



An tÚdarás Inniúil um
Thorann Aerárthaí
Aircraft Noise
Competent Authority

ANCA

Noise Abatement Objective and Regulatory Decision relating to Aircraft Noise Management at Dublin Airport:

Strategic Environmental
Assessment Statement

20th June 2022



ACKNOWLEDGEMENTS



**An tÚdarás Inniúil um
Thorann Aerárthaí**
Aircraft Noise
Competent Authority

The services of Noise Consultants Ltd were retained by ANCA to support the work of the authority by undertaking technical assessments and providing expert advice in the areas of acoustics, aviation, and environmental assessments.



This report was prepared with the assistance of Noise Consultants Ltd., working with:



Contents

1	Introduction	5
2	How Environmental Considerations were Integrated into the Plan	8
3	How Submissions, Observations, Consultations and the Environmental Report were Integrated into the Plan	12
4	Consideration of Alternatives	19
5	Monitoring Measures	26

01

Introduction

01 Introduction

Background

- 1.1 This Strategic Environmental Assessment (SEA) Statement sets out the findings of the Aircraft Noise Competent Authority (ANCA) in relation to ANCA's SEA of the following plans, for the purposes of the EU SEA Directive (2001/42/EC)¹ and implementing Irish regulations (SI 435/2004)² (the SEA Regulations):
 - The Noise Abatement Objective for Dublin Airport (the NAO), as defined in accordance with Section 9(2)(a) of the Aircraft Noise (Dublin Airport) Regulation Act 2019 (the Act of 2019); and
 - ANCA's Regulatory Decision (the RD) in response to an application by the airport authority for Dublin Airport (daa) under Section 34C of the Planning and Development Act 2000 (as amended, in particular by the Act of 2019) (the Act of 2000), dated 18 December 2020 and referenced as F20A/0668 (the Application). The Application is for a "relevant action" as defined in Section 34C of the Act of 2000, seeking to amend prior planning conditions associated with night time aircraft activity at Dublin Airport.
- 1.2 A noise problem was identified at Dublin Airport following initial assessment of the Application, which specifically sought to amend two of the conditions of the existing Dublin Airport North Runway Planning Permission (register reference PL 06F.217429, as extended by planning permission register ref F04A/1755/E1), related to use of the Airport at night. In line with the requirements of EU Regulation 598/2014 and the Act of 2019, ANCA proceeded to define the NAO to address the noise problem and carry out a detailed noise assessment, before making a regulatory decision in relation to the Application.
- 1.3 Focused on noise outcomes, the NAO seeks to "limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, particularly at night, as part of the sustainable development of Dublin Airport". The expected outcomes of the NAO are that:
 - The number of people highly sleep disturbed and highly annoyed in 2030 shall reduce by 30% compared to 2019;
 - The number of people highly sleep disturbed and highly annoyed in 2035 shall reduce by 40% compared to 2019;
 - The number of people highly sleep disturbed and highly annoyed in 2040 shall reduce by 50% compared to 2019; and
 - The number of people exposed to aircraft noise above 55dB L_{night} and 65dB L_{den} shall be reduced compared to 2019.
- 1.4 The RD is focused on noise mitigation measures and operating restrictions which seek to secure the noise outcomes set by the NAO. It has three components, each relating to the existing operating restrictions of the North Runway Planning Permission. These are summarised as follows:
 - Revoking Condition 5, which set out a permitted number of night time aircraft movements, and replacing it with an annual noise quota scheme operating between 23:00 - 07:00, with noise-related limits on the aircraft permitted to operate at night.
 - Amending Condition 3(d) to enable the use of North Runway for take-off and landing between 23:00 - 00:00 and 06:00 - 07:00.
 - Introducing a voluntary residential sound insulation grant scheme for residential dwellings forecast in 2025 to be exposed to aircraft noise at or above 55dB L_{night} contour or experience a 'very significant' effect.

1 Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

2 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004.

Summary of the SEA Process

- 1.5 SEA is used to describe the application of environmental assessment to plans and programmes in accordance with the SEA Directive and the SEA Regulations. The NAO and the RD set a framework for future applications for planning permission at the Airport, and as such can be considered a “plan” for the purposes of the SEA Directive and the SEA Regulations.
- 1.6 The specific purpose of SEA is to ensure that early consideration is given to environmental aspects when a plan or programme is in development. The key stages of the SEA process, as set out in the SEA Process Checklist (EPA, 2008), are the following:
 - Screening – the process of determining whether implementation of a plan or programme would be likely to have significant environmental effects on the environment.
 - Scoping – the process of deciding the proposed scope of the detailed environmental assessment that will be documented within the SEA Environmental Report itself. The SEA Regulations require consultation with prescribed “Environmental Authorities” in that regard (currently the Environmental Protection Agency (the EPA), the Minister for Housing, Local Government and Heritage, the Minister for Agriculture, Food and the Marine and the Minister for Environment, Climate and Communications).
 - Environmental Assessment – the process of identifying the likely significant effects of implementing the plan or programme, alongside its realistic alternatives, on each of the scoped in environmental factors, and proposing mitigation and monitoring measures to address these effects. This step of the process involves preparation of an Environmental Report, further consultation with the Environmental Authorities and consultation with the public generally.
 - Information on Decision – the process of explaining how environmental considerations have been integrated into and addressed through the plan or programme.
- 1.7 Following production of an SEA Screening Report, on 15 April 2021, ANCA made a Screening Determination that SEA applies to the NAO and RD. ANCA subsequently produced an SEA Scoping Report to set out the proposed scope of the detailed environmental assessment. ANCA issued this Scoping Report to the Environmental Authorities on 6 May 2021. ANCA then prepared a Draft Environmental Report which detailed the SEA that was undertaken on the NAO and draft RD for Dublin Airport.
- 1.8 Separately, but concurrently, to the SEA, ANCA also carried out an Appropriate Assessment (AA) of the NAO and RD, in line with the requirements of the EU Birds and Habitats Directive³ and the European Communities (Birds and Natural Habitats) Regulations 2011 (the Habitats Regulations).⁴ Following production of an AA Screening Report, on 18 August 2021, ANCA made a Screening Determination that AA requirements apply to the NAO and RD. A Natura Impact Statement (the NIS) was therefore produced to identify potential impacts on European sites as a result of implementing the NAO and RD.
- 1.9 ANCA published the NAO, the draft RD and a related report, the SEA Draft Environmental Report, and the NIS together for public consultation, which ran for a period of 14 weeks during 11 November 2021 to 28 February 2022. At the same time, the SEA Draft Environmental Report was issued to the Environmental Authorities.
- 1.10 Following the consultation, a Consultation Report and SEA Final Environmental Report were produced, along with a revised RD Report, to account for the submissions made during the public consultation (including those from the Environmental Authorities). ANCA also updated the NIS in response to submissions and observations on AA matters, and made an AA Determination for the purposes of the Habitats Regulations. The NAO and RD were formally adopted by ANCA by Chief Executive Order.

³ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds; Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

⁴ SI 477/2011.

Purpose of this SEA Statement

1.11 In accordance with the SEA Regulations, ANCA is required to prepare a statement providing information on the decision to adopt the NAO and RD. This 'SEA Statement' represents the final stage of the SEA process, as prescribed in the SEA Process Checklist and the SEA Pack (EPA, 2020).

1.12 This SEA Statement provides the following information:

- How environmental considerations have been integrated into the NAO and RD (Chapter 2);
- How the Environmental Report, submissions and observations made to ANCA by the Environmental Authorities and the public⁵, have been taken into account during the preparation of the NAO and RD (Chapter 3);
- The reasons for choosing the NAO and RD in the light of the other reasonable alternatives dealt with (Chapter 4); and
- The measures decided upon to monitor the environmental effects of implementation of the NAO and RD (Chapter 5).

Consultant Team

1.13 This Statement has been prepared by Logika Consultants Ltd. ('Logika'), part of the Noise Consultants Ltd. consultant team engaged to provide expert support to ANCA in setting the NAO and making the RD. Specifically Logika are responsible for providing SEA and AA input to the NAO and RD process. The individuals involved in the production of this Statement are Helen Davies and Toby Gibbs, whose qualifications and experience are set out in more detail in Chapter 1 of the SEA Environmental Report.

⁵ Consultations under Article 14 of the SEA Regulations were not deemed necessary due to the absence of transboundary environmental effects.

02

How Environmental Considerations were Integrated into the Plan

02 How Environmental Considerations were Integrated into the Plan

Introduction

- 2.1 The SEA and AA processes were undertaken in parallel to the preparation of the NAO and RD, with the consultant teams working closely with ANCA (including through weekly project meetings) throughout the development of the NAO and RD. This approach ensured that environmental considerations were integrated into the NAO and RD from the outset, and the potential environmental implications of those instruments were taken into account.

Environmental Baseline and Sensitivities

- 2.2 The integration process commenced at the SEA Screening stage with consideration of the key environmental issues likely to be relevant to the NAO and RD, and the likely magnitude and geographic extent of the potential effects. These aspects were covered in more depth at the SEA Scoping stage, once more detail was known about the proposed contents of the NAO and RD. Again the consultant teams liaised regularly with ANCA on the likely impacts of the evolving plan. This stage of the process included consultation with the prescribed Environmental Authorities, and in particular the EPA, which provided a scoping submission.
- 2.3 Baseline environmental conditions were ascertained in relation to: air quality; biodiversity; carbon and climate change; geology, soils and land use; landscape and visual; material assets; noise and vibration; population and health; and water and hydrology. Information for the environmental baseline was obtained from a range of documents as referenced in Chapter 4 of the Final Environmental Report. For each environmental aspect, a Zone of Influence (Zoi) was identified relating to the possible impacts of overflying, as ground operations or land-based development are outside of ANCA's remit. Where appropriate, Geographic Information Systems (GIS) were used to assist with analysis of this data; and maps were produced to display relevant spatial information.
- 2.4 The baseline information was used to highlight key environmental and sustainability issues or sensitivities and to provide an evidence base for likely future environmental conditions without the NAO and RD. These issues included the presence of designated nature conservation sites under existing and future flightpaths, increasing noise levels and associated health impacts in the vicinity of Dublin Airport, and the national/international climate emergency. Along with a review of other relevant plans and programmes, the baseline information was also used to focus the SEA objectives, support development of alternatives, and assess positive and negative impacts associated with the implementation of the NAO and RD.

Environmental Assessment

- 2.5 The methodology for undertaking the environmental assessment of the NAO and RD, including each of the alternatives, is set out in Chapter 3 of the SEA Final Environmental Report. The methodology includes the future baseline and assessment case (i.e. what is being assessed); the SEA objectives, indicators and targets for each of the scoped-in environmental aspects (the assessment framework); and the significance criteria used.
- 2.6 For SEA, the impacts of the NAO and RD must be described relative to an identified baseline scenario, which describes how matters would develop in the absence of the NAO and RD. The future baseline described in the Final Environmental Report therefore assumed that daa will seek to grow the airport in line with existing local and national policy. The assessment case, i.e. the impact of the NAO and RD beyond the baseline, therefore included an increase of 4.6m night-time passengers per annum by 2040, but where noise impacts are limited and reducing as a result of the implementation of the NAO.

- 2.7 The results of the assessment are detailed in Chapter 6 of the Final Environmental Report. This analysis is presented through high level matrices comparing the impacts of the alternative approaches for both the NAO and RD on each of the SEA objectives, supported by accompanying text. These results were fed back to ANCA through the drafting of the report, both prior to and subsequent to the public consultation, and during the weekly project meetings.

Appropriate Assessment

- 2.8 The Habitats Directive and Habitats Regulations require AA to be carried out where a plan is likely to have a significant impact on a designated “European site” (also referred to as “Natura 2000” sites), either individually or in combination with other plans or projects. European sites include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs). Each of these sites is designated because of their specific biodiversity value: for SPAs this is because of their value for wild birds; for SACs, it is because of the important habitats and species that they support. More specifically, AA is required if it cannot be excluded, on the basis of objective scientific information following screening, that the plan, individually or in combination with other plans or projects, will have a significant effect on a European site. As with SEA, in determining this position, a Screening exercise is undertaken to establish whether the potential for such effects exists.
- 2.9 AA Screening was therefore undertaken broadly concurrently, but separately, to SEA Scoping. ANCA, in its role as competent authority, was required to make a Screening Determination on whether AA was required in respect of the NAO and RD. On 18 August 2021, having regard to the information provided in the AA Screening Report, ANCA determined that there was potential for impacts on European sites to occur as a result of implementing the NAO and RD.
- 2.10 A NIS was therefore produced as required under the Habitats Regulations; again, broadly concurrently, but separately, to the draft SEA Environmental Report. ANCA published the NIS for public consultation together with the draft SEA Environmental Report, the NAO, the draft RD, and a report underlying the draft RD.
- 2.11 As with the SEA, the assessment conducted for the AA compared the likely future baseline with the assessment case. In making the assessment consideration was paid to the indirect impacts of the NAO and RD, including operations and measures that are precluded by Condition 3(d) and 5 but that would not be precluded by the NAO and RD. Two key changes in activities were therefore considered in the detailed assessment: more overflying of European sites as a result of increased numbers of flights operating to and from the airport; and changes to the operating procedures, fleet mix, flight paths and frequency of aircraft movements specifically as a result of more night-time flights occurring.
- 2.12 Reaching a conclusion on the likelihood for a change arising from the implementation of the NAO and RD having an effect on a European site was informed by a detailed review of relevant existing literature, the documents in support of the application made by daa to vary operating conditions, and also through the professional judgement of those preparing the NIS. No detailed assessment work, for example including noise modelling, was, or could have been, undertaken. This is because the proposals of the NAO and RD are necessarily high-level and their implementation will require further planning applications which will be the subject of EIA and AA.
- 2.13 On the basis of best scientific knowledge, the NIS concluded that the implementation of the NAO and RD will not have a significant adverse effect on the ecological integrity of any European site, either individually or in combination with any other plan or project. Again, these results were fed back to ANCA through the drafting of the report, both prior to and subsequent to the public consultation, and during the weekly project meetings.
- 2.14 Having regard to the information provided in the NIS along with submissions and observations received during public consultation, ANCA has also determined that the NAO and RD are compliant with the requirements of Article 6 of the EU Habitats Directive as transposed into Irish law. ANCA recorded this position in an AA Determination made on or about the date of this SEA Statement, in accordance with the requirements of the Habitats Regulations.

Mitigation Measures

- 2.15 Annex 1 of the SEA Directive requires the Environmental Report to set out 'the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme'. The SEA of the NAO and RD concluded that there would be no significant adverse environmental effects as a result of implementing the preferred alternatives, i.e. Alternative (1) for the NAO and Alternatives (iv), (vi) and (x) for the RD (see Chapter 4 for detail on these alternatives).
- 2.16 Nevertheless, the SEA process revealed that, depending on how daa chooses to meet the aircraft noise efficiencies required through the NAO, there could potentially be consequential environmental effects. For example:
- Routing aircraft over less densely populated areas can mean that more rural and therefore more tranquil areas are overflown.
 - Similarly overflying areas that are less densely populated can result in new receptors including important biodiversity sites and heritage assets, being affected or receptors already affected being impacted more.
 - Certain operational measures, for example steeper ascents, can result in more fuel burn as a result of requiring increased thrust, thereby increasing carbon (and other pollutant) emissions.
- 2.17 For the above reasons, and to ensure that appropriate decisions are made as the Airport plans future growth in line with the requirements of the NAO, there will need to be detailed consideration of the exact form of measures that are proposed, including operational measures proposed, any changes to airspace and the types of aircraft that operate. These measures will be considered in an alternatives assessment undertaken as part of an EIA that would be required in support of an application for planning permission for growth at the Airport.

03

How Submissions,
Observations,
Consultations and the
Environmental Report
were Integrated into
the Plan

03 How Submissions, Observations, Consultations and the Environmental Report were Integrated into the Plan

Introduction

- 3.1 Consultation with the Environmental Authorities (listed below) was undertaken on the SEA Screening Report, the SEA Scoping Report and the SEA Draft Environmental Report:
 - Environmental Protection Agency (EPA);
 - Minister for Agriculture, Food and the Marine;
 - Minister for Environment, Climate and Communications;
 - Minister for Housing, Local Government and Heritage.
- 3.2 In addition, the SEA Draft Environmental Report was also made available for public consultation, alongside the NAO, the draft RD, the RD Report and the AA NIS.
- 3.3 As prescribed in the SEA Directive and Regulations, ANCA was required to take account of the Environmental Report and of any opinions expressed upon it as it prepared the NAO and RD for adoption.
- 3.4 A brief summary of the consultations, key submissions and how these were addressed through the SEA (including minor modifications to the Environmental Report and the RD) is set out below.

SEA Screening Consultation

- 3.5 ANCA consulted the Environmental Authorities by providing them with a copy of the SEA Screening Report, during the period 12 February 2021 to 12 March 2021, allowing them to provide input to inform the SEA Screening Determination. A submission was received from the EPA on 8 March 2021, and an acknowledgement from the Minister for Housing, Local Government and Heritage.
- 3.6 The submission from the EPA included a list of plans that the NAO and RD would need to be consistent with, along with a list of online resources for use in determining the environmental baseline. Key relevant national, regional, sectoral and environmental plans are described in section 4 of the NAO, section 3.1 of the RD Report, and Chapters 2 and 4 of the Final Environmental Report. The online resources were utilised in Chapter 4 of the Final Environmental Report, including for production of associated maps.

SEA Scoping Consultation

- 3.7 In accordance with the SEA Regulations, the Scoping Report was issued to the Environmental Authorities on 6 May 2021, for a period of 4 weeks. This enabled comments to be made regarding the scope and proposed methodology of the subsequent environmental assessment. A submission was received from the EPA on 28 May 2021, and an acknowledgement from the Department of Agriculture, Food and the Marine (DAFM).
- 3.8 The submission from the EPA highlighted a series of considerations for the SEA Draft Environmental Report stage, relating in particular to the scope of the SEA; the integration of SEA and the Plan; monitoring and reporting; and data and knowledge gaps. How these points were addressed is set out in Table 3.2 of the Final Environmental Report. These responses included providing clarity on the scope and remit of the NAO and RD; producing summary tables outlining the key findings and recommendations of the SEA for ease of integration into and implementation through the NAO and RD; producing a schematic linking the NAO and RD to other plans; and including a section on difficulties encountered in compiling the required information.

Public Consultation on the Draft Plan and Draft Environmental Report

- 3.9 The Draft Environmental Report was presented for public consultation over the period 11 November 2021 to 28 February 2022, at the same time as the NAO, the draft RD, a report underlying the draft RD, and the NIS. Consultation on the Draft Environmental Report was also undertaken with the Environmental Authorities. The purpose of the consultation was to give the public and the Environmental Authorities an opportunity to express their opinions on the findings of the Draft Environmental Report, and to use it as a reference point in commenting on the NAO and draft RD.
- 3.10 ANCA received a total of 1,382 submissions during the consultation period. Comments were received from two Environmental Authorities (the EPA and DAFM), various NGOs and a large number of private individuals and community groups. ANCA subsequently produced a Consultation Report which sets out the key themes that emerged through the consultation and how these were addressed in the adopted NAO and RD. The majority of the responses received by ANCA related to the following:
- Monitoring and enforcement of the NAO and relationship with land use planning;
 - Timeline for the application of the NAO and selection of 2019 as the reference year;
 - Retaining the original planning conditions for the North Runway;
 - Setting and application of and exemptions to the noise quota scheme;
 - Impacts of noise on health and quality of life; and
 - Adequacy and eligibility of the residential sound insulation grant scheme.
- 3.11 Some of the submissions received by ANCA specifically addressed the SEA or AA, whilst others contained elements relating to the environment more generally. A summary of the key points from the Environmental Authorities and how these were addressed through the SEA are set out in Table 3.1 below.

Table 3.1: Key points from the public consultation submissions received from Environmental Authorities

ID	Summary of point	How point accounted for
EPA submission		
1	ANCA should ensure that the Plan aligns with and considers relevant objectives and policy commitments of the NPF, the RSES, and the Climate Action Plan 2021.	Key relevant national, regional, sectoral and environmental plans are described in section 4 of the NAO Report, and section 3.1 of the RD Report. This Final Environmental Report has been updated to refer to the updated Climate Action Plan published in 2021. ANCA has considered the Climate Action Plan 2021 in line with the EPA's submission, but did not consider that it required any changes to the NAO or RD.
2	There is merit in considering climate adaptation measures and resilience to climate change in preparing the RD.	Adaptation policy and climate change impacts in Ireland are covered briefly in Chapter 4 of the Final ER, however introducing adaptation measures (as opposed to mitigation measures) is not relevant in the context of the NAO or RD which deal only with aircraft noise and associated outcomes (e.g. from overflying) and not ground operations or land-based development.
3	Once the RD and the NAO are adopted, ANCA should prepare an SEA Statement and send this to the Environmental Authorities.	This SEA Statement has now been produced and will be sent to the Environmental Authorities.

ID	Summary of point	How point accounted for
EPA submission		
4	The Plan should include a recommendation that adjoining local authorities' noise action plans may require a review.	ANCA has no statutory role in terms of providing guidance to local authorities on noise action planning. The NAO and RD and supporting material will be available for local authorities to review and take into account when preparing future noise action plans.
5	In Table N4, for 'Air Quality', the reference to the Climate Action Plan 2019 should be updated to refer to the Climate Action Plan 2021. For 'Carbon and Climate Change', the reference in Column 2 to significant decreases in fuel tourism having been observed should describe what this means in the context of the Plan.	References to the Climate Action Plan 2019 in the Final ER were updated to the 2021 version where appropriate. Text explaining what fuel tourism is was added to para 4.45 of the Final ER; note that this relates to vehicle fuel, not aviation fuel, so is relevant to transport as a whole but not specifically to the Plan.
6	While the noise quota is set at '16,260', it would be useful to refer to the related units associated for this number where this is referenced in the Plan and SEA. It would be useful to consider including a reference table highlighting some of the standard aircraft noise values currently in operation at Dublin Airport.	Appendix B of the RD describes the quota count classification as based on certified effective perceived noise levels (EPNdB). New text was added to the Final ER in Chapter 2 to explain this (see para 2.16 and Table 2.2). Table 2.3 of the Final ER (Content of the RD) was left unchanged as this is a direct quote from the RD itself, and the units are simply noise quota units.
7	It may be useful to consider amending the description of the NAO (in Table 2.1) as follows: "Noise from Dublin Airport should be limited and reduced in line with principles of environmentally sustainable development..."	The UN definition of sustainability (amongst many others) includes the environment, so ANCA considers that this aspect does not need to be stated expressly.
8	Given that the other plans and programmes considered in the SEA includes Meath County Development Plan 2021-2027, this should be reflected in the description of Condition 3 of the RD (what is now Table 2.3), as well as in Chapter 4 of the RD.	ANCA has taken the Meath County Development Plan 2021-2027 into account in the making of the NAO and RD, as suggested. ANCA has concluded that the NAO and RD are consistent with the Meath County Development Plan, for the reasons set out in Section 3.4 of the Consultation Report. Accordingly, ANCA considers that no changes to the NAO or RD are required to better align those instruments with the Meath County Development Plan 2021-2027. Further, the reference to the Fingal Development Plan in the description of Condition 3 of the RD is solely in relation to a cut off point for eligibility for the Residential Sound Insulation Grant Scheme rather than a link to the policy in the plan itself, so does not need to be amended to include reference to the Meath County Development Plan.

ID	Summary of point	How point accounted for
EPA submission		
9	Though the SEA states that the likelihood of compliance with WHO noise guidelines will improve with adoption of the NAO, given that night-time noise exposure is likely to increase, this should be supported by effective relevant monitoring and reporting to ensure the mitigation measures set out in the Plan are being implemented.	Part 5 of the NAO deals specifically with monitoring of noise measures and associated health effects. ANCA considers that these measures are sufficient to ensure compliance with WHO noise guidelines.
10	Monitoring of the effectiveness of the measures proposed to reduce noise and other environmental criteria considered in the SEA should be considered over the lifetime of the Plan and feed into the annual reviews and reporting where possible. There is merit in including a table which shows how the monitoring programme takes wider environmental impacts into account. The monitoring programme should set out the various data sources, monitoring frequencies and responsibilities.	ANCA has considered monitoring measures relating to air quality, carbon emissions and designated nature conservation sites, however, these matters are not within ANCA's remit to require or enforce. ANCA will make the relevant sections of Fingal County Council aware of the EPA's submission in this regard. Part 5 of the NAO deals specifically with monitoring of noise measures and associated health effects.
DAFM submission		
11	This activity does not fall within the remit of DAFM. Therefore, once relevant environmental and planning regulations are met, DAFM has no comment at this stage of the consultation process.	Agreed. No action required. In particular, as outlined in the Final Environmental Report, ANCA determined at the scoping stage (following a scoping consultation submission from DAFM) that impacts on sea-fisheries, aquaculture or the water-based marine environment could be scoped out because they are not expected to occur.

3.12 Relevant aspects of submissions relating to the SEA from other stakeholders were reviewed by the consultant teams. A summary of the points raised is provided by topic in Table 3.2 below.

Table 3.2: Summary of environmental points from the public consultation submissions received from other stakeholders

Topic of submissions	Summary of points made
Air quality impacts on human health	<p>Concern about air quality generally in the vicinity of the Airport, and in particular how aircraft exhaust fumes and odours might impact on people's health in the areas of Boraimhe, Ridgewood, Rivervalley, St. Marnock's Bay, Malahide and Portmarnock.</p> <p>Concern about inability to meet WHO air quality guidelines with the proposed additional flights.</p> <p>Suggestion of additional monitors being positioned in areas under the flight paths.</p> <p>Concern about the independence of the air quality assessment.</p>
Air quality impacts on wildlife	<p>Concern about air pollution impacts (including nitrogen deposition and emergency fuel dumping) on biodiversity, including birds, small mammals, insects, plants (grasses, mosses, liverworts) and natural habitats occurring in the vicinity of Dublin Airport, including areas along the coastline, areas of natural significance, and residential areas such as Balbriggan.</p>
Noise impacts on human health	<p>Concern about the impact of 'unacceptable' night-time noise on local residents (e.g. at Malahide, Portmarnock, St. Margarets, The Ward and Coolquay), including annoyance, sleep disruption, acute cardiovascular mortality, ischaemic heart disease, stroke, hypertension, increases in blood pressure (hypertension), dementia, depression and other mental illnesses.</p> <p>Concern about inability to meet WHO noise guidelines with the proposed additional flights.</p> <p>Concern that the SEA does not sufficiently assess the health impacts caused by aircraft noise.</p>
Noise impacts on wildlife	<p>Concern about noise pollution impacts on biodiversity, including wildlife at Baldoye Bay SPA/Ramsar, as well as birds, small mammals and insects living in gardens, hedgerows and other habitats in the vicinity of Dublin Airport, including areas such as Balbriggan.</p>
Impacts on climate change	<p>Concern regarding an increase in flights and associated carbon emissions being at odds with national and international climate objectives and commitments at a time of global warming and climate emergency.</p> <p>Concern that mitigating arguments regarding improved energy efficiency are premature until the new engine technology is actually in place and proven to be implemented by all flights operating under the night time restrictions.</p> <p>Concern that night flights have a significantly greater impact on climate than day flights, e.g. due to atmospheric forcing.</p>
Impacts on landscapes	<p>Concern regarding disturbance of parkland in Baldoye where people seek recreation and some quiet due to increased flight activity.</p>
Other SEA-related points	<p>Concern that the SEA has failed to consider the alternative of a complete ban on night-time flights.</p> <p>Concern for local farmers and growers that increased air pollution and disturbance of livestock around the clock could affect food production/quality.</p> <p>Tree planting should be proposed as a nature-based solution to aircraft noise pollution, carbon emissions offsets, improved visual amenities and increased biodiversity value.</p>

Topic of submissions	Summary of points made
Appropriate Assessment	<p>Continuous and intermittent noise should be accounted for, with information from the nearest noise monitoring station to Baldoyle Bay being used to understand levels. Consideration of the noise effects on wildlife has not been considered in light of all relevant scientific literature. The conclusions drawn in the NIS should be revised to include consideration of the relevant noise monitoring data and scientific literature.</p> <p>The approach to appropriate assessment should account for the North Runway Project and a range of other plans and projects cumulatively.</p> <p>The Natura Impact Statement does not account for the potential differential effects on birds and other wildlife of noise in the hours of darkness and does not include consideration of certain studies published in the scientific literature that are helpful in understanding the effects of disturbance on birds.</p>

- 3.13 How each of these points was addressed is set out in Table 5.2 and Appendix 5 of the SEA Final Environmental Report. Where appropriate, amendments were made to the wording of the Environmental Report, as well as to the NIS. For example, the NIS (and thus also the Biodiversity sections of the Environmental Report) were updated with further relevant information from the scientific literature and the assessment text clarified in order to address the points raised. Other changes made to the Environmental Report include additional text relating to: a discounted alternative; the climate impact night flights; and the potential health impacts caused by aircraft noise.
- 3.14 Despite the post-consultation modifications to the Environmental Report and the NIS, the overall assessment findings and conclusions of both the SEA and AA remain unchanged.

Post-Consultation Modifications to the Plan

- 3.15 Following completion of the public consultation exercise, ANCA undertook further work on the RD, particularly in response to submissions relating to the noise quota scheme and the residential sound insulation grant scheme. These changes are set out in Chapter 14 of the RD Report. No changes were made to the NAO in response to public consultation, as ANCA was satisfied that no such amendments were necessary.
- 3.16 None of the changes to the RD had a material impact on the findings and outcomes of the SEA. Though the quota count for individual aircraft will no longer become more stringent over time, the increasingly stringent reductions in the number of people highly sleep disturbed and highly annoyed over time still applies. Meanwhile, the change to the residential sound insulation grant scheme, though positive, will have a negligible effect on the population as a whole.
- 3.17 Amendments to the NAO and RD were also considered as a result of submissions relating to the SEA. For example, including reference to the Meath County Development Plan 2021-2027, the Climate Action Plan 2021, making the recommendation that noise action plans should be reviewed, and including monitoring of environmental effects (beyond noise and health). However, ANCA decided that no amendments to the wording of the NAO or RD was necessary on these points, for the reasons set out in table 3.1 above.
- 3.18 Despite the post-consultation modifications to the RD, the assessment findings and conclusions of both the SEA and AA remain unchanged.

04.

Consideration of Alternatives

04 Consideration of Alternatives

Introduction

- 4.1 Consideration of realistic and reasonable alternatives is a key feature of the SEA process as defined by the SEA Directive and the SEA Regulations. These have been considered by means of a three step process, as set out in the Guidance on Alternatives in SEA (EPA, 2015):
1. Alternatives identification and development (covered in Chapter 3 of the SEA Final Environmental Report);
 2. Alternatives assessment and comparison (covered in Chapters 3 and 6 of the Environmental Report);
 3. Alternatives selection and documentation (covered in Chapter 6 of the Environmental Report).
- 4.2 The three step process is detailed in the following sections.

Summary of the Alternatives Considered

- 4.3 Through application of the Balanced Approach, ANCA identified available measures to reduce the identified noise impact, and evaluated these in terms of their effectiveness (in terms of both noise and cost), and their impact on environmental sustainability (including interdependencies between noise and emissions). Through working closely with ANCA, the SEA process fed into the development and selection of alternatives for both the NAO and the RD, ensuring that each alternative put forward for assessment against the SEA objectives was reasonable and realistic.
- 4.4 Two of the possible alternative approaches for the NAO set out in the SEA Scoping Report were subsequently discounted from the SEA because they failed to meet the purpose and objectives that ANCA has set for the NAO in terms of providing certainty, opportunities for sustainable growth, and realistic timeframes for noise and health improvements (i.e. they were not 'realistic'). They also failed to account for ambitions for the growth of Dublin Airport set out in existing local and national policy (i.e. they were not 'reasonable').
- 4.5 An alternative approach for the RD – to strengthen rather than relax the planning conditions associated with North Runway – was also discounted from the SEA Environmental Assessment. This alternative was not considered to be 'reasonable' whilst ANCA is required not to introduce measures or combinations of measures that are more restrictive than is necessary to achieve the NAO. Given that night-flights already operate from the airport and that expansion of the Airport is set out in published national and local policy, setting a general ban on night-time flights was not considered by ANCA to be a realistic or reasonable alternative.
- 4.6 The realistic and reasonable alternatives that ANCA considered for the NAO and RD, and that were assessed through the SEA Environmental Assessment, are set out in the table below.

Table 4.1: NAO and RD alternatives considered in the assessment

No.	Description
1	An NAO which seeks to “Limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, particularly at night, as part of the sustainable development of Dublin Airport”, with specific outcomes set for 2030, 2035 and 2040.
2	An NAO which seeks to limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, but does not set specific outcome reductions (as per the planning application).
3	An NAO which seeks to limit the long-term adverse effects of aircraft noise on health and quality of life, but not reduce it.
4	An NAO which seeks to limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, with a specific outcome set only for 2040.
5	An NAO which seeks to limit and reduce aircraft noise, but does not link this to health outcomes.
i	A change to Condition 5 which would remove the numerical cap on the number of night-time flights and replace it with an annual night-time noise quota of 7,990 between the hours of 23:30 and 06:00 (i.e. with no constraints during 23:00 to 23:30 and 06:00 to 07:00).
ii	A change to Condition 5 that mimics the above, but with additional noise-related limits on the types of aircraft permitted to operate at night.
iii	A change to Condition 5 that subjects the Airport to a noise quota with an annual limit of 16,260 between the night-time hours of 23:00 and 07:00.
iv	A change to Condition 5 that subjects the Airport to a noise quota with an annual limit of 16,260 between the night-time hours of 23:00 and 07:00 with noise-related limits on the aircraft permitted to operate at night.
v	No change to Condition 3(d), but assuming the Condition 5 restriction of 65 flights per night is lifted. This is runway use pattern P11.
vi	A change to Condition 3(d) which prohibits the use of North Runway for landings and take-offs only between the hours of 00:00 and 06:00, enabling use of both runways during 23:00 to 00:00 and 06:00 to 07:00 (with all landings to be from the east, and all take-offs to the west). This is runway use pattern P02.
vii	As per runway use pattern P02, but with variations to the timings, e.g. preventing the use of North Runway between 23:00 and 06:00, or between 23:30 and 05:00. These are runway use patterns P03, P07, P12 and P13 (night-time hours vary across the patterns, though all are shorter than the Condition 3(d) hours of 23:00 to 07:00).
viii	Removal of the Condition 3(d) prohibition on the use of North Runway for landings and take-offs at night, enabling both runways to be used. These are runway use patterns P04, P05, P06, P08, P09 and P10, which differ from each other in terms of the factors that determine which of the two runways is used, e.g. depending on destination or using one for arrivals and the other for departures, or whether daa is free to choose (though all effectively result in both runways having roughly equal night-time traffic).
ix	A voluntary residential sound insulation grant scheme for residential dwellings for all homes forecast in 2025 to be exposed to aircraft noise at or above 55dB L _{night} contour, and for all homes experiencing a ‘very significant’ effect in the first full year when the Relevant Action comes into operation (i.e. 2022).
x	A voluntary residential sound insulation grant scheme for residential dwellings for all homes forecast in 2025 to be exposed to aircraft noise at or above 55dB L _{night} contour and for all those experiencing a ‘very significant’ effect in 2025 (i.e. the worst year for noise).

Summary Assessment of Alternatives

4.7 The likely impacts of the realistic and reasonable alternatives for the NAO and RD on each of the environmental aspects are summarised graphically in Tables 4.2 and 4.3 on the following pages. The key used for this assessment is repeated below:

Key to likely significant effects	
Potential for significant positive effects	++
Potential for minor positive effects	+
Negligible or no effect	0
Potential for both positive and negative effects	+/-
Potential for minor negative effects	-
Potential for significant negative effects	--

Table 4.2: Summary assessment of the alternative options for the NAO

NAO alternative being assessed	Environmental aspects						
	Air Quality (compliance with legislation and WHO guidelines)	Biodiversity (effects on SPAs, SACs and pNHAs)	Carbon and Climate Change (meeting aviation carbon emissions reduction targets)	Cultural Heritage (effects on designated heritage assets)	Landscape and Visual (effects on designated landscapes)	Noise and Vibration (compliance with WHO guidelines)	Population and Health (compliance with air quality legislation and WHO guidelines)
1) As described in Table 2.1, an NAO which seeks to "Limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, particularly at night, as part of the sustainable development of Dublin Airport", with specific outcomes set for 2030, 2035 and 2040.	+/-	+/-	-	0	0	+/-	+/-
2) An NAO which seeks to limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, but does not set specific outcome reductions (as per the planning application).	-	-	-	0	0	-	-
3) An NAO which seeks to limit the long-term adverse effects of aircraft noise on health and quality of life, but not reduce it.	-	-	-	0	0	-	-
4) An NAO which seeks to limit and reduce the long-term adverse effects of aircraft noise on health and quality of life, with a specific outcome set only for 2040.	+/-	-	-	0	0	+/-	+/-
5) An NAO which seeks to limit and reduce aircraft noise, but does not link this to health outcomes.	+/-	+/-	-	0	0	+/-	-

Table 4.3: Summary assessment of the alternative options for the RD

RD alternative being assessed	Environmental aspects						
	Air Quality (compliance with legislation and WHO guidelines)	Biodiversity (effects on SPAs, SACs and pNHAs)	Carbon and Climate Change (meeting aviation carbon emissions reduction targets)	Cultural Heritage (effects on designated heritage assets)	Landscape and Visual (effects on designated landscapes)	Noise and Vibration (compliance with WHO guidelines)	Population and Health (compliance with air quality legislation and WHO guidelines)
Alternatives to Condition 5 (i.e. a limit of 65 flights per night between the hours of 23:00 and 07:00)							
i) The change to Condition 5 requested by daa, which would remove the numerical cap on the number of night-time flights and replace it with an annual night-time noise quota of 7,990 between the hours of 23:30 and 06:00 (i.e. with no constraints during 23:00 to 23:30 and 06:00 to 07:00).	-	-	-	0	0	--	--
ii) A change to Condition 5 that mimics the daa request, but with additional noise-related limits on the types of aircraft permitted to operate at night.	-	0	-	0	0	-	-
iii) A change to Condition 5 that subjects the Airport to a noise quota with an annual limit of 16,260 between the night-time hours of 23:00 and 07:00.	0	-	-	0	0	-	-
iv) The change to Condition 5 set out in Table 2.3, i.e. that subjects the Airport to a noise quota with an annual limit of 16,260 between the night-time hours of 23:00 and 07:00 with noise-related limits on the aircraft permitted to operate at night.	0	0	-	0	0	0	0
Alternatives to Condition 3(d) (i.e. prohibiting the use of North Runway for landings and take-offs between the hours of 23:00 and 07:00)							
v) No change to Condition 3(d), but assuming the Condition 5 restriction of 65 flights per night is lifted. This is runway use pattern P11.	0	0	-	0	0	-	-
vi) The revision to Condition 3(d) requested by daa and as set out in Table 2.3, which prohibits the use of North Runway for landings and take-offs only between the hours of 00:00 and 06:00, enabling use of both runways during 23:00 to 00:00 and 06:00 to 07:00 (with all landings to be from the east, and all take-offs to the west). This is runway use pattern P02.	0	+/-	-	0	0	+/-	+/-

RD alternative being assessed	Environmental aspects						
	Air Quality (compliance with legislation and WHO guidelines)	Biodiversity (effects on SPAs, SACs and pNHAs)	Carbon and Climate Change (meeting aviation carbon emissions reduction targets)	Cultural Heritage (effects on designated heritage assets)	Landscape and Visual (effects on designated landscapes)	Noise and Vibration (compliance with WHO guidelines)	Population and Health (compliance with air quality legislation and WHO guidelines)
Alternatives to Condition 3(d) (i.e. prohibiting the use of North Runway for landings and take-offs between the hours of 23:00 and 07:00)							
vii) As per runway use pattern P02, but with variations to the timings, e.g. preventing the use of North Runway between 23:00 and 06:00, or between 23:30 and 05:00. These are runway use patterns P03, P07, P12 and P13 (night-time hours vary across the patterns, though all are shorter than the Condition 3(d) hours of 23:00 to 07:00).	0	+/-	-	0	0	+/-	+/-
viii) Removal of the Condition 3(d) prohibition on the use of North Runway for landings and take-offs at night, enabling both runways to be used. These are runway use patterns P04, P05, P06, P08, P09 and P10, which differ from each other in terms of the factors that determine which of the two runways is used, e.g. depending on destination or using one for arrivals and the other for departures, or whether daa is free to choose (though all effectively result in both runways having roughly equal night-time traffic).	0	+/-	-	0	0	+/-	+/-
Other alternative measures being considered by ANCA to address noise impacts associated with the daa planning application							
ix) As proposed by daa, a voluntary residential sound insulation grant scheme for residential dwellings for all homes forecast in 2025 to be exposed to aircraft noise at or above 55dB L _{night} contour, and for all homes experiencing a 'very significant' effect in the first full year when the Relevant Action comes into operation (i.e. 2022).	0	0	0	0	0	+	+
x) As set out in Table 2.3, a voluntary residential sound insulation grant scheme for residential dwellings for all homes forecast in 2025 to be exposed to aircraft noise at or above 55dB L _{night} contour and for all those experiencing a 'very significant' effect in 2025 (i.e. the worst year for noise).	0	0	0	0	0	+	++

Reason for Choice of Preferred Alternatives

- 4.8 The SEA alternatives assessment enabled ANCA to understand the implications of the different noise measures for each of the environmental aspects (including particularly air quality, biodiversity, climate change, cultural heritage and landscape), ensuring that these were taken into account alongside noise, health and cost considerations. Through assessing the environmental performance of alternative options as they emerged, it was therefore possible to influence the overall sustainability of the evolving NAO and RD, as well as the selection of the preferred alternatives.
- 4.9 The assessment of the NAO alternatives revealed that Alternative (1) – the preferred alternative of ANCA – would perform the best environmentally, with a mix of minor adverse and minor beneficial effects. Its specific short, medium and long-term health-based outcomes go beyond EC guidance, yet are considered to be achievable, and will incentivise further initiatives and measures to reduce noise at Dublin Airport (including efficiency measures that will have broader environmental benefits). In contrast, the policy objective and outcomes proposed by daa through the planning application (i.e. Alternative (2)) would be likely to have an adverse effect on most of the environmental aspects, due to its lack of specific outcome reductions. Alternative (3) would be similarly adverse; the very long-term targets of Alternative (4) would likely result in impacts for the majority of environmental aspects worsening before they get better; whilst Alternative (5) would be disadvantageous to human health.
- 4.10 The assessment of the RD alternatives similarly revealed that the proposed amendments to Condition 5 put forward by daa through the planning application (i.e. Alternative (i)) would be likely to have an adverse effect on most of the environmental aspects, due to its lack of operational constraints during the period 23:00 to 23:30 and 06:00 to 07:00. Alternatives (ii) and (iii) would be better for biodiversity and air quality respectively (with impacts reduced to negligible levels), whilst both would offer a reduction in adverse effects on noise and health compared to Alternative (i). The alternative that performed the best in SEA terms – and also the preferred alternative of ANCA – was Alternative (iv), as not only would the proposed noise quota operate throughout the 8 hours of the night, but there would be additional noise-related limits on the types of aircraft permitted to operate at night.
- 4.11 Revising Condition 3(d) effectively means prescribing a form of night-time runway preference or prescribing scheduled use of the North or South Runways over a certain period of the night. All of the alternative runway use patterns considered by ANCA involve the same amount of noise overall, just redistributed depending on which runway is being used and how. Consequently, it was not possible to state which of the runway use patterns is better or worse in SEA terms, as all would involve noise improvements (and thus human health and biodiversity improvements) in some locations, and deteriorations in others. Nevertheless, the proposal put forward by daa in the planning application, Alternative (vi), was also the preferred alternative of ANCA. This is because it permits the operation of the runways in a manner which reduces the impacts on those newly affected by aircraft night-time noise, whilst providing certainty to communities as to how they will be affected by night-time operations from the North Runway.
- 4.12 Finally, the two alternatives considered by ANCA in relation to the proposed voluntary residential sound insulation grant scheme for residential dwellings differ only in their impacts on human health, with Alternative (x), as proposed by ANCA, being more beneficial than Alternative (ix), as proposed by daa. There are no other impacts from an environmental perspective, and so Alternative (x) was the preferred alternative.

05

Monitoring Measures

05 Monitoring Measures

Introduction

- 5.1 Article 10 of the SEA Directive requires ANCA, as the 'managing authority', to monitor significant environmental effects of implementing the NAO and RD. This must be done in such a way as to also identify unforeseen adverse effects and to take appropriate remedial action. Monitoring should commence as soon as the programme is adopted, with annual reporting carried out for the life of the programme.
- 5.2 However, the environmental assessment of the NAO and RD revealed that there would be no significant adverse environmental effects as a result of implementing the preferred alternatives, i.e. Alternative (1) for the NAO and Alternatives (iv), (vi) and (x) for the RD.
- 5.3 Nevertheless, ANCA will monitor the effectiveness of the measures proposed through the RD (i.e. with regard noise) through the requirements of the NAO.

Adopted Monitoring Programme

- 5.4 Annual monitoring of the Airport's performance against the NAO will be undertaken as detailed in Schedule A (Part 4) of the RD. These monitoring requirements are repeated below:

Part 4 – Noise Performance Reporting

The Airport shall issue annual reports to the planning authority and ANCA on its noise performance. The report for the previous Annual Period (1 January to 31 December) shall be published by no later than 31 March each year and comprise of:

Noise exposure statistics and contours as required to facilitate performance review of the Noise Abatement Objective including as a minimum:

- Annual 55dB L_{night}
- Annual 65dB L_{den}
- through the number of people 'highly sleep disturbed' and 'highly annoyed' in accordance with the approach recommended by the World Health Organisation's Environmental Noise Guidelines 2018 as endorsed by the European Commission through Directive 2020/367, taking into account noise exposure from 45dB L_{den} and 40dB L_{night} .
- Annual L_{night} contours from 40dB in 5dB increments
- Annual L_{den} contours from 45dB in 5dB increments
- Summer 60dB $L_{Aeq, 16hr}$ and 63dB $L_{Aeq, 16hr}$ (measured averaged across 92-day summer period from 16th June to 15th September).

Any residential properties that have benefits and are eligible for and yet to benefit from the Airport's noise insulation schemes.

Key Statistics with respect to aircraft operations in the preceding Annual and Summer Periods including but not limited to:

- aircraft movements including average hourly movements
- use of the Noise Quota Scheme
- movements by aircraft type
- passenger numbers
- aircraft destinations
- flight routings
- runway use

Summaries from noise monitoring terminals for the Airport

Details of all noise modelling undertaken in support of the Noise Performance Reporting describing compliance with the methodology set out in Directive 2015/996 (ECAC Doc.29 4th Edition). All noise modelling shall be validated using local noise and track keeping performance data from the Airport's systems.

Summary of complaints records for the preceding Annual Period categorised by the:

- location of complaints; and
- reason for complaint

Details of any anticipated changes or developments that may affect noise at the Airport in the current year, through for example airspace change or fleet modernisation.

- 5.5 The NAO requires that the monitoring data collected that relates specifically to the NAO itself (para 6.12) should be provided to ANCA in an Annual Report. The contents of the Annual Report will be informed by the measures determined by ANCA within the NAO and RD.

Additional Proposed Monitoring

- 5.6 As noted, certain submissions proposed additional monitoring measures, including in relation to air quality. ANCA will make the relevant sections of Fingal County Council aware of these submissions. ANCA considered monitoring measures, including of air quality, carbon emissions of all inbound and outbound flights, and aircraft movements over designated biodiversity sites. However, such monitoring measures fall outside of the remit of ANCA to require or enforce. Such measures would be more appropriate at the level of a planning application for growth of the Airport should such come forward, as then such monitoring would be enforceable as part of planning consent rather than simply a recommendation through the SEA.



An tÚdarás Inniúil um
Thorann Aerárthaí

Aircraft Noise
Competent Authority

Comhairle Contae
Fhine Gall
Fingal County
Council

