



An tÚdarás Inniúil um
Thorann Aerárthaí
Aircraft Noise
Competent Authority

Ascertaining a Noise Problem at Dublin Airport

Recommendation report arising from planning
application F20A/0668 for a Relevant Action

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Council





10th February 2021

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Part 1 - Overview

Introduction

The Airport Authority for Dublin Airport (daa) submitted a planning application to Fingal County Council, as Planning Authority for the area encompassing the airport, on 18th December 2020 (FCC ref. F20A/0668 - the Application). The Application relates to a Relevant Action only within the meaning of Section 34C of the Planning and Development Act 2000, as amended, at Dublin Airport, Co. Dublin.

The Application relates to the night-time use of the runway system at Dublin Airport. It proposes the amendment of the operating restriction set out in condition no. 3(d) and the replacement of the operating restriction in condition no. 5 of the North Runway Planning Permission (Fingal County Council ref. F04A/1755; ABP ref. PL06F.217429 as amended by FCC ref. F19A/0023, ABP ref. ABP-305289-19), in addition to proposing new noise mitigation measures.

The Application was referred to the Aircraft Noise Competent Authority (ANCA) on 23rd December 2020 by the Planning Authority in accordance with the provisions of the Aircraft Noise (Dublin Airport) Regulation Act 2019 (the 2019 Act) for an assessment of the potential noise impact of the proposed Relevant Action.

The Competent Authority is responsible for ensuring that noise generated by aircraft activity at Dublin Airport is assessed in accordance with EU and Irish legislation and for the application of the *Balanced Approach* to aircraft noise management where a noise problem or potential noise problem at the Airport is identified.

North Runway Planning History

Planning consent was granted for Dublin Airport's north runway by An Bord Pleanála in August 2007 (FCC Ref: F04A/1755; ABP Ref: PL06.217429). The planning consent was subject to 31 conditions. Two of these conditions place restrictions on night flights and take effect upon completion of the construction of the north runway.

These are:

Condition 3(d): Runway 10L-28R¹ shall not be used for take-off or landing between 2300 hours and 0700 hours;

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

Condition 3(a) to 3(c) and Condition 4 establish preferential modes of operating the runways but are not the subject of this Application.

Permission was granted for 10 years from the date of the grant of permission. An Extension of Duration of Permission was granted by Fingal County Council until 28th August 2022 (FCC ref. F04A/1755/E1).

DAA applied for planning permission to amend specified runway structural details in July 2019 (F19A/0023) and permission was granted by An Bord Pleanála in March 2020 (ABP-305289-19).

Planning Permission Ref FCC ref: F04A/1755; ABP ref: PL06.217429 as extended by the Extension of Duration of Permission (FCC ref: F04A/1755/E1) and as amended by planning permission FCC Ref: F19A/0023; ABP ref: 305289/19 is hereinafter referred to as the **North Runway Planning Permission**.

In Dublin Airport's current form as a two-runway operation, there are no operating restrictions relating to the use of its runways or the numbers or types of aircraft which can fly. The airport is however subject to a passenger capacity limit which restricts the airport to 32 million passengers per annum (mppa). These passenger cap restrictions are contained in Condition 2 of the Terminal 1 Extension Planning Permission (FCC Reg ref No. F06A/1248; ABP ref:

¹ the north runway

PL06F.220670) and Condition 3 of the Terminal 2 Planning Permission (FCC Ref 04A/1775; ABP Ref: PL06F.220670).

Overview of the Proposed Application

The proposed development proposes that a Relevant Action be taken pursuant to Section 34C(1)(a) so as:

1. **To amend condition no. 3(d) of the North Runway Planning Permission. Condition 3(d) and the exceptions at the end of Condition 3 state the following:**

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

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

Permission is being sought to amend condition 3(d) so that it reads:

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

2. **To replace condition no. 5 of the North Runway Planning Permission which provides as follows:**

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

Permission is being sought to replace Condition 5 with the following:

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

The Application proposes the following noise mitigation and monitoring measures:

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

It is noted that Conditions 3(d) and 5 of the North Runway Planning Permission have not yet come into effect or operation, as the construction of the north runway has not yet been completed.

It is further noted that the Application does not seek to make changes to or modify:

- a) the airport's existing passenger capacity limit of 32 million passengers per annum (mppa);
- b) the preferred daytime mode of operation as set out in Condition 3(a) - 3(c) of the North Runway Planning Permission,
- c) the restricted use of the airport's crosswind runway as set out under Condition 4 of the North Runway Planning Permission.

Part 2 - Assessment of the Application

International, EU and national context

International Civil Aviation Organization

The International Civil Aviation Organization (ICAO) introduced the Balanced Approach to noise management which consists of analyzing the various measures available to reduce aircraft noise in the most cost-effective manner through the exploration of four principal elements where a noise problem is identified at an airport using objective and measurable criteria. To determine whether there is a noise problem at a particular airport that needs to be addressed, it is necessary to assess the evolution of the noise climate at that airport and the surrounding community. To the extent a noise problem is identified, characterization of the problem should assist in determining what measure or measures might mitigate or solve the problem. (See ICAO guidance on the Balanced Approach to Aircraft Noise, second edition, 2008).

European Legislation

Directive 2002/49/EC as amended by Directive 2015/996/EU (the END) relates to the assessment and management of environmental noise and establishes common assessment methods for the major sources of environmental noise, including that emitted by aircraft.

Regulation (EU) No. 598/2014 (the Aircraft Noise Regulation) establishes a regulatory basis for the identification of additional noise abatement measures in accordance with the Balanced Approach methodology for airports where a noise problem has been identified. The Aircraft Noise Regulation, in recognizing that sustainable development is a key objective of the common transport policy, sets out an integrated approach to balance the effective functioning of Union transport systems with the protection of the environment. Sustainable development of air transport requires the introduction of measures aimed at reducing the noise impact from aircraft at Union airports to improve the noise environment around Union airports in order to maintain or increase the quality of life of neighbouring citizens and foster compatibility between aviation activities and residential areas, particularly where night flights are concerned. The ICAO Balanced Approach is established as the mechanism for the regulation of aviation noise.

Irish Legislation

The European Communities (Environmental Noise) Regulations 2018 (SI 549/2018) provide for the implementation in Ireland of the END and in particular the common approach within the European Union to avoid, prevent or reduce on a prioritized basis the harmful effects,

including annoyance, due to exposure to environmental noise.

The 2019 Act gives further effect to The Aircraft Noise Regulation and defines, inter alia, the process to be followed to address any noise problem that would arise from the carrying out of a proposed development or from taking a relevant action in relation to an operating restriction at Dublin Airport.

Ascertaining a noise problem at Dublin Airport

Method of assessment

The 2019 Act and The Aircraft Noise Regulation requires ANCA to have regard for the effect of noise exposure on human health using common assessment methods. In doing so, the overall number of people exposed to specific levels of aircraft noise at different levels must be understood and presented with respect to health outcomes. To ascertain whether a noise problem may arise, it is appropriate to consider the evolution of the noise climate at the airport and the surrounding community to examine trends in human noise exposure.

Dublin Airport Noise Action Plan 2019 - 2023

The Dublin Airport Noise Action Plan 2019 - 2023 (the NAP) was prepared in accordance with the provisions of the European Communities (Environmental Noise) Regulations 2018 but prior to the introduction of the 2019 Act. The noise mapping outputs of the action plan assessments are presented alongside noise exposure levels from previous years. From this, trends can provide context to the noise situation pertaining at the time of assessment. This comparison assists in the identification of noise problems and situations to be improved, from which any required actions can be determined. The assessment of the noise mapping in this plan indicated that *'night noise and land use planning were areas which may be a problem and may need to be improved'* cautioning however that further work needed to be undertaken in these areas.

Current Noise Situation

The noise climate at the Airport, since assessed in the Noise Action Plan, has significantly changed during the coronavirus pandemic and the full extent of this impact has yet to be determined. Construction work on the north runway remains underway and the completion of the project will further influence the evolving noise climate as the prescribed modes of day-time runway operation take effect. The new modes of runway operation may occur in tandem with a rescheduling of flights post-pandemic which present circumstances that must be further understood in the context of the Application for a Relevant Action.

Consideration of the Application for a Relevant Action

An assessment of the evolving noise climate at Dublin Airport must also consider the current Application for a Relevant Action. In this context, the Application proposes a form of night-time runway operations that are not currently permitted.

Condition 3 of the North Runway Planning Permission establishes how the primary runways should be used during day-time (0700 hours - 2300 hours) depending on the prevailing wind conditions. This is illustrated in Figure 1 which shows that:

- the parallel runways (10R-28L and 10L-28R) shall be used in preference to the cross runway, 16-34;
- When winds are westerly, Runway 28L shall be preferred for arriving aircraft. Either Runway 28L or 28R shall be used for departing aircraft as determined by air traffic control,
- When winds are easterly, either Runway 10L or 10R as determined by air traffic control shall be preferred for arriving aircraft. Runway 10R shall be preferred for departing aircraft.

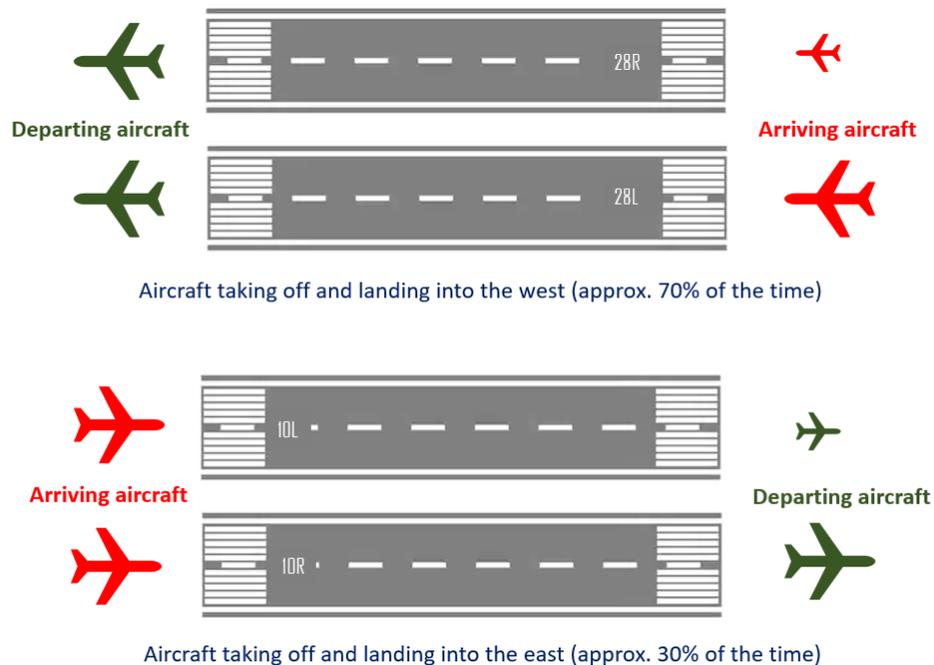


Figure 1 - parallel runway system daytime operating mode

The Application for the Relevant Action states that '*in practice it is expected that, unless capacity requires mixed mode, the runways will operate in segregated mode during the daytime with arrivals using either Runway 10L or Runway 28L and departures using either Runway 10R or Runway 28R depending on wind direction*'.

It is preferable for an aircraft to take off and land into the wind and, in a Dublin Airport context, the prevailing wind dictates that approximately 70% of flights take off and land into the west.

The Application for the Relevant Action presents the forecasts and operating scenarios considered with a description of the environmental effects of the proposed Relevant Action together with proposed mitigation measures and controls. The Application states that the proposed Relevant Action, if permitted, will allow for an increase in the number of flights taking off and/or landing at Dublin Airport between 2300hrs and 0700hrs over and above the number stipulated in condition no. 5 of the North Runway Planning Permission, in accordance with the annual night time noise quota sought.

ANCA commissioned Noise Consultants Ltd (NCL) to undertake an initial technical review of the potential noise impacts of planning application F20A/0668, if granted. This work² has examined and detailed the potential implications of the proposed development with respect of an aircraft noise problem and made 5 summary observations:

The harmful effects of aircraft noise in the future with the Proposed Development will be worse than without, particularly at night. As such the Proposed Development will increase aircraft noise rather than reduce it;

Some people will experience elevated levels of night-time noise exposure for the first time which may be considered harmful to human health;

The Proposed Development gives rise to significant adverse night-time noise effects as reported within the EIAR. This indicates that the noise effects of the Proposed Development are a material consideration;

Mitigation in the form of a night-time noise insulation scheme is proposed by the Applicant. The provision of such mitigation is an indicator that the Proposed Development may give rise to a Noise Problem;

The nature of the Proposed Development is to enable a form of operation which was not considered by ABP in their original decision to grant consent for the North Runway. Such a change will attract significant third party interest, particularly from communities, who may perceive there to be a noise problem.

² Advice Report: Aspects of a Potential Noise Problem associated with Planning Application F20A/0668; February 2021

Part 3 - Report Recommendations

Summary

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The implications of the data submitted in support of planning application ref. F20A/0668 for a Relevant Action, together with the technical analysis undertaken by Noise Consultants Ltd, support a considered view for the reasons given below, either in isolation or in tandem, that the proposed development may significantly influence the evolving noise climate at Dublin Airport to the extent that presents a noise problem that requires detailed assessment. This assessment should be undertaken through the provisions of the Balanced Approach to identify whether the noise impacts may be appropriately mitigated.

- 1) The Application proposes an increase in aircraft activity at night, when referenced against the situation that would otherwise pertain, which may result in higher levels of human exposure to aircraft noise.**

This situation requires detailed evaluation in the context of the combined intent of environmental noise legislation. The Application should be assessed to ascertain whether an acceptable balance can be achieved between the effective functioning of the Airport and the protection of the environment through the application of the ICAO Balanced Approach.

- 2) The Application proposes a situation where some people will experience elevated levels of night-time noise exposure for the first time which may be considered harmful to human health.**

The Application seeks to enable a form of operation which was not considered by ABP in their original decision to grant consent for the north runway. A detailed assessment should be undertaken through the application of the ICAO Balanced Approach to ascertain the significance of the impact of a change in noise exposure arising from the Application for a Relevant Action.

- 3) The EIAR accompanying the Application indicates that the proposed Relevant Action will give rise to significant adverse night-time noise effects. This indicates that the noise effects of the Proposed Development are a material consideration. Mitigation in the form of a night-time noise insulation scheme is proposed by the Application. The provision of such mitigation is an indicator that the Proposed Development may give rise to a Noise Problem.

This situation requires detailed evaluation in the context of the combined intent of environmental noise legislation. The Application should be assessed to ascertain whether an acceptable balance can be achieved between the effective functioning of the airport and the protection of the environment through the application of the ICAO Balanced Approach

Recommendation

The proposed introduction of night-time use of the north runway and associated redistribution of night-time noise present a situation whereby significant environmental effects arise that require detailed assessment through the provisions of the Balanced Approach to ascertain whether noise mitigation measures, up to and including operating restrictions, may be required if the Application is granted.

In consideration of the issues addressed in this report, the technical assessment report of Noise Consultants Ltd together with technical guidance documents and legislative provisions, I conclude that the Application for a Relevant Action, if granted, may reasonably be considered to present a noise problem at Dublin Airport and accordingly, I recommend the following:

1. The determination of a noise problem at Dublin Airport, in the context of the 2019 Act and the Aircraft Noise Regulation, arising from the Application for a Relevant Action ref. F20A/0668;
2. The establishment of a Noise Abatement Objective for Dublin Airport;
3. The commencement of the process of aircraft noise regulation prescribed by Section 34C of the Planning and Development Act of 2000 including the application of the ICAO Balanced Approach.

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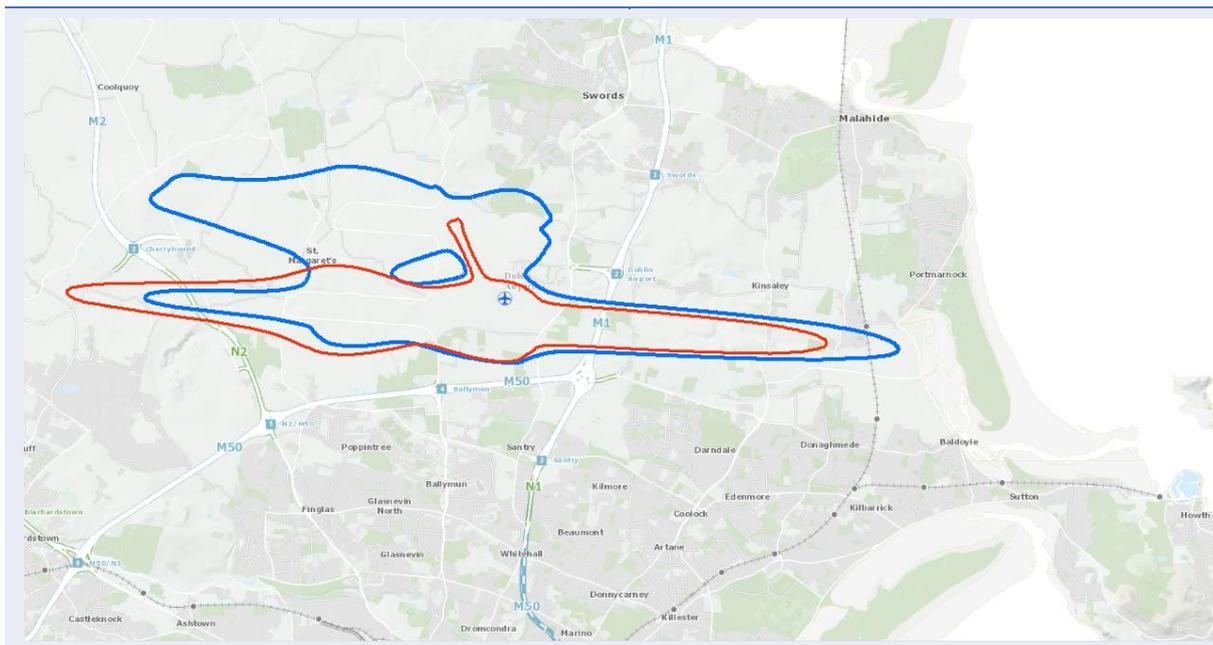
Appendix B - Glossary

2019 Act	Aircraft Noise (Dublin Airport) Regulation Act 2019
ABP	An Bord Pleanála
Application	Planning application for a Relevant Action ref. F20A/0668
ANCA	Aircraft Noise Competent Authority
ANR	Aircraft Noise Regulation
Balanced Approach	ICAO Balanced Approach to Aircraft Noise Management
daa	Dublin Airport Authority
EIAR	Environmental Impact Assessment Report
END	Environmental Noise Directive
FCC	Fingal County Council
ICAO	International Civil Aviation Organization
MPPA	Million Passengers Per Annum
L_{night}	8-hour night-time LAeq sound level value in dB for the period 23:00 to 07:00 determined over all the night periods of a year;
NAO	Noise Abatement Objective
NAP	Noise Action Plan
NCL	Noise Consultants Ltd.
Relevant Action	As defined in Section 34C (23) of the Planning and Development Act 2000.

Appendix B - Noise contours

Noise Contours

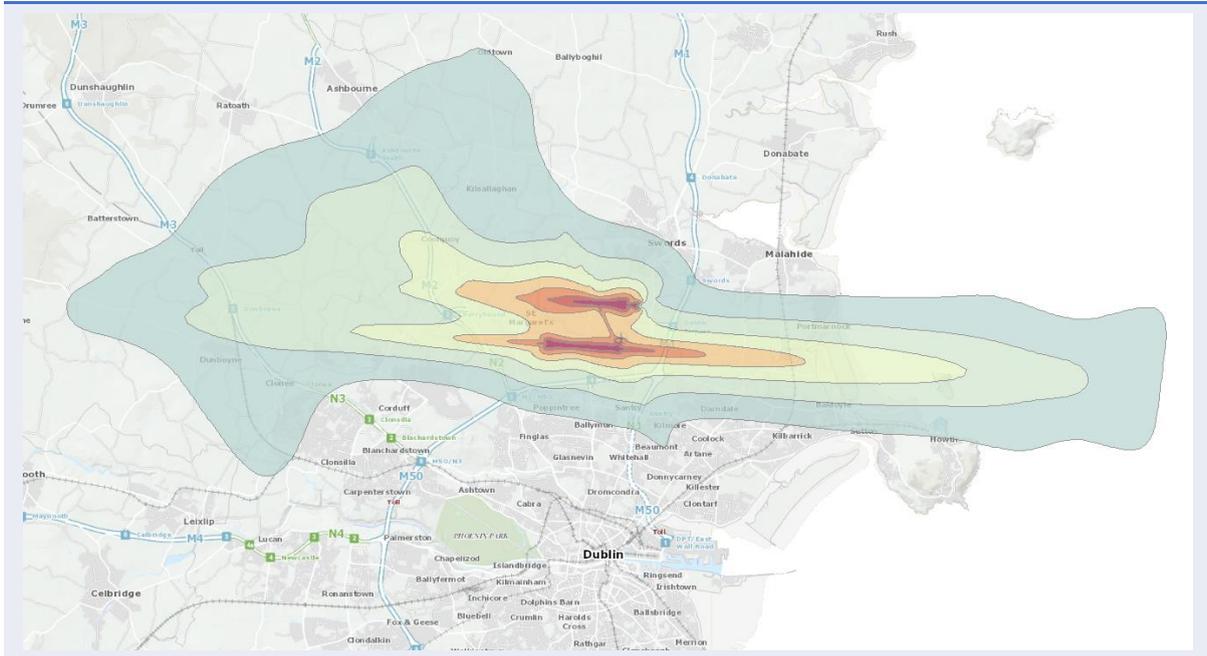
Application for a Relevant Action F20A/0668



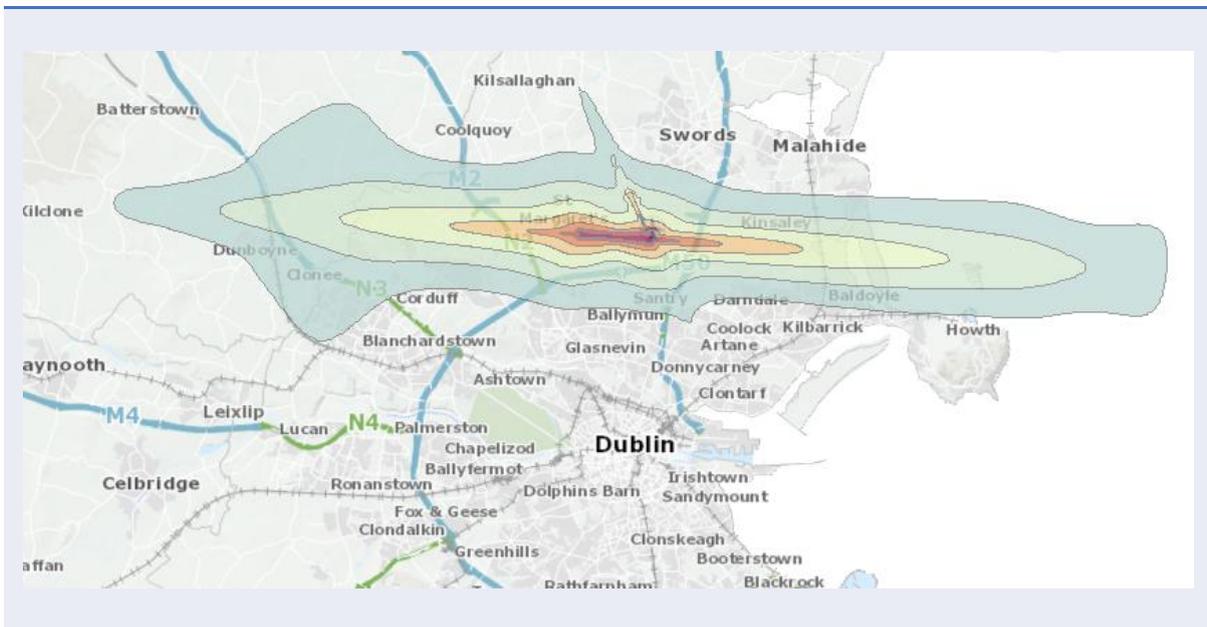
 2025 Forecast 55dB L_{night} contour with Relevant Action

 2025 Forecast 55dB L_{night} contour without Relevant Action

Application for a Relevant Action F20A/0668

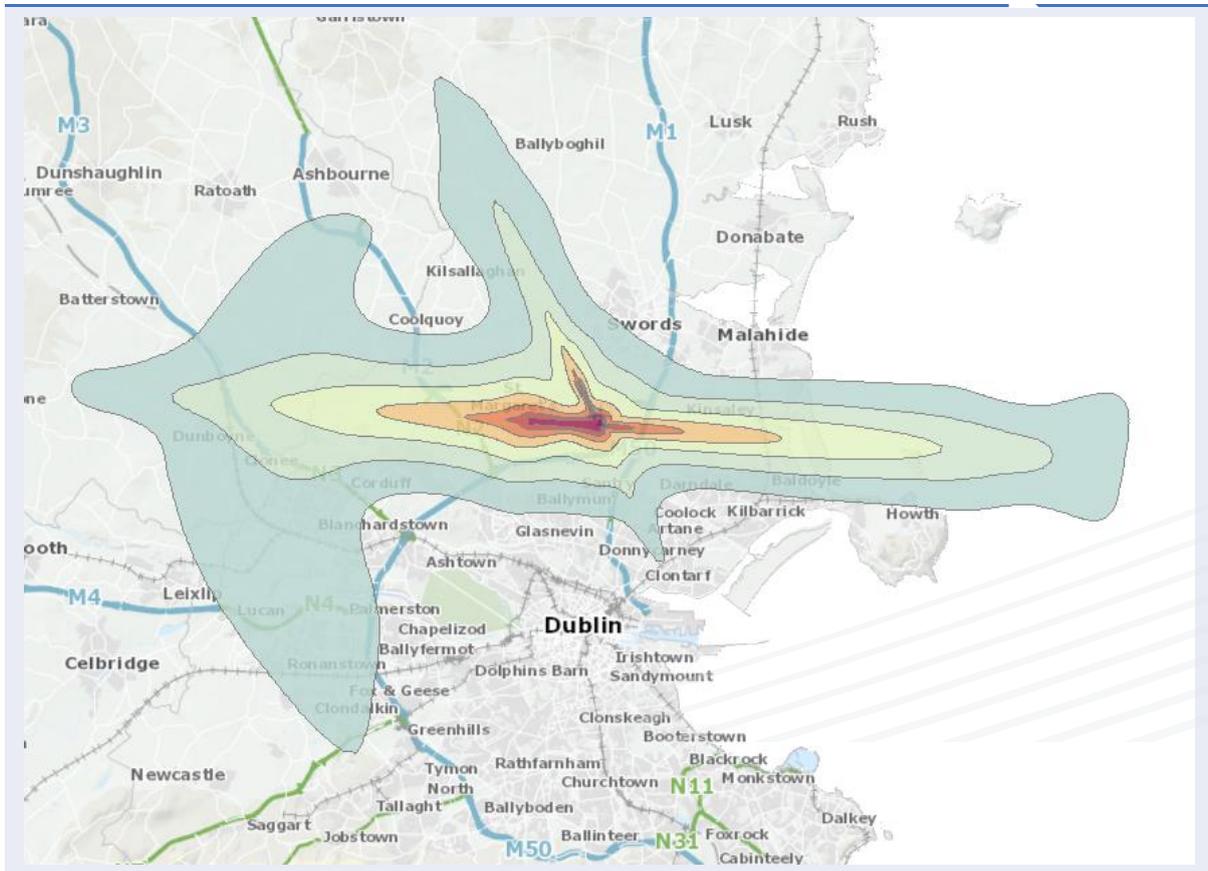


2025 Forecast L_{night} noise contours (40dB - 70dB) with Relevant Action



2025 Forecast L_{night} noise contours (40dB - 70dB) without Relevant Action

Application for a Relevant Action F20A/0668

2019 L_{night} noise contours (40dB - 70dB)



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