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Environmental Noise Directive

Implementation of Round 1 Noise Action Plans: Progress Report

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Introduction

1. This document provides a report on progress on the implementation of the Environment Noise Directive (END) in England, and more specifically on progress made in implementing the first round of the Noise Action Plans, including the long term strategies on managing noise from road, rail, and industrial sources. It also provides a high level summary of the implementation of the first round of airport Noise Action Plans prepared separately under the END by the relevant airport operators. This report also fulfills a commitment made in the first round Noise Action Plans.

2. The Department for Environment, Food and Rural Affairs (Defra) leads on the implementation of the Government's policy on noise, which is set out in the Noise Policy Statement for England (NPSE)[1]. The policy contains the vision to promote good health and good quality of life through the effective management of environmental, neighbour and neighbourhood noise. In particular, the policy aims to:

    - avoid significant adverse impacts on health and quality of life,
    - mitigate and minimise adverse impacts on health and quality of life; and
    - where possible, contribute to the improvement of health and quality of life.

3. The END requires, on a five year cycle:

    - The determination, through noise mapping, of exposure to environmental noise from major sources of road[2], rail[3] and aircraft noise and to environmental noise in the larger urban areas (known as agglomerations)[4], including noise from industry;
    - Provision of information to the public on environmental noise and its effects;

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[1] Noise Policy Statement For England: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf

[2] Major roads for the first round of mapping and action planning were those which had flows above 6 million vehicles passages per year. In the second and subsequent rounds this figure became 3 million vehicle passages per year.

[3] Major railways for the first round of mapping and action planning were those with more than 60,000 train movements per year. In the second and subsequent rounds this figure became 30,000 movements.

[4] A first round agglomeration is defined as an urbanised area that has a population in excess of 250,000 persons with a population density of 500 people per sq.km. For the second and subsequent rounds of mapping and action planning, the population threshold changed to being in excess of 100,000 persons.

- Adoption of Noise Action Plans, based upon the noise mapping results, which are designed to manage environmental noise and its effects, including noise reduction if necessary; and

- Preservation of environmental noise quality where it is good, particularly in urban areas.

4. Defra is the competent authority for preparing Action Plans for major roads, major railways and agglomerations, and the relevant airport operators are the competent authorities for preparing airport Noise Action Plans.

5. The first round of noise mapping was completed in 2006 and the first round Noise Action Plans were subsequently adopted. The Round 1 Noise Action Plans for roads, railways and agglomerations can be viewed here:

   http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/environment/quality/noise/environmental-noise/action-plans/

6. The Noise Action Plans for airports can be viewed on their individual websites. A summary of some of the actions that airports identified to manage and mitigate noise impacts under the first round of noise action planning can be found in Annex A of this report.

Defra has now completed the second round of strategic noise mapping as required by the END and prepared the second round of Noise Action Plans. These Action Plans have been published alongside this report.

Round 1 noise mapping

7. The first round of noise mapping as required by the END produced maps for:

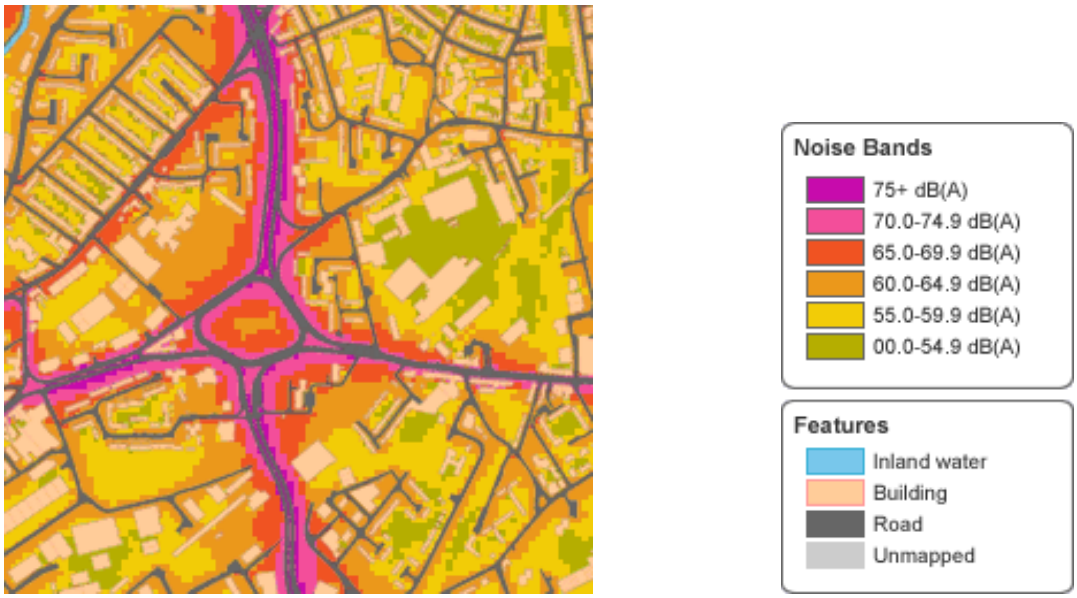
    - major roads which had more than six million vehicle passages a year;
    - major railways which had more than 60,000 train passages a year;
    - major airports with more than 50,000 movements (excluding training on light aircraft); and
    - major industrial sites in first round agglomerations (i.e. those with a population of more than 250,000 and a population density of 500 persons per square kilometre).

8. The results showed the number of people exposed to various levels of noise and where they are located. This enabled Defra, through the action planning process, to set up a framework for prioritising the worst affected areas with respect to major roads, major railways and agglomerations. The mapping results have also enabled the Government and others to calculate the costs of transport noise.

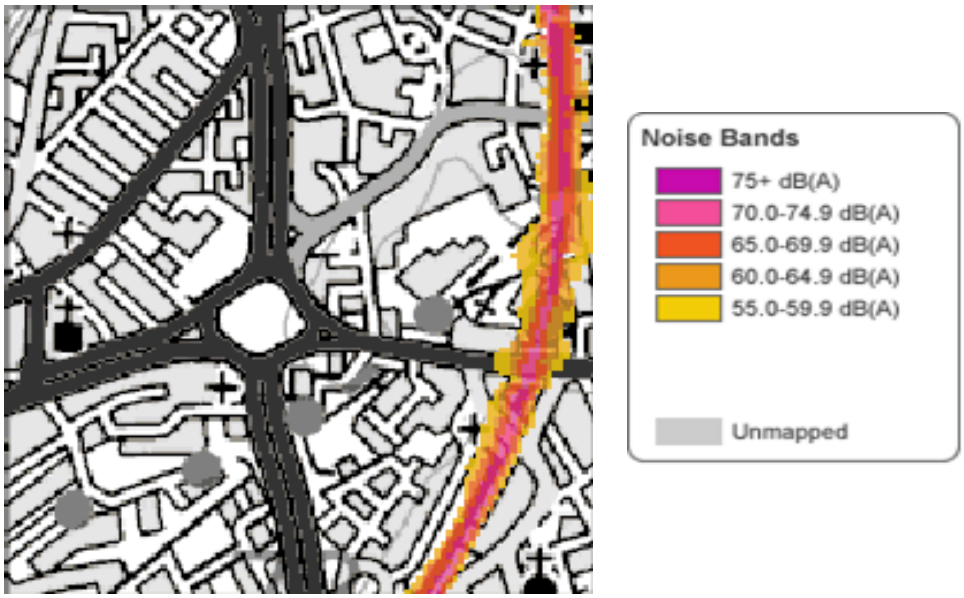
9. The Noise Mapping England website allows individuals, businesses and organisations to see the noise exposure separately from road, railway, aviation and larger industrial sources: http://services.defra.gov.uk/wps/portal/noise.

10. This site shows results from the first round of noise mapping. The examples below show the road and rail traffic noise maps for part of the Bristol agglomeration.

Road Noise Map BS1 6EB



Railway Noise Map BS1 6EB



11. The different colours correspond to different levels of noise exposure, with the highest exposures being broadly related to the busier roads. It can also be seen that noise from road traffic is far more widespread than noise from railways in this area.

12. It should be noted that the noise maps are produced by bringing together a range of input data including traffic flow, composition, surface topography and other factors. The mapping is strategic and was designed to provide an overall indication of the noise exposure rather than a precisely accurate value at a particular location. The results should therefore be treated with a degree of caution. We took this into account in the way we designed the Round 1 Noise Action Planning Process.

Round 1 Noise Action Plans

13. The Environmental Noise Directive requires that the Noise Action Plans contain a number of specific sections including the identification of long term strategies for managing environmental noise[5]. Defra has aligned the Plans with the principles set out in the Noise Policy Statement for England and the government's localism principles. Thus the plans were designed to focus on those worst affected and enable local decision makers to address the first aim of the NPSE. In order to facilitate this Defra identified Important Areas where the top 1% of the worst affected people were located (according to the results of the noise mapping). Within that, a subset of First Priority Locations was identified with the intention that these locations should be prioritised for investigation.

14. In developing this framework Defra needed to be mindful of the need for transport authorities and local authorities to respond to locally set budgets and priorities. The Noise Action Plans therefore provided a noise management framework with regard to road and railway noise, which allowed the relevant authorities to decide about what, if any, detailed action might be taken.

15. For each Important Area, the relevant transport authority was asked to consider the existing noise management and decide what further measures, if any, might be taken to assist the management of noise. A range of possible outcomes were anticipated. These were:

    A: It is possible to be able to implement an action and there are financial resources immediately available to do so.

    B: It is possible to be able to implement an action but there are no immediately available financial resources to do so.

    C: It is not possible to implement any action because there is no scope for doing so or there is some overriding technical issue that prevents implementation.

    D: It is not possible to implement any action because there would be large adverse non-acoustics effects that could not be accommodated by the proposed measure.

    E: Nothing further needs to be done as the noise level at each dwelling in the Important Area is below 65 dB(A), $L_{A10,18h}$, (roads) or 65 dB(A), $L_{Aeq,18h,}$ (railways) ignoring the effect of reflection from the facade of the relevant dwelling.

[5] See Annex V of the Environmental Noise Directive for Action Plan requirements: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:189:0012:0025:EN:PDF

A/B: Both Outcomes A and B apply

16. A three-stage process was defined:

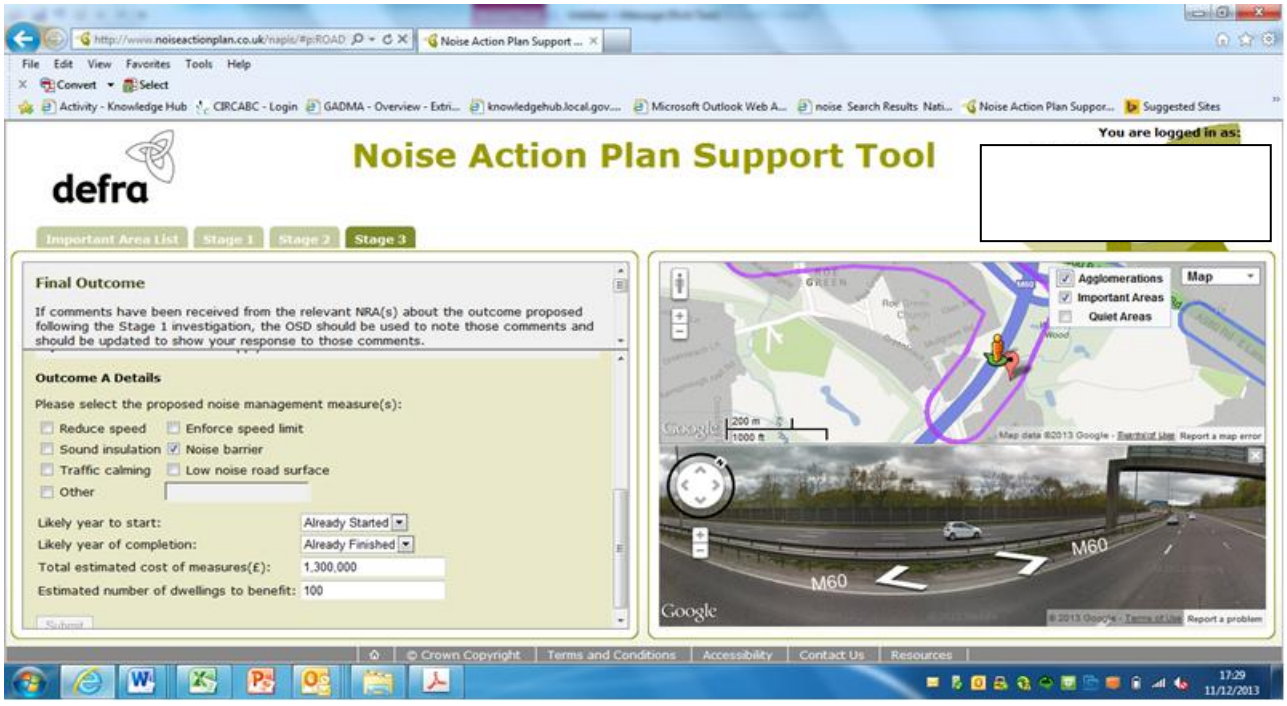
    I. Identification of an outcome by the relevant transport authority;

    II. Liaison between the transport authority and the relevant local authority about the proposed outcome;

    III. Final decision by the transport authority, taking account of any feedback from the local authority.

17. Defra developed the Noise Action Plan Support Tool to facilitate information exchange between Defra, the various transport authorities and local authorities. A screenshot from the Tool is shown below:

Example screenshot from the Noise Action Plan Support Tool



Implementation of Round 1 Action Plans

Roads

18. For the first round of Action Plans, a total of 8,105 Important Areas for roads were identified, comprising 3,487 First Priority Locations and 4,618 other Important Areas. There are just over 150 different highway authorities in England and all except two authorities had at least one Important Area associated with the roads they manage. The Highways Agency had just over 2,400 Important Areas and Transport for London had just under 300. A further eleven highway authorities had over 100 Important Areas each.

19. By 22nd January 2014 291 Important Areas had reached as far as Stage 2 and 2,622 had completed the process and reached Stage 3.

20. This means that investigations have commenced or been completed for just over 35% of the identified Important Areas for roads at that time.

Long Term Strategy for Roads

21. The END requires that Action Plans set out the long term strategy for the management of environmental noise. For roads, this is set out in the Round 1 Noise Action Plan for major roads outside agglomerations, and the road section of each of the 23 Round 1 Agglomeration Action Plans.

22. Progress on the various elements of the strategy has been steady since the adoption of the Action Plans. The Government is committed to the delivery of the Environmental Noise Directive within the context of the Noise Policy Statement for England and the Action Plan framework provides a mechanism for prioritising the management of noise where the impact is greatest. In recognising the need for reliable input data collection, Defra has engaged with the various highway authorities in order to secure the relevant data to use for subsequent noise mapping.

23. The Government has also been liaising with the European Commission on initiatives designed to reduce noise from road traffic, for example the new EU proposals on noise from vehicles, which should see the introduction of new legislation in 2016. Since the adoption of the Round 1 Action Plans, the European Commission has also introduced tyre labelling regulations to enable better consumer choice regarding the noise generated by different types of tyre.

24. The Government continues to work with national and local policy making bodies to improve the methods for identifying the impact of noise and for determining noise management measures. Examples include some revisions to the calculation

methodology used for predicting road traffic noise and the Design Manual for Roads and Bridges. We have also worked closely with the Highways Agency regarding initiatives such as the Managed Motorways Schemes which provide opportunities for noise mitigation.

25. In looking at future land use planning, the Government published a revised national planning policy on noise in March 2012 as part of the National Planning Policy Framework (NPPF). The NPPF clarifies that the planning system should contribute to and enhance the natural environment by preventing it from being affected by unacceptable levels of noise pollution. The same framework introduced a new Local Green Space designation which can be used to protect demonstrably special green areas on a number of grounds, including tranquillity. The Government has also published new planning practice guidance on noise and local green spaces.

26. The Government has also encouraged the use of low noise road surfaces. For example, low noise surfacing is adopted when replacing road surfaces through maintenance and renewals programmes. We continue to encourage good practice by local highways authorities, and produce relevant advice, as required, on the assessment and management of road traffic noise.

Railways

27. For the first round of Noise Action Plans, a total of 614 Important Areas were identified that comprised 159 First Priority Locations and 455 other Important Areas. The various bodies involved in the management and operation of the railways liaised to implement the Action Plan.

28. As of 22nd January 2014 12 Important Areas had reached Stage 2 and 559 had reached Stage 3.

    This means that investigations have commenced or been completed on nearly 93% of the identified Important Areas at that time.

Long Term Strategy for Railways

29. The long term strategy for railways is contained in the Noise Action Plan (for major railways outside agglomerations) and the railways section of each of the 23 Round 1 Agglomeration Action Plans.

30. The Government is working closely with organisations such as Network Rail and with train operators to help manage the noise generated by use of the rail network. Increased investment in rail is delivering indirect noise benefits through new quieter rolling stock, smoother track and increased electrification on the rail network. In particular, increasing the frequency of railhead grinding has reduced the noise emitted at the interaction between the wheel and the rail.

31. The Government has also been liaising with the rail authorities on aspects of the management of railway noise, including night time noise. We have also been engaging with the European Commission and other relevant organisations that look to manage the impact of noise from railways.

32. The Government has also been liaising with national and local policy making bodies to encourage the proper consideration of noise management in policy development, taking into account land use, sustainable development and local government legal frameworks.

Agglmerations

33. The Regulations require that Action Plans for agglomerations include provisions that aim to protect existing quiet areas from an increase in noise. The Round 1 agglomerations Action Plans outlined a high-level approach for the identification and management of quiet areas and described their anticipated attributes. Whilst we do not yet have any formally identified quiet areas in England, Defra has worked to support the implementation of this policy by commissioning a number of studies to trial different locally-led approaches to identifying quiet areas. The studies revealed that, in order to implement the policy, further information from Government was required. We have addressed this request in the second round of Action Plans by providing a structured process and criteria to facilitate the identification and preservation of quiet areas.

Aviation

34. Prior to the transposition of the Environmental Noise Directive most airports were already routinely undertaking their own noise mapping, and had also implemented a range of local noise management measures specifically tailored to the size and impact of their operations. It was therefore decided that the relevant Airport Operator should be responsible for action planning (in consultation with relevant stakeholders) and were designated as Competent Authorities for airports. For Round 1 a total of 17 airports[6] were required to produce noise maps and prepare Noise Action Plans, all of which were reviewed and adopted by the Government by early 2012. Each airport has a copy of their Noise Action Plan on their website.

35. As part of the process for reviewing and adopting the airport Action Plans, the Government compiled a schedule of the actions identified by the various airports (attached at Annex A).

[6] Birmingham, Blackpool, Bournemouth, Bristol, East Midlands, Gatwick, Heathrow, Leeds/Bradford, Liverpool, London City, Luton, Manchester, Newcastle, Shoreham, Southend, Southampton and Stansted

Other outcomes from implementing the Environmental Noise Directive

36. The implementation of the END has raised the profile of noise as a health and quality of life issue. For example the Department of Health has included noise as a wider determinant of health in the Public Health Outcomes Framework indicator set[7]. The data provided in support of this indicator, some of which comes directly from the noise mapping results, will help local health decision makers understand more about the local impacts of noise in their areas.

37. A key part of the policy making process in England involves the preparation of Impact Assessments, which require tests to be carried out to determine a range of potential impacts. A key aspect of Impact Assessments is the evaluation of the costs and benefits of policy proposals. Prior to the strategic noise mapping it was not possible to obtain a national figure for the cost of exposure to road traffic noise. The data generated by the END noise mapping has enabled Defra to estimate the cost in England of exposure to road traffic noise as being between £7-10 billion per annum. The costs are based on the loss of amenity value for those living near roads as well as the costs arising from the direct health effects of noise exposure. The availability of these figures has been valuable in enabling noise impacts to be given proper consideration in policy making, in particular in monetary evaluations.

38. The strategic noise mapping has also led to an increase in the quantity of evidence about health effects. One example is the World Health Organization report on the 'Burden of disease from environmental noise - Quantification of healthy life years lost in Europe'[8]. This report includes an estimate of the disability adjusted life years (DALYs) lost due to exposure to environmental noise at EU level as being 1.0–1.6 million across all health outcomes. Again, these types of figures are helpful in increasing our understanding of the impacts of noise.

39. The END requirement that Agglomeration Action Plans should aim to protect existing quiet areas has stimulated interest in the health and quality of life benefits to be enjoyed from having spaces that are quiet or relatively quiet, particularly in urban areas. There is also increased interest in the concept of tranquillity, such that under the National Planning Policy Framework, local planning policies and decisions should aim to identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational amenity value for this reason.

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[7] http://www.phoutcomes.info/

[8] http://www.who.int/quantifying_ehimpacts/publications/e94888.pdf

Conclusion

40. The implementation of the END in England has delivered a number of key benefits. The first round of strategic noise mapping provided a high level assessment showing exposure to environmental noise within agglomerations and from major transport sources. The data have been used both in support of the action planning process, but also more widely in policy appraisal and in raising the profile of noise as a wider determinant of health.

41. The first round Action Plans have provided a framework to support relevant transport authorities in the investigation and, where appropriate, treatment of Important Areas, so that efforts and resources can be targeted where they are most needed.

42. Defra has now published the second round of Noise Action Plans, which revise Round 1 plans. We will continue to review progress as we implement the second round of Action Plans.

Annex A: Summary of actions identified for each airport

The following table provides an indication of the types of action identified by airports as part of their Noise Action Plans. For further details or copies of specific Noise Action Plans please go to the relevant airport website.

Type of Action intended (X) or under consideration (X*)	BHX	BLK	BOH	BRS	EMA	LGW	LHR	LBA	LPL	LCY	LTN	MAN	NCL	ESH	SOU	SEN	STN
Use of CDA	X		X	X	X	X	X	X*	X*		X	X	X				X
Use of NPRs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Reduce reverse thrust					X	X	X	X	X	X		X			X		X
Use of NTKS	X		X	X	X	X	X	X	X	X	X	X	X		X	X*	X
Use of P-RNAV									X*		X*	X*	X*				X*
Use of WebTrak			X		X	X	X								X		X
Complaints services	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Website information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Training limits			X		X						X		X*		X		
Limit on use of higher QC aircraft	X		X		X	X	X	X	X		X	X			X	X*	X
Annual night quota limit	X		X	X		X	X		X			X			X		X
Annual movement limit (including night limit)	X					X	X	X		X				X		X*	X
Fines/Penalties/Surcharges	X			X	X	X	X	X		X	X	X		X*	X		X

Type of Action intended (X) or under consideration (X*)	BHX	BLK	BOH	BRS	EMA	LGW	LHR	LBA	LPL	LCY	LTN	MAN	NCL	ESH	SOU	SEN	STN
Compensation/Insulation schemes	X			X	X	X	X	X	X	X	X	X		X*	X*	X*	X
Fixed or mobile noise monitoring	X		X*	X	X	X	X	X	X	X	X	X	X		X*		X
Limits on ground running & engine testing	X	X	X	X		X	X	X	X	X	X	X	X*	X		x	X
Helicopter monitoring/restrictions	X										X		X*		X	X	
Reports & reviews of specific actions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Section 106 agreements (or equivalent)	X		X	X		X	X		X	X		X	X	X	X	X	

Key to Airports:

Identifier	Name	Identifier	Name
BHX	Birmingham	LCY	London City
BLK	Blackpool	LTN	Luton
BOH	Bournemouth	MAN	Manchester
BRS	Bristol	NCL	Newcastle
EMA	East Midlands	ESH	Shoreham
LGW	London Gatwick	SOU	Southampton
LHR	London Heathrow	SEN	Southend
LBA	Leeds Bradford	STN	Stansted
LPL	Liverpool		

Key to Measures

Measure	Description
Use of CDA	Continuous Descent Approach (CDA) is a technique used by a pilot when approaching an airport. The aircraft descends at a constant rate until it joins the final approach glide path. This procedure minimises the need for periods of level flight which is relatively noisier. The technique also keeps the aircraft higher for longer, also reducing arrival noise.
Use of NPRs	Use of noise preferential routes or prescribed departure routes for departing aircraft designed to avoid built-up areas where possible.
Reduce reverse thrust	Reverse thrust can be used to reduce the speed of an aircraft once it has landed. The airport has procedures/instructions to avoid the use of reverse thrust as a noise abatement measure.
Use of NTKS	Airport has a Noise and Track Keeping System which enables the airport to measure the noise of individual aircraft and relate the measured noise to its position in flight.
Use of P-RNAV	Precision Area Navigation is the ability of an aircraft's flight management system to navigate by means of waypoints rather than by ground based navigational techniques. This allows aircraft to fly more accurately.
Use of WebTrak	A web based system which allows members of the public to follow recent flights close to the airport.
Complaints services	A system in place to receive and respond to complaints about aircraft noise
Website information	Information provided on the Airport's website about the management of noise
Training limits	Procedures for minimising noise when pilots are training; for example minimum height circuits.
Limit on use of higher QC aircraft	Each aircraft type is assigned a Quota Count (QC) rating based on the noise generated according to the International Civil Aviation Organisation (ICAO) noise certification process. The measure generally prohibits the noisiest aircraft from operating at the airport.
Annual night quota limit	A total quota limit based on the QC values of each aircraft at night. This measure encourages the use of quieter aircraft at night.
Annual movement limit (including night limit)	A restriction on the number of aircraft movements allowed either overall or at night.
Fines/Penalties/Surcharges	Fines or penalties imposed for breaking departure noise limits, or surcharges relating to additional landing charges for noisier aircraft or additional charges for landing at night.
Compensation/Insulation schemes	Noise insulation and compensation schemes provided to mitigate the noise impact to residents, schools etc.

Measure	Description
Fixed or mobile noise monitoring	Airport provides noise monitors in local areas to check compliance with noise limits. Can include mobile noise monitors for measuring the noise at other locations.
Limits on ground running & engine testing	This can include limits on timing, duration and frequency of occurrence.
Helicopter monitoring/restrictions	Measures to manage the impact of helicopter noise.
Reports & reviews of specific actions	Undertakings to provide reviews of implementation including periodic reporting
Section 106 agreements (or equivalent)	Planning agreements or other related controls in place to manage noise impacts.