



Dublin Airport North Runway Relevant Action Application

18-12-2020F 20A/0668
FINGAL COCO PL DEPT

Environmental Impact Assessment Report
Main Report

December 2020

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 DublinAirport

Prepared for:

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Project number: PR-407849

Prepared by:

AECOM Ireland Limited
4th Floor
Adelphi Plaza
Georges Street Upper
Dun Laoghaire
Co. Dublin A96 T927
Ireland

T: +353 1 238 3100
aecom.com

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Quality information

Prepared by

Various Authors

Checked by

Peta Donkin
Associate Director

Approved by

Barry Sheridan
Technical Director

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Acronyms and Abbreviations

| Abbreviation / Term | Definition |
|--------------------------|--------------------------------------------------------------------------------------------------------|
| % | Percentage. |
| $\mu\text{g}/\text{m}^3$ | Microgram per cubic meter. A measure of concentration commonly used to present air quality conditions. |
| μm | Micro-metre. A measure of length equaling 1×10^{-6} of a metre. |
| AA | Appropriate Assessment |
| ABP | An Bord Pleanála |
| ACA | Architectural Conservation Area |
| AEDT | Aviation Environmental Design Tool |
| ANCA | Aircraft Noise Competent Authority |
| ANPR | Automatic Number Plate Registration |
| ANQ | Annual Noise Quota |
| APU | Auxiliary Power Units |
| AQLV | Air Quality Limit Values |
| ATM | Air Traffic Movement |
| ASI | Archaeological Survey of Ireland |
| AQC | Air Quality Consultants |
| ACDM | Airport Collaborative Decision Making |
| BCT | Bat Conservation Trust |
| BNL | Basic Noise Level. |
| BSI | British Standards Institute |
| CAR | Commission for Aviation Regulation |
| CAFE | Cleaner Air for Europe |
| CCD | Climb, Cruise and Descent |
| CCR | Climate Change Resilience |
| CEMP | Construction Environmental Management Plan. |
| CFRAM | Catchment Flood Risk Assessment and Management |
| CGI | Computer Generated Imagery |
| CHD | Coronary Heart Disease |
| CH_4 | Methane |
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| CIRIA | Construction Industry Research and Information Association |
| cNAO | Candidate Noise Abatement Objective |
| CO | Carbon monoxide. |
| COD | Chemical Oxygen Demand |
| CODA | Central Office of Delay Analysis |
| CO_2 | Carbon dioxide. |
| COMAR | Control of Major Accident Hazard |
| CTPRO | Change to Permitted Runway Operations |
| CSO | Central Statistics Office |
| CD | Cardiovascular disease |
| C_6H_6 | Benzene |
| DAA | Dublin Airport Authority |

| Abbreviation / Term | Definition |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dB | The unit of noise measurement that expresses the loudness in terms of decibels (dB) based on a weighting factor for humans sensitivity to sound (A). |
| dB(A) | The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies. |
| DBA | Desk-Based Assessment. |
| DCHG | Department of Culture, Heritage and the Gaeltacht |
| DCLG | Department of Communities and Local Government |
| DECC | Department of Energy and Climate Change |
| Defra | Department for Environment, Food and Rural Affairs |
| DfE | Department of Education |
| DfT | Department for Transport |
| DoEHLG | Department of Transport and the Department of Environment, Heritage and Local Government |
| DRAQMP | Dublin Regional Air Quality Management Plan |
| DTTAS | Department of Transport, Tourism and Sport |
| DUB | Dublin |
| EASA | European Aviation Safety Agency |
| EC | European Commission. |
| ED | Electoral Divisions |
| EIA | Environmental Impact Assessment. A technique for ensuring that the likely effects of new development on the environment are fully understood and taken into account before the development is allowed to go ahead. It provides a focus for public scrutiny of the project and enables the importance of the predicted effects, and the scope for modifying or mitigating them, to be properly evaluated by the decision-making authority. |
| EIAR | Environmental Impact Assessment Report. A technique for ensuring that the likely effects of new development on the environment are fully understood and taken into account before the development is allowed to go ahead. It provides a focus for public scrutiny of the project and enables the importance of the predicted effects, and the scope for modifying or mitigating them, to be properly evaluated by the decision-making authority. |
| EIS | Environmental Impact Statement |
| EPA | Environmental Protection Agency |
| EPS | European Protected Species |
| EPUK | Environmental Protection UK. |
| ES | Environmental Statement. The report that documents the findings of the EIA. |
| ETS | Emission Trading Scheme |
| EU | European Union. |
| FAA | Federal Aviation Administration |
| FDI | Foreign Direct Investment |
| FEGP | Fixed Electrical Ground Power |
| FCC | Fingal County Council |
| FRA | Flood Risk Assessment. |
| NFTMS | Flight Track Monitoring System |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas. |
| GLVIA | Guidelines for Landscape and Visual Impact Assessment |
| GSE | Ground Support Equipment |
| ha | hectare |
| HFCs | Hydrofluorocarbons |

| Abbreviation / Term | Definition |
|---------------------|-------------------------------------------------------|
| HIA | Health Impact Assessment. |
| HSA | Health and Safety Authority |
| HSE | Health and Safety Executive |
| HT | High Technology |
| IAA | Irish Aviation Authority |
| IAI | Institute of Archaeologists Ireland |
| IAQM | Institute of Air Quality Management. |
| ICAO | International Civil Aviation Organisation |
| ICE | Inventory of Carbon and Energy |
| ICCI | In-combination climate change impact assessment |
| IEMA | Institute of Environmental Management and Assessment. |
| IFC | International Finance Corporation |
| IFI | Inland Fisheries Ireland |
| IGI | Institute of Geologists of Ireland |
| IHD | Ischaemic Heart Disease |
| IHT | Institution of Highways and Transportation |
| IPC | Integrated Pollution Control |
| IPPC | Intergovernmental Panel on Climate Change |
| ISO | International Organisation for Standardisation |
| IW | Irish Water |
| JA | Jobseekers Allowance |
| JB | Jobseekers Benefit |
| km | Kilometres. |
| LAP | Local Area Plan |
| LAQM | Local Air Quality Management. |
| LDC | Least Developed Countries |
| LLDC | Landlocked Developing Countries |
| Ltd | Limited |
| LTO | Landing and Take-off |
| mppa | Million Passengers Per Annum |
| NAO | Noise Abatement Objective |
| NAP | National Aviation Policy |
| N/A | 'Not applicable' or 'Not appropriate'. |
| NDP | The National Development Plan 2018 – 2027 |
| NFTMS | Noise and Flight Track Monitoring System |
| NF ₃ | Nitrogen trifluoride |
| NIAH | National Inventory of Architectural Heritage |
| NIS | Natura Impact Statement |
| NLS | National Landscape Strategy |
| NMS | National Monument Service |
| NMTs | Noise Monitoring Terminals |
| NO ₂ | Nitrogen dioxide. |
| NOEL | No Observed Effect Level. |

| Abbreviation / Term | Definition |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NO _x | Nitrogen oxides. |
| NPPF | National Planning Policy Framework. A document that sets out government's planning policies for England and how these are expected to be applied. |
| NPF | National Planning Framework. The Government's high-level strategic plan for shaping the future growth and development of our country out to the year 2040. |
| NPPG | National Planning Policy Guidance notes set out the Government's policies on different aspects of planning. Local planning authorities must take their content into account in preparing their development plans and the guidance may also be material to decisions on individual planning applications and appeals. |
| NPWS | National Parks and Wildlife Services |
| NQP | Night Quota Period |
| NRA | National Roads Authority |
| NSO | National Strategic Outcomes |
| NSS | National Spatial Strategy |
| NTA | National Transport Authority |
| NTS | Non-Technical Summary. A concise document that provides a description of the EIA process and its findings in a manner that is both appealing to read and easily understood by the general public. |
| N ₂ O | Nitrous Oxide |
| O-D | Origin-Destination |
| OPW | Office of Public Works |
| OS | Ordnance Survey |
| OSI | Ordnance Survey Ireland |
| PAX | Annual Passengers |
| PDA | Planning and Development Acts |
| PFCs | Perfluorocarbons |
| PM ₁₀ | Particulate Matter |
| PM _{2.5} | Particulate Matter |
| PWHT | Polluted Water Holding Tank |
| QC | Quota Count |
| QI | Qualifying Interest |
| RMP | Record of Monument and Places |
| RMSE | Root Mean Square Error |
| RoI | Republic of Ireland |
| RPS | Record of Protected Structures |
| RSES | Regional Spatial and Economic Strategy |
| PSZ | Public Safety Zones |
| SA | Small Areas |
| SAC | Special Area of Conservation |
| SCI | Special Conservation Interests |
| SEAI | Sustainable Energy Authority of Ireland |
| SF ₆ | Sulphur hexafluoride |
| SI | Statutory Instrument |
| SID | Standard Instrument Departure |
| SIDS | Small Island Developing States |
| SO ₂ | Sulphur dioxide |

| Abbreviation / Term | Definition |
|---------------------|--------------------------------------|
| SPA | Special Protected Area |
| SRI | Societal Risk Index |
| SSSI | Site of Special Scientific Interest. |
| TFS | Trans frontier Shipping |
| TII | Transport Infrastructure Ireland |
| TOC | Total Organic Carbon |
| TPA | Tom Philips + Associates |
| TTA | Traffic and Transport Assessment |
| UK | United Kingdom. |
| UV | Ultraviolet |
| VOC | Volatile Organic Compounds |
| WFD | Water Framework Directive |
| WHO | World Health Organisation. |
| ZOI | Zone of Influence. |

Chapter 01:
Introduction

01 .

1. Introduction

1.1 Background

This Environmental Impact Assessment Report (EIAR) has been prepared on behalf of daa (hereafter referred to as 'the Applicant') to accompany the application to be made pursuant to Section 34 of the Planning and Development Acts 2000 as amended (the "PDA"). Specifically, this report relates to an application for a proposed Relevant Action to be taken in accordance with Section 34C(1)(a) of the PDA, to amend and replace two planning conditions, namely conditions no. 3(d) and 5 of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429, 'the North Runway Permission'), which limit access or reduces the operational capacity of Dublin Airport.

The proposed Relevant Action relates to the night-time use of the runway system at Dublin Airport. It involves 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 Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19, the **North Runway Permission**), as well as proposing new noise mitigation measures. Conditions no. 3(d) and 5 have not yet come into effect or operation, as the construction of the North Runway on foot of the North Runway Planning Permission is ongoing.

The proposed Relevant Action, if permitted, would be to remove the numerical cap on the number of flights permitted between the hours of 11pm and 7am daily that is due to come into effect in accordance with the North Runway Permission and to replace it with an annual night-time noise quota between the hours of 11.30pm and 6am and also to allow flights to take off from and/or land on the North Runway (Runway 10L 28R) for an additional 2 hours i.e. 2300 hrs to 2400hrs and 0600 hrs to 0700 hrs. Overall, this would allow for an increase in the number of flights taking off and/or landing at Dublin Airport between 2300 hrs and 0700 hrs 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.

The relevant action pursuant to Section 34C(a) is to amend condition no. 3(d) of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19). 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 the above condition 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.'

The net effect of the proposed change, if permitted, would change the normal operating hours of the North Runway from the 0700hrs to 2300 hrs to 0600 hrs to 0000 hrs.

The relevant action also is to replace condition no. 5 of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19) 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.

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

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.

In addition to the proposed night time noise quota, the relevant action also proposes the following noise mitigation measures:

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

The proposed relevant action does not seek any amendment of conditions of the North Runway Planning Permission governing the general operation of the runway system (i.e., conditions which are not specific to night-time use, namely conditions no. 3 (a), 3(b), 3(c) and 4 of the North Runway Planning Permission) or any amendment of permitted annual passenger capacity of the Terminals at Dublin Airport. Condition no. 3 of the Terminal 2 Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No. PL06F.220670) and condition no. 2 of the Terminal 1 Extension Planning Permission (Fingal County Council Reg. Ref. No. F06A/1843; ABP Ref. No. PL06F.223469) provide that the combined capacity of Terminal 1 and Terminal 2 together shall not exceed 32 million passengers per annum.

The planning application will be subject to an assessment by the Aircraft Noise Competent Authority in accordance with the Aircraft Noise (Dublin Airport) Regulations Act 2019 and Regulation (EU) No 598/2014. The planning application is accompanied by information provided for the purposes of such assessment.

1.2 Project Overview

The Site is defined as being located at Dublin Airport, Co. Dublin, in the townlands of Collinstown, Toberbunny, Commons, Cloghran, Corballis, Coultry, Portmellick, Harristown, Shanganhill, Sandyhill, Huntstown, Pickardstown, Dunbro, Millhead, Kingstown, Barberstown, Forrest Great, Forrest Little and Rock on a site of c. 580 ha. North Runway is currently under construction within the northern extent of the Airport.

The North Runway Permission contains 31 planning conditions. Two of these planning conditions (Conditions 3(d) and 5) relates to operating restrictions on the use of the runways and overall number of permitted flights at night, and these are due to come into force once the North Runway is operational in 2022. In addition, Condition 4 of the North Runway Permission introduces a restriction on the use of the cross-wind runway (16/34). For avoidance of doubt there is no intention to apply to amend, review or revoke Condition 4.

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

Notwithstanding the current situation with Covid-19, there is still a need to safeguard the return to growth in air traffic movements at the airport which means addressing the night-time operating restrictions attached to the North Runway permission.

A Relevant Action application has therefore been prepared to request an amendment to Condition 3d and a replacement of condition 5 as conditioned by the North Runway Permission. Further detail regarding for the characteristics of the proposed Relevant Action is contained within Chapter 2, and further detail of the need for the proposed Relevant Action is contained within Chapter 3, of this EIAR.

1.3 EIA Process

EIA is the process for assessing the effects, if any, which proposed development, if carried out, would have on the environment. An EIA is required for certain classes of project as defined in domestic legislation that transposes the EIA Directives 2011/92/EU and 2014/52/EU. Amendments introduced by the EIA Directives were transposed into Irish law on the 1st September 2018 in the form of the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (hereafter referred to as 'the EIA Regulations'). EIA requirements derive

from Council Directive 85/337/EEC (as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC) and as codified and replaced by Directive 2011/92/EU of the European Parliament and the Council on the assessment of the effects of certain public and private projects on the environment. Amending EIA Directive 2014/52/EU, constitutes an update of the preceding Directive 2011/1192/EU and has been considered in the assessments completed herein.

Directive 2014/52/EU was transposed into Irish law on September 1st 2018 in the form of the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

An EIA is required for certain classes of projects defined in (Schedule 5, Part 2(10) (d)) of the Planning and Development Regulations 2001, as amended. Where a project falls into one of these classes and exceeds a related size threshold (also defined in the legislation) an EIA is required. Where the project is below the threshold an EIA may still be required if there is the potential for significant environmental effects and this potential is assessed in relation to criteria set out in Annex III of the EIA Directive.

1.4 Need for an EIA

The application relates to a proposed Relevant Action only, comprising a change in operating restrictions, and will involve no construction works or changes to the consented physical infrastructure of the North Runway. Therefore, the proposed Relevant Action is not a project within the meaning of the EIA Directive.

On the basis of the case law of the Court of Justice of the European Union (CJEU), and, in particular, the Judgments in the *Brussels Airport Case* (Case C-275/09) and *Pro-Braine* (Case C-121/11), this application to remove, replace or vary Conditions No. 3(d) and No 5 of the North Runway permission is not an application for development consent for a 'project' within the meaning of the EIA Directive, and is therefore outside the scope of that Directive. Strictly without prejudice to that position, daa is submitting an EIAR with the application out of an abundance of caution.

This EIAR has been prepared as part of the EIA process, which includes a baseline assessment to determine the status of the existing environment, and a statement of the effects, if any, which the proposed Relevant Action, if carried out, would have on the environment.

1.5 EIAR Methodology and Relevant Guidelines

1.5.1 EIAR Preparation

An EIAR is defined by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 246 of 2018) as:

"...a report of the effects, if any, which proposed development, if carried out, would have on the environment and shall include the information specified in Annex IV of the Environmental Impact Assessment Directive".

The primary objective of the EIAR is therefore to identify baseline environmental conditions in the proposed project area, identify significant environmental effects, predict potential beneficial and/or significant adverse effects of the proposed development and propose appropriate mitigating measures where necessary, as set out in Figure 1-1 below.

This EIAR assesses, as required, the direct effects and any indirect, secondary, cumulative, transboundary, short term, medium term and long term permanent and temporary, positive and negative effects of the proposed Relevant Action.

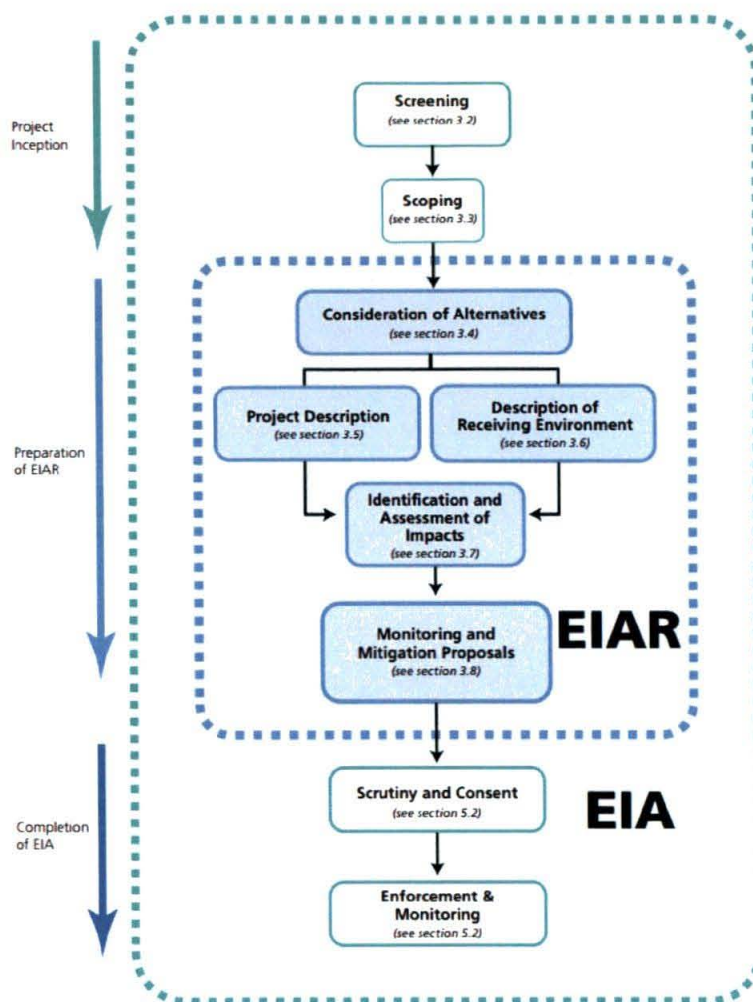


Figure 1-1 EIA Process (EIAR Draft Guidelines, EPA, 2017)

As outlined in Section 1.2, the proposed Relevant Action relates solely to proposals to amend condition 3(d) and replace condition 5 of the North Runway Permission and does not comprise or require the development of any physical or other infrastructure.

The assessment carried out in this EIAR will analyse / consider:

- the nature of the relevant environment;
- potential alternatives; and
- mitigation and monitoring measures will focus on the operation of the consented and constructed runway system.

The Environmental Protection Agency is required to "prepare Guidelines on information to be contained in environmental impact statements". The Environmental Protection Act 1992 (as amended) further provides that those preparing and evaluating EIARs shall have regard to such guidelines. This is intended to provide developers, CAs and the general public guidance on the preparation and assessment of EIARs, within the context of established development consent procedures.

The following EIA regulations and EPA guidelines were considered by AECOM in preparing this EIAR:

- The requirements of EC Directives and Irish Regulations regarding EIA, such as European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296/2018), and EIA Directives 2011/92/EU and 2014/52/EU;

- Guidelines on the information to be contained in Environmental Impact Statements, EPA, (Draft August 2017);
- Advice Notes for preparing Environmental Impact Statements, EPA, Draft September 2015;
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU), European Union, 2017; and
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out EIA, August 2018.

In addition to this, a number of specific guidance documents have been used in individual assessments where required. These will be addressed within the policy and legislation section of each assessment topic covered within the EIAR.

Information on the proposed Relevant Action and the receiving environment was obtained through a number of means including:

- Review of existing data for the general area of the site
- Review of previous studies carried out at the site and locality
- Site visits and field surveys
- Aerial photographs
- Meetings with FCC
- Engagement with local communities as part of the Dublin Airport consultation programme

1.5.2 Identifying Potentially Significant Environmental Effects

The Environmental Protection Agency (EPA) draft 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2017) (hereafter referred to as 'the EPA Draft Guidelines') states the identification of potential likely significant impacts from different phases of a proposed development should be considered as far as reasonably possible. The environmental assessments for this project have evaluated the effects of the proposed Relevant Action, and the likelihood, extent, magnitude, duration, reversibility and significance of any likely potential impacts of the proposed Relevant Action versus the consented operations.

Specific criteria for each technical discipline has been utilised, giving due regard to the following criteria from the EPA Draft Guidelines:

- The magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
- The nature of the impact;
- The transboundary nature of the impact;
- The intensity and complexity of the impact;
- The probability of the impact;
- The expected onset, duration, frequency and reversibility of the impact;
- The accumulation of the impact with the impact of other existing and/or approved projects; and
- The possibility of effectively reducing the impact.

1.5.3 Assessment Terminology

In order to provide a consistent approach across the different technical disciplines addressed within the EIA, the following terminology will be used throughout the EIAR. This terminology has been adapted from the EPA Draft Guidelines. Where individual environmental topics use different terminology due to specific guidance or legislative requirements, this will be described further in that section.

To define residual effects (i.e. the effect after the application of any required additional mitigation measures), the following terminology will be used:

- Positive Effects – A change which improves the quality of the environment (for example, by increasing species diversity; or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
- Negative/Adverse Effects – A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
- Neutral Effects – No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.

When addressing the duration of an effect, the following terminology will be used:

- Momentary Effects – Effects lasting from seconds to minutes
- Brief Effects – Effects lasting less than a day
- Temporary Effects – Effects lasting less than a year
- Short-term Effects – Effects lasting one to seven years
- Medium-term Effects – Effects lasting seven to fifteen years
- Long-term Effects – Effects lasting fifteen to sixty years
- Permanent Effects – Effects lasting over sixty years
- Reversible Effects – Effects that can be undone, for example through remediation or restoration
- Frequency of Effects – Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)

The extent and context of an effect will also be described as this can affect the perception of significance. These terms are defined as:

- Extent – Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
- Context – Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)

Where adverse or beneficial effects are identified, these will be assessed against the following scale:

- Imperceptible – An effect capable of measurement but without significant consequences.
- Not significant – An effect which causes noticeable changes in the character of the environment but without significant consequences.
- Slight Effects – An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
- Moderate Effects – An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
- Significant Effects – An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
- Very Significant – An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
- Profound Effects – An effect which obliterates sensitive characteristics.

Finally, the probability of an effect should be defined to establish how likely it is to occur.

- Likely Effects – The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
- Unlikely Effects – The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

1.5.4 Significance Criteria

For each technical EIAR chapter, the classification and significance of effects will be evaluated with reference to definitive standards, accepted criteria and legislation where available. Where it has not been possible to quantify effects, qualitative assessments will be carried out, based on professional opinion and professional judgement. Where uncertainty exists, this will be noted in the relevant EIAR chapter.

For each topic, the technical assessment will consider the magnitude of impacts and the sensitivity of the resources / receptors that could be affected in order to classify the effect. Each environmental factor and technical discipline will have its own method based on various standards and approaches, which will be detailed in a transparent and understandable way within the EIAR chapter.

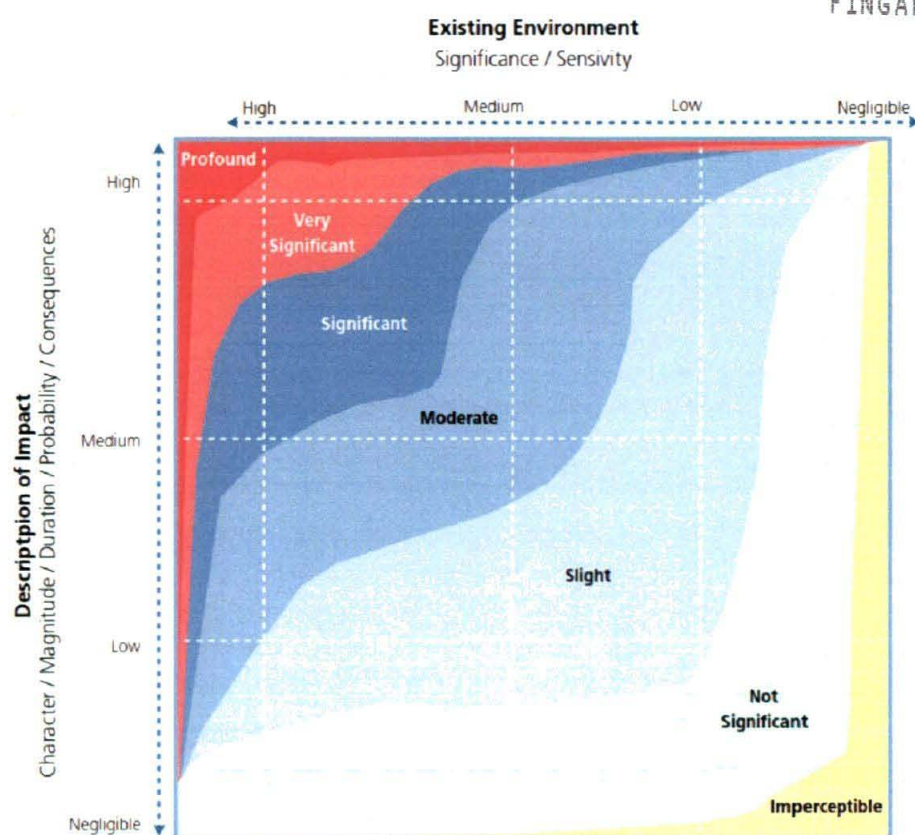


Figure 1-2 Determination of the Significance of an Effect (EPA, 2017)

In general, residual effects found to be 'significant', 'very significant' or 'profound' are deemed to be 'significant effects'. Effects found to be 'moderate' and 'slight' are considered to not be significant effects 'Not significant' and 'imperceptible' effects are considered to not be significant.

1.6 Cumulative Effects

The EIA Directive states an Environmental Impact Assessment Report (EIAR) should contain:

'A description of the likely significant effects of the project on the environment resulting from...the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.'

The Directive makes clear that the description of the likely significant effects should cover their cumulative effects. The Environmental Protection Agency's draft 'Guidelines on the information to be contained in Environmental

Impact Assessment Reports' (hereafter referred to as 'the EPA Draft Guidelines') explains that cumulative effects are 'the addition of many minor or significant effects, including the effects of other projects, to create larger, more significant effects'.

Cumulative effects consider the impacts of other undeveloped permitted projects and reasonably foreseeable development within the vicinity and context of the project. This will include other projects planned by daa, and any known permitted or planned projects by third parties. *Chapter 21: Interaction and Cumulative Effects*, assesses the cumulative and in-combination effects associated with the proposed Relevant Action. These two types of environmental effects are defined as:

- In-combination Effects - Interrelationships that occur between the individual environmental effects of the proposed Relevant Action and the way that these effects have the potential to combine together to cause cumulative effects with one another at certain sensitive locations and lead to significant effects; and
- Cumulative Effects - The potential for effects of the proposed Relevant Action to combine with effects from other projects in the vicinity and lead to significant effects.

The receiving environment of the proposed Relevant Action within which any potential effects of the proposed Relevant Action may combine with the effects arising from other developments will be determined on the basis of the maximum study areas of the technical assessments considered within the EIAR.

A long list of schemes included in the cumulative effects assessment has been identified and filtered to short list 'other developments' for purposes of the assessment of cumulative effects together with the proposed Relevant Action. Each technical assessment within the EIAR has considered which of these schemes may result in cumulative effects together with the proposed Relevant Action from the perspective of the relevant technical assessment.

Interaction with other schemes and transboundary effects has also been considered after further detail is provided within *Chapter 21: Cumulative Effects*, of this EAIR.

1.7 Scenarios Assessed

The existing operations at Dublin Airport are described in Chapter 3 of this EIAR. The following sections describe the proposed Relevant Action at Dublin Airport which are the subject of this application.

The assessment focusses on a comparison between the future permitted baseline (2022 constrained) and the proposed (unconstrained) operational scenario relating to the amendment to Condition 3(d) and the replacement of Condition 5. The future years assessed across the technical topics include 2022 and 2025.

The existing baseline (2018), is evaluated as this provides an empirical description of the effects when the airport was close to 32mppa. 2018 is also the existing baseline year examined in detail in the noise chapters.

1.7.1 Permitted / Constrained Scenario

The permitted scenario assessed in this EIAR is that with Conditions 3d and 5 in place in the future years 2022 and 2025 (ie constrained).

1.7.2 Proposed / Unconstrained Scenario

In the proposed scenario, it assumes the planning conditions imposed under the North Runway Permission are implemented at Dublin Airport, with the exception of Condition 3(d) and 5 (ie the proposed / unconstrained scenario).

The year of opening is 2022, the year that North Runway is planned to be operational in; with the future assessment years defined as:

- 2022 – the year in which North Runway is expected to be operational
 - 2022 constrained / permitted; and
 - 2022 unconstrained / proposed
- 2025 – the first year 32 mppa is forecast to be reached with North Runway operations
 - 2025 constrained / permitted; and

- 2025 unconstrained / proposed.

The year of predicted maximum environmental effects during operational phase will consider the year(s) of highest use of the runway system and associated emissions i.e the year when 32mppa will be reached but not exceeded (predicted to be 2025).

Table 1-1 below is taken from the Mott MacDonald Report (Quantification of Impacts on Future Growth, Update 2022 - 2025 Period') which sets out the predicted Annual Traffic Movements (ATMs) and Annual Passengers (PAX) for the future baseline (constrained and unconstrained) ATM and PAX numbers assessed in this EIAR:

Table 1-1 Annual Traffic Impact

Annual Traffic Impact – High Growth Case (Night Restriction constraints)

| Annual Passengers (m) | | | | Annual ATMs (000s) | | | |
|-----------------------|---------------|-------------|------------|--------------------|---------------|-------------|------------|
| Year | Unconstrained | Constrained | Difference | Year | Unconstrained | Constrained | Difference |
| 2018 | 31.5 | 31.5 | 0.0 | 2018 | 233 | 233 | |
| 2019 | 32.9 | 32.9 | 0.0 | 2019 | 241 | 241 | |
| 2020 | 8.2 | 8.2 | 0.0 | 2020 | | | |
| 2021 | 20.7 | 20.7 | 0.0 | 2021 | | | |
| 2022 | 29.6 | 28.7 | -0.9 | 2022 | 229 | 223 | -5.8 |
| 2023 | 30.4 | 29.3 | -1.1 | 2023 | 233 | 226 | -7.1 |
| 2024 | 31.2 | 30.1 | -1.1 | 2024 | 237 | 229 | -7.8 |
| 2025 | 32.0 | 30.9 | -1.1 | 2025 | 241 | 233 | -7.8 |

1.8 Format of the EIAR

This EIAR was prepared as part of the EIA process, which includes a baseline assessment to determine the status of the existing receiving environment, impact prediction and evaluation, and determining appropriate mitigation measures, including monitoring and reinstatement where appropriate.

This EIAR has been prepared according to the 'Grouped Format Structure' as outlined in the EPA's 'Guidelines on the information to be contained in Environmental Impact Statements' (EPA, 2002), and as evolved in 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (EPA, 2017).

The EIAR is divided into 21 chapters as follows:

- Chapter 1: Introduction
- Chapter 2: Characteristics of the Project
- Chapter 3: Background and Need for the Project
- Chapter 4: Examination of Alternatives
- Chapter 5: Consultation
- Chapter 6: Planning and Development
- Chapter 7: Population and Human Health
- Chapter 8: Major Accidents and Disasters
- Chapter 9: Traffic and Transportation
- Chapter 10: Air Quality
- Chapter 11: Climate and Carbon
- Chapter 12: Water
- Chapter 13: Air Noise and Vibration
- Chapter 14: Ground Noise and Vibration
- Chapter 15: Biodiversity (Terrestrial)
- Chapter 16: Biodiversity (Aquatic)
- Chapter 17: Landscape and Visual
- Chapter 18: Land and Soils
- Chapter 19: Material Assets

- Chapter 20: Cultural Heritage
- Chapter 21: Interaction and Cumulative Impact

A Non-Technical Summary of this EIAR has also been prepared.

1.9 Difficulties Encountered

Preparation of this EIAR has been ongoing for many months. In March 2020 it became apparent that the Covid-19 pandemic was having a significant impact on global aviation. The immediate impacts were severe and in the short-medium term these impacts will continue to manifest themselves in reduced air traffic demand in Ireland and globally.

After the severe disruption to air travel in 2020 and anticipated partial recovery in 2021, demand is assumed to recover to 90% of 2019 levels by 2022 and grow to 32m annual passengers by 2025. There is uncertainty with any forecast at this time, however, it is reasonable to plan for a return to pre-Covid air traffic levels by 2025. This is discussed further in Chapter 3: Need for the project.

1.10 The Project Team

This EIAR has been prepared by an EIA team appointed by the Applicant. The EIA process requires a multi-disciplinary approach due to the varied environment topics that could be affected by the proposed Relevant Action. Specialists within each relevant field have contributed to the assessment as set out in Table 1-2 below.

Table 1-2 The Project Team

| Role | Organisation |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| EIAR co-ordination and preparation (Peta Donkin BSc (Hons) AIEMA) | AECOM Ireland Limited |
| Environmental topic specialists: | |
| • Population and Human Health (David Widger BSc (Hons) MSc (Econ)) | |
| • Traffic and Transport (Colin Acton BEng CEng MIEI MCIHT) | |
| • Air Quality (Gareth Hodgkiss BSc MSc MEnvSc MIAQM) | |
| • Climate and Carbon (Ian Davies BA (Hons)) | |
| • Landscape and Visual (Jorge Schulze) | |
| • Biodiversity, Flora and Fauna (Terrestrial) Tony Marshall BSc (Hons), MCIEEM | |
| • Biodiversity (Aquatic) Tony Marshall BSc (Hons), MCIEEM | |
| • Water (Drainage) (Anthony Dale BSc (Eng) Dip Eng CEng MIEI) | |
| • Land and Soils (Edel O'Hannelly) | |
| • Material Assets (Peta Donkin BSc (Hons) AIEMA) | |
| • Cultural Heritage (David Kilner) | |
| • Interaction and Cumulative Impact (Peta Donkin BSc (Hons) AIEMA) | |
| Planning Consultants (Gavin Casey BSs MRUP MIPI) | Tom Phillips + Associates (TPA) |
| Air Quality & Odour (Stephen Moorcroft) | AECOM Ireland Limited joint venture with Air Quality Consultants Ltd (AQC) |
| Hazard and Risk (Dr Mark Eddowes MA DPhil (Oxon)) | Eddowes Aviation Safety Ltd |
| Air Noise and Vibration | Bickerdike Allen Partners LLP |

| Role | Organisation |
|--------------------------------------------------------------------------------------------------------------|------------------------|
| Ground Noise and Vibration (Nick Williams BSc (Hons) MSc MIOA and David Charles BSc (Hons) Pg Dip MIOA | |
| Greenhouse gas modelling | Airport Footprints Ltd |
| Regulation 598 Assessment and Cost Effectiveness Analysis | Ricondo |
| Impact on Future Growth | Mott MacDonald |
| Economic Impact | InterVISTAS |
| Annual Night Quota System proposals | Anderson Acoustics |

Chapter 02: Characteristics of the Project

02

2. Characteristics of the Project

2.1 Project Description

2.1.1 Introduction

This report relates to an application for a proposed Relevant Action to be taken in accordance with Section 34C(1)(a) of the PDA, to amend and replace two planning conditions, namely conditions no. 3(d) and 5 of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429, 'the North Runway Permission'), which limit access or reduces the operational capacity of Dublin Airport. The Aircraft Noise (Dublin Airport) Regulation Act 2019 (the **Aircraft Noise Act**) further implements EU Regulation 598/2014 on the establishment of rules and procedures with regard to the introduction of noise related operating restrictions at European Union Airports within the Balanced Approach. The Aircraft Noise Act amends the Planning and Development Act, as amended (PDA) to cater for revoking, amending or replacing operating restrictions at Dublin Airport.

The Aircraft Noise (Dublin Airport) Regulation Act 2019 also sets out a process of Aircraft Noise Regulation whereby the competent authority shall ensure that the Balanced Approach is adopted where a noise problem at the airport has been identified and to that end further ensure that as appropriate a noise abatement objective (NAO) is defined.

The NAO will be set in due course by the Aircraft Noise Competent Authority (ANCA) established under the 2019 Act. In order to provide the necessary supporting documentation to allow ANCA to carry out their assessment, daa have developed a candidate NAO (cNAO) to provide a basis for assessment of the proposed aircraft noise reduction measures assessed in the Aircraft Noise Regulation assessment that accompanies this Relevant Action application.

A baseline year of 2018 was chosen for the cNAO. The summary objective of the cNAO states:

"To limit and reduce the adverse effects of long-term exposure to aircraft noise, including health and quality of life, so that long-term noise exposure, particularly at night, does not exceed the situation in 2018. This should be achieved through the application of the Balanced Approach"

A "relevant action" is defined in section 34C of the Planning and Development Act 2000 as inserted by section 11 of the Aircraft Noise (Dublin Airport) Regulation Act 2019 as:

- a. "to revoke an operating restriction,
- b. to amend the terms of an operating restriction in the manner specified in the application,
- c. to replace an operating restriction with an alternative operating restriction specified in the application,
- d. To take an action referred to in para (a), (b) or (c) together with introducing new noise mitigation measures or revoking, revoking and replacing, or amending the terms of, existing noise mitigation measures, or a combination thereof,
- e. if the relevant application relates to 2 or more relevant operating restrictions, to take any combination of any of the actions referred to in paragraphs (a) to (d), or
- f. to take an action referred to in paragraph (a), (b), (c), (d) or (e) together with revoking, revoking and replacing, or amending the terms of, a condition of the relevant permission;"

The relevant noise related operating restrictions which currently apply to the North Runway permission are set out in full in paragraphs 2.1.11 to 2.1.15 below. In summary they provide as follows:

- No use of North Runway at night (2300 to 0700). - This is provided for in Condition 3d of the North Parallel Runway Planning Permission (FCC Reg. Ref. F04A/1755; ABP Ref. PL06F.217429).
- The Crosswind runway can be only used for essential purposes. - This is provided for in Condition 4 of the North Parallel Runway Planning Permission (FCC Reg. Ref. F04A/1755; ABP Ref. PL06F.217429).
- A limit on the number of aircraft movements at the airport at night (2300 to 0700) to 65/night. - This is provided for in Condition 5 of the North Parallel Runway Planning Permission (FCC Reg. Ref. F04A/1755; ABP Ref. PL06F.217429).

Section 34C(1)(a) provides that "*The person in whose favour a relevant permission operates may, by virtue of this subsection and notwithstanding any other provision of this Act (including section 34), make an application under section 34 to the planning authority where the application is only for a relevant action to be taken.*"

The proposed Relevant Action relates to the night-time use of the runway system at Dublin Airport. It involves 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, as well as proposing new noise mitigation measures. Conditions no. 3(d) and 5 have not yet come into effect or operation, as the construction of the North Runway on foot of the North Runway Planning Permission is ongoing.

The proposed relevant action does not seek any amendment of conditions of the North Runway Planning Permission governing the general operation of the runway system (i.e., conditions which are not specific to night-time use, namely conditions no. 3 (a), 3(b), 3(c) and 4 of the North Runway Planning Permission) or any amendment of permitted annual passenger capacity of the Terminals at Dublin Airport. Condition no. 3 of the Terminal 2 Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No. PL06F.220670) and condition no. 2 of the Terminal 1 Extension Planning Permission (Fingal County Council Reg. Ref. No. F06A/1843; ABP Ref. No. PL06F.223469) provide that the combined capacity of Terminal 1 and Terminal 2 together shall not exceed 32 million passengers per annum.

The result of the permitted / constrained scenario coming into effect when North Runway becomes operational in 2022, is a loss of air traffic movements and associated loss of 1.1m passengers per year (-3.5%) and a cumulative loss over the 4-year period 2022-2025 of 4.3m passengers. The net effect of the proposed Relevant Action would be to facilitate an increase in the number of flights permitted to take off from, or land at, Dublin Airport at night, which would enable the lost 1.1million passengers to be regained annually in the post-COVID-19 recovery period.

2.1.2 Proposed Development in Detail

The proposed Relevant Action, if permitted, would be to remove the numerical cap on the number of flights permitted between the hours of 11pm and 7am daily that is due to come into effect in accordance with the North Runway Permission and to replace it with an annual night-time noise quota between the hours of 11.30pm and 6am and also to allow flights to take off from and/or land on the North Runway (Runway 10L 28R) for an additional 2 hours i.e. 2300 hrs to 2400hrs and 0600 hrs to 0700 hrs. Overall, this would allow for an increase in the number of flights taking off and/or landing at Dublin Airport between 2300 hrs and 0700 hrs 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.

2.1.2.1 Condition 3(d) of the North Runway Permission

The relevant action pursuant to Section 34C(a) is to amend condition no. 3(d) of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19). 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 the above condition 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.'

The net effect of the proposed change, if permitted, would change the normal operating hours of the North Runway from the 0700hrs to 2300 hrs to 0600 hrs to 0000 hrs.

2.1.2.2 Condition 5 of the North Runway Permission

The relevant action also is to replace condition no. 5 of the North Runway Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429 as amended by Fingal County Council F19A/0023, ABP Ref. No. ABP-305289-19) 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.

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

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.

In addition to the proposed night-time noise quota, the relevant action also proposes the following noise mitigation measures:

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

2.1.2.3 The Proposed Quota Count System

A Quota Count (QC) system is designed to limit the overall amount of noise produced by aircraft using an airport based on an allowable Annual Noise Quota (ANQ) for a given time period. A QC value is assigned to each individual aircraft movement based on the certified noise level of that aircraft. Lower QC values are attributed to aircraft with lower noise levels, higher values to noisier aircraft. The QC accumulates for each air traffic movement (ATM) against the Annual Night Quota (ANQ) across the chosen time period. As such, the system allows a greater number of quieter aircraft movements within a given quota thereby encouraging the use of quieter aircraft at the airport.

An Annual Night Quota (ANQ) has been developed for the period 23:30 to 06:00 (known as the Night Quota Period (NQP)) consistent with airports operating similar QC based systems. An ANQ of 7,990 is proposed to apply for each year from the opening of the North Runway to 2025 to facilitate growth back to pre-COVID-19 levels up to 32million passengers per annum (mppa). This total ANQ has been derived using a QC value of 0.49 per ATM and based on the number of forecast Air Traffic Movement (ATMs) in 2025. This represents a reduction in QC value per ATM from 2018 which was 0.52 per ATM. Details of the ANQ calculations and methodology are provided in the document, 'Dublin Airport, Developing a Proposed Night Quota System' by Anderson Acoustics, which forms part of the planning application package.

The proposed change from the night-time aircraft movement cap of 65 movements per night to the ANQ, will allow growth in overall air traffic movements at night whilst ensuring that the overall effects of aircraft noise do not exceed those in 2018 in accordance with the cNAO. This is the result of airlines updating the fleet operating at Dublin Airport to comprise more quieter aircraft.

In addition to the above, it is proposed that a noise monitoring framework will be put in place at the airport to monitor, assess and report across a number of key noise metrics and to demonstrate ongoing compliance with the Noise Abatement Objective (NAO) for the airport once it has been defined by ANCA.

2.1.2.4 Proposed Noise Mitigation

A separate Regulation 598, Balanced Approach assessment has been undertaken for the Relevant Action and is submitted as part of the planning application.

The Regulation 598 assessment is used to inform the noise measures for the proposed Relevant Action and the Alternatives assessment. daa propose to introduce the following noise mitigation measures:

2.1.2.5 A Night Noise Insulation Scheme

An Insulation Grant of €20,000 for dwellings:

- Forecasted to be exposed to night-time noise levels of at least 55 dB L_{night} in 2025 or

- Forecasted to be exposed to noise levels greater than 50 dB L_{night} in 2022 arising from a change of at least 9 dB when compared with 2018.

Eligibility within the 55 dB L_{night} contour will be reviewed every 2 years with revised forecasts.

The night noise insulation scheme is considered additional to the existing daytime noise insulation scheme currently provided in accordance with Condition 7 of North Runway planning permission.

A detailed framework for monitoring the noise performance with respect to the Noise Abatement Objective (NAO), when it has been defined, will be implemented. Performance will be reported annually to the Aircraft Noise Competent Authority (ANCA), in compliance with the Aircraft Noise (Dublin Airport) Regulation Act 2019.

2.1.2.6 The Balanced Approach

The application as proposed will seek to amend Condition 3d and replace Condition 5 of the North Runway Permission. An assessment of the International Civil Aviation Organisation (ICAO) Balanced Approach is required under the Aircraft Noise (Dublin Airport) Regulation Act 2019. The principle of the "balanced approach" to aircraft noise management was adopted by the ICAO Assembly in 2011. The Balanced Approach consists of identifying any noise problem that may exist at a specific airport and analysing various measures available to reduce noise through the exploration of various measures which can be classified into four principal elements, described in Figure 2-2 below. The process of identifying a noise problem and developing a Noise Abatement Objective (NAO) under the 2019 Noise Regulations will be undertaken by the competent authority (ANCA) in due course.

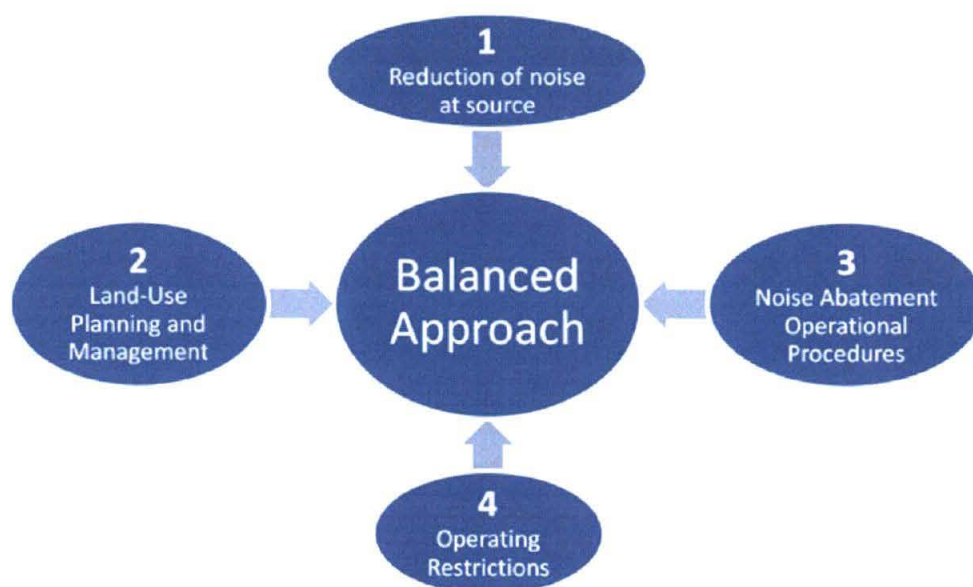


Figure 2-1 The four principal elements of the Balanced Approach to Aircraft Noise Management

The proposed Relevant Action relates to the night-time use of the runway system at Dublin Airport. It involves 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, with no changes to the permitted infrastructure of North Runway which is under construction. The design and construction of North Runway will be as consented in 2007 and as amended in 2019. The proposed Relevant Action is therefore best considered within the focus of the use of the runway system and in particular the use of the runways during the night period of 2300 to 0700.

During the operational phase, it is intended that the crosswind runway (16/34) will predominantly be used as a taxiway. The existing 'Dual Runway Operations' (i.e. departures from both the existing main runway (28) and the crosswind runway (34) when weather conditions allow during the hours of 0630 – 0800 local time) will cease. The use of crosswind runway (16/34) for take-offs and landings will be for essential use only, as specified by Condition 4. There is no intention to review this operating restriction or to amend condition 4, in the Relevant Action application.

2.2 Construction Phase

The proposed Relevant Action comprises a change in operating restrictions and will involve no construction works or changes to the consented physical infrastructure of North Runway or any other areas of the airport. This application for the proposed Relevant Action has no construction phase element for assessment.

2.3 Operational Phase

The proposed Relevant Action involves amendment or replacement of the operating restrictions on the use of runway system at night, which would result in additional night flights above the number permitted under Condition 5 of the North Runway permission. The use of the runway system during the daytime will be as per Condition 3a-c of the North Runway permission.

2.4 Main Scenarios Assessed

The existing operations at Dublin Airport are described in Chapter 3 of this EIAR. The following sections describe the proposed Relevant Action at Dublin Airport which are the subject of this application.

The assessment focusses on a comparison between the future permitted baseline (2022 constrained) and the proposed (unconstrained) operational scenario relating to the amendment to Condition 3(d) and the replacement of Condition 5. The future years assessed across the technical topics include 2022 and 2025.

The existing baseline (2018), is evaluated as this provides an empirical description of the effects when the airport was close to 32mppa. 2018 is also the existing baseline year examined in detail in the noise chapters.

2.4.1 Permitted / Constrained Scenario

The permitted scenario assessed in this EIAR is that with Conditions 3d and 5 in place in the future years 2022 and 2025 (i.e. constrained).

2.4.2 Proposed/Constrained Scenario

In the proposed scenario, it assumes the planning conditions imposed under the North Runway Permission are implemented at Dublin Airport, with the exception of Condition 3(d) and 5 (i.e. the proposed / unconstrained scenario).

The year of opening is 2022, the year that North Runway is planned to be operational in; with the future assessment years defined as:

- 2022 – the year in which North Runway is expected to be operational
 - 2022 constrained / permitted; and
 - 2022 unconstrained / proposed
- 2025 – the first year 32 mppa is forecast to be reached with North Runway operations
 - 2025 constrained / permitted; and
 - 2025 unconstrained / proposed.

The year of predicted maximum environmental effects during operational phase will consider the year(s) of highest use of the runway system and associated emissions i.e the year when 32mppa will be reached but not exceeded (predicted to be 2025).

2.5 Description of Operations

Permitted Runway Usage (as per the North Runway Permission Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No.: PL06F.217429)

Future Runway usage is determined by Conditions 3 (a-d), 4 and 5 of the North Runway planning permission, which dictates the usage of runway system. These conditions state:

Condition 3 - On completion of construction of the runway hereby permitted, the runways at the airport shall be operated in accordance with the mode of operation Option 7b as detailed in the Environmental Impact Statement Addendum, Section 16 as received by the planning authority on the 9th day of August, 2004 and shall provide that:

- (a) the parallel runways (10R -28L and 10L-28R) shall be used in preference to the cross runway, 16-34,
- (b) when winds are westerly, Runway 28L shall be preferred for arriving aircraft. Either Runway 28L or 28R shall be used for departing aircraft as determined by air traffic control,
- (c) when winds are easterly, either Runway 10L or 10R as determined by air traffic control shall be preferred for arriving aircraft. Runway 10R shall be preferred for departing aircraft, and
- (d) Runway 10L-28R shall not be used for take-off or landing between 2300 hours and 0700 hours, except in cases of safety, maintenance considerations, exceptional air traffic conditions, adverse weather, technical faults in air traffic control systems or declared emergencies at other airports.
- Reason: In the interest of clarity and to ensure the operation of the runways in accordance with the mitigation measures set out in the Environmental Impact Statement in the interest of the protection of the amenities of the surrounding area.

Condition 4 - The crosswind runway (16-34) shall be restricted to essential occasional use on completion of the new runway in accordance with Objective DA03 of the Fingal County Development Plan, 2005-2011 - international regulations for safety reasons.

- Reason: In the interest of public safety, residential amenity and the proper planning and sustainable development of the area

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.

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

Two of these planning conditions (Conditions 3(d) and 5) related to operating restrictions on the use of the runways and overall airport operations at night. Condition 4 of the permission introduces a restriction on the use of the crosswind runway (16/34). For avoidance of doubt there is no intention to apply to amend or replace Condition 4.

Once North Runway is operational, the crosswind runway (16/34) will be used but only for essential use. For the purposes of this EIAR an assumption of use for 1% of aircraft movements was used which is based on the percentage of time it is likely to be essential for use i.e when the crosswind component requires its use. The assumed future runway usage over a given year is summarised in Table 2-1, based on the average runway usage over the last 10 years allowing for the expected reduction in cross runway usage.

Table 2-1 Future Runway Usage

| Runway | Arrivals | Departures |
|---------|----------|------------|
| 10L/10R | 29.0%* | 29.0% |
| 28L/28R | 70.0% | 70.0% |
| 16 | 0.75% | 0.75% |
| 34 | 0.25% | 0.25% |

2.7 Description of Proposed Operations

The following sections outline the proposed operations at Dublin Airport:

2.7.1 Proposed Runway Usage

Once North Runway is operational the parallel runway will predominately be operated in segregated mode, i.e. one runway for all arrivals, the other for all departures. However, in peak periods, the runways will operate in semi-mixed mode, i.e. one runway used for both arrivals and departures simultaneously and the other runway for arrivals or departures depending on the wind direction. It is not expected that full mixed mode would be required in the assessment years of 2022 and 2025 i.e. both runways used for arrivals and departure at the same time.

Condition 3 a-c states that;

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

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

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

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

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.’

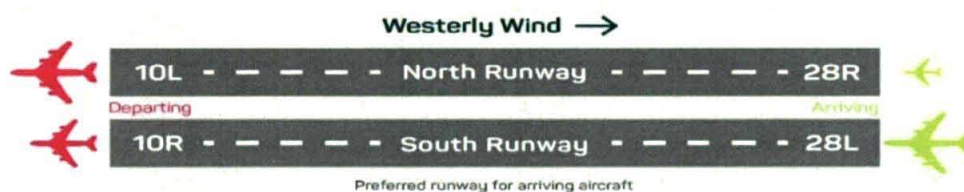
The net effect of the proposed change, if permitted, would change the normal operating hours of the North Runway from the 0700hrs to 2300 hrs to 0600 hrs to 0000 hrs.

Option 7b shall be achieved primarily by segregated mode of operation as follows and illustrated in Figure 2-2:

When winds are westerly (approximately 70% of the time), Runway 28L shall be preferred for arriving aircraft. Runway 28R shall be used for departing aircraft.

When winds are easterly (approximately 30% of the time), Runway 10R shall be preferred for departing aircraft. Runway 10L shall be used for arriving aircraft.

Option 7b: Westerly Operations (approx. 70% of the time)



Option 7b: Easterly Operations (approx. 30% of the time)

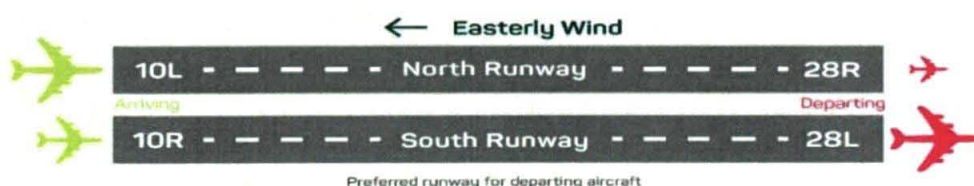


Figure 2-2 Operating Mode 7b

The relevant action also is 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.'

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

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.

In addition to the proposed night time noise quota, the relevant action also proposes the following noise mitigation measures:

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

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

Condition no. 3 of the Terminal 2 Planning Permission (Fingal County Council Reg. Ref. No. F04A/1755; ABP Ref. No. PL06F.220670) and condition no. 2 of the Terminal 1 Extension Planning Permission (Fingal County Council Reg. Ref. No. F06A/1843; ABP Ref. No. PL06F.223469) provide that the combined capacity of Terminal 1 and Terminal 2 together shall not exceed 32 million passengers per annum.

Further details around the need for the project are contained within *Chapter 3: The Need for the Project*.

Chapter 03:
Need for the
Project

03

3. Need for the Project

3.1 Background

This report relates to an application for a proposed Relevant Action to be taken in accordance with Section 34C(1)(a) of the PDA, to amend and replace two planning conditions, namely conditions no. 3(d) and 5 of the North Runway Planning Permission.

Mott MacDonald was appointed by daa to assess and quantify the traffic impacts of the operating restrictions. The resulting report entitled 'Quantification of Impacts on Future Growth, Update 2022 - 2025 Period' was prepared in September 2020 and informs the following sections of this chapter. The full report is included as part of the planning application for the proposed Relevant Action.

The airport has two main airlines providing the majority of flights: Ryanair (35% share) and Aer Lingus (29% share), based on the Summer 2019 schedule. The airport serves mostly short haul services (90% of flights) to points in the UK and Europe. Long haul services are mainly to North America, plus some services to the Middle East, Asia and Africa.

Demand for night flights between 23:00-07:00 is driven mainly by short haul services operated by aircraft based at Dublin. In order to achieve the high levels of aircraft utilisation necessary for airline competitiveness, based aircraft such as Aer Lingus and Ryanair tend to operate with first departure between 06:00-07:00 and last arrival after 23:00. Other 23:00-07:00 period flights are long haul arrivals in the early morning, and a small number of cargo flights mainly operated by the time-critical package delivery integrators (FedEx, DHL, TNT and UPS).

The 1h time difference between Ireland and mainland Europe means that flights need to leave early (before 07:00) to arrive in time for business passengers to have a full working day at their destination. The geographical position of Dublin Airport means that there are longer sector distances to many European destinations than from other competing airports. This means that Dublin Airport requires longer operating days than competing European hubs. Similarly, Dublin Airport's proximity to North America compared to the rest of Europe means that transatlantic flights arrive earlier in Dublin than at other European airports.

The Dublin night restrictions (Conditions 3d and 5) time period is also unusual in that it includes a peak hour of demand at the airport – 06:00-07:00. Therefore, the impact of the restriction on air traffic as defined under the North Runway Permission and potential future growth is significant.

Pre-COVID 19 levels of demand for night flights (23:00-07:00) was over 100/night, with 113/night associated with regularly scheduled services on a typical busy day in Summer 2019. This is well in excess of 65/night (measured as an average over the 92-day modelling period) that would come into effect under condition 5 of the North Runway Permission.

Demand for 23:00-07:00 night flights is not expected to reduce significantly during the post COVID-19 recovery. The forecast schedules analysed for the Mott MacDonald study require 108/night movements in 2022/23, rising to 113/night when the airport returns to 32m annual passenger traffic levels in around 2025.

The need for night flights at Dublin – driven by the need for airlines to achieve competitive levels of aircraft utilisation, flight connection connectivity, and to support timely air freight services into Ireland – is not diminished for the post COVID air transport scenario.

The Mott MacDonald 2020 study created busy day schedules for the years 2022 and 2025 (when the 32m passenger level is likely to be reached). It modelled the impact of the North Runway operating restrictions (Conditions 3d and 5) and overall runway capacity (operating in compliance with the North Runway Permission on airline schedules, taking into account the impacts on aircraft rotations throughout the day.

The assessed impact is a loss of 3.2% of total air traffic movements in the 24-hour period and associated 1.1m passengers per year (-3.5%) and a cumulative loss over the 4-year period 2022-2025 of 4.3m passengers when compared with the proposed / unconstrained scenario.

The operating restrictions particularly impact on the recovery and growth of the Dublin-based Irish carriers Aer Lingus and Ryanair. The Dublin-based carriers require early morning departures and late evening arrivals for their short haul operations, and Aer Lingus requires early morning arrivals for its transatlantic operations. Non-Irish

carriers are less affected by the restrictions as they have proportionately fewer operations in the restricted 23:00-07:00 period.

The operating restrictions constrain growth in short haul operations throughout the day, as the lack of night slots limits the number of Dublin based aircraft that can be accommodated, with each aircraft performing multiple flights during the operating day.

In summary, in the constrained scenario (i.e the North Runway Permission), there is a forecasted 3.2% decrease in flights across a 24-hour period in 2025 and a significant reduction in available night time slots at the airport and associated impacts on air connectivity for Ireland.

The net effect of the proposed relevant action would be to facilitate an increase in the number of flights permitted to take off from, or land at, Dublin Airport at night and enable a return to growth at the airport post Covid-19.

3.2 Need for the Project

3.2.1 General

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3.2.1.1 Aircraft Noise (Dublin Airport) Regulation Act 2019

The Aircraft Noise (Dublin Airport) Regulation Act 2019 (the **Aircraft Noise Act**) further implements EU Regulation 598/2014 on the establishment of rules and procedures with regard to the introduction of noise related operating restrictions at European Union Airports within the Balanced Approach. The Aircraft Noise Act amends the Planning and Development Act, as amended (PDA) to cater for revoking, amending or replacing operating restrictions at Dublin Airport.

Fingal County Council has been designated as the competent authority for the purposes of aircraft noise regulation at Dublin Airport by section 3(1) of the Aircraft Noise (Dublin Airport) Regulation Act 2019.

The Aircraft Noise Act amends the PDA by inserting a number of new sections in Part 3 of the PDA, which deals with Control of Development.

3.2.2 Growth in Passenger and Aircraft Numbers

Following a long period of growth between 2000 and 2008, with an average growth rate of 6.9%, the airport experienced significant declines in air travel in 2009 and 2010 due to the global economic downturn. However, since 2010, traffic growth has averaged 6.9% per annum, reaching 31.5 million in 2018 (Figure 3-2).

Passenger traffic at Dublin Airport can be broken down into five categories:

- Domestic;
- United Kingdom;
- Continental Europe;
- Transatlantic; and
- Other International.

The total passenger traffic at Dublin Airport has seen an increase of nearly 53.6% since 2010. As shown in Figure 3-1, of the five areas, the region which has seen the largest growth in passenger traffic since 2010 is Other International - this includes traffic to China, the rest of Asia, Middle East and Africa. Over the past eight years, the passenger traffic on these routes has increased by over 359%, from a small base. Transatlantic traffic has seen a growth of 155% from increased service to the United States and Canada. European and United Kingdom passenger traffic have both increased by 70% and 50% respectively. Domestic traffic, which makes up less than 1% of traffic, has seen a decrease in volume by 83%. This drop is attributable to the fact that the road network within Ireland has seen significant advancements over recent years.

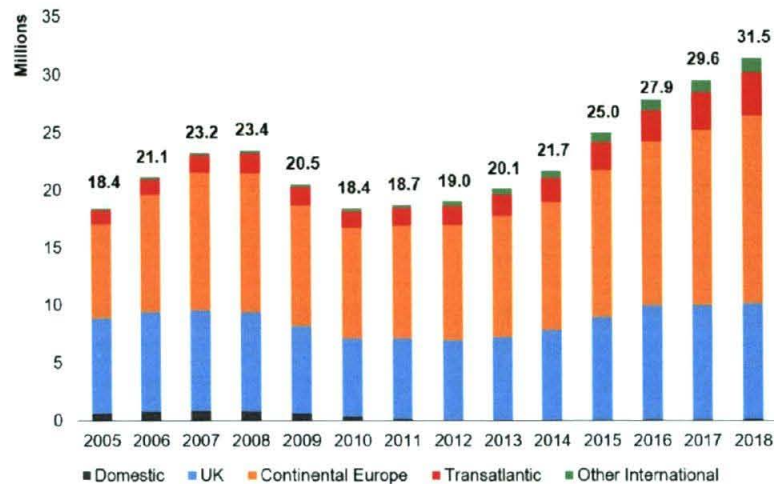


Figure 3-1 Annual Passenger Movements at Dublin International Airport, 2005-2018 (Source 'Dublin Airport Economic Impact of Operating Restrictions', InterVISTAS, 2019)

Figure 3-2 below shows the percentage share of passenger traffic by region in 2018. In terms of the share of passenger traffic by world region, Continental European traffic comprised 52% of all passengers in 2018. The United Kingdom represented 36% of total passengers, followed by Transatlantic at 10%, Other International at 3% and Domestic passenger traffic at less than 1%. Long haul passengers accounted for 15.8% of traffic in 2018 compared with 6.9% in 2015, reflecting the increasing range of destinations served from Dublin Airport.

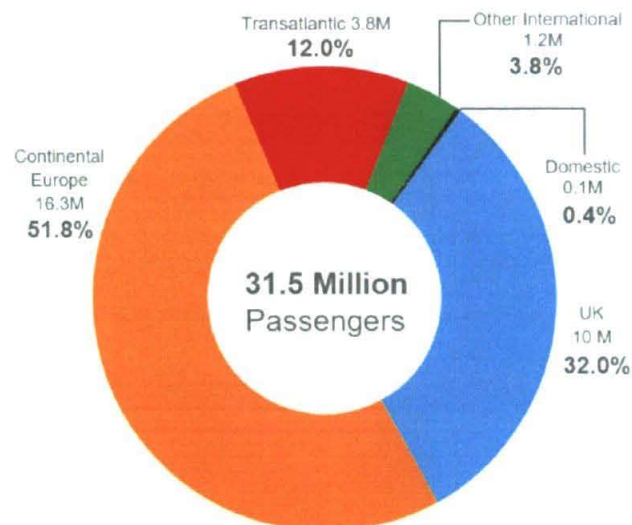


Figure 3-2 Passenger Movements by Region at Dublin Airport, 2018 (Source 'Dublin Airport Economic Impact of Operating Restrictions', 2019 InterVISTAS)

3.2.3 Impacts of Restrictions

Preparation of this EIAR has been ongoing for many months. In March 2020, it became apparent that the Covid-19 crisis was having a significant impact on global aviation. The immediate impacts were severe, and in the short-medium term these impacts will continue to manifest themselves in reduced air traffic demand in Ireland and globally.

The anticipated negative implications of conditions 3(d) and 5 being implemented when North Runway becomes operation in 2022 fall into the following categories:

- Constrained traffic impacts at Dublin Airport;
- Implications for achieving the objectives set in the National Aviation Policy; and