

Noise Action Plans Review - Final Report & Summary of Recommendations

CAP 3110

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Executive Summary

The Civil Aviation Authority (CAA) was commissioned by the Department for Transport (DfT) to review the effectiveness of Noise Action Plans as a noise management tool. This report summarises the key findings from that review and presents a table of 13 recommendations aimed at strengthening the overall framework. These recommendations are made within the context of current noise policy.

The review examined three core components of the Noise Action Plan framework. These were:

1. The process followed by airport operators in preparing Noise Action plans,
2. Clarity of the Department for Environment, Food and Rural Affairs (Defra) Guidance for airport operators, and
3. the effectiveness of adopted plans.

To support this work, the study reviewed three rounds of Noise Action Plans from ten airports—including two located in the devolved nations—and two airports in the European Union (EU). The study was conducted by AtkinsRealis on behalf of the CAA. The study identified the key areas where improvements are needed.

The 12 recommendations set out in this report aim to address the findings of the study by focussing on four priority areas:

- The legal framework and Defra Guidance
- Engagement and consultation
- Communication and publication
- Monitoring and compliance

These recommendations are made within the context of current noise policy and aim to support a more effective approach to noise management and community relations. DfT and Defra will need to consider these recommendations alongside the other priorities such as the initiative to reduce administrative costs for businesses by the end of the current Parliament.

Recommendations

This report sets out a range of recommendations made within the context of current noise policy to improve the effectiveness of the Noise Action Plan framework in managing noise. The recommendations are drawn from the AtkinsRealis study. The recommendations have been grouped by 1) legal framework and Defra guidance, 2) engagement and consultation, 3) communication and publication, and 4) monitoring and compliance. The scope and content of these recommendations are further clarified in the section Legal Criteria for Recommendations.

Legal Framework & Defra guidance

R.1 The CAA makes the following recommendations to strengthen implementation of the Noise Action Plans framework¹:

1. The CAA recommends that Noise Action Plans contain information to explain the rationale behind the requirement for airports to develop a Noise Action Plan. This will help contextualize the legal obligation and enhance understanding among stakeholders.
2. The CAA recommends that the published Noise Action Plans should clearly state the authority responsible for making and, where relevant, adopting noise maps and Noise Action plans.
3. The CAA notes the limited uptake by local authorities in designating quiet areas, despite the provisions set out in the Environmental Noise Regulations (England) 2006 (as amended). To address this, the CAA recommends that Defra guidance be revised to encourage greater engagement by suggesting that airport consultative committees (ACC) work collaboratively with local authorities to identify and designate potential quiet areas. This would help ensure that the intent of the regulations is more effectively realised in practice.
4. Currently the provision of financial information on the costs and benefits of measures in a Noise Action Plan is required where available². The CAA recommends that Defra guidance should provide clarity on financial information required by responsible authorities as part of the Noise Action Plan process. Where a cost-benefit analysis has been used to inform the selection of a measure, that information should be included. Any assumptions made, and trade-off information (where available) should be included. To ensure consistency and robustness, the CAA recommends that recognised

¹ These amendments could be implemented through revisions to Defra guidance, which may reinforce the requirements of Annex V of the Environmental Noise Directive (END), Directive 2002/49/EC.

² In Environmental Noise Regulations (2006) as amended in Annex V, it states "Financial information (if available)".

methodologies, such as those recommended in The Green Book³ or incorporated into Transport Analysis Guidance (TAG)⁴, be used as references when conducting cost-benefit analyses. The CAA also acknowledges the potential cost and resource implications in undertaking detailed cost-benefit analyses for individual measures and recommends carrying out sensitivity analysis on this kind of assessment.

5. The CAA recommends commissioning research to assess the impact of aviation noise mitigation measures on public health outcomes. This will enable the development of evidenced guidance on health impacts to better support Noise Action Plans.

R.2 The CAA recommends that the Defra guidance be updated with a requirement for airports to include all relevant legal obligations in their Noise Action Plans. Specifically, this should include information on any relevant planning conditions or section 106 obligations and other similar legal requirements relating to noise that are enforceable. In addition, where other legal requirements—such as flight restrictions related to noise—exist, these should also be explicitly incorporated within the Noise Action Plan framework.

R.3 The CAA recommends that the Defra guidance provide direction on the inclusion of noise forecasting in Noise Action Plans, offer advice on how future technologies should be considered, and how airports should assess and report the potential impact of such technologies on the existing noise environment.

Engagement and Consultation

R.4 The CAA recommends that Defra should ensure the following information is made available to both airports and stakeholders:

1) the steps of the Noise Action Plan consultation process and minimum timelines for the steps of consultation to enable them to prepare for engagements in advance, and

2) further information on the approval and adoption process by clearly defining compliance requirements and decision-making criteria.

R.5 The CAA recommends that Noise Action Plans should be shared with the stakeholders consulted during development, prior to adoption. A written response to feedback provided during the consultation should be included as an

³ The HM Treasury's The Green Book provides central government guidance on appraisal and evaluation. Available at:

https://assets.publishing.service.gov.uk/media/6645c709bd01f5ed32793cbc/Green_Book_2022_updated_links.pdf

⁴ Transport analysis guidance (TAG) provides information on the role of transport modelling and appraisal. Available at: <https://www.gov.uk/guidance/transport-analysis-guidance-tag>

annex to show how the feedback was addressed in the Noise Action Plan. This should include details of where a decision was based on a cost-benefit analysis. Where feedback has not been taken forward, a justification for the exclusion must be given.

- R.6 The CAA recommends that the airports should, where reasonably practicable and subject to the availability of appropriate resources, make every effort to ensure that stakeholders with a demonstrable interest in local noise issues—regardless of whether or not they are represented on the Airport Consultative Committee(ACC)—are afforded a meaningful opportunity to provide input.
- R.7 The CAA recommends that the Noise Action Plans should include a list of the community stakeholders who participated in the consultation process, in line with the General Data Protection Regulation. Stakeholders must be informed in advance that their participation will be recorded in a list annexed to the Noise Action Plan prior to their involvement in the consultation.

Communication and Publication

- R.8 The CAA notes that Schedule 4 of the Environmental Noise Regulations requires Noise Action Plans to contain a summary covering all the important aspects of the plan. The CAA recommends that the summary should be written in plain English and tailored to a non-technical audience, ensuring the content is accessible and easily understood by the public.
- R.9 The CAA recommends that an accessible version of this summary should also be made available. Airports should consider whether local residents may need documents translated in order to be able to understand them and should take steps to ensure differences in language are not a barrier to accessibility.

Monitoring and Compliance

- R.10 The CAA recommends that all actions or measures identified within the Noise Action Plan should, at a minimum, include indicative timelines. Measures that fall within the airport's control and are planned for implementation over time should be developed in accordance with the Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) framework. The CAA recognises that some actions may lie outside the direct control of the airport; in such cases, airports should clearly define their role in relation to the action, outline any relevant dependencies, and identify any existing contingencies.
- R.11 The CAA recommends that DfT/Defra consider the establishment of an oversight function through an extant body or authority or through local authority or planning bodies, to ensure ongoing compliance with the Noise Action Plan. We note that

the DfT Terms of Reference⁵ to Airport Consultative Committees expects ACCs to "to monitor the implementation of airports' commitments made under statutory Noise Action Plans".

- R.12 The CAA recommends that Defra require airports to produce progress reports at least annually against Noise Action Plans, using an approved mechanism to indicate progress.
- R.13 The CAA recognises that land use planning plays a critical role in the ongoing management of noise. The roles and responsibilities of local authorities and developers needs to be clarified as the study has identified that there is a trend of population growth or encroachment increasing the size of affected populations despite noise contour areas decreasing. The CAA recommends that the Ministry of Housing, Communities and Local Government (MHCLG) work with Defra in facilitating and supporting engagement between the various stakeholders, ensuring effective collaboration to integrate new standards into proposed developments.

⁵ The Guidelines for ACCs can be found here :
<https://assets.publishing.service.gov.uk/media/607ff458d3bf7f012fa75def/guidelines-airport-consultative-committees.pdf>

Chapter 1

Introduction

- 1.1 The Department for Transport (DfT), which has responsibility for aviation noise policy, commissioned the CAA to conduct a critical review of the following:
 - The process of developing and implementing Noise Action Plans.
 - The clarity of the Defra Guidance, particularly surrounding its ability to assist relevant airport operators in the development of their Noise Action Plans.
 - The effectiveness of Noise Action Plans as a tool for managing aviation noise and its effects around the airports.
- 1.2 The review identified potential areas for improvement and provided recommendations to Defra and DfT on possible revisions in relation to the three areas outlined above. The study's output is a set of recommendations intended to inform Defra's guidance to airport operators for developing Noise Action Plans in future rounds.
- 1.3 Due to the timeframe required for the CAA to carry out the study and for DfT and Defra to assess how to take the recommendations forward, any potential changes to the Defra Guidance will not affect Noise Action Plans developed for Round 4, published in 2024. Instead, recommendations will be aimed towards the development of 'Round 5' of Noise Action Plans (due to be adopted in 2029) and future rounds. Nevertheless, monitoring and evaluation methods currently conducted by the airports could be improved by incorporating insights from feedback and recommendations immediately. This could help compliance with commitments made in Round 4.
- 1.4 By summarising the report and key recommendations from the review, this document aims to help Defra, DfT, and airport operators improve the next round of Noise Action Plans. The report is organised as follows:
 - Chapter 1 sets out the project introduction.
 - Chapter 2 sets out the background information and the legal context of Noise Action Plans.
 - Chapter 3 details the study's aims, objectives, and governance structure.
 - Chapter 4 describes the methodology.
 - Chapter 5 summarises the study's results and key findings.
 - Chapter 6 discusses the limitations of the review and proposes next steps.

CHAPTER 2

Background Information

- 2.1 This section provides an overview of Noise Action Plans and their legal framework.
- 2.2 Noise Action Plans offer a structured approach to controlling environmental noise and its impacts. They also consider the preservation of environmental noise quality where it is good, particularly in urban areas.
- 2.3 Noise Action Plans ('Action Plans') are a legal requirement in the UK under the Environmental Noise (England) Regulations 2006 (the 'Regulations')⁶. Relevant airport operators are required to submit these plans to the Department for Environment, Food and Rural Affairs (Defra) for adoption. These Regulations were originally derived from the Environmental Noise Directive⁷, or 'END'. Noise Action Plans provide a framework to support the Government's noise policy which is set out in the Aviation Policy Framework⁸ (APF). Current noise policy includes an overarching aviation noise policy statement⁹ which has recently been revised. Defra has developed Guidance for Airport Operators (the Defra Guidance) to produce Noise Action Plans under the terms of the Regulations.¹⁰

⁶ The Environmental Noise (England) Regulations (2006) (UK Statutory Instruments, 2006) As Amended (2018) (UK Statutory Instruments, 2018)

⁷ Directive 2002/49/EC of the European Parliament and of the Council of June 2002 relating to the assessment and management of environmental noise (Official Journal of the European Communities, 2002)

⁸ The Aviation Policy framework was published in 2013 as Government's policy on aviation, available at <https://assets.publishing.service.gov.uk/media/5a7aa94b40f0b66eab99bc3e/aviation-policy-framework.pdf>. One of the objectives to manage aviation's environmental impact, set out in this document is:

'To limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.'

⁹ The government's revised overarching aviation noise policy statement as published on March 2023 can be found here - <https://www.gov.uk/government/publications/aviation-noise-policy-statement/overarching-aviation-noise-policy>. They state that:

'The impact of aviation noise must be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise.' It must also be noted that there is a possibility that the government policies could change again over the course of time.

The basis for this change are the Aviation 2050 Green Paper, the 2020 consultation on night flight restrictions and the UK air navigation guidance 2017. The noise policy issued in March 2023 takes precedence over the noise policy section outlined in APF.

¹⁰ DEFRA, 2013, Guidance for Airport Operators to produce Noise Action Plans under the terms of the Environmental Noise (England) Regulations 2006 (as amended). Available at:

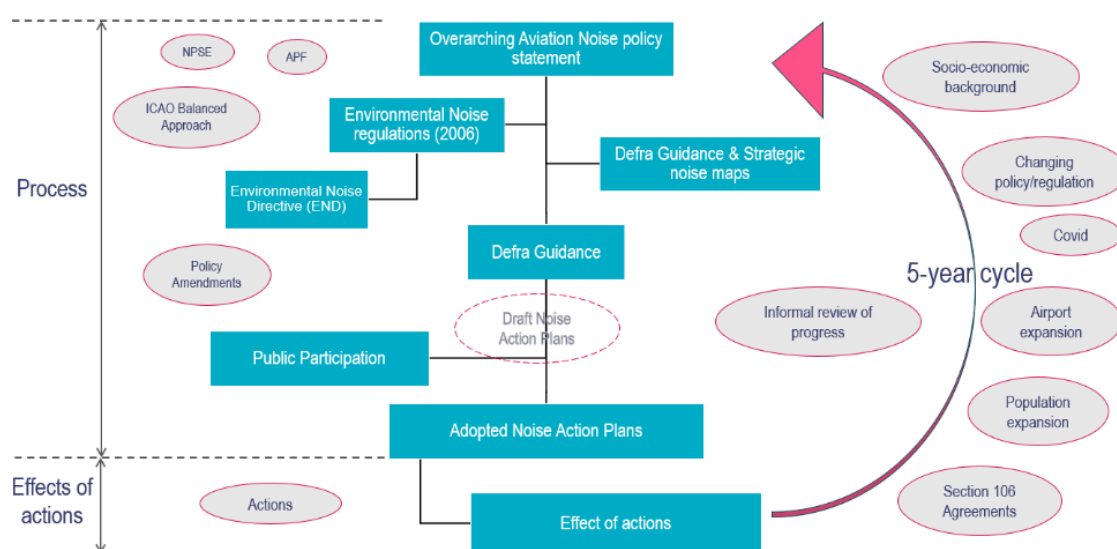
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/276226/noise-action-plan-airport-operators-guidance-201401.pdf Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/276226/noise-action-plan-airport-operators-guidance-201401.pdf

2.4 The first round of Noise Action Plans was developed and published in response to Round 1 of noise mapping undertaken in 2007, based on 2006 data. All airports have published their Action Plans for the current round, designated as 'Round 4', in 2024. In March 2024, when the project was started, Round 4 draft Action Plans were being evaluated by Defra.

2.5 The key steps that influence the development of a Noise Action Plan over a five-year cycle are shown in Figure 1. The primary goal of a Noise Action Plan is to ensure that the objectives of aviation noise policy are effectively met.

Figure 1: Lifecycle of a Noise Action Plan. See paragraph 2.7 below for a break down of this process.

2.6



2.7 The process typically unfolds as follows:

1. Environmental Noise Directive sets out the legal requirements for Noise Action Plans which has been transposed into UK law through the Environmental Noise Regulations (2006) as amended. This is devolved for the four nations.
2. Environmental Noise (England) Regulations (2006) are overseen by Defra. These regulations define the criteria under which certain airports must produce strategic noise maps. These maps are submitted to Defra.
3. Based on the outcomes of these noise maps, specific airports—whose noise impacts an agglomeration¹¹—are required to develop a Noise Action Plan. All major airports are required to produce a Noise Action Plan.

¹¹ Legislation.gov.uk. (2006). *The Environmental Noise (England) Regulations 2006*. [online] Available at: <https://www.legislation.gov.uk/uksi/2006/2238/regulation/3/made> [Accessed 10 Apr. 2025]. Regulation 3.

4. Airport operators then use Defra's Guidance for operators of civil airports to prepare a draft Noise Action Plan in accordance with the Environmental Noise (England) Regulations 2006 (as amended).
5. The draft Noise Action Plan undergoes consultation, allowing community stakeholders to provide feedback.
6. After the consultation period, the consultation response is incorporated into the draft .
7. The revised Noise Action Plan is then submitted to Defra. If Defra finds the draft unsatisfactory, it will be sent back for revisions. Once it is resubmitted, if it meets all requirements, it is formally adopted by the Secretary of State.
8. Once adopted, the final plan must be published for public access. Airports are responsible for publishing, and they typically publish on their website.
9. Airports are expected to implement the actions set out in their adopted Noise Action Plan.

2.8 Figure 1 also makes note of external factors influencing the cycle, such as planning conditions, policy changes, socio-economic shifts (events such as COVID-19), airport expansion, and population growth.

2.9 The overarching aviation Noise Policy Statement also applies to the Noise Action Plans. Several factors affect the Noise Action Plans including any planning conditions in place, any operating restrictions, external events such as pandemics, socio-economic shifts, airport expansion, changing policy or regulations and population growth.

CHAPTER 3

Project Details

Aims

- 3.1 This chapter details the study's aims, objectives, and governance structure. The overarching aim of this project was to investigate the effectiveness¹² of Noise Action Plans as a method of noise management. The outputs of this project have provided Defra and DfT with a set of recommendations to inform on potential improvements:
- on how airports manage and monitor the actions they have committed to under Round 4; and /or
 - to the Defra Guidance for Round 5, which could be made either under the existing legislation¹³ or, if required, through new legislation.
- 3.2 To achieve these aims, the CAA has actively collaborated with a wide range of stakeholders, including government departments and executive authorities responsible for noise improvement actions. This collaboration also includes formal groups/consultations such as a government steering group and a Stakeholder Engagement Group. To support this review, published Noise Action Plans for 10 selected airports were studied.

Objectives & Scope

- 3.3 The project has three main objectives:
- 1) To evaluate the process for developing Noise Action Plans to manage noise.
 - 2) To assess the clarity of the Defra Guidance in assisting the competent authorities in the development of their Noise Action Plans.
 - 3) To assess the effectiveness of Noise Action Plans in managing noise and its effects around airports.

Limitations of the Review

- 3.4 The study did not include an assessment of noise mapping, modelling, or calculation methodologies as they were outside the project's scope.¹⁴

¹² 'Effectiveness' is defined by the extent to which objectives set are achieved. In the context of this document, effectiveness refers to the degree of capability of the process, guidance, and/or legislation in creating Noise Action Plans, and how effective Noise Action Plans are in managing noise.

¹³ Secretary of State for Transport, March 2013. Available at

<https://assets.publishing.service.gov.uk/media/5a7aa94b40f0b66eab99bc3e/aviation-policy-framework.pdf>

¹⁴ CAP 2091: CAA Policy on Minimum Standards for Noise Modelling. (2021). Civil Aviation Authority .

- 3.5 The study did not focus on the appropriateness of currently required noise metrics as per regulation.
- 3.6 The study did not examine individual measures and actions.
- 3.7 The study did not evaluate how the requirements of the International Civil Aviation Organization (ICAO) Balanced Approach to aircraft noise management¹⁵ are incorporated into Noise Action Planning.
- 3.8 The study did not address the potential impact of airspace modernisation on noise management strategies.
- 3.9 The study did not examine Noise Action Plan framework from an efficiency perspective across the various stakeholders involved.
- 3.10 The study did not specifically examine ground-level noise, occupational noise, or traffic noise generated due to airports, as these are not covered under the Environmental Noise Regulations.

Methodology

- 3.11 The project methodology consisted of five steps:

Step One: Literature Review and preliminary Scope development

- 3.12 Preliminary assessment to establish the scope of the review. At this stage, a background study was conducted into Noise Action Plans which included existing legislation, mapping out the different stages involved in the Noise Action planning process, identifying different stakeholders involved and affected by Noise Action Plans, and any potential drivers that can affect outcomes. This preliminary study was used to establish a base scope which was further developed through the next steps. A literature study of similar works was also conducted to help refine the scope.

Step Two: Governance Structure Developed

- 3.13 Development of a governance structure and agreement of the Terms of Reference with key stakeholders. The governance structure consisted of a steering group to provide strategic direction and advice at various stages. Discussions with the steering group identified stakeholder engagement groups made of both airport and community members as best practice for gathering open feedback. This led to the establishment of a stakeholder engagement group.

¹⁵ ICAO (2024). Aircraft Noise. [online] Icao.int. Available at: <https://www.icao.int/environmental-protection/Pages/noise.aspx>.

Step Three: Scope Refinement

- 3.14 Refinement of the review scope, including the selection of 10 airports for detailed analysis. After establishing the two groups, a draft scope for the review was shared for feedback. Based on that feedback, the scope was refined as follows:
- a. Identified the need to conduct a study of existing Noise Action Plans to identify weak points.
 - b. Decided to study more than one Round of Noise Action Plan.
 - c. Explored Noise Action Plans and Guidance (where available) from devolved nations and 2 EU countries for comparison and to identify best practices. 9 of the 10 airports were selected based on selection criteria established through discussions with the steering group. One airport was selected by the stakeholders.
 - d. The selection criteria for airports and the list of selected airports is given in the section, 'Airport selection for study'.
 - e. Establish project timelines for delivery and completion.
- Due to the newly established timelines, and the widening of the scope, an external consultant was commissioned to conduct the study.

Step Four: AtkinsRéalis Contracted for the Study

- 3.15 Engagement of AtkinsRealis as the external consultant to conduct the review. The study summary and results are given in section 'External Consultant:'.

Step Five: Completion and Recommendations

- 3.16 Completion and publication of recommendations based on the findings of the study.
- 3.17 Throughout the project, four stakeholder engagement sessions and seven steering group meetings were conducted.

Project Governance

Project Sponsor:

- 3.18 The project was funded by DfT, who held ultimate accountability for the project. DfT offered to provide guidance, secure resources and resolve escalated issues.

Steering Group:

- 3.19 A government steering group was established to provide strategic oversight and direction for the project, but without seeking to influence the final recommendations. The steering group was comprised of Defra, DfT, UK Health Security Agency (UKHSA) and the Ministry of Housing, Communities & Local Government (MHCLG).

The CAA:

3.20 The CAA was responsible for conducting the project.

Stakeholder Engagement Group:

3.21 A Stakeholder Engagement Group (SEG) was established to serve as a platform for diverse stakeholders to engage with the Noise Action Plan review project and facilitate meaningful dialogue, information exchange, and feedback collection. These stakeholders included both those who possess executive authority for noise improvement actions as well as community stakeholders. Invitations to join the group were sent out to The AirportsUK (previously Airport Operators Association (AOA)), Manchester Airports Group (MAG), Heathrow Airport, Airlines UK, Aviation Environment Federation (AEF), United Kingdom Airport Consultative Committees (UKACC), Heathrow Association for the Control of Aircraft Noise (HACAN), and Strategic Aviation Special Interest Group (SASIG).
External Consultant:

3.22 AtkinsRealis was appointed as the external consultant to design a methodology and conduct a study of the Noise Action Plans of 10 airports, including Rounds 2, 3 and 4 Noise Action Plans. The selected airports were chosen based on criteria decided after discussions with the steering Group(s) and included both UK and non-UK airports which fall within the END obligations.

Airport selection for study

3.23 The criteria for airport inclusion in the study were set out as part of discussions with the steering group, and included: character and population exposure – rural vs urban, type of operations, highest noise impact, an airport from the north of England to ensure an even geographical reach of the study, an airport based on agglomeration, an airport from each of the devolved nations for comparison, two airports from the EU for comparison, and an airport selected by the stakeholders. Table 1 shows the list of airports included in the study along with their selection criteria.

3.24 Table 1: List of airports selected for study and their selection criteria

No.	Country	Airport	Selection Criteria
1	England	East Midlands	Significant night flights & cargo
2	England	London Gatwick	2nd largest and rural character
3	England	London Heathrow	Biggest with the highest impact
4	England	Manchester International	2 runway large airport in the north
5	England	Southend	Agglomeration based

6	England	Leeds Bradford Airport	Stakeholder selection
7	Scotland	Edinburgh Airport	Devolved airports
8	Northern Ireland	George Best Belfast City Airport	Devolved airports
9	Germany	Frankfurt	Overseas airports
10	Netherlands	Amsterdam Schiphol airport	Overseas airports

CHAPTER 4

Study Summary

- 4.1 This section sets out and summarises the study conducted by AtkinsRealis on behalf of the CAA.
- 4.2 AtkinsRealis was commissioned to develop a methodology and carry out a study of Noise Action Plans of the 10 selected airports, covering Rounds 2, 3 and 4. The study was structured around the three core project objectives. To support initial discussions, a non-exhaustive list of sample questions was provided for further development. Additional materials, including contact lists for stakeholders across the 10 selected airports, were also shared.
- 4.3 The first step following project initiation was a stakeholder engagement session. This session was instrumental in collecting feedback on the project scope and in setting expectations among the various stakeholder groups.
- 4.4 The methodology adopted by AtkinsRealis included a multi-step process. The initial phase involved data acquisition, during which the Noise Action Plans and any relevant airport guidance documents were collected. At this stage, documentation for the literature review was also gathered, including broader noise and aviation policy frameworks in place during each round of noise action planning.
- 4.5 Following data collection, a series of research questions was developed to align with the project's three objectives. These questions formed the basis of questionnaires which were sent out to the various stakeholders. The stakeholders contacted to support this study were:
- Airport operators from each of the ten airports
 - Defra
 - Airport Consultation Committees (ACCs)
 - One community group for each of the eight UK airports, who were put forward by the Aviation Environment Federation (AEF), a key UK-based Non-Governmental Organisation.
- 4.6 The research questions were also addressed through a desktop review of the Noise Action Plans. The data gathered from the airport Noise Action Plans, along with stakeholder feedback, were mapped to the corresponding research questions to deliver a comprehensive response.

4.7 Further information on the questionnaires and their development can be found on the project report¹⁶.

Information Collected

4.8 Table 2 shows the airport Noise Action Plans that were successfully obtained and reviewed by AtkinsRealis.

4.9 Table 2: Noise Action Plans obtained

Airport	Round 2	Round 3	Round 4
London Heathrow	Yes	Yes	Yes (Draft)
London Gatwick	Yes	Yes	Yes (Draft)
London Southend	Yes	Yes	Yes
East Midlands	Yes	Yes	Yes (Draft)
Leeds Bradford	Yes	Yes	Yes (Draft)
Manchester International	Yes	Yes	Yes (Draft)
Edinburgh	Yes	Yes	Yes (Draft)
George Best Belfast City	Yes	Yes (Adopted 2024)	NA
Amsterdam Schiphol	Yes	Yes	Yes
Frankfurt am Main	Yes (Summary only)	Yes	Yes

4.10 The response rate to the questionnaires distributed to selected airports, their respective Airport Consultative Committees (ACCs), and community groups is presented in Table 3 below. In some cases, multiple responses were received from community groups for a single airport; where applicable, the number of responses is indicated in brackets.

4.11 Table 3: Questionnaire responses received

Airport	Airports	ACCs	Other community groups
London Heathrow	Yes	Yes	No
London Gatwick	Yes	Yes	Yes (2)
London Southend	Yes	Yes	No

¹⁶ See report xx produced by AtkinsRealis and overseen by the CAA.

East Midlands	Yes	Yes	Yes (4)
Leeds Bradford	Yes	No	Yes
Manchester International	Yes	Yes	Yes
Edinburgh	Yes	Yes	No
George Best Belfast City	No	No	Yes
Amsterdam Schiphol	Yes	No	NA
Frankfurt am Main	No	Yes	NA

- 4.12 In addition, four iterations of guidance for UK airport operators issued by Defra were identified and reviewed, corresponding to the years 2009, 2013, 2017, and 2022. Equivalent guidance for the EU-based airports were unavailable.
- 4.13 The information collected from the various sources was mapped to each of the 82 research questions. Insights derived from these responses were then synthesized with the help of Artificial intelligence (AI) and aligned with the three project objectives to inform the final conclusions.

CHAPTER 5

Key Findings of AtkinsRealis Study

5.1 This chapter outlines the key findings from the study.

Results of the study

5.2 Below is the results from the study arranged as per the 3 objectives.

Objective 1: Process of developing Noise Action Plans

Preparation

- 5.3 Many airports collaborate on sharing best practices, lessons learnt and interpretation of the Defra guidance, leading to consistency in the presentation of Noise Action Plans amongst different airports.
- 5.4 Common preparatory elements include consideration of the existing legal framework, strategic noise mapping results, proposed noise reduction actions and measures, and a consultation phase prior to submitting the Noise Action Plan for adoption.

Selection of Measures

- 5.5 Many airports provide rationale behind selection of measures. Some plans have linked the selection of measures and actions to the regulatory framework, for example, the ICAO Balanced Approach or the Aviation Policy Framework.
- 5.6 In cases where the responsibility lies outside the airport, like the DfT, this can inhibit the airport operator from taking action. Regulatory frameworks which require multiple stage approval process can slow down the implementation process of measures.
- 5.7 Measures are not always SMART, which means they cannot be measured for success. Public consultation feedback played a significant role in shaping the Noise Action Plans, highlighting the influence of community input on airports' noise management strategies.

Best practice

- 5.8 Round 3 Manchester and East Midlands Plans use colour-coded labels to indicate where measures/circumstances are changing.
- 5.9 The Amsterdam Schiphol Round 4 Noise Action Plan shows how reducing flights can help meet environmental goals, but the industry pushback they received highlights the need to better balance aviation benefits with environmental responsibilities.

Consultation

- 5.10 A degree of flexibility exists within the Defra guidance, and this has resulted in different approaches by airport operators, leading to mixed levels of satisfaction among ACCs and community groups.

Differing Perspectives

- 5.11 Community stakeholders, ACCs and airports have differing perspectives on consultation.
- 5.12 East Midlands provides an example of the benefits of having an independently chaired ACC, with local community groups praising the arrangement in their questionnaire responses. Newer members of the ACC reported noticeable advantages from participating and felt more empowered to engage in the process.

The Submission Process

- 5.13 Community stakeholders have consistently expressed concern that final Noise Action Plans are often not shared with them before formal adoption, leading to feelings of exclusion, distrust toward airport operators, and perceptions of bias by the adopting authorities.

Quality of Feedback

- 5.14 Mixed quality of consultation feedback and conflicting stakeholder views on the same issue. Despite strong participation at consultation events, the actual number of formal feedback submissions was low.

The Clarity of Draft Noise Action Plan Documents

- 5.15 The use of technical language in draft Noise Action Plan documents often hindered meaningful public engagement and limited the potential for informed debate, especially in the context of the Aviation Policy Framework.

Best practice

- 5.16 No concerns raised on document clarity for Gatwick and George Best Belfast city airports.

Defra's Input

- 5.17 Defra's advice on consultation and timelines could be standardised to improve transparency and ensure community stakeholders are engaged early in the noise action planning process.

Adoption of the Noise Action Plan

- 5.18 Annex V does not specify the required level of detail for Noise Action Plans. As a result, audits focus on the presence of required information rather than its depth, leading to consistency in content types but variability in detail.

Objective 2: Clarity of Defra Guidance

Defra Guidance

- 5.19 Further clarification and guidance from Defra could enhance consistency and understanding throughout the planning and consultation process.

Objective 3: Effectiveness of Noise Action Plans in Managing Noise and its Effects Around Airports

Quality, Detail and Content of the Adopted Noise Action Plans

- 5.20 Quality has improved from Round 2 to 4. Level of detail has increased by Round 4. Most Noise Action Plans have made use of noise contour maps and population exposure data to demonstrate aviation noise impact. Specific noise type for instance, ground operations, night flights etc were identified by certain Action plans.
- 5.21 All Noise Action Plans indicate that reducing noise levels depends on behavioural changes driven by the implementation of noise mitigation measures.

Compliance with Annex V

- 5.22 Noise Action Plans meet Annex V requirements, though there is room for improvement in some areas.

Authority Responsible

- 5.23 Not all Action plans clarify who the competent authority is.

The Legal Context

- 5.24 Balanced approach strategy has influenced the Action plans in all countries.
- 5.25 In the UK, APF has considerable impact on airports. The airport operators' opinions mentioned that the framework empowers their airports to take action to reduce noise.
- 5.26 Based on questionnaire responses, it was found that in some instances, local planning and overarching planning requirements meant that some proposed measures were removed due to complexity and long timeframe.

Discussion of Quiet Areas

- 5.27 UK airports tend not to mention quiet areas. There are no defined designated quiet areas in England. EU airports tend to mention quiet areas.

Financial Information

- 5.28 Costs of measures are not always included. No guidance available on cost benefit analysis.

- 5.29 Round 4 Noise Action Plans for Gatwick and Edinburgh provide cost information for a selection of measures.

Provisions Envisaged for Evaluating the Implementation and the Results of the Action Plan

- 5.30 All airports enforce noise reduction measures, often through contractual agreements with airlines and stakeholders, supported by noise monitoring systems, data collection, and community feedback.
- 5.31 Enforcement methods include regulatory oversight, operational controls, financial incentives, independent audits (especially at larger airports), and penalties such as fines for non-compliance.
- 5.32 Certain measures such as investment in quieter planes are out of the airports' control and therefore difficult to check for compliance.
- 5.33 There is little evidence of enforcement action specifically tied to airport operators' Noise Action Plans, though questionnaire responses suggest that local authorities have issued notices for planning breaches.
- 5.34 The Amsterdam Schiphol case highlights how weak enforcement from governing bodies can lead to legal challenges over worsening noise impacts, while Heathrow has shown consistent noise reductions despite similar operational scale.

Estimates in Terms of the Reduction of the Number of People Affected

- 5.35 Annex V does not specifically mention health effects but specifies that each plan should contain estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other).
- 5.36 There are discussions on LOAEL/SOAEL with reference to the Government Airspace policy threshold values. All plans discuss the possibility for health effects but explicit assessment for specific health conditions is absent.

Evidence of Noise Improvement

- 5.37 A positive impact can be seen from the implementation of measures. These include better outcomes on community engagement, economic benefits, environmental sustainability, air quality and improvement of health and wellbeing. External factors such as housing encroachment within airport noise contours, air traffic growth or airport expansion can offset noise management measures.
- 5.38 Common examples of monitoring progress was seen through noise contour maps, population details and implementation of preventive mitigation.

Stakeholder Engagement and Perceptions

- 5.39 Airport operators and community stakeholders had opposing views on the quality of consultations.

- 5.40 While all airport operators claimed community influence on measure selection, only 44% of stakeholders felt they had actual influence.
- 5.41 Larger airports tend to have more robust and frequent engagement processes; smaller airports adopt proportionate approaches based on their scale.
- 5.42 Six UK airports demonstrated consistent stakeholder engagement through methods such as annual reporting, community noise forums, and advisory groups.
- 5.43 All Noise Action Plans included community noise perceptions, often through complaints data and consultation reviews, but some stakeholders felt their views were under-represented.
- 5.44 Only one-third of surveyed stakeholders found the consultation process accessible, and most expressed a desire for more frequent involvement.
- 5.45 Surveys of noise attitudes are rarely used, limiting the understanding of the full range of stakeholder views.

Role of Contextual Factors

- 5.46 Larger airports like Heathrow and Gatwick have more detailed Noise Action Plans and a wider range of noise reduction measures due to their higher volume of air traffic.
- 5.47 Despite the use of various measures, increased demand for flights means noise reductions are not always achieved.
- 5.48 Noise Action Plans did not specifically address freight or cargo flight impacts or measures.
- 5.49 Most airports penalise night flights and offer incentives for quieter aircraft during daytime operations to encourage more daytime flying.
- 5.50 Planning decisions facilitating expansion plans, such as Heathrow's third runway or increased use of Gatwick's northern runway, led to feedback that greater transparency and community engagement is needed at the planning stage. The planning stage is the key point where local communities have an opportunity to voice their noise concerns relating to future growth to influence the amount of noise they experience.
- 5.51 The proximity of airports to population centres did not directly influence the number of measures, but noise contour maps were used to identify and target impacted areas.
- 5.52 Population growth from new housing near airports increases the number of people exposed to noise, and led to feedback that airports must coordinate with local authorities and calls for the enhancement of insulation schemes.

- 5.53 Community perceptions of airports' attitudes toward noise abatement significantly affect stakeholder relationships, with many viewing current noise management efforts unfavourably.

Effectiveness of Noise Action Plans

- 5.54 Varying airport contexts and the impact of COVID-19 on recent data make it difficult to assess the overall effectiveness of Noise Action Plans. However, there is some positive evidence where Noise Action Plans have been effective. These include:
1. Some airports, like Heathrow, have shown consistent noise reductions over time.
 2. Ongoing monitoring at airports like Manchester and East Midlands supports the introduction of new, potentially more effective noise measures.
 3. Innovative approaches, such as Amsterdam's flight reduction plan, are used when standard measures fail.
- 5.55 Feedback from both airport operators and communities indicates that Noise Action Plans have the potential to be more effective than they currently are.
- 5.56 Based on these findings, the following key areas were identified for improvement:
- 5.57 Transparency should be improved by sharing initial submissions with community stakeholders and clearly explaining how feedback influenced the plan, as well as making Defra's approval process more open.
- Noise Action Plan measures should be SMART and supported by cost-benefit analysis to enhance effectiveness and accountability.
 - Clearer links between noise exposure, affected populations, and health effects should be included, such as LOAEL/SOAEL references or estimates of highly disturbed populations.
 - Communication with local stakeholders should be more accessible and ongoing, using non-technical summaries and better promotion of consultation periods.
 - Enforcement needs to be stronger, as current penalties mostly target airlines, while airport operators face limited accountability unless tied to legal agreements or designations.

Findings From Comparative Review of Airports Located in Devolved Administrations and the EU

- 5.58 Amsterdam Schiphol is planning a 6–8% reduction in annual flights, including limiting night-time operations to 27,000, due to previous Noise Action Plans failing to deliver meaningful noise reductions amid traffic growth. This self-imposed flight cap contrasts with typical airport growth ambitions and raises questions about the viability of similar measures at large UK airports.
- 5.59 Schiphol's approach shows that quieter aircraft alone may not reduce overall noise if flight numbers continue to grow.
- 5.60 Schiphol also leads in how it presents health effect data, assigning population sizes to specific noise bands based on levels of annoyance and sleep disturbance, a step beyond current UK practices.
- 5.61 Gatwick's Noise Action Plan includes LOAEL comparison tables, but UK airports generally do not clearly differentiate between populations exposed to LOAEL and SOAEL thresholds.
- 5.62 Schiphol and Frankfurt Noise Action Plans also report on noise impacts to sensitive non-residential locations like schools and hospitals — information mostly absent in UK plans, which focus on residential buildings.
- 5.63 Reporting on non-residential impacts could help track noise exposure for vulnerable groups and support more targeted noise mitigation.
- 5.64 George Best Belfast City Airport was the only UK airport reviewed in the study to use community attitude surveys to understand local perceptions, which proved effective.
- 5.65 Other UK airports referenced national noise studies, but local stakeholders felt these did not improve their influence over noise management decisions.
- 5.66 Local attitude surveys could help airports better understand community concerns and improve trust, transparency, and targeted action in Noise Action Plans.

Criteria for Recommendations

- 5.67 The AtkinsRealis study identified specific areas within the Noise Action Plans framework where enhancements could improve overall effectiveness. These key areas have informed the development of the following recommendations: Legal framework and Defra guidance, Communication and publication, Monitoring and compliance, engagement, and consultation.

Legal framework and Defra guidance

- 5.68 While the current Defra guidance aligns with the requirements of Annex V of the Environmental Noise Directive, our study has found that strictly adhering to

Annex V alone is insufficient. To address this gap, additional clarifications within the Defra guidance will be required. Provision for certain items, for instance, the designation of quiet areas already exist within the regulation, but there was a limited uptake on this by the local authorities. This could enhance the preservation of environmental noise quality, where it is good. Legal and planning conditions, including the role of Section 106 agreements where applicable, should be assessed for their influence on noise management outcomes.

Engagement and consultation

- 5.69 The study highlighted the need for greater transparency throughout the development of the Noise Action Plan. Enhancing transparency would enable community stakeholders to participate in a more informed dialogue, as outlined in the Aviation Policy Framework, and increase confidence that noise-related concerns are being thoroughly considered.

Communication and publication

- 5.70 A plain-language summary can help stakeholders understand key actions and objectives without needing technical knowledge. While some airports already use this approach, it can be improved to make information clearer and more accessible. Easier-to-understand communication was one of the main themes raised by community stakeholders in the questionnaire responses.

Monitoring and compliance

- 5.71 The study identified the need for measures and actions to follow the SMART framework (Specific, Measurable, Achievable, Relevant, Time-bound) to enable effective monitoring and compliance.

CHAPTER 6

Next steps

- 6.1 DfT and Defra to review the 13 recommendations set out in section 'Recommendations' with a view to:
- 6.2 Determine which proposals to take forward.
- 6.3 Identify which will not be pursued, along with documented justifications for their exclusion.
- 6.4 Commission relevant research where applicable to support implementation or further evaluation.
- 6.5 Develop an action plan to implement the accepted proposals, aligned with the publication of the next guidance by Defra.
- 6.6 Additionally, for the measures related to monitoring and compliance, the CAA suggests that they be reviewed to ensure their applicability to Round 4 of noise action planning.
- 6.7 Consider whether to develop a long-term strategy for amending Annex V of the Environmental Noise Directive, which has been referenced in UK legislation under the Environmental Noise Regulations.

APPENDIX A

Abbreviations

ACC	Airport Consultative Committees
AEF	Aviation Environment Federation
AOA	Airports UK(previously Airport Operators Association)
APF	Aviation Policy Framework
CAA	Civil Aviation Authority
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
END	Environmental Noise Directive
HACAN	Heathrow Association for the Control of Aircraft Noise
ICAO	International Civil Aviation Organisation
LOAEL	Lowest Observed Adverse Effect Level
MAG	Manchester Airports Group
MHCLG	Ministry of Housing, Communities & Local Government
SEG	Stakeholder Engagement Group
SASIG	Strategic Aviation Special Interest Group
SMART	Specific, Measurable, Achievable, Relevant, and Time-bound
SOAEL	Significant Observed Adverse Effect Level
TAG	Transport Analysis Guidance
UKACC	United Kingdom Airport Consultative Committees
UKHSA	UK Health Security Agency

APPENDIX B

Further Notes

- B1 Agglomeration: An area having a population in excess of 100,000 persons and a population density equal to or greater than 500 people per km² and which is considered to be urbanised.
- B2 Airport operator: The person for the time being having, in relation to a particular airport, the management of that airport.
- B3 Major airports: As per regulation 3 of Environmental noise regulations England(2006) as amended, major airports are identified by civil airports which have more than 50,000 movements per year (a movement being a take-off or a landing), excluding those purely for training purposes on light aircraft.
- B4 Annex V of European Directive 2002/49/EC:

The European Directive 2002/49/EC of the European Parliament covers various environmental noise sources including road vehicles, rail vehicles, aircraft, general outdoor industrial sources and their impacts on residential and built-up areas, quiet areas, hospitals, schools and other noise sensitive buildings and areas. The Directive is commonly known as the Environmental Noise Directive (END) and seeks action to manage noise impacts in priority areas through Noise Action Plans. The directive also sets out in Article 8 and Annex V the information which should be reported in Noise Action Plans. Annex V specifies that Noise Action Plans must include the following elements:

- A description of the agglomeration, the major roads, the major railways or major airports and other noise sources taken into account,
- The authority responsible,
- The legal context,
- Any limit values in place in accordance with Article 5,
- A summary of the results of the noise mapping,
- An evaluation of the estimated number of people exposed to noise, identification of problems and situations that need to be improved,
- A record of the public consultations organised in accordance with Article 8(7),
- Any noise-reduction measures already in force and any projects in preparation,
- Actions which the competent authorities intend to take in the next five years, including any measures to preserve quiet areas,
- Long-term strategy,

- Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment,
- Provisions envisaged for evaluating the implementation and the results of the action plan.

Annex V also states that each Noise Action Plan should contain estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other).