICAO B	Baseline	ICAO B
51	114	111	25,146	23,484
54	71	69	13,171	12,252
57	42	40	5,146	4,952
60	22	21	1,807	1,590
63	12	12	79	80
66	7	7	26	29
69	4	4	11	17

Easterly day. Comparison of 100% ICAO A to 100% ICAO B departures.



SEL (dBA)	Area (sq. km)		Dwelling count	
	ICAO A	ICAO B	ICAO A	ICAO B
51	118	111	27,753	23,484
54	74	69	14,338	12,252
57	44	40	6,254	4,952
60	23	21	2,285	1,590
63	12	12	83	80
66	6	7	23	29
69	4	4	10	17

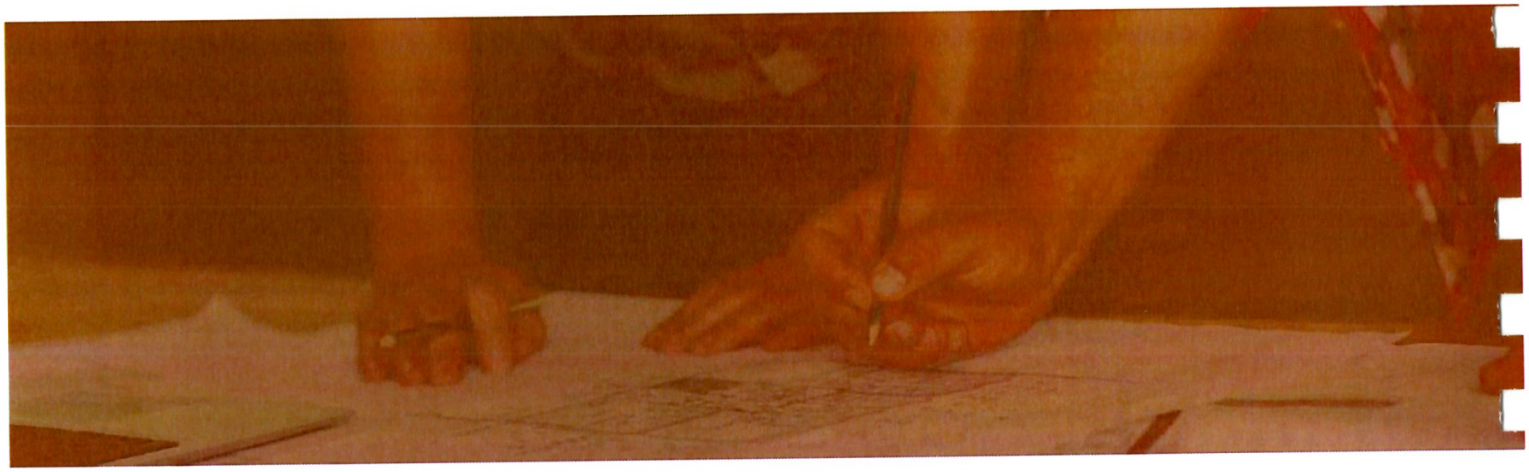
Contents

Summary. Adopting ICAO-B as standard departure procedure on easterly operations could reduce the number of people exposed to aircraft noise > 60 dB $L_{Aeq,16hr}$

The implications of the two NADP families on noise exposure from departures from Dublin Airport has been investigated using modelling tools.

- Analysis indicates that around 73% of departures are using an ICAO A or equivalent procedure.
- At the individual aircraft event level, ICAO A shows clear benefits over ICAO B of up to ~4dB for those under the flight path, but to the sideline there can be an increase in noise level possibly due to height differences that result from the procedures.
- Westerly Operations:
  - There would be little change to the noise environment to the west of the airport if all aircraft adopted the ICAO A profile since 85% of departures already use the ICAO A profile.
  - If all aircraft switched to the ICAO B profile there would be areas within the 66dB $L_{Aeq16hr}$ contour that would experience an increase in noise levels of up to 2dB while a larger area, predominantly outside the 60dB $L_{Aeq,16hr}$ contour, would experience up to a 1dB decrease in average noise levels. Due to the population distribution the number of dwellings in each contour band would not change significantly.
- Easterly Operations:
  - Noise levels would decrease up to 1.5dB within the 66dB $L_{Aeq,16hr}$ contour with 100% ICAO A departures while areas to the side of the main flight path would increase up to 1dB increasing the number of dwellings within the 57dB $L_{Aeq,16hr}$ contour by 1,100 compared to the current mix of profiles.
  - Conversely, noise levels would increase up to 1.5dB within the 66dB $L_{Aeq,16hr}$ contour with 100% ICAO B departures while areas to the side of the main flight path would decrease up to 1dB decreasing the number of dwellings within the 57 and 60dB $L_{Aeq,16hr}$ contour by 200. This would represent a 12% decrease in dwellings within 60dB $L_{Aeq,16hr}$ contour (and 4-7% decrease in the number of dwellings in the 51-57dB $L_{Aeq,16hr}$ contours) .

Appendix I – Health Costs



Health Costs Assessment

Table of Contents

1.0 Health Costs

1.0 Summary

Included is a summary of the Health Costs for Dublin Airport comparing 2023 and 2025 Proposed using the same methodology as used in other published cases at Île-de-France and Brussels.

https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/20240506_hgr-9741_vliegtuiglawaai_en_andere_emissies_vweb.pdf.

https://wakeupkraainem.be/wp-content/uploads/2023/06/ENVISA_Health-Economic-Impact-Brussels-Airport_March-2023.pdf,

The calculations are based on the fo rmuae:

Cost due to HA = Total HA x 0.02 x Value of DALY

Cost due to HSD = Total HSD x 0.07 x Value of DALY

The French and Belgian cases used a cost of a DALY of **€132,000.**

	Bruit-Parif - Ile-de-France			**Envisa - Brussels**		
	People	DALYs	Cost bn/yr	People	DALYs	Cost bn/yr
HA	210,000	4,200	0.553	220,000	4,380	0. 578
HSD	188,000	13,000	1.738	109,000	7,630	1.007
CVD	78,000	9,300	1.222	53,000	6,800	0.9