

Noise Action Plan

Noise Action Plan 2019-2023

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Executive Summary

Birmingham Airport has long recognised that noise is a consequence of our operations. Over the years we have developed a comprehensive noise management programme to minimise disturbance to our neighbours. Birmingham Airport has produced this Noise Action plan to update and replace the 2013-2018 Noise Action Plan. This is a strategic document, setting out the Airport Company's noise programmes to 2023.

Birmingham Airport is committed to meeting the air travel needs of the Midlands region in an environmentally responsible way. In this way the region benefits economically and socially from a successful airport, while the environmental impact is minimised. We work with all of our stakeholders, including those local to the Airport to try to achieve this balance. Birmingham Airport's objective for managing aircraft noise is:

“To work with our stakeholders, including the local community and industry partners, to adopt the best practicable means to assess, manage and minimise the impact of aircraft noise, both now and in the future.”

The scope of this Noise Action Plan includes airborne noise from arriving and departing aircraft and ground borne noise from operations such as taxiing and engine ground running.

Managing the impact of noise is given high priority at Birmingham Airport. Aircraft noise (both airborne and ground borne), is recognised by the Airport Company as a sensitive issue for the local community and as such, a comprehensive noise management programme has been in existence for many years. In 1996, this noise programme was formalised into a legal document with Solihull Metropolitan Borough Council (MBC) through a Section 106 Agreement, as part of the Outline Planning Approval for the Expansion of the Passenger Terminal Facilities.

The most significant development at the Airport since the last Noise Action Plan is the runway extension to the south of the airfield. As a result of this, new departure routes for aircraft taking off from runway 15 have been implemented and the landing threshold for aircraft arriving on to runway 33 has been relocated.

Through the voluntary measures and the obligations outlined within the Section 106 Agreement with Solihull MBC, the Airport Company already had an effective noise management programme in place prior to the adoption of the original Noise Action Plan and subsequent revisions. This latest revision reviews performance and progress against the actions set out in the 2013 to 2018 plan, building on these, and developing new actions for 2019 to 2023. This is presented in **Appendix A** and **Appendix B**.

This Revised Noise Action Plan has been produced as a requirement of the Environmental Noise (England) Regulations 2006 (as amended), which were transposed from the European Commission Directive 2002/49/EC. This requires major airports to produce Strategic Noise Maps. The Department for Environment, Food and Rural Affairs (DEFRA) also published Guidance for Airport Operators on Noise Action Planning in March 2009. This was updated in July 2013, and again in July 2017 and includes the requirements for the revision of Noise Action Plans.

The action planning process is designed to consider the results of the new strategic noise mapping and to identify whether there are any particular or additional measures that may be taken to meet the government's aim, as set out in the Aviation Policy Framework, “to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.”

This revised Noise Action plan contains:

- The progress made against all actions.
- The new strategic noise mapping and results.
- A comparison of the new strategic noise mapping (based on data from 2016) with the noise mapping contained in the previous plan (based on data from 2011).
- New and revised actions. Birmingham Airport has committed to improve and develop the Noise Action Plan by enhancing some actions and also introducing seven new actions.

These are:

- Prohibiting aircraft with a Quota Count of greater than 1 being scheduled to take-off or land during the night period (from October 2018).
- Implementing a more stringent Night Noise Limit of 83dB(A) (previously 85dB(A)).
- Drive improvements in our Continuous Descent Approaches by increasing our target to 96% (previously 90%).
- A new action to investigate the feasibility of a 3.2° glide slope to runway 33 (and ideally runway 15) which could potentially take aircraft on approach closer to the height they were prior to the runway extension. It should be noted that to implement slightly steeper approaches requires a policy change from the CAA, which is dependent on the outcome of a trial at Heathrow.
- A new action to assess the actual noise impact of Noise Abatement Departure Procedures (NADP) 1 & 2 and to recommend the most appropriate procedure for use to Airlines, if applicable.
- We will keep a record of all meetings with external stakeholders on matters relating to the impact of aircraft operations on neighbouring communities.
- We will investigate the feasibility of decreasing the night-time noise limit from 83dB(A) to 81dB(A).

Our Noise Action Plan continues to incorporate three key themes:

Measure

We will continue to monitor aircraft noise using best practicable methods. Our commitment starts with investment in systems and equipment to enable us to understand our noise impact and identify opportunities to reduce noise.

Mitigate

We will continue to operate noise management schemes to achieve the quietest practicable aircraft operations. We currently operate a comprehensive programme of noise management schemes, which are closely monitored by the Airport's Environment Team.

Engage

We will meet with our neighbours and partners to involve, engage and inform people through open dialogue. We will continue to operate a transparent stakeholder engagement programme. This will aid mutual understanding of noise issues and allow us to inform our local community of any changes to airport activities which may have a noise impact.

In the previous plan the Airport Company committed to publicly reporting our performance against the Noise Actions in our Noise Action Plans. This commitment has continued with a review of progress against the revised 2013-2018 action plan, the contents of which have been consolidated into this revised Noise Action Plan, setting out the commitments to 2023.

1. Introduction

1.1 Purpose

The Department for Environment, Food and Rural Affairs (DEFRA) published Guidance for Airport Operators, on Noise Action Planning in March 2009. This was updated in July 2013 and further updated in July 2017. The 2017 guidance requires airports to review and revise their Noise Action Plans and sets out what the Noise Action Plan should include.

This Revised Noise Action Plan is produced in line with the Environmental Noise Regulations (England) 2006 (as amended), which are transposed from the European Commission Directive 2002/49/EC. This requires major airports to produce Strategic Noise Maps. The results of the new Strategic Noise Maps (based on the year 2016) were considered in the development of this Noise Action Plan. The drawing up of Noise Action Plans for airports supports the Government's aim, as set out in the Aviation Policy Framework "to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise."

Managing the impact of noise is given top priority at Birmingham Airport. Aircraft noise, both airborne and ground borne has long been recognised by the Airport Company as a sensitive issue for the local community and as such, a comprehensive noise management programme has been in existence for many years. The introduction of the Environmental Noise Regulations (England) 2006 (as amended) requires the Airport to build on these programmes by developing formal Noise Action Planning.

The competent authority for developing this revised Noise Action Plan is Birmingham Airport Limited.

The original Noise Action Plan was produced following public consultation. However, in line with the July 2017 guidance, comment on this revision is through the Airport Consultative Committee. The revised Noise Action Plan was tabled at the Airport Consultative Committee on the 17th May 2018 and members were invited to submit written comments to the Airport Company:

[Birmingham Airport Limited,
Diamond House,
Birmingham Airport,
Birmingham B26 3QJ](#)

The formal consultation process commenced on 6th July and closed on 17th August 2018. ACC members were then given an additional 10 days between 21st and 31st August to review BAL's interpretation of their consultation responses for factual accuracy.

During the consultation period, Birmingham Airport held two drop-in sessions on the 17th and 25th July 2018 which Airport Consultative Committee members were invited to attend. A number of points were raised at these sessions and these are discussed in further detail within Birmingham Airport's consultation response table in **Appendix F**.

1.2 Scope

The scope of this revised Noise Action Plan includes airborne noise from arriving and departing aircraft and ground borne noise from operations such as aircraft taxiing and engine ground running. The Environmental Noise Regulations (England) 2006 (as amended) requires consideration of noise impacts within the Strategic Noise Maps. However, Birmingham Airport recognises that noise impacts can extend beyond these areas. The Noise Action Plan therefore includes noise measures that benefit areas outside of the Strategic Noise Maps.

Although the inclusion of ground noise is not a requirement of the Environmental Noise Regulations (England) 2006 (as amended), Birmingham Airport's Noise Action Plan does include these aspects; this reflects our recognition of the noise impact that ground noise presents to our neighbours.

The scope of this Noise Action Plan excludes noise relating to airport construction activities and noise associated with surface access to the airport (major road and rail). Noise Action Plans for the West Midlands Agglomeration (including Birmingham and Solihull), major rail and major roads are produced separately by DEFRA.

The Environmental Noise Regulations (England) 2006 (as amended) requires the Noise Action Plan to be based on the results from the Strategic Noise Maps. The Noise Action Plan must consider noise within the 55dB (A) L_{den} and 50 dB (A) L_{night} noise contours (refer to Section 3 for explanation of Strategic Noise Maps). By including ground noise and noise impacts beyond the contours shown on the Strategic Noise Maps, this Noise Action Plan goes beyond the scope of the legal requirements. The Regulations also require an estimation of the number of people affected by the noise actions. However, as many of our actions aim to reduce noise outside of the contours this has been difficult to estimate.

The Environmental Noise Regulations (England) 2006 (as amended) also require that Airport Noise Action Plans must aim to protect quiet areas. There are currently no quiet areas defined for the West Midlands Agglomeration. Birmingham Airport will continue to liaise with the relevant authorities regarding any future designation of quiet areas.

Birmingham Airport's 2019 - 2023 Noise Action Plan has been aligned with the Airport Company's existing noise management programmes and the Obligations within the current Section 106 Agreement with Solihull Metropolitan Borough Council.

The Airport Company is committed to revising the Noise Action Plan following the completion of any major development which may affect the existing noise situation.

The Birmingham Airport Master Plan contains the Airport Company's current development plans up to 2030. A new Airport Master Plan is currently in development and is due for consultation in by the end of 2018. The new Master Plan will include plans for the future development of the Airport site.

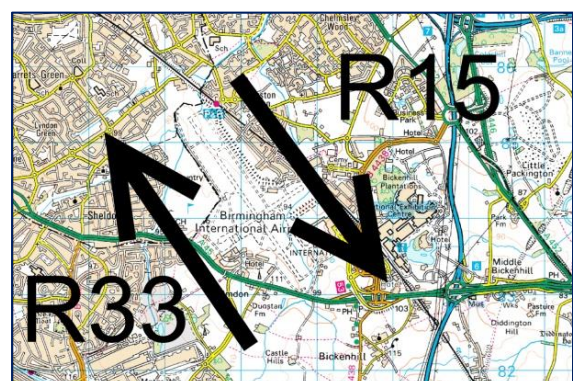
1.3 Airport Description

Birmingham Airport covers an area of 775 acres, is located within the Metropolitan Borough of Solihull and borders the City of Birmingham. The current shareholding for Birmingham Airport Limited includes: Seven West Midlands District Councils (Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall and Wolverhampton) (49%), Ontario Teachers' Pension Plan (48.25%) and the Employee Share Ownership (ESOP) (2.75%).

Birmingham is the UK's seventh largest Airport, third largest for charter traffic and is the third largest airport outside London. In 2017, it handled 12,983,436 million passengers. The number of Air Transport Movements (ATMs) during 2017 was 112,132.

Birmingham Airport has one Runway, which operates in two modes (Runway 15 and Runway 33); the direction of operation is dependent upon meteorological conditions. Both runways have defined Standard Instrument Departure Procedures and Noise Preferential Routes. A runway extension was completed in 2014, increasing the length of both Runway 15 and Runway 33.

Runway Information		
Orientation	Length (m)	Width (m)
15	3003	45
33	3003	45
Runway Elevation = 325 feet		



Birmingham Airport occasionally accommodates military flights. The majority are medical evacuation flights although their number has declined in recent years. Birmingham Airport is close to the Royal Centre for Defence Medicine at Queen Elizabeth Hospital. West Midlands Police also base and operate a helicopter from Birmingham Airport.

1.4 Characterisation of Airport Surroundings

To the north of the airfield is the residential area of Birmingham and North Solihull. This area is the most impacted by aircraft noise, with some properties overflown at 500 feet.

To the South of the airfield are countryside areas and small towns and villages. Areas particularly reporting concerns about aircraft noise include Balsall Common, Barston, Bickenhill, Catherine de Barnes, Eastcote, Hampton in Arden and Knowle. The majority of community complaints come from areas to the south of the airfield.

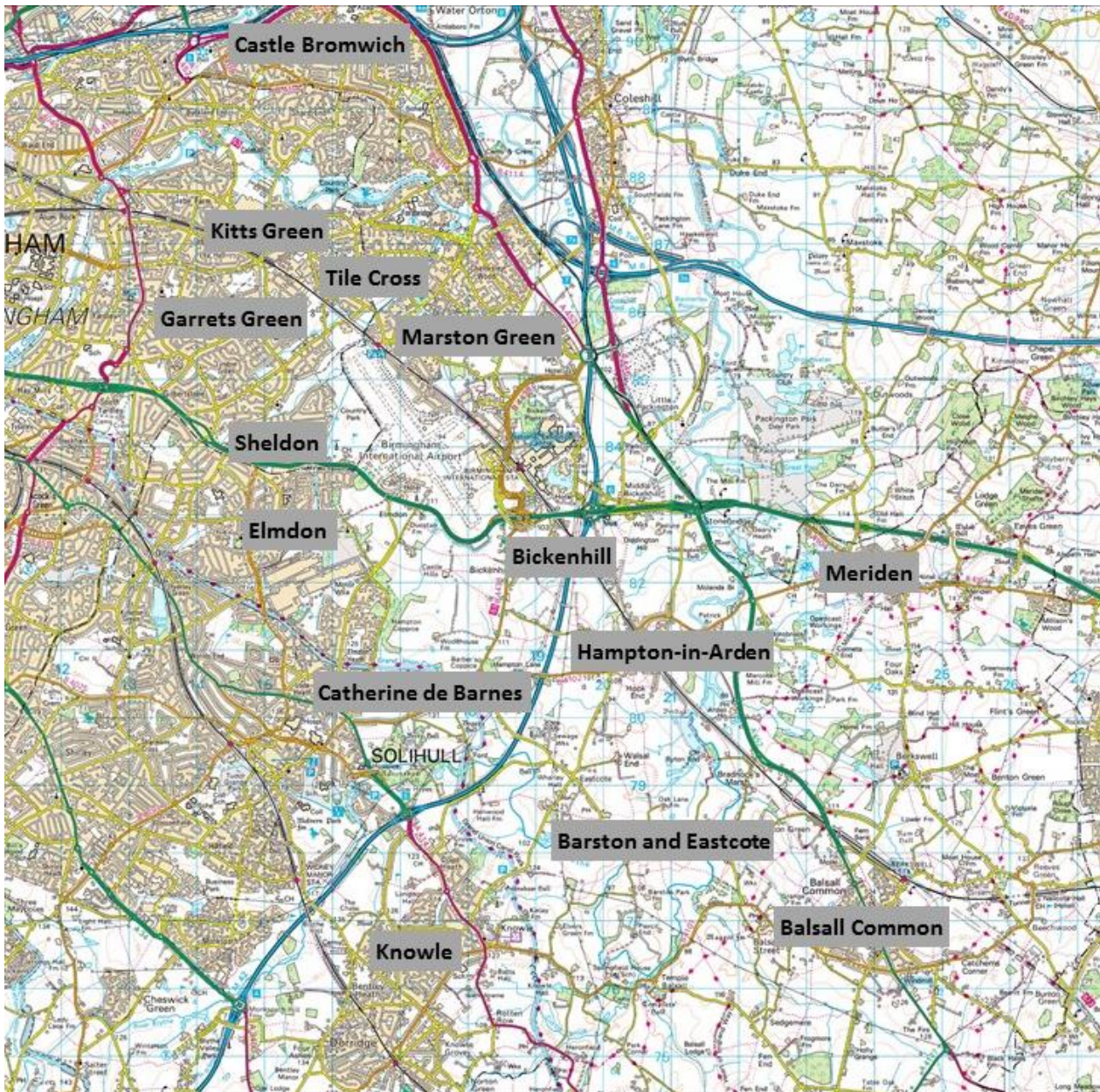
Many of these areas are outside of the 2016 LAeq 54dB(A) contour (the level the Government states is the approximate onset of significant community annoyance).

At the time of publishing this Noise Action Plan the Government is preparing a new Aviation Strategy that is due to be published in early 2019. It is likely that this review will revisit the level at which government consider to be the onset of significant community annoyance which is currently published in the Aviation Policy Framework 2013 as 57 dB(A).

The West of the airfield includes the areas of Elmdon and Sheldon. These areas are not directly overflown but are impacted by noise from landing and departing aircraft and the associated taxiing noise. The Elmdon side of the airfield is also the location of a small cargo operation and will therefore on occasions experience noise associated with this, including the prolonged running of the Auxiliary Power Unit (APU). The APU is a small jet engine located in the tail of the aircraft that provides power at times when no electrical ground power is available.

To the East of the airfield is the residential area of Marston Green. This area is also not overflown directly by aircraft but will be impacted by noise from landing and departing aircraft and the associated taxiing noise. In addition, areas in Marston Green located next to the Airport boundary may also experience noise from Full Power Engine Ground Runs. This is particularly the case when they are carried out on Taxiway Tango. The use of this location is heavily restricted and can only be used when absolutely necessary. A noise bund exists between the Airport and Marston Green, which limits the impact of ground noise on the area. The National Exhibition Centre also lies to the east of the airfield.

1.5 Map showing the Location of Birmingham Airport and the Surrounding Areas



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1.6 Future Development

In 2013, the Government published an Aviation Policy Framework. One of the main objectives of the Aviation Policy Framework is to...

"... ensure that the UK's air links continue to make it one of the best-connected countries in the world. This includes increasing our links to emerging markets so that the UK can compete successfully for economic growth opportunities. To achieve this objective, we believe that it is essential both to maintain the UK's aviation hub capability and develop links from airports which provide point-to-point services (i.e. carrying few or no transfer passengers). This should be done in a balanced way, consistent with the high-level policies set out in this document and acknowledging Government's commitment to economic growth."

Paragraph 1.24 of The Aviation Policy Framework states the following:

"The Government wants to see the best use of existing airport capacity. We support the growth of airports in Northern Ireland, Scotland, Wales and airports outside the South East of England. However, we recognise that the development of airports can have negative as well as positive local impacts, including on noise levels. We therefore consider that proposals for expansion at these airports should be judged on their individual merits, taking careful account of all relevant considerations, particularly economic and environmental impacts."

Future Aviation Policy

The Government recognises that aviation is an important vehicle for driving economic growth and crucial to building a strong economy. The high level of growth over the past five years is also acknowledged to have put significant pressure on existing infrastructure. Given the long lead-time for new runway capacity at Heathrow, the Government recognises that it is vital the UK continues to grow its domestic and international connectivity during the intervening period, and that this objective can only be achieved through more intensive use of existing airport capacity. The Government is currently reviewing its wider aviation policies and is looking to update the overarching strategy for the sector, to better respond to future challenges and opportunities.

The Government issued a Call for Evidence on a new aviation strategy in July 2017. The consultation document '*Beyond the Horizon - The future of UK aviation: A call for evidence on a new strategy*' sought views on the approach the Government is proposing to take and the issues it has identified in relation to aviation. The Aviation Strategy will set out the Government's vision for the wider aviation sector and will eventually replace the 2013 Aviation Policy Framework. In April 2018, the Government published '*Beyond the Horizon, The Future of UK Aviation, Next Steps Towards an Aviation Strategy*', which outlines the Government's six key objectives for the strategy, the challenges ahead and the actions the Government is considering to address these. The final version of the aviation strategy is expected to be published in 2019. Taken together, the Aviation Strategy and the Airports National Policy Statement (which focuses on the South East) will provide Government policy in respect of the aviation sector.

Birmingham Airport is in the process of preparing its Master Plan, which will include plans for future growth.

Birmingham Airport's ambition is to be the preferred international hub for the Midlands acting as a key economic accelerator for the region, providing the air connectivity vital for the expansion of international trade, investment and employment, the growth of inbound tourism, and the provision of outbound leisure destinations.

To achieve this, we will:

- Increase the range of destinations and frequency of flights.
- Invest in expanded and enhanced facilities to provide the customer experience to underpin our growth.
- Meet or exceed regulatory requirements to ensure safety and security.
- Play an active and responsible role in the community, mitigating the adverse environmental impacts of the Airport where possible.
- Work closely with local and national government and agencies to ensure the Airport is not constrained by insufficient surface transport or airspace capacity.

2. Introduction to Aircraft Noise

2.1 How do we describe aircraft noise?

Aircraft noise can be categorised in terms of air noise and ground noise. Airborne noise is created while aircraft are departing or arriving. This includes noise generated from engines and airframe turbulence, while the aircraft is taking-off and landing. Ground noise includes noise from aircraft taxiing and engine ground running on the airfield. The inclusion of ground noise within our Noise Action Plan reflects our recognition of the noise impact that ground borne noise presents to our neighbours.

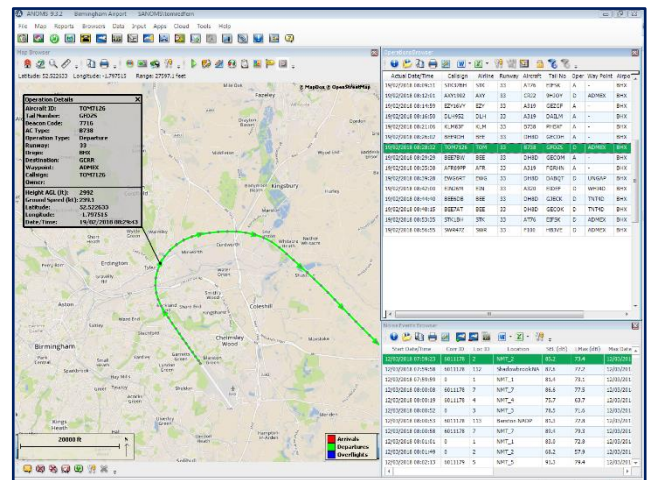
Aircraft in operation today are considerably quieter than those in operation 20 years ago. Moving forward, today's aircraft are anticipated to be replaced by quieter models as airlines renew their fleets with the newest aircraft types including the Boeing 737-800 MAX and the Airbus A320 NEO. Despite aircraft continuing to become quieter, the Airport Company does acknowledge that noise disturbance remains a concern for many local residents.

It is often difficult to describe the effect that aircraft noise has on the local community, as noise perception is very subjective. Indeed, there is no direct correlation between the noise levels modelled and the community concerns we receive. We do acknowledge that within the aviation industry the communication of noise information can be improved. At Birmingham Airport, as well as having noise contours we also publish actual air traffic movements via Google Earth with links to our website or environmental helpline number for further information.

2.2 How do we measure noise?

Aircraft noise is measured using the A-weighted Decibel, dB(A). The decibel is a ratio that compares the sound pressure of the noise source (e.g. an aircraft) to reference pressure (the quietest sound we can hear). The A-weighting approximates the sensitivity of our ear to different frequencies (pitch) in the sound and helps to assess the relative loudness of various sounds.

The Airport Company, constantly measures aircraft noise at six noise monitors located in the local community, where noise events (flyovers) are recorded as dB(A). The community noise monitors feed into the Airport Noise and Operations Monitoring System (ANOMS), which allows the Airport's Environment Team to monitor noise and track-keeping. ANOMS also allows the Environment Team to log community complaints and identify the cause of disturbance. There is a further noise monitor located on the Airfield.



ANOMS



Community Noise Monitor

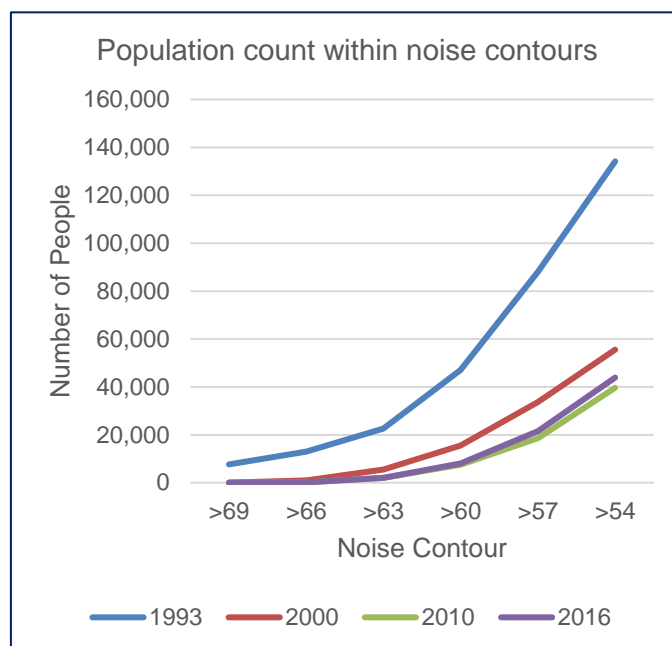
2.3 dB LAeq Noise Contours

The dB LAeq metric is the standard method of measuring average noise levels at airports in the UK, and is the method used in producing noise contours. Noise contours are produced independently every 2 years for Birmingham Airport, based upon this methodology. The contours are produced for an average day time noise exposure based on actual traffic data (0700 – 2300 hours) for the 92-day summer period (16th June – 15th September). When required, contours are also produced for an average night time noise exposure (2300 – 0700 hours). The noise contours are produced to estimate the average noise levels experienced by people living around the Airport. The 2016 average summer day contours are in **Appendix C**.

The latest LAeq contours were produced for summer 2016. The following chart illustrates how populations within the LAeq noise contours have changed over time. The number of people affected by noise is still considerably below that of operations before 2000. However, there has been an increase in the number of people affected in the 57 dB(A) and 54 dB(A) noise contours in 2016 when compared to 2010. It should be noted that there has also been a moderate reduction in the number of people affected by noise in the 66 dB(A) noise contour in 2016 when compared to 2010.

When specifically looking at the 54 dB(A) contour there is an increase in affected population of 11%. However, in 2016 there were 30% more operations when compared to the same period in 2010. This demonstrates how the introduction of newer, modern aircraft is reducing the noise impact from individual movements. CAP 1588 – Aircraft Noise and Annoyance: Recent findings acknowledges the 54dB LAeq 16-hour contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance.

Birmingham Airport has also seen an increase in passenger numbers of 36% when comparing 2010 to 2016. This is greater than the 30% increase in the number of operations due to improved load factor (how full a flight is). In 2016 the average load factor was 77% compared to 73% in 2010.



Population count within 54dB(A) noise contour				
Year	1993	2000	2010	2016
Population	134,150	55,550	39,650	43,900

2.4 dB Lden Noise Contours

The Environmental Noise Regulations (England) 2006 (as amended) require major airports (as well as major agglomerations, roads and railways) to produce Strategic Noise Maps every five years, using Lden noise contours based on an annual average day. The Lden noise metric is itself derived from three sets of contours:

- L_{day}: average 12-hour period from 0700 – 1900
- L_{evening}: average 4-hour period from 1900 – 2300
- L_{night}: average 8 hours period from 2300 – 0700

L_{den} is the average 24-hour period including L_{day}, L_{evening} and L_{night}. A 5dB and 10dB noise weighting is given to the evening and night periods respectively, to reflect the increased community sensitivity to noise, during these periods.

The original 2012 Noise Action Plan was based on the results of the L_{den} contours created from 2006 data. The 2013-2018 Noise Action Plan is based on the L_{den} contours created from 2011 data. Section 4 provides a review of the more recent results. This Noise Action Plan is based on the L_{den} contours created from 2016 traffic data.

The Environmental Noise Regulations (England) 2006 (as amended) requires that the households within the $55L_{den}$ and $50L_{night}$ noise contours are considered in the development of the Noise Action Plan.

The Environmental Noise Regulations (England) 2006 (as amended) also require that Airport Noise Action Plans must aim to protect quiet areas. There are currently no quiet areas defined for the West Midlands Agglomeration. Birmingham Airport will continue to liaise with the relevant authorities regarding any future designation of quiet areas.

More information on Birmingham Airport's noise management programmes can be found on our website:

<https://www.birminghamairport.co.uk/about-us/community-and-environment/aircraft-noise/>

3. Aircraft Noise Policy

All UK airports must comply with International, European and National Noise Policy. In addition, some airports, including Birmingham Airport, must also comply with Local Planning Agreements.

3.1 International Policy

Responsible Authority: ICAO

ICAO and the ‘Balanced Approach’

Under International Civil Aviation Organisation (ICAO) objective C ‘Environmental Protection - minimize the adverse effect of global civil aviation on the environment’, ICAO sets progressively higher aircraft certification standards, known as “Chapters” for noise emissions. These chapters set the maximum acceptable noise levels for different aircraft under specific conditions.

Member States (including the UK) must comply with these standards by prohibiting any aircraft from operating that does not meet these standards.

The current operating standard is at Chapters 3 and 4. This follows the phase out of Chapter 2 aircraft (e.g. BAC 1-11) in April 2002 (unless they are granted specific exemption – e.g. Military flights). All new aircraft manufactured from 2006 must meet Chapter 4 requirements. From 2017, a new more stringent Chapter 14 noise standard came into force for high-weight aircraft. This new standard will become effective for low-weight aircraft from 2020.

ICAO recognises that there is a significant community reaction related to aircraft noise and therefore requires all member states to adhere to a ‘Balanced Approach’ to managing this noise. This balanced approach encompasses four main elements to address noise management in an environmentally responsible way, through;

- Reducing noise at source
- Land-use planning and management
- Noise abatement operational procedures
- Operating restrictions on aircraft

Our Noise Action Plan takes into account this Balanced Approach to managing aircraft noise.

Further information on the role of ICAO can be found at www.icao.int

3.2 European Policy

Responsible Authority: The European Union

European Commission Directive 2002/49/EC

Noise Action Plans are a legal requirement under European Commission Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise. The requirements of the Directive were transposed into UK Law through the Environmental Noise Regulations (England) 2006 (as amended). The Birmingham Airport Noise Action Plan must formally describe how Birmingham Airport proposes to meet the objectives of the Environmental Noise (England) Regulations 2006, and hence demonstrate how it will manage its noise impact.

Regulation (EU) No 598/2014

The regulation replaces the previous European Commission Directive 2002/30/EC and provides a framework for implementing Noise Abatement Restrictions at Airports. The Regulations take note of the ICAO Balanced Approach to aircraft noise management.

European Commission Directive EC/2006/93

Directive EC/2006/93 replaces Directive 92/14/EEC and covers the phase-out of the noisier Chapter 2 aircraft in the European Union.

3.3 National Policy

Responsible Authority: National Government

Environmental Noise (England) Regulations 2006, as Amended

Noise Action Plans are a legal requirement under Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise. The requirements of the Directive were transposed into the Environmental Noise Regulations (England) 2006 (as amended), which also includes a requirement for Airports to produce Strategic Noise Maps. Once produced, the Strategic Noise Maps and Noise Action Plan must be reviewed every five years, or following a major development, affecting the noise situation.

The Civil Aviation Act 1982 (amended 2006)

The Civil Aviation Act 1982 (amended 2006) gives power to Airports to establish penalty schemes with the aim of limiting the effect of noise from aircraft arriving and departing from UK Airports.

The Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003 (SI No. 1742)

Directive 2002/30/EC was transposed into The Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003 (SI No. 1742). The Regulations introduced discretionary powers to Airports to restrict the operation of marginally compliant aircraft. It also required Airports to adopt a balanced approach to noise management.

The Aeroplane Noise Regulations 1999

The Aeroplane Noise Regulations 1999 set out that aircraft landing and departing the UK have a valid noise certificate issued by their competent authority complying with ICAO noise certification requirements.

Aviation Policy Framework 2013

The Aviation Policy Framework (APF), published in March 2013, set out the Government's high-level strategy for overall aviation objectives and policies. Its key objective for the management of aviation noise impacts is "to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise".

The APF states that the acceptability of growth in aviation depends to a large extent on the industry continuing to tackle its noise impact and confirms that the Government expects the industry at all levels to continue to address noise. The APF also sets the objective "to encourage the aviation industry and local stakeholders to strengthen and streamline the way in which they work together". This will ultimately be replaced by The Government's Aviation Strategy with a consultation document entitled 'Beyond the horizon: the future of UK aviation – call for evidence on a new strategy' published in 2017.

National Planning Policy Framework 2012

The National Planning Policy Framework (NPPF) acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications. In terms of guidance on development and noise the NPPF has a stated aim of:

"Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of (...) noise pollution" It also states that planning policies and decisions should aim to:

- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- Mitigate and reduce adverse impacts on health and quality of life arising from noise from new development;
- Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and
- Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

The NPPF supersedes the previous Planning Policy Guidance Notes (PPGs), including Planning Policy Guidance 24: Planning and Noise. More information is available at <http://www.communities.gov.uk>

CAP1616: Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements

CAP1616 was published in December 2017 and superseded the previous CAP725: Airspace Change Process Guidance Document.

CAP1616 introduces new noise metrics that must be considered when changes to the flightpaths are made below an altitude of 7,000 feet. This includes the use of 'N' Contours which identify the number of overflights an area is likely to experience that register above a prescribed noise level, for example 65 dB(A).

The new guidance also requires airspace change sponsors to use DfT's WebTag tool when carrying out an options appraisal of new procedures in order to help understanding of health impacts relating to noise.

There is also an expectation that Airports, regardless of whether or not an Airspace Change has been carried out, will make route utilisation statistics publicly available. This is in order to help improve transparency and allow the public to better understand aircraft operations in their location. This requirement forms a new action for the 2019 – 2023 Noise Action Plan.

Department for Transport Air Navigation Guidance 2017

This document gives guidance to the Civil Aviation Authority and the wider airport industry on airspace and noise management.

The guidance on noise relates to the potential impact on neighbouring communities. It specifically states that noise should be prioritised below an altitude of 7,000 feet when compared to other environmental factors such as CO² emissions.

It should however be noted that there could be circumstances where local air quality may be a consideration above that of noise. This will be in situations where emissions from aircraft taking off, landing, or whilst they are on the ground have the potential to contribute to overall pollution levels in the area.

This could lead to a situation which creates unacceptable costs in terms of local air quality or might risk breaching legal limits.

3.4 Local Policy

Responsible Authority: Local Authorities

Section 106 Agreement 2009

Solihull Metropolitan Borough Council (SMBC) is the responsible Local Planning Authority for Birmingham Airport.

In 2009, the Airport Company agreed a Section 106 Agreement with SMBC as part of the Planning Approval for Runway Extension. This was implemented in 2012 when works commenced and continues to be reported upon by SMBC every 2 years. The Section 106 Agreement contains environmental obligations including noise control, night flying and air traffic management. Some key noise obligations that the Airport are required to carry out are listed below:

- Maintain a Sound Insulation Scheme
- Maintain a Schools Environmental Improvement Scheme
- Maintain the Aircraft Noise and Track-keeping system and respond to community complaints
- Administer a daytime noise level limit of 90dB(A) LA_{max} for departures
- Maintain an Engine Ground Running operating instruction
- Maintain a Night Flying Policy, including the use of a quota count system, annual limit on movements and night time noise level limit.
- Maintain a track-keeping target of 97% for all departing aircraft
- Ensure a Continuous Decent Approach Policy is in operation

As part of the Section 106 Agreement, Birmingham Airport funds the monitoring of compliance through the payment of £60,000 per annum to SMBC. This is to audit the Airport Company's compliance with all aspects of the Section 106 Agreement.

Solihull Draft Local Plan 2016 Review

The Solihull Draft Local Plan 2016 Review sets out Solihull Metropolitan Borough Council's vision for the local area. It highlights Birmingham Airport as a key economic asset and states that "The Council will support and encourage further development needed for operational purposes such as passenger and freight facilities, terminals, transport facilities and other development that supports operational needs, or which allows the capacity of the extended runway to be maximised".

It also states that "The Council recognises the existence of significant sources of noise or potential noise within the Borough, such as Birmingham Airport (...) and the need to protect noise sensitive uses, including housing, education and health institutions. The policy seeks to ensure that noise and vibration are contained by appropriate design and operational measures".

3.5 Consideration for Non-Noise Environmental Impacts

The aviation industry is striving to develop ways of reducing aircraft noise. Significant improvements in noise performance have continue be developed by aircraft manufacturers. An example of this is the Airbus 320 NEO which is 50% quieter than the existing Airbus 320 CEO that it replaces when on departure at maximum take-off weight. The NEO also uses 15% less fuel than the CEO reducing CO² emissions.

Birmingham Airport understands that there is a need to balance these interdependent environmental impacts. Where possible, the Airport Company will support programmes that provide all round environmental benefits, while recognising that in some cases a balance must be achieved.

In addition to noise, aircraft also produce air emissions, which can affect local air quality and are a contributor to climate change. Most of the technological improvements to date have led to reductions in both noise and air emissions. However, reductions in noise do not necessarily lead to reductions in air emissions, and vice versa. For example, some of the technologies and operating procedures used to reduce aircraft noise have led to an increase in air emissions. Scientific understanding on the relationship between noise and air emissions is still evolving and is currently subject to a number of studies. Birmingham Airport is a signatory to Sustainable Aviation and continues to take an active role.

This is recognised within the Department for Transport Air Navigation Guidance 2017.

4. Progress since the last Action Plan

Birmingham Airport adopted its second Noise Action Plan in 2013, following approval by the Department for Environment, Food and Rural Affairs (DEFRA). The plan presented a strategic set of noise actions to 2018.

Since adoption of the 2013 -2018 plan we have:

- Successfully progressed the actions from the original Noise Action Plan.
- Undertaken our third round of noise mapping under the requirements of the Environmental Noise (England) Regulations 2006 (as amended).
- Undertaken a further review of our Night Flying Policy.

Full details of the above are included in this report.

4.1 Results of the 2016 L_{den} Noise Contours

Birmingham Airport has undertaken a review of its day, evening and night (L_{den}) noise contours for the year 2016. This is in accordance with The Environmental Noise (England) Regulations 2006.

The noise contours are independently produced by the Civil Aviation Authority's (CAA) Environmental and Research Consultancy Department (ERCD), using the latest version of ANCON (version 2.3). The modelling incorporates actual annual Air Transport Movement (ATMs) data and flight track radar data, taken from the Airport Company's ANOMS system. As part of the Noise Action Plan process these results must be analysed by DEFRA prior to publication.

The noise contours are produced for day, evening and night periods. Daytime noise levels (L_{day}) are averaged over a 12-hour period (0700-1900), evening (L_{evening}) over a 4-hour period (1900-2300) and night-time (L_{night}) noise levels are averaged over an 8 hour period (2300-0700). These are combined to form a 24 hour (L_{den}). Evening values (1900-2300) are weighted by the addition of 5 dB(A), and the night values (2300-0700) weighted by the addition of 10dB(A).

The results of the 2016 Noise Contours can be found in **Appendix C** alongside 2011 results. The 2016 Noise Contour Maps can be found in **Appendix D** along with a map detailing comparison between our 2011 and 2016 annual L_{den} Noise Contours. The L_{den} values can also be found in the table below

2016 L _{den} compared to 2011 L _{den} ¹				
Noise Level (dB)	2016		2011	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
>55	21,700	53,600	18,900	44,200
>60	6,850	16,400	5,800	13,400
>65	850	1,800	800	1,700
>70	<50	100	<50	<100
>75	0	0	0	0

There has been an increase in both the number of dwellings and people within the 65, 60 and 55 dB noise contour levels whilst there has been no change in the 70 and 75 dB contour levels. The L_{den} 55dB and L_{night} 48dB noise contour are designated for consideration in the Noise Action Plan. There has been an increase in the L_{den} 55dB noise contour, with an increase of 21.3% more people and 14.8% more dwellings. For the L_{night} 48dB contour there are 23.5% more people and 15.7% more dwellings.

Percentage Difference 2011 to 2016		
	Lden 55dB	Lnight 48dB
Number of Dwellings	+14.8%	+15.7%
Number of People	+21.3%	+23.5%

It is considered that these increases can be largely attributed to the 23.1% increase in total Air Transport Movements (ATMs) from 2011 to 2016. This increase in ATMs will directly impact the noise contour size.

In terms of night ATMs (2300 – 0700), there has been an increase of 11.3% from 2011 to 2016. This has a significant impact on the L_{den} contour which combines day, evening and night as all night movements have a 10 dB penalty applied. The addition of this penalty therefore has a disproportionate impact on the overall contour size.

Air Transport Movements		
	2011	2016
Night	9,452	10,518 (+11.3%)
Total	90,580	111,483 (+23.1%)

Runway utilisation will also have an impact upon the shape of the noise contours and, in particular the number of people affected by noise. Analysis has therefore been undertaken on runway usage during the noise contour periods for 2016 in comparison to 2011.

Average Runway Modal Splits				
Period	2011		2016	
	R33	R15	R33	R15
Day	58%	42%	57%	43%
Evening	61%	39%	59%	41%
Night	64%	36%	63%	37%
24-hour period	59%	41%	58%	42%
16-hour period	59%	41%	57%	43%

There has been a modest decrease of 1% in the use of runway 33 (our preferred runway configuration) over a 24-hour period. It is not anticipated that this reduction would have a significant impact on the noise contour results.

Aircraft types will also have an effect on the size and shape of the contours. Analysis has also been undertaken into the dominant aircraft types in operation during 2016 for comparison with 2011. The top ten aircraft have been listed below (these represent 83% of 2016 movements and 69% of 2011 movements).

There have been changes to both aircraft operators and aircraft types between 2016 and 2011. An example of this is the increase in the number of single aisle, twin jet Airbus aircraft. This is due to existing Airlines growing their fleets and new carriers commencing operations with these aircraft. The most notable operator of these aircraft was Monarch whose operation grew at Birmingham Airport by 90% between 2011 and 2016.

Most Frequent Aircraft Types 2011		
AC Type		ATMs
DH4	De Hav Canada-8-300 Dash 8 / 8Q	17212
738	Boeing 737-800 pax	10634
E95	Embraer 195	6875
733	Boeing 737-300 pax	5756
321	Airbus A321-100/200	4830
757	Boeing 757 all pax models	4396
752	Boeing 757-200 pax	3849
322	Airbus A330-322	3449
AR8	Avro RJ85 Avroliner	3022
AT7	Aerospatiale/Alenia ATR 72	2642

Most Frequent Aircraft Types 2016		
AC Type		ATMs
DH4	De Hav Canada-8-300 Dash 8 / 8Q	22837
738	Boeing 737-800 pax (winglets)	16811
E75	Embraer 175	10122
320	Airbus 320	9398
321	Airbus 321	12826
319	Airbus 319	5216
757	Boeing 757 all pax models	4720
AT7	Aerospatiale/Alenia ATR 72	4623
E95	Embraer 195	3726
CR9	Bombardier CRJ-900	2414

Older variants of single aisle twin jet Airbus aircraft such as those operated by Monarch are typically noisier aircraft types. Monarch ceased trading in October 2017 and therefore it is anticipated that their numbers will fall over the coming years.

It should also be noted that since the last round of Noise Action Planning the runway has been extended by 400 metres. As a result, this has led to a modest shift of the contours further south and away from the more densely populated areas of Birmingham. The primary reason for this was the relocation of the Start of Roll for aircraft on departure from runway 33.

5. Progress Against Actions and Proposed Enhancements

Our commitment at Birmingham Airport is to meet the air travel demands of the region in an environmentally responsible way. In this way the region benefits economically and socially from a successful airport and the environmental impact is minimised.

Birmingham Airport's objective for managing aircraft noise is:

“To work with our stakeholders, including the local community and industry partners to adopt the best practicable means to assess, manage and minimise the impact of aircraft noise, both now and in the future.”

The Environmental Noise Regulations (England) 2006 (as amended) require that the Airport Company consider the 55 dB(A) L_{den} and 50 dB (A) L_{night} noise contours, when developing the Noise Action Plan. However, Birmingham Airport recognises that the population affected by aircraft noise extends beyond these noise contours. Consequently, this Airport Noise Strategy has been developed to consider wider aircraft noise impacts, including noise from engine ground running.

A review of other airport's Noise Actions Plans was undertaken in order to ensure that Birmingham Airport is employing industry best practice where possible.

Actions that relate to the Night Flying Policy have also been updated.

The Birmingham Airport Noise Action Plan incorporates three key themes. These are detailed below and are accompanied by a summary of some of the noise management programmes that we have in place and the enhancements proposed in this revised plan.

A full list of actions, progress and revisions can be found in **Appendix A** and **Appendix B**.

5.1 Measure

“We will continue to monitor aircraft noise using best practicable methods. Our commitment starts with investment in systems and equipment to enable us to understand our noise impact and identify opportunities to reduce noise.”

Noise and Track Keeping Monitoring

The Airport Company implements an extensive programme of monitoring. This includes the ANOMS 9 Noise and Track Keeping System, which combines secondary radar data with noise data from our community noise monitors. Birmingham Airport was the first commercial Airport in the world to implement the state of the art ANOMS 9 system. The system is also used to log and investigate community complaints relating to aircraft noise.

We continue to monitor aircraft activity, including noise levels and tracks, using the Airport Noise and Operations Monitoring System (ANOMS). Via the Airport Consultative Committee, we provide statistics on environmental issues, including community concerns.

Birmingham Airport continues to carry out noise monitoring studies using Portable Noise Monitors within the community. During 2015 studies were carried out in Barston and Balsall Street East for the runway 15 Airspace Change Process. In 2017 a study was carried out at Clock Lane, Bickenhill.



Portable Noise Monitor

Complaints Management

We ensure that members of the public who wish to complain about aircraft noise receive an informative, helpful and friendly service. A dedicated Environmental Helpline (0121 767 7433) enables complaints to be dealt with quickly and efficiently. Alternatively, concerns can be logged via our Complaint Form located on the Airport website:

<https://www.birminghamairport.co.uk/about-us/community-and-environment/aircraft-noise/make-a-community-complaint/>.

Complaints statistics are compiled quarterly and reported through the Airport Consultative Committee. We have maintained our target time to respond to complaints within 5 working days.

A complaints policy was introduced in 2015 and is published online to inform complainants of the procedure for investigation and the service levels that they can expect. Available resources and the need to treat complainants fairly and equally are considered within the scope of this policy.

5.2 Mitigate

“We will continue to operate noise management schemes to achieve the quietest practicable aircraft operations. We currently operate a comprehensive programme of noise management schemes, which are closely monitored by the Airport’s Environment Team.”

Sound Insulation Scheme

An extensive programme is in place at Birmingham Airport, to manage the noise impact on our neighbours. This includes our Sound Insulation Scheme, through which we have invested over £12 million since 1978, to insulate over 7000 properties. The Sound Insulation Scheme is based on the 2002 63 dB L_{Aeq} average summer day noise contour. Since adoption in August 2014 125 properties have received new glazing.

The 2017/18 Sound Insulation Scheme was split into two phases with a total of 50 properties being offered work under the scheme. Of the 50 properties, 40 accepted the offer of high-specification double glazing and have benefited from the scheme.

Schools Environmental Improvement Scheme

We continue to invest in the Schools Environmental Improvement Scheme with funds made available for 2018.

Case Study:

Name: Mrs S Amin
Head-Teacher, Gossey Lane School
Date: 11/05/2018

“I would like to thank Birmingham Airport for funding the replacement of the window to our main hall and year 1 class room under their sound insulation scheme. The activities were carried out with no fuss and all works ran smoothly. With our school being directly under the flight path this project will have a great positive impact on reducing the noise from passing air traffic as prior to these works the noise level would distract our pupils and they couldn’t hear what was being said until the plane had passed. David Newman Associates who project managed the install were absolutely great. Good communication was maintained throughout the project.”

Night Flying Policy

Night flying is recognised by Birmingham Airport as a very sensitive issue and as such the Night Flying Policy was voluntarily introduced and subsequently transposed into the Section 106 Agreement with Solihull Metropolitan Borough Council. The Night Flying Policy is designed to minimise disturbance in the local community during the night period (2330-0600).

In 2017/18, Birmingham Airport undertook a further review of the Night Flying Policy. This included presentation of the results to the Airport Consultative Committee (ACC) and Solihull Metropolitan Borough Council for approval. The table below outlines the updates to the Policy, effective from 28th October 2018 until 31st October 2021.

2015 – 2018 NFP	2018 – 2021 NFP	Notes
Night Period is defined as 2330 to 0600 .	Night Period is defined as 2330 to 0600 .	No change.
Aircraft with Quota Count of greater than 2 prohibited from being scheduled to take-off or land during the Night Period.	Aircraft with Quota Count of greater than 1 prohibited from being scheduled to take off or land during the Night Period.	More stringent requirement to reduce noisier aircraft during the night period.
Any departing aircraft registering more than 85dB(A) at the centre noise monitors during the Night Period will be subject to a surcharge equivalent to a full runway charge.	Any departing aircraft registering more than 83dB(A) at the centre noise monitors during the Night Period will be subject to a surcharge equivalent to a full runway charge.	More stringent requirement to prevent noisier aircraft during the night period.
Annual Quota Count limit during the Night Period of 4,000 .	Annual Quota Count limit during the Night Period of 4,000 .	No change. BAL will consider a full review of this limit during the next NFP review in 2021.
The maximum annual movement limit allowed during the Night Period is calculated at 5% of the total number of ATMs from the busiest single year within the last 5-year period.	The maximum annual movement limit allowed during the Night Period is calculated at 5% of the total number of ATMs from the busiest single year within the last 5-year period.	No change - 5% capacity maintained.
No absolute annual departure limit implemented between 2330 and 0500.	Absolute annual departure limit implemented between 2330 and 0500 of 877 movements	More stringent requirement to prohibit an increase in departures at 2330 to 0500.
Quota can be reclaimed for movements which register less than 74dB(A) at all three noise monitors.	Quota can be reclaimed for movements which register less than 74dB(A) at all three noise monitors.	No change.
Taxiway Lima/Tango is not to be used between the hours of 2300 and 0600, except in emergency situations.	Taxiway Lima/Tango is not to be used between the hours of 2300 and 0600, except for T6 and T5 to enter Taxiway Uniform or in emergency situations.	Amendment made to allow T6 and T5 to be used at night for entry to Taxiway Uniform.
Provision to exempt certain ATMs including, mercy flights, emergencies, delays due to prolonged Air Traffic disruption and delays likely to lead to serious congestion at the Airport or hardship and suffering to passengers or animals, and those aircraft classified at less than 84 EPNdB .	Provision to exempt certain ATMs including, mercy flights, emergencies, delays due to prolonged Air Traffic disruption and delays likely to lead to serious congestion at the Airport or hardship and suffering to passengers or animals, and those aircraft classified at less than 81 EPNdB .	More stringent restriction reducing the number of aircraft that can be exempted during the night period.

The Night Flying Policy firstly includes an Annual Limit to restrict the number of aircraft allowed to operate during the night.

The Night Flying Policy also includes an annual night Noise Quota Count Limit of 4,000. All aircraft operating during the night period are assigned a noise quota, ranging from 0 to 16 dependent on the noise certification of the aircraft. Noisy aircraft are assigned a high noise quota value whereas quiet aircraft are assigned a low noise quota value.

Under our original Action Plan, Aircraft with a noise quota of 8 or more were not scheduled to operate during the night period. A further revision in 2015 prohibited the scheduling of aircraft of a Quota Count greater than 2 during the night period. We will now prohibit the scheduling of aircraft of a Quota Count greater than 1 during the night period (effective October 2018). Since adoption of the previous plan in 2014 we have continued to operate within our aircraft movement and quota count limits.

Improvement

We have prohibited the scheduling of aircraft of a Quota Count greater than 1 during the night period

Our new Night Flying Policy (effective October 2018) now includes a night noise limit of 83 dB(A)¹ (reduced from 85dB(A)). If a departing aircraft registers a noise level above this at our centreline noise monitors (Noise Monitors 1 and 2), the airline is surcharged an amount equivalent to a full runway charge. All funds from night noise violations are placed into the Community Trust Fund, a registered charity that benefits projects in the local community.

Improvement

We have reduced our night time noise violation limit from 85db(A) to a more stringent 83dB(A)

¹ Tolerance of 0.4 dB(A) applies

Daytime Noise Limit

If a departing aircraft exceeds our daytime noise violation limit at our centreline noise monitors (Noise Monitors 1 and 2), the airline is surcharged £500 plus a further £150 for every full decibel recorded over the limit. All funds generated from this Policy are placed into the Community Trust Fund. Under this revised plan the Daytime Noise Limit remains at 90dB(A), however a commitment has been made to review this, as set out in **Appendix B**.

Aircraft Track Keeping

Birmingham Airport stipulates that all departing aircraft (greater than 5700 kg) should follow Noise Preferential Routes (NPRs) until reaching 3,000 or 4,000 feet altitude (dependent upon heading). The NPRs consist of flight corridors three kilometres in width, which are designed to take departing aircraft over the least populated areas. The Airport Company consistently achieves the current target not to fall below 97% compliance.

Continuous Decent Approaches (CDAs)

The CDA programme was launched at Birmingham Airport during May 2009. The basic principle of a CDA is that arriving aircraft stay higher for longer, by descending at a continuous rate. CDAs require significantly less engine thrust, which leads to reduced air emissions and noise. Unlike some Airports, CDAs are implemented at Birmingham 24 hours a day. Birmingham has been identified as being practice for CDAs and airlines consistently achieve the current target not to fall below 90% CDA compliance.

Improvement

We have set a new target not to fall below 96% CDA compliance

Birmingham Airport also have a new action to investigate the feasibility of a 3.2° glide slope to runway 33 (and possibly runway 15) which could potentially take aircraft on approach closer to the height they were prior to the runway extension. It should be noted that to implement slightly steeper approaches requires a policy change from the CAA, which is dependent on the outcome of a trial at Heathrow.

Engine Ground Running

Although the Noise Action Plan is not required to consider noise from Engine Ground Running, we recognise that it is a key concern of residents in some neighbouring communities. Engine Ground Running is required by airlines following essential aircraft maintenance and only takes place when absolutely necessary.

To minimise disturbance, we have an Engine Ground Running Policy which includes the following provisions:

- Specified engine ground running locations to help minimise noise disturbance to local residents.
- Full power engine ground runs can only take place from 0600hrs until 2300hrs (Monday to Saturday), and 0800hrs until 2300hrs on Sundays (and not between 1030-1230 hrs Sundays).
- Stringent restrictions on the use of taxiway T.
- All engine ground runs require prior approval.
- Monthly reports are compiled and provided on a quarterly basis to the Airport Consultative Committee.

Airspace Redesign

Since the last Noise Action Plan was developed Birmingham Airport has progressed a number of Airspace Change Proposals as summarised below:

- Implementation of new Instrument Approach Procedures to runway 33 to coincide with the new landing threshold for the extended runway.
- Implementation of RNAV-1 procedures for all departures from runway 15 following the runway extension.
- Submission to the Civil Aviation Authority (CAA) of new RNAV-1 procedures for all departures from runway 33 to meet the requirements of the redesigned upper airspace north of Birmingham Airport. A decision is expected by the end of 2018.

The implementation of RNAV-1 procedures has in some instances led to the reduction in the overflight of communities surrounding the Airport due to improved concentration.

BAL is however cognisant of the fact that concentrating aircraft on NPR centrelines may also lead to an increase in overflights for communities positioned directly beneath them.

Furthermore, with BAL being an early adopter of RNAV-1 procedures, it was identified that the designed procedure for aircraft heading north from runway 15 did not provide the anticipated level of concentration.

As a result, BAL committed to making technical amendments to the design in order to improve concentration. This identified a number of constraints on the process of flightpath development. As an increasing number of airports are required to implement new procedures, there have been difficulties in securing procedure designers and simulator time to design and validate new procedures.

However, BAL has now redesigned the Northbound Turn and submitted it to the CAA for their independent review.

5.3 Engage

“We will meet with our neighbours and partners to involve, engage and inform people through open dialogue. We will continue to operate a transparent stakeholder engagement programme. This will aid mutual understanding of noise issues and allow us to inform our local community of any changes to airport activities which may have a noise impact.”

Airport Consultative Committee

The Airport Company reports, on a quarterly basis, to the Airport Consultative Committee (ACC). Membership of this group includes local community representatives. The Airport Company offers an open and transparent service and provides detailed reporting on environmental performance including noise and track keeping. Quarterly minutes are available via the Airport Company website:

<https://www.birminghamairport.co.uk/about-us/community-and-environment/airport-consultative-committee/agendas-and-minutes/>

Operation Pathfinder

In 2006 the Airport Company launched Operation Pathfinder, a forum through which the Airport Environment Team works with Birmingham Airport Air Traffic Control (BAATC), NATS and airlines, to develop improvements to noise and track keeping performance and to reduce carbon emissions.

Operation Pathfinder is not just about improving track keeping performance; we work closely with BAATL, NATS and the airlines to investigate other projects to reduce noise. In 2009, following extensive trials, the Airport Company launched Continuous Descent Approaches (CDAs). Aircraft stay higher for longer and require significantly less engine thrust, which leads to reduced air emissions and noise. Airlines at Birmingham consistently achieve the current target not to fall below 90% CDA compliance.

As of 2018 an annual awards campaign has been introduced through Operation Pathfinder in order to recognise airlines that consistently achieve strong CDA compliance.

Operation Pathfinder is also responsible for implementing Continuous Climb Operations, where aircraft operate a continuous climb on departure, thereby reducing their fuel consumption and noise impact. Engagement with Operation Pathfinder is core to the aim of minimising the impact of aircraft noise.

Community Engagement

We operate a community outreach programme where we openly engage with members of the community. This includes presentations to local community groups, Ward Committees and Parish Council meetings, as well as attending local community events.

Our community engagement strategy is core to our noise management strategy as it aids a mutual understanding of noise issues. We aim to engage with our neighbours through these events, through community updates via email and through our own dedicated specific twitter account:

[@bhx_community](https://twitter.com/bhx_community)



Airspace Change Consultation Roadshow: Cudworth 2017

Another key feature of our community engagement strategy is our Community Impact Alert System. This system notifies a group of key local contacts of any changes to airport activities that may have an impact upon the local community. Notifications are made by telephone, text message, email or letter as appropriate.

We continue to operate a Community Trust Fund, with over £84,000 available each year for local projects. This figure is augmented by any aircraft noise limit violation surcharges. Since the Trust's inception in 1998 nearly £1.6 million has been invested in over 700 local projects.

Improvement
From 2014 we increased our annual contribution from £50,000 to £75,000. This is index linked and currently stands at £84,000. This is augmented by revenue from noise exceedance surcharges.

Information Resources

Over the years, we have developed and maintained a range of information resources that give a detailed overview of our environmental management programmes for our neighbours. Much of this is now available on the Community and Environment Section of our website, where we have a section dedicated to aircraft noise management:

www.birminghamairport.co.uk

We are always seeking new ways to communicate our initiatives and information and Birmingham Airport was the first Airport in the UK to launch an environmental information service on Google Earth.

To access this information users must first have Google Earth installed on their computer, they can then download a KMZ file the Environment Section of our website and view the various layers of airport information. These layers include the location of our flight paths, sound insulation scheme boundary, location of engine ground running sites and the Strategic Noise Maps.

We have also added a 'How is my area affected?' section to our website:

<https://www.birminghamairport.co.uk/about-us/community-and-environment/aircraft-noise/how-is-my-area-affected/>

This series of documents explain the impact of the Airport's operations within various specific communities.

Sustainable Aviation Noise Road Map

We continue to support Sustainable Aviation with a BAL representative acting as vice-chair of the Sustainable Aviation Operations Improvement Group. We also continue to support improvements in technology and operations towards the Advisory Council for Aeronautics Research in Europe (ACARE) goal of 50% reduction in aircraft noise by 2020, relative to 2000.

We have been an active participant in the development of Sustainable Aviation's Noise Roadmap, launched in April 2013, which demonstrates that noise from UK aviation will not increase with more flights over the next 40 years. This can be achieved through the development and introduction of quieter aircraft alongside the implementation of better operating procedures and improved land-use planning.

6. Performance Indicators and Evaluation

The Noise Actions contained within this Noise Action Plan are based upon the existing measures in place at Birmingham Airport. The Noise Actions have been selected from both voluntary measures and Obligations from the Section 106 Agreement with Solihull MBC. A detailed list of Noise Action Indicators is included within Appendices A and B. This includes all the limit values that have been implemented either on a voluntary basis, or via the current Section 106 Agreement with Solihull MBC.

Many of the proposed actions aim to reduce noise impact for not just the 21,700 dwellings (53,600 people) located within the 55 dB(A) L_{den} noise contour but also for many dwellings located outside of the contour. Whilst it is therefore difficult to estimate the number of dwellings that may benefit from the proposed actions, it is anticipated that many of the 198,200 dwellings located within Birmingham Airport's Noise Preferential routes may benefit to some extent.

The Environmental Noise Regulations (England) 2006 (as amended) state that the actions should be based upon the Strategic Noise Maps. However, our Noise Actions have been developed with consideration for areas beyond the Strategic Noise Maps, for example to include noise from engine ground running and helicopter operations.

Through the use of performance indicators, we can evaluate and report on the Noise Actions detailed in the Noise Action Plan. This will enable us to assess the effectiveness of our Noise Actions and ensure that our noise management programme is benefiting the local community.

The Airport Company already has a comprehensive programme for monitoring and reporting our noise performance against key indicators. Where appropriate, we will apply our existing indicators to the Noise Actions. Our performance against the performance indicators will be reported on an annual basis and made available via our website.

Our performance against the noise aspects of the Section 106 Agreement, is also audited on an annual basis, by Solihull MBC's Airport Monitoring Officer.

Within the five-year period of this Noise Action Plan, we may amend the range of performance indicators. The Airport Company is committed to revising the Noise Action Plan following the completion of any major development which affects the existing noise situation. Any amendments to the Noise Action Plan will be made following engagement with the Airport Consultative Committee.

7. Conclusion

This further revised plan sets out Noise Actions for Birmingham Airport until 2023. In line with statutory guidance it includes updated information on the airport, its operations, legislation and standards, as well as national and local policies. It includes a review of the L_{den} Noise Contours produced for 2016 and details progress that has been made against the actions in the previous 2013-2018 Noise Action Plan.

These actions have been amended and enhanced to accommodate new obligations and to ensure that Birmingham Airport continues to demonstrate best practice in noise mitigation and community engagement.

Appendix A: Full List of Actions (as per 2013-2018 NAP) and Progress

Our approach to managing noise is underpinned by three themes; Measure, Mitigate, and Engage

Measure					
<i>“We will continue to monitor aircraft noise using best practicable methods. Our commitment starts with investment in systems and equipment to enable us to understand our noise impact and identify opportunities to reduce noise.”</i>					
Action	Impact	Timescale	Performance Indicator	Progress (since adoption in August 2014)	
1	We will continue to monitor aircraft activity using a sophisticated Noise and Track-keeping System.	Arrivals, Departures	Ongoing	Section 106 Compliance	Progressed. We continue to operate our Aircraft Noise and Operations Monitoring System (ANOMS).
2	We will carry out the Round 2 Mapping exercise in line with the Environmental Noise (England) Regulations (as amended) (producing L_{den} and L_{night} Noise Contours for 2011).	Noise Action Planning	2018	Contours produced for 2016 data	Progressed. Strategic Noise Mapping was undertaken in 2017 based on 2016 data.
3	We will continue to produce L_{Aeq} Noise Contours on a biennial basis or for a major development.	Land Use Planning, Community Relations	2012, 2014, 2016	Contours will be produced for 2012, 2014 and 2016	Progressed. Contours have been produced in 2012, 2013, 2014 and 2016. Additional contour due to airspace change work.

4	We will continue to benchmark our noise programmes with other comparable airports.	Arrivals, Departures, Ground Noise	Ongoing, at least every 2 years	Internal benchmarking undertaken and where practicable noise policies reviewed	Progressed. Benchmarking completed for 2018.
5	We will liaise with the relevant authorities regarding quiet areas.	Arrivals, Departures, Ground Noise	Ongoing	N/A	Ongoing. As yet no quiet areas have been declared in the vicinity.
6	We will continue to monitor the percentage of aircraft registering less than 87 dB(A) at our fixed noise monitors.	Arrivals, Departures	Ongoing	Percentage of aircraft registering less than 87 dB(A) at our noise monitors	Progressed. Since adoption, on average, 99.94% of aircraft have been less than 87dB (A) at our noise monitors.
7	We will establish a programme to carry out noise monitoring studies using a Portable Noise Monitor.	Arrivals, Departures Ground Noise	Twice yearly dependent upon demand	Studies conducted and reports available with the evaluation of local noise impact	Progressed. Studies conducted in Barston and Balsall Street East for runway 15 Airspace Change Process. An additional 2 noise monitoring studies have been carried out.

Mitigate

“We will continue to operate noise management schemes to achieve the quietest practicable aircraft operations. We currently operate a comprehensive programme of noise management schemes, which are closely monitored by the Airport’s Environment Team.”

Action	Impact	Timescale	Performance Indicator	Progress (since adoption in August 2014)	
8	We will continue to operate a Sound Insulation Scheme to provide sound proof glazing to properties most affected by aircraft noise (within 2002 63 dB LAeq noise contour).	Arrivals, Departures	Reviewed in line with the Section 106 Agreement	Section 106 Compliance Number of properties insulated	Progressed. Since adoption 135 properties have been insulated. All properties have now been insulated in the scheme boundary.
9	We will continue to invest in the Schools Environmental Improvement Scheme and provide sound insulation.	Arrivals, Departures	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance Number of schools insulated	Progressed. Funds have been made available for high specification double glazing at Gossey Lane school.
10	We will operate an Annual Movement Limit for aircraft movements between 2330–0600, at 5% of the annual total, in line with our Night Flying Policy.	Arrivals, Departures (Night)	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance Within the Annual Limit	Progressed. The number of ATM’s has been within the Annual Limit. During the Night Flying Year 2016/17 we used 90% of our Annual Limit.

11	We will operate a Noise Quota Limit of 4000, between 2330 – 0600, in line with our Night Flying Policy.	Arrivals, Departures (Night)	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Within the Quota Limit	Progressed. The Quota Count used is within the Quota Limit. During the Night Flying Year 2016/17 we used 46% of our Quota Count Limit.
12	We will surcharge aircraft which exceed a maximum noise level of 85dB(A) at the centreline noise monitors between 2330 – 0600, in line with our Night Flying Policy.	Departures (Night)	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Number of fines for aircraft exceeding 85dB(A) at centreline noise monitors	Progressed. Since adoption 10 aircraft have been surcharged for exceeding the noise limit, with all proceeds going to the Community Trust Fund. Improvement: We will reduce our night time noise violation level to 83dB(A) (effective 28th October 2018).
13	Aircraft with a Quota Count of 4 or more are prohibited from being scheduled to take-off or land during the night period (2330 – 0600), in line with our Night Flying Policy.	Arrivals, Departures (Night)	Ongoing	Section 106 Compliance	Progressed. Section 106 Compliance. Improvement: We will prohibit the scheduling of aircraft with a Quota Count greater than 1 during the night period. (effective 28th October 2018)
14	We will surcharge departing aircraft which exceed a maximum noise level of 90dB(A) at the centreline noise monitors between 0600 – 2330, in line with our Daytime Noise Policy.	Departures (Day)	Ongoing	Section 106 Compliance Number of fines for aircraft exceeding 90dB(A) at centreline noise monitors	Progressed. Since adoption 6 aircraft have been surcharged for exceeding the noise limit with funds going to the Community Trust Fund.

15	We will continue to require that aircraft fly within Noise Preferential Routes (NPRs) up to 3000 feet and operate a target to not fall below 97% compliance.	Departing aircraft required to follow set routes	Ongoing	Section 106 Compliance Percentage of 'On-Track' aircraft	Progressed. Since adoption, on average 97.69% of aircraft have been 'on-track'. Improvement: We raised the ceiling of the NPR for aircraft departing from runway 15 on a southerly heading to 4,000 feet in September 2016.
16	Our operations facilitate the use of Continuous Descent Approaches (CDA) 24 hours a day.	Arrivals	Ongoing	Percentage of aircraft achieving CDAs	Progressed. Since adoption, on average 95% of aircraft have performed CDA's.
17	We will continue to operate a Policy for Helicopters taking off and landing at Birmingham in order to minimise the number of people overflown.	Helicopter Noise	Ongoing	Policy maintained	Progressed. Policy maintained.
18	We will continue to operate an Engine Ground Running Policy between 2300 – 0600 (0800 hours on Sundays) to reduce the noise impact of this operation during sensitive times.	Ground Noise	Ongoing	Section 106 Compliance Number and locations of full power runs, Number and locations of runs in the Morning SP Compliance with 79dB $L_{Aeq,T}$ Limit.	Progressed. Since adoption, full engine runs have been prohibited during the night period. During the daytime 1,554 full power engine runs have been undertaken, of which 132 have been in the morning shoulder period. Operations remain within the 79dB $L_{Aeq,T}$ Limit.

19	We will carry out a feasibility study into the proposed Engine Ground Running Facility as part of the Section 106 Agreement for the Runway Extension.	Ground Noise	In line with timescales for the Section 106 Agreement for the Runway Extension	Report submitted	Progressed. A feasibility study was completed in 2012, in which the Airport Company decided that a dedicated Engine Ground Running Facility was not required, however this continues to be kept under review.
20	We will continue to support Sustainable Aviation and improvements in technology and operations towards the Advisory Council for Aeronautics Research in Europe (ACARE) goal of 50% reduction in aircraft noise by 2020, relative to 2000.	Arrivals, Departures, Ground Noise	Ongoing	Engagement with Sustainable Aviation, including Noise Roadmap Promotion of noise initiatives with airlines via Operation Pathfinder	Progressed. Engagement with Sustainable Aviation, including the Noise Roadmap and the CO2 Roadmap. We continue to promote noise initiatives with airlines via Operation Pathfinder, including track-keeping and Continuous Descent Approaches. Improvement: BAL representative is vice-chair of the Sustainable Aviation Operations Improvement Group.

Engage

“We will meet our neighbours and partners to involve, engage and inform people through open dialogue. We will continue to operate a transparent stakeholder engagement programme. This will aid mutual understanding of noise issues and allow us to inform our local community of any changes to airport activities which may have a noise impact .”

	Action	Impact	Timescale	Performance Indicator	Progress (since adoption in August 2014)
21	We will engage with the Local Planning Authorities, located within Strategic Noise Maps, to encourage consideration of aircraft operations in the development of land use.	Land Use Planning	Ongoing	Local Authorities advised of Strategic Noise Maps	Progressed. Local Authorities advised of Strategic Noise Maps.
22	We will continue to use the ‘Operation Pathfinder’ programme to seek improvements in adherence to noise management programmes.	Arrivals, Departures, Ground Noise	Ongoing	Minutes from Operation Pathfinder meetings (internal)	Progressed. Operation Pathfinder now meets quarterly as part of the Flight Safety Committee. This is an improvement and has helped to increase attendance.
23	We will continue to regularly engage with the Airport Consultative Committee and Environment Monitoring Working Group on noise issues.	Arrivals, Departures, Ground Noise	Ongoing	Minutes of meetings	Progressed. Engagement with the ACC continues on a quarterly basis. The Environment Monitoring Working Group was dissolved 2015 and now a dedicated ACC sub-group is setup for all major changes that affect local stakeholders.

24	We will continue to be accessible for complaints and enquiries relating to environmental issues, including noise.	Community Relations and Awareness of Noise Issues	Ongoing	Section 106 Compliance Number of complaints	Progressed. In February 2016 we setup a dedicated Customer Relations Management (CRM) System which allows correspondents to log concerns on our website. This has helped to improve internal management and response to complaints. We also continue to operate our Environmental Helpline as well as accepting enquiries by letter when internet access is not available.
25	We will continue to investigate and report on all complaints relating to aircraft noise.	Community Relations and Awareness of Noise Issues	Ongoing	Section 106 Compliance Number of complainants, contacts, events and concerns	Progressed. Since adoption we have investigated and responded to 3,157 contacts about 5,156 events.
26	We will seek to respond to all complaints within 5 working days of receipt of the concern.	Community Relations and Awareness of Noise Issues	Ongoing	Percentage of complaints responded to within 5 working days	Progressed. We continue to apply the target with 99% of complaints responded to within the set time in 2017.
27	We will provide a Community Trust Fund (registered charity), supporting local community projects, where the Airport Company will provide £50,000 plus revenues from noise exceedance surcharges.	Community Relations	Ongoing	Section 106 Compliance	Progressed. Funds made available each year in line with Section 106 Compliance. Improvement: The Airport company currently provide £84,000 (2018), plus revenues from noise exceedance surcharges.

28	We will continue to report on our noise programmes through our Annual Community & Environment Report (or equivalent).	Community Relations and Awareness	Annually	Report Published	Progressed. Environmental Monitoring statistics included in the quarterly Sustainability Report which is presented to the Airport Consultative Committee. Annual Corporate Responsibility Report is also published.
29	We will continue to operate the Community Impact Alert System, to advise local community representatives of abnormal activities which may have an adverse noise effect.	Community Relations and Awareness	Ongoing	Records of community alerts	Progressed. We continue to issue community alerts when required advising on issues such as ILS (Instrument Landing System) outage and unusual aircraft movements.
30	We will continue to operate a programme to engage with members of the local community.	Community Relations and Awareness	Ongoing	Records of issues raised and responses, as appropriate	Progressed. Since adoption we have held a large Airspace Change Consultation in relation to departures from runway 33. We have also attended 5 Community Events.
31	We will make our key noise information available on Google Earth.	Community Relations and Awareness	Ongoing	Information available on Google Earth	Progressed. Google Earth information available on our Environment Pages.
32	We will publish our quarterly Environment Monitoring Report via our website.	Community Relations and Awareness of Noise Issues	Ongoing	Reports Published	Progressed. Environmental Information is published quarterly in the Sustainability Report which is published on Birmingham Airports and Solihull MBC websites.

33	We will report our progress against the Noise Action Plan on an annual basis.	Community Relations	Annually	Progress reported Number of Actions Complete	Partially Progressed. Key noise information reported to Airport Consultative Committee on a quarterly basis. Following adoption of this plan BAL proposes to produce an Annual report on the progress of the Noise Action Plan.
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Appendix B: Noise Action Plan 2019 - 2023

Measure				
<p><i>“We will continue to monitor aircraft noise using best practicable methods. Our commitment starts with investment in systems and equipment to enable us to understand our noise impact and identify opportunities to reduce noise.”</i></p>				
Action	Impact	Timescale	Performance Indicator	
1	We will continue to monitor aircraft activity using a sophisticated Noise and Track-keeping System.	Arrivals, Departures	Ongoing	Section 106 Compliance.
2	We will carry out the Round 4 Mapping exercise in line with the Environmental Noise (England) Regulations (as amended) (producing L _{den} and L _{night} Noise Contours for 2021).	Noise Action Planning	2021	Contours produced for 2021 data.
3	We will continue to produce L _{Aeq} Noise Contours on a biennial basis or for a major development.	Land Use Planning, Community Relations	2018, 2020, 2022	Contours will be produced for 2018, 2020, 2022.
4	We will continue to benchmark our noise programmes with other comparable airports.	Arrivals, Departures, Ground Noise	Ongoing, every 2 years	Internal benchmarking undertaken and where practicable noise policies reviewed.

5	We will liaise with the relevant authorities regarding quiet areas.	Arrivals, Departures, Ground Noise	Ongoing	Ongoing. As yet no quiet areas have been declared in the vicinity.
6	We will establish a programme to carry out noise monitoring studies using a Portable Noise Monitor.	Arrivals, Departures Ground Noise	Twice yearly dependent upon demand	Studies conducted and reports available with the evaluation of local noise impact.

Mitigate

“We will continue to operate noise management schemes to achieve the quietest practicable aircraft operations. We currently operate a comprehensive programme of noise management schemes, which are closely monitored by the Airport’s Environment Team.”

	Action	Impact	Timescale	Performance Indicator
7	We will provide a second offer to all properties that have previously declined Sound Insulation works and are located within the 2002 63 dB L _{Aeq} noise contour.	Arrivals, Departures	Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Number of properties insulated.
8	We will continue to invest in the Schools Environmental Improvement Scheme and provide sound insulation.	Arrivals, Departures	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Number of schools eligible. Number of schools insulated.
9	We will operate an Annual Movement Limit for aircraft movements between 23:30–0600, at 5% of the total number of ATMs from the busiest single year within the last 5-year period, in line with our Night Flying Policy. We will also have no more than 877 departures between 23.30 and 05.00 per annum.	Arrivals, Departures (Night)	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Within the Annual Limit.

10	We will operate a Noise Quota Limit of 4000, between 2330 – 0600, in line with our Night Flying Policy.	Arrivals, Departures (Night)	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Within the Quota Limit.
11	We will surcharge aircraft which exceed a maximum noise level of 83dB(A) at the centreline noise monitors between 2330 – 0600, in line with our Night Flying Policy.	Departures (Night)	Ongoing. Reviewed in line with the Section 106 Agreement	Section 106 Compliance. Number of fines for aircraft exceeding 83dB(A) at centreline noise monitors.
12	Aircraft with a Quota Count greater than 1 are prohibited from being scheduled to take-off or land during the night period (2330 – 0600).	Arrivals, Departures (Night)	Ongoing	Section 106 Compliance.
13	We will surcharge departing aircraft which exceed a maximum noise level of 90dB(A) at the centreline noise monitors between 0600 – 2330, in line with our Daytime Noise Policy.	Departures (Day)	Ongoing	Section 106 Compliance. Number of fines for aircraft exceeding 90dB(A) at centreline noise monitors.
14	We will continue to require that aircraft fly within Noise Preferential Routes (NPRs) up to 3000 or 4000 feet (dependent upon heading) and operate a target to not fall below 97% compliance.	Departing aircraft required to follow set routes	Ongoing	Section 106 Compliance. Percentage of ‘On-Track’ aircraft.

15	Our operations facilitate the use of Continuous Descent Approaches (CDA) 24 hours a day and operate a target to not fall below 96% CDA compliance.	Arrivals	Ongoing	Percentage of aircraft achieving CDAs.
16	We will continue to operate a Policy for Helicopters taking off and landing at Birmingham in order to minimise the number of people overflowed.	Helicopter Noise	Ongoing	Policy maintained.
17	We will continue to operate an Engine Ground Running Policy between 2300 – 0600 (0800 hours on Sundays) to reduce the noise impact of this operation during sensitive times.	Ground Noise	Ongoing	Section 106 Compliance. Number and locations of full power runs. Number and locations of runs in the Morning Shoulder Period. Compliance with 79dB $L_{Aeq,T}$ Limit. Number of runs on Taxiway T.
18	We will publish quarterly route and runway utilisation figures on our website, in order to improve understanding of aircraft operations in our local communities.	Arrivals, Departures	Ongoing	Figures published on the website.

19	We will continue to support Sustainable Aviation and improvements in technology and operations towards the Advisory Council for Aeronautics Research in Europe (ACARE) goal of 50% reduction in aircraft noise by 2020, relative to 2000.	Arrivals, Departures, Ground Noise	Ongoing	Engagement with Sustainable Aviation, including Noise Roadmap. Promotion of noise initiatives with airlines via Operation Pathfinder.
20	We will investigate the feasibility of decreasing the daytime noise limit from 90 dB(A).	Departures (day)	2019	Review presented to Airport Consultative Committee.
21	Investigate the feasibility of a 3.2° glide slope to runway 33 (and possibly runway 15) which could potentially take aircraft on approach closer to the height they were prior to the runway extension. It should be noted that to implement slightly steeper approaches requires a policy change from the CAA, which is dependent on the outcome of a trial at Heathrow.	Arrivals	2019	Review presented to Airport Consultative Committee.
22	We will assess the actual noise impact of Noise Abatement Departure Procedures (NADP) 1 & 2 and recommend the most appropriate procedure for use to Airlines, if applicable.	Departures	2019	Review presented to Airport Consultative Committee.
23	We will investigate the feasibility of decreasing the night-time noise limit from 83dB(A) to 81dB(A).	Departures (night)	2018	Review presented to Airport Consultative Committee.

Engage

“We will meet our neighbours and partners to involve, engage and inform people through open dialogue. We will continue to operate a transparent stakeholder engagement programme. This will aid mutual understanding of noise issues and allow us to inform our local community of any changes to airport activities which may have a noise impact.”

	Action	Impact	Timescale	Performance Indicator
24	We will engage with the Local Planning Authorities, located within Strategic Noise Maps, to encourage consideration of aircraft operations in the development of land use	Land Use Planning	Ongoing	Local Authorities advised of Strategic Noise Maps
25	We will continue to use the ‘Operation Pathfinder’ programme to seek improvements in adherence to noise management programmes through the Flight Safety Committee.	Arrivals, Departures, Ground Noise	Ongoing	Minutes from Flight Safety Committee meetings (internal)
26	We will continue to regularly engage with the Airport Consultative Committee and their subgroups on noise issues.	Arrivals, Departures, Ground Noise	Ongoing	Minutes of meetings
27	We will continue to be accessible for complaints and enquiries relating to environmental issues, including noise.	Community Relations and Awareness of Noise Issues	Ongoing	Section 106 Compliance Number of complaints

28	We will continue to investigate and report on all complaints relating to aircraft noise	Community Relations and Awareness of Noise Issues	Ongoing	Section 106 Compliance Number of complainants, contacts, events and concerns
29	We will seek to respond to all complaints within 5 working days of receipt of the concern	Community Relations and Awareness of Noise Issues	Ongoing	Percentage of complaints responded to within 5 working days
30	We will provide a Community Trust Fund (registered charity), supporting local community projects, where the Airport Company will provide £84,000 (index linked) plus revenues from noise exceedance surcharges	Community Relations	Ongoing	Section 106 Compliance
31	We will continue to report on our noise programmes through our Annual Corporate Responsibility Report	Community Relations and Awareness	Annually	Report Published
32	We will continue to operate the Community Impact Alert System, to advise local community representatives of abnormal activities which may have an adverse noise effect	Community Relations and Awareness	Ongoing	Records of community alerts
33	We will continue to operate a programme to engage with members of the local community	Community Relations and Awareness	Ongoing	Records of issues raised and responses, as appropriate

34	We will make our key noise information available on Google Earth	Community Relations and Awareness	Ongoing	Information available on Google Earth
35	We will publish our quarterly ACC Minutes via our website	Community Relations and Awareness of Noise Issues	Ongoing	Minutes Published
36	We will report our progress against the Noise Action Plan on an annual basis	Community Relations	Annually	Progress reported Number of Actions Complete
37	We will keep a record of all meetings with external stakeholders on matters relating to the impact of aircraft operations on neighbouring communities	Arrivals, Departures, Ground Noise	Quarterly ACC Sustainability Report	Report submitted

Appendix C: Noise Contour Results

Contour Results 2011 and 2016²

2016 L _{den} compared to 2011 L _{den}				
Noise Level (dB)	2016		2011	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
>55	21,700	53,600	18,900	44,200
>60	6,850	16,400	5,800	13,400
>65	850	1,800	800	1,700
>70	<50	100	<50	<100
>75	0	0	0	0

2016 L _{day} compared to 2011 L _{day}				
Noise Level (dB)	2016		2011	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
>54	16,900	41,800	15,650	36,600
>57	8,300	20,200	7,450	17,400
>60	2,950	6,900	2,900	6,600
>63	700	1,500	750	1,700
>66	<50	<100	50	100
>69	0	0	0	0

2016 L _{evening} compared to 2011 L _{evening}				
Noise Level (dB)	2016		2011	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
>54	11,950	30,000	10,700	25,000
>57	5,150	12,200	4,550	10,400
>60	1,400	3,300	1,350	3,000
>63	200	400	250	500
>66	<50	<100	<50	<100
>69	0	0	0	0

2016 L _{night} compared to 2011 L _{night}				
Noise Level (dB)	2016		2011	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
>48	16,950	42,100	14,650	34,100
>51	8,200	20,000	6,650	15,400
>54	2,900	6,800	2,450	5,600
>57	650	1,400	500	1,100
>60	<50	<100	<50	<100
>63	0	0	0	0
>66	0	0	0	0

² It has been identified that there is a minor error within the 2011 data where the L_{evening} was overreported and the L_{night} was underreported. Overall this has resulted in an underreporting of circa 1% for the L_{den} contour. DEFRA have been advised of this.

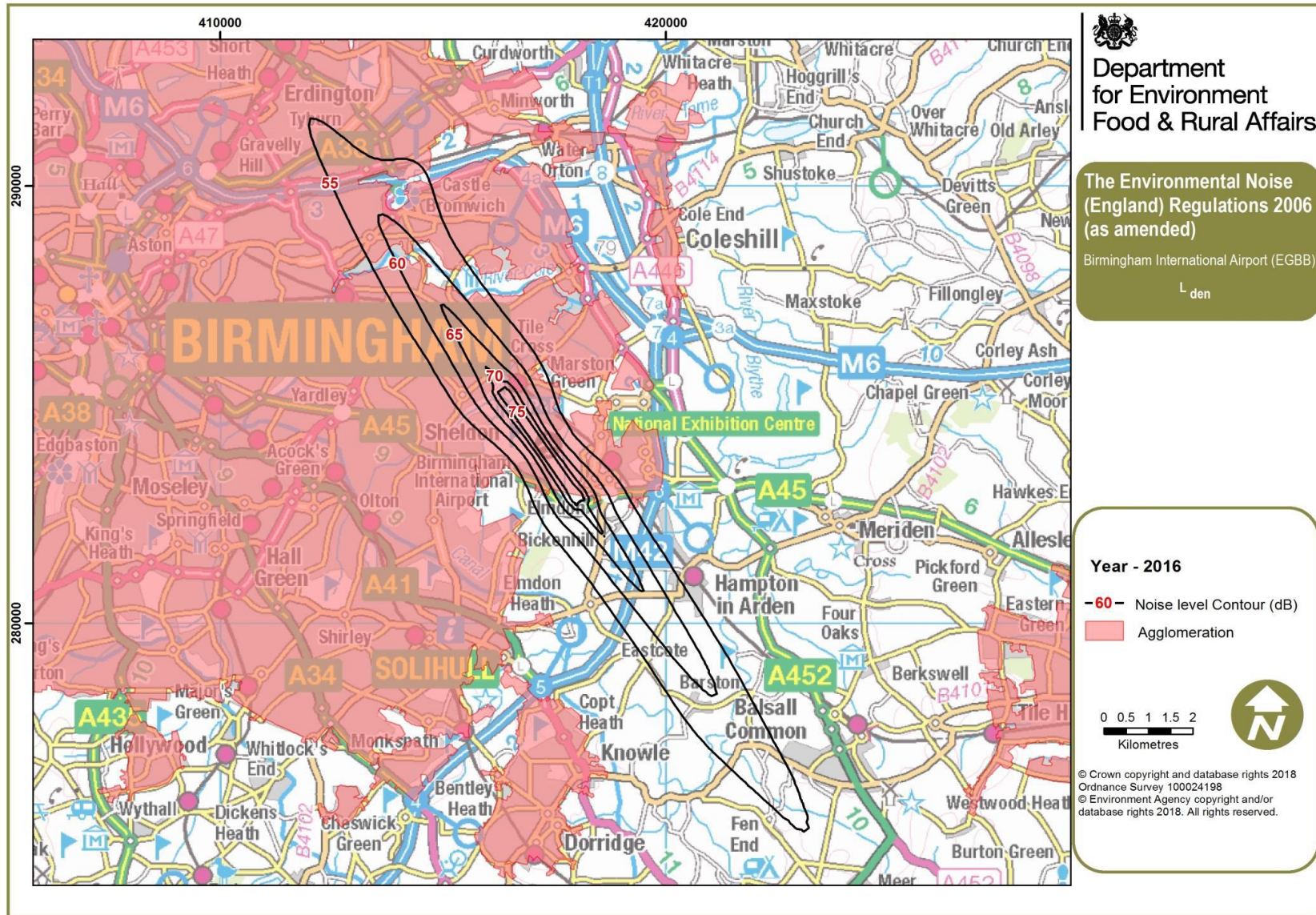
2016 Average Summer Day Contours

2016 Summer day 16hr Leq			
Noise Level (dB)	Area (km ²)	Population	Households
>54	25.6	43,000	18,300
>57	14.5	21,600	9,000
>60	7.8	8,000	3,400
>63	4.1	2,000	900
>66	2.3	100	<100
>69	1.3	0	0
>72	0.8	0	0

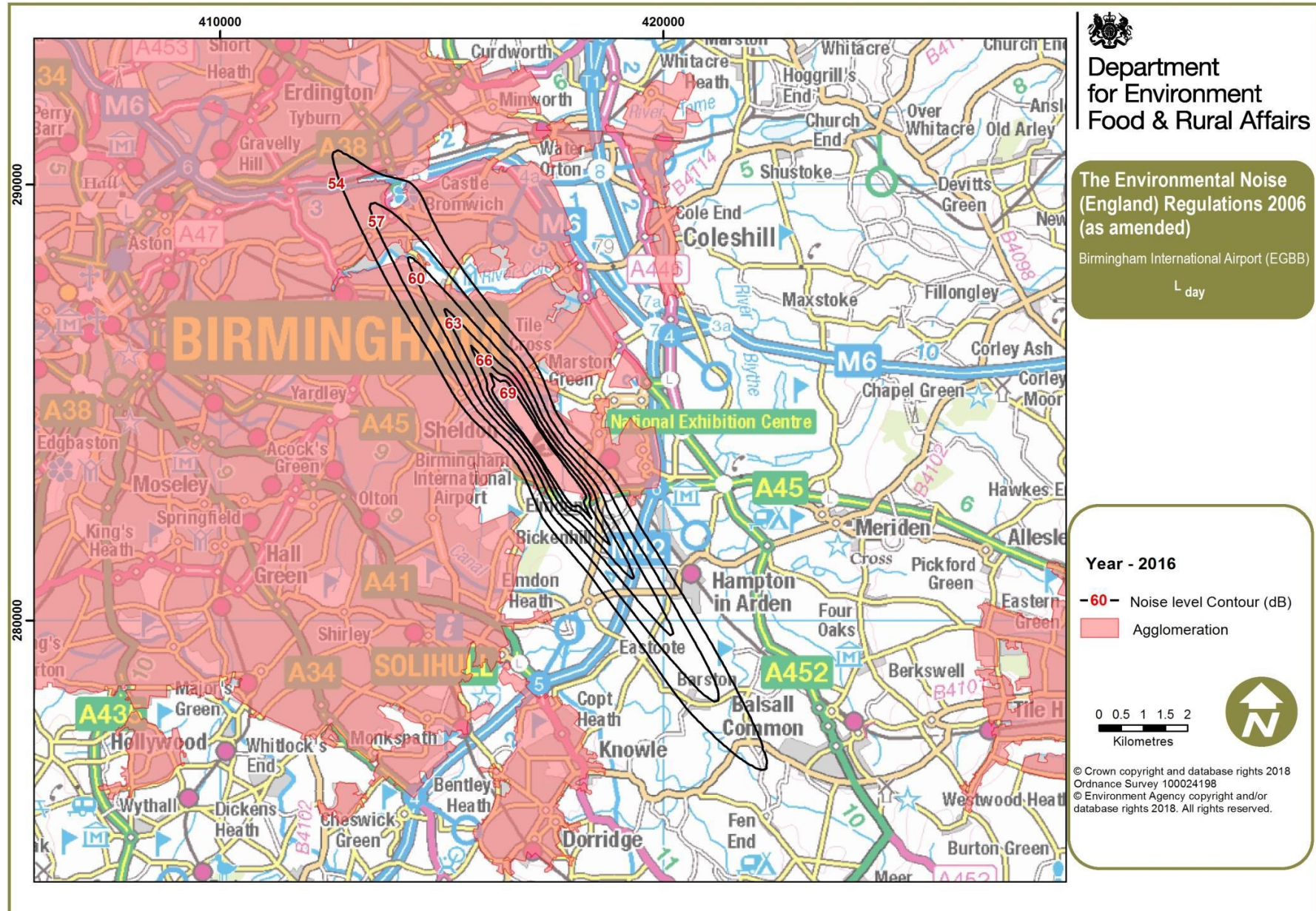
2016 Summer night 8hr Leq			
Noise Level (dB)	Area (km ²)	Population	Households
>48	31.6	54,400	22,600
>51	17.6	28,100	11,800
>54	9.4	11,200	4,800
>57	4.9	3,000	1,300
>60	2.7	200	100
>63	1.5	0	0
>66	0.9	0	0

Appendix D: Strategic Noise Maps 2016

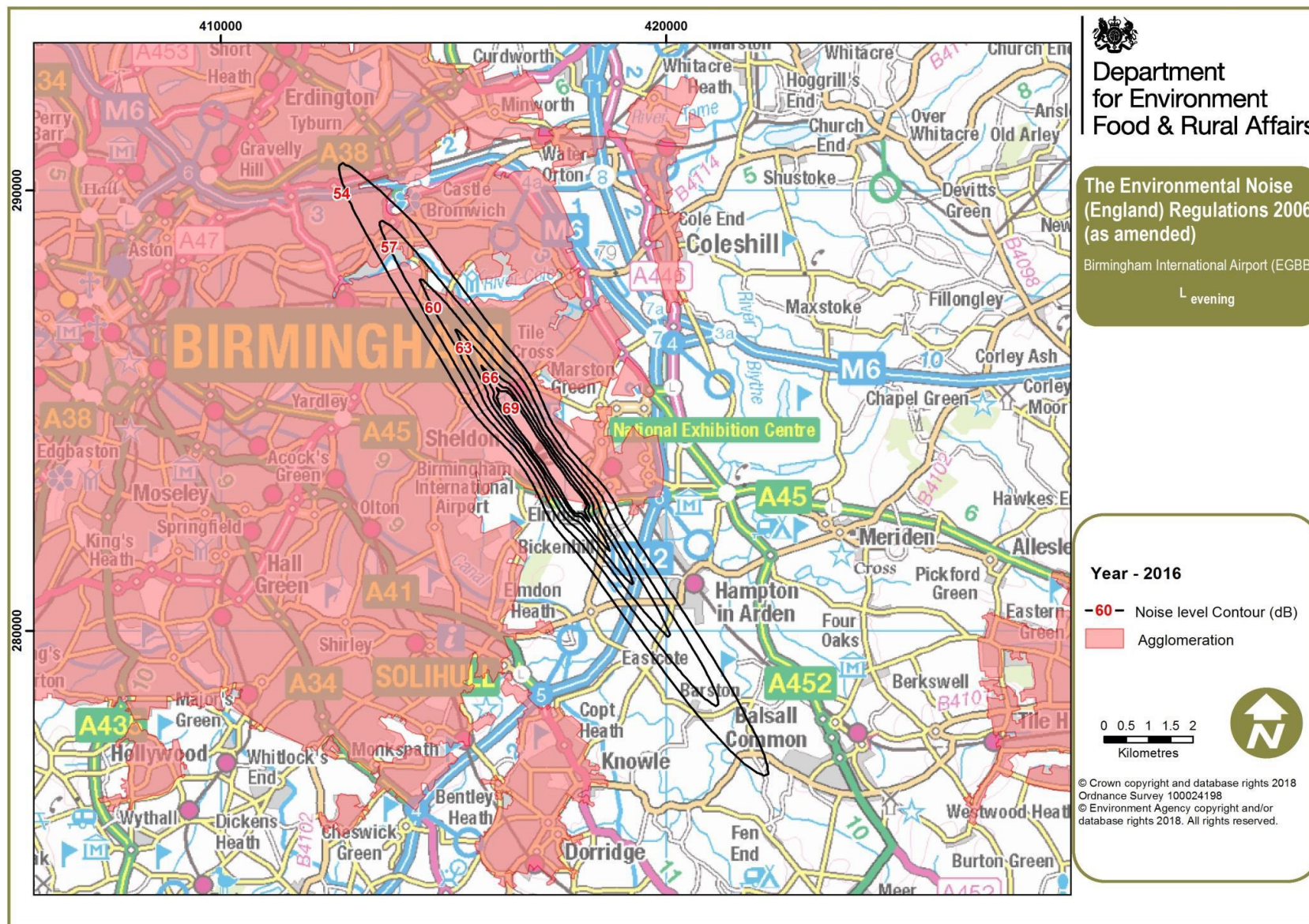
L_{den} 2016 Noise Contour Map:



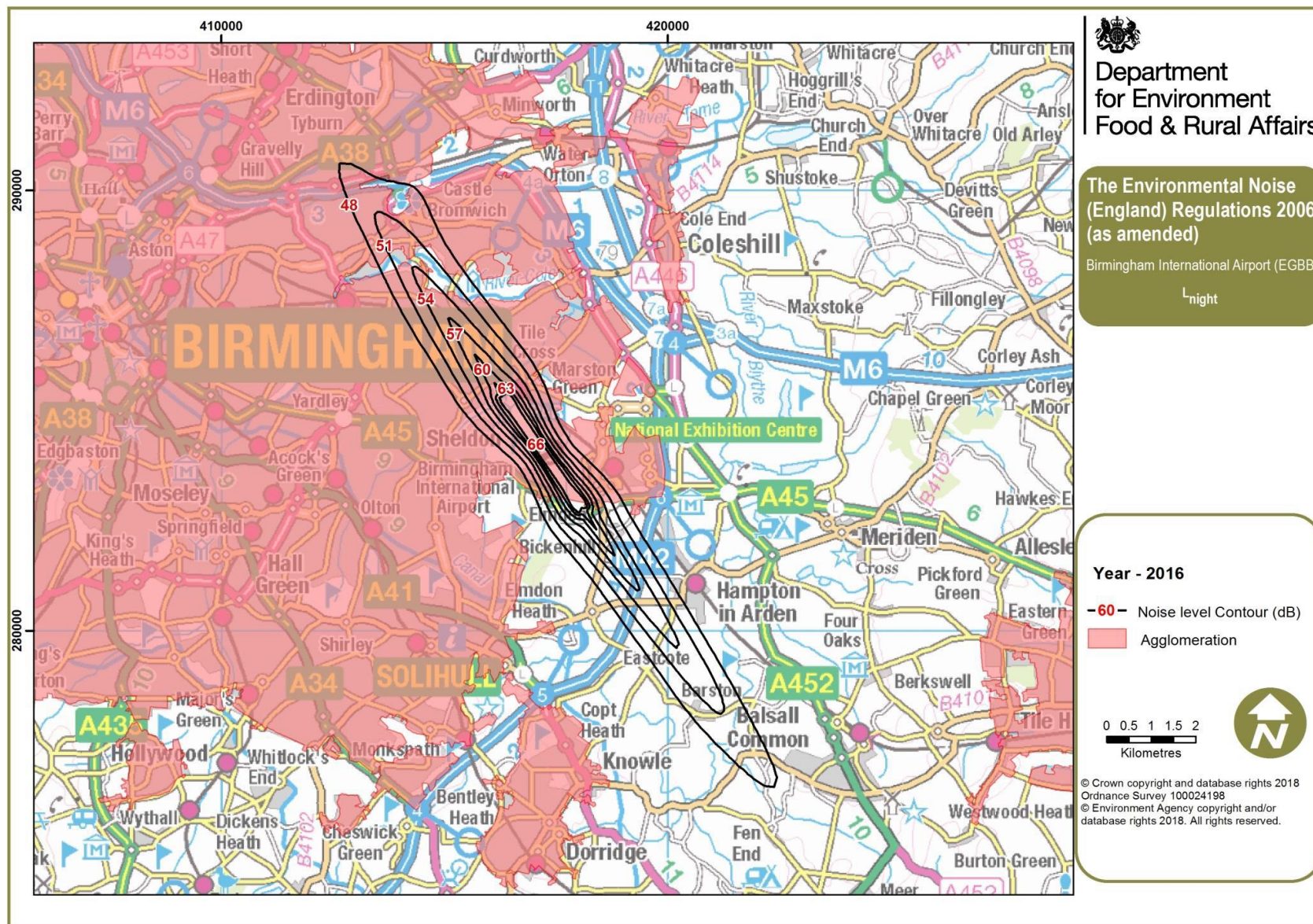
L_{day} 2016 Noise Contour Map:



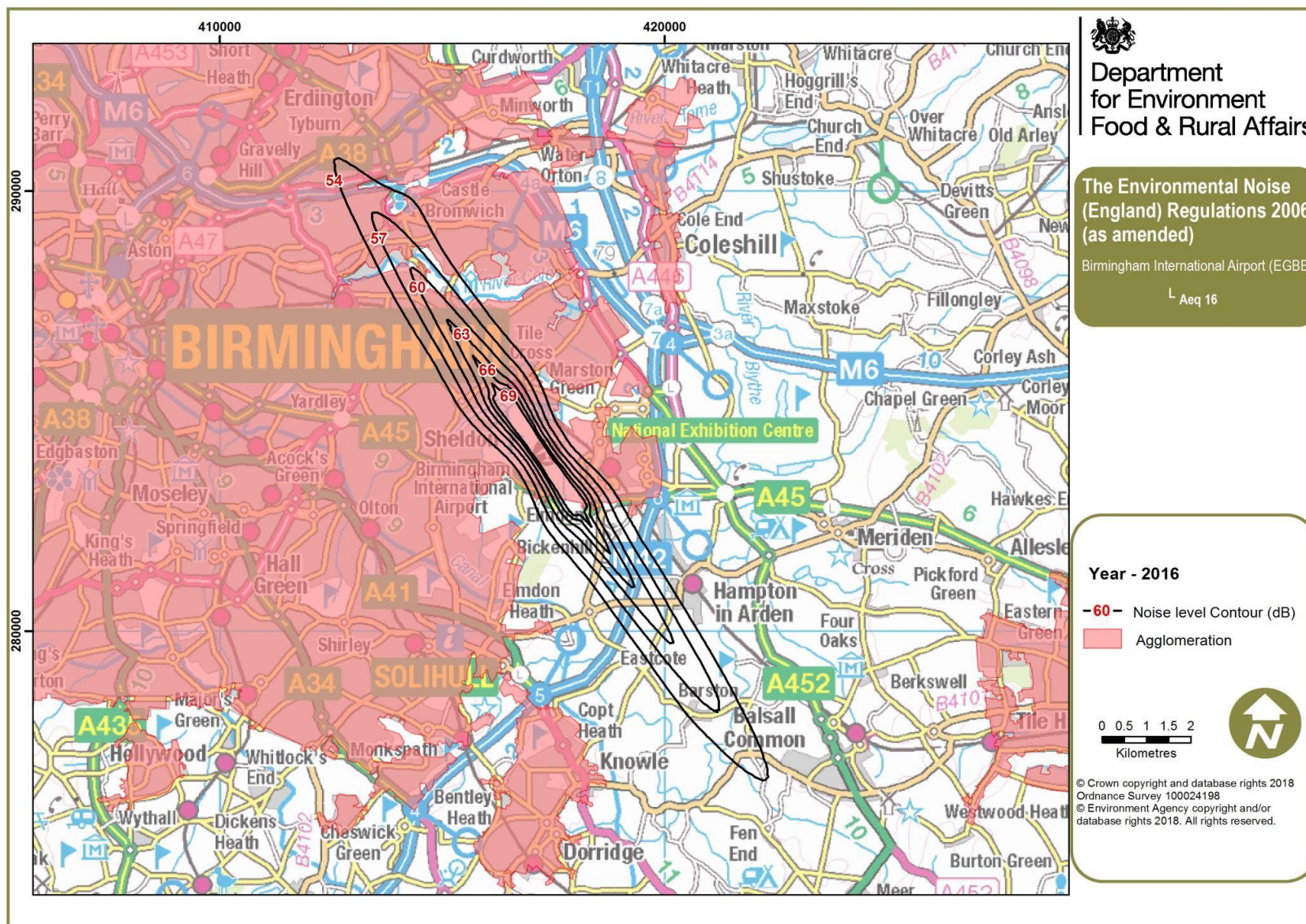
Levening 2016 Noise Contour Map:



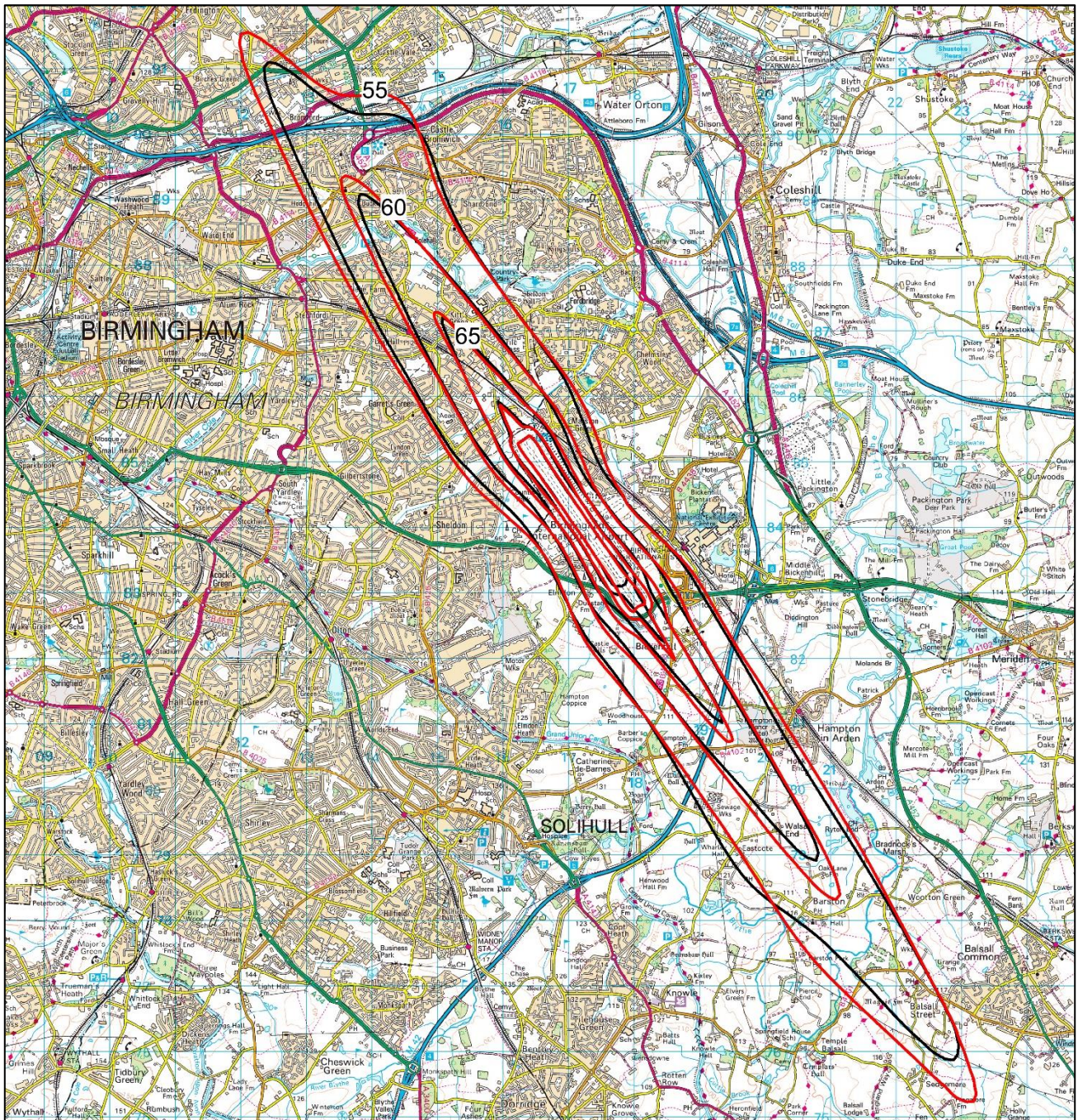
L_{night} 2016 Noise Contour Map:



L_{Aeq} 2016 Noise Contour Map:



Birmingham Airport Annual Lden Noise Contours 2016 and 2011:



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Appendix E: Financial Information

Type	Cost	Benefit
Noise & Track-keeping Equipment	We cannot disclose this cost due to Commercial Confidentiality	The Noise and Track-keeping system, ANOMS enables us to monitor the impact of aircraft operations on the local community. The system integrates radar data with noise data captured at 6 noise monitors located in the local community. ANOMS also allows us to investigate and respond to complaints about aircraft activity.
Sound Insulation Scheme (SIS)	£200,000 per annum	The SIS has a direct benefit to homes within the scheme. To date, the Airport Company has provided secondary glazing or high specification double glazing to reduce the impact of aircraft noise in over 7000 local homes (more than £12 million spent to date).
Schools Environmental Improvement Scheme	£50,000 per annum	Each year the Airport Company makes £50,000 available for the insulation of schools against aircraft noise through replacing windows and insulating sensitive areas such as IT suites and school halls.
Other Environmental Monitoring	£6000 per annum	Allows us to identify the areas most affected by aircraft noise, in line with the methods outlined in Government Policy.
Community Trust Fund	£84,000 per annum	We provide £84,000 (index linked) per annum to the Community Trust Fund (registered charity) which supports local projects in areas affected by aircraft noise.
Employee Costs	£73,000 per annum	Employees are required to assess the impact of noise, work with the local community on noise issues and implement noise management strategies. Airport employees also monitor policies and procedures that are in place to mitigate noise.
Noise Projects	£50,000 per annum	The Airport invests in Noise projects on an annual basis, including projects such as Airspace re-design and investigation into slightly steeper approaches.

Appendix F: Identification of Key Themes Arising from the Consultation

ACC Comment	BAL Comment
<p>It was raised that it would be beneficial to have further information available on the portable noise monitoring studies carried out by BAL, including a summary of the equipment used, the length of time they are situated at a particular location and how an application may be made to request one for a particular area.</p>	<p>BAL will gather information on portable noise monitoring and create a policy document for the request and deployment of the monitor. This document will be included in the November 2018 ACC for - review and comment by the committee.</p>
<p>A comparison of the 2006 noise contours against the 2016 contours was requested as Air Transport Movement numbers in 2006 were closer to the 2016 figure, than the 2011 total.</p>	<p>BAL notes that there is a similarity between the total number of ATM's recorded, with 115,547 in 2006 and 111,185 in 2016. However, 2006 was prior to the runway being extended and the consequential changes to the flight paths. Therefore, the two cannot be compared.</p>
<p>There was an enquiry as to why the contour banding differs, depending on whether the data was provided by the Civil Aviation Authority's (CAA) Environmental Research and Consultancy Department (ERCD) or was validated by the Department for Environment, Food and Rural Affairs (DEFRA).</p>	<p>BAL has investigated this. DEFRA advised that they are required to provide noise contour data in 3dB (A) increments at the request of the DfT. The UK therefore differs from the European Union in its approach to mapping END contours. The UK's approach also aligns with Planning Policy Guide (PPG) Note 24: Planning and Noise. PPG 24 has now been withdrawn, however it was in place during the first and second rounds of Noise Contour Mapping.</p>
<p>There was a feeling that the wording in BAL's night flying policy used to explain the annual movement limit was not clear, leaving it open to interpretation.</p>	<p>BAL has reviewed the wording within the plan and amended it to make it clearer.</p> <p>The wording was previously: "Annual movement limit during the Night Period is calculated at 5% of the ATMs from the last 5 years."</p> <p>The amended version now reads: "The maximum annual movement limit allowed during the Night Period is calculated at 5% of the total number of ATMs from the busiest single year within the last 5-year period."</p> <p>See section 5.2 – Night Flying Policy and Action 9, Appendix B.</p>

<p>It was asked how many new properties have been built within the noise contours between 2011 and 2016.</p>	<p>BAL has investigated this, but it has not been possible to obtain information on new developments within the noise contour areas. However, BAL is committed to providing noise contour data to local planning authorities for their consideration when approving new developments.</p>
<p>It was felt important to recognise that those outside the noise contours may still be affected by aircraft noise, and that BAL should also work with these communities on noise mitigation.</p>	<p>BAL recognises this limitation of Noise Contour Mapping and covers this point in Section 1.2.</p>
<p>BAL's commitment to review the 81dB(A) limit, made to the ACC Night Flying Policy sub-group, was not detailed in the plan.</p>	<p>BAL has added this as an action within the Plan:</p> <p>“We will investigate the feasibility of decreasing the night-time noise limit from 83dB (A) to 81dB (A)”</p> <p>See Action 23, Appendix B.</p>
<p>It was asked how many schools are eligible for the Schools Environmental Improvement Scheme (currently 1). Based on this, while the current key performance indicator (KPI) only details the number of schools insulated, it was suggested that it would be more informative to separate this into two strands: the number of schools eligible as well as the number of schools insulated.</p>	<p>BAL has changed the wording in the updated plan and now separates the KPI into two strands.</p> <p>See Action 8, Appendix B.</p>
<p>It was suggested that BAL review the Schools Environmental Improvement Scheme. This could consider the possibility of extending the contour boundary to beyond 63dB(A) or incorporating Hospitals or Hospices.</p>	<p>BAL has investigated and determined that there are currently no Hospitals/ Hospices that fall within the Schools Environmental Improvement Scheme's 63dB(A) contour boundary.</p> <p>With regard to extending the contour boundary beyond 63dB(A), BAL follows Government policy, detailed within the Aviation Policy Framework 2013, which sets expectations on airport operators to offer acoustic insulation to noise-sensitive buildings, such as schools and hospitals, exposed to levels of noise of 63 dB LAeq,16h or more. Where acoustic insulation cannot provide an appropriate or cost-effective solution, alternative mitigation measures would be offered by BAL. BAL will also continue to assess the noise impact and insulate any new schools that fall into the boundary.</p>

<p>A query was raised as to how community engagement is measured. It was recognised that minutes of any community engagement meetings could not always be shared due to commercial sensitivity, but it was suggested that a summary could be provided.</p>	<p>BAL has added this as a new action within the Plan:</p> <p>“We will keep a record of all meetings with external stakeholders on matters relating to the impact of aircraft operations on neighbouring communities.”</p> <p>See Action 37, Appendix B.</p> <p>This will be presented quarterly at ACC meetings and will form part of the Sustainability Report.</p>
<p>It was suggested that it would be useful to record the number of missed approaches to understand reasons and to identify any trends.</p>	<p>BAL has liaised with ATC regarding missed approach data and feedback. ATC record any missed approaches on a Daily log sheet as they occur. This information is then added to a spreadsheet which includes the reason and helps to identify any trends. This data is then shared with the Flight Safety Committee for discussion and is considered commercially sensitive.</p>
<p>Whilst the methodology behind the preparation of the Noise Contour maps was understood, it was felt that the "averaging" process fails to indicate the impact of traffic making the Runway 15 North Turn over the NE part of Balsall Common. It was unclear whether or not the calculated sound level takes account of the bank angle and flight profile.</p>	<p>BAL acknowledges that averaging sound over a given period it will not identify the noise generated by individual movements. However, for the mapping of the noise contours, BAL provided actual radar data which did include the climb profile and track flown by aircraft on departure from Birmingham Airport, including those using the northbound turn from runway 15.</p>
<p>Although relatively few aircraft follow this route [Northbound Turn from Runway 15], it was noted that the noise level of each aircraft is high. It was recognised there has been a protracted period of flight path development during the Airspace Change Process, but it was felt that it would be constructive if the difficulties were acknowledged in Section 4 of the NAP, and that specific measurement actions were detailed in Section 5.1.</p>	<p>This has been added under section 5.2 – see Airspace Redesign, as it is felt that this is the most appropriate section.</p>

<p>The Night Flying Policy is described in Section 5.2 of the NAP. Given that the NFP will be revised during the period of the NAP, it would be appropriate to list the ongoing action to evaluate the benefits and difficulties of reducing the night noise limit to 81 dB(A). Also, the NAP should acknowledge the community objectives of working toward a complete revision of the Quota Count system to encourage quieter operations, as well as the seeking of beneficial changes in all the other categories in the Night Flying Policy.</p>	<p>BAL has added an action within the plan relating to the commitment to investigate the feasibility of reducing the night noise limit to 81 dB(A):</p> <p>“We will investigate the feasibility of decreasing the night-time noise limit from 83dB (A) to 81 dB(A)”</p> <p>See Action 23, Appendix B.</p> <p>With regard to BALs commitment to review the Quota System the following text has been added to the Night Flying Policy table in Section 5.2:</p> <p>“BAL will consider a full review of this limit during the next NFP review in 2021”.</p>
<p>It was requested that consideration be given to the disturbance caused by low frequency rumble emanating from the start of the Take Off roll. This noise seems to propagate over a wide area and is more disturbing than indicated by the A-weighting, due to vibration and structural resonance. In the period of the NAP, it would be useful to include - at least - a programme in Section 5.1 to characterise the problem.</p>	<p>BAL has not previously received any concerns regarding this matter. It is acknowledged that LAeq contours will not include ground-borne noise and neither is it a requirement of the Noise Action Plan process. BAL therefore does not feel that it is appropriate to include this within the Plan.</p> <p>However, BAL commits to understanding this concern more fully through one to one engagement with the individual who raised it.</p>
<p>It was suggested that the new CDA action should include a reference to the current Heathrow trials and the need to amend the angle of approach from 3.0 degrees to 3.2 degrees (should the outcome of the trials be successful & CAA obtain authority from ICAO to enable this). It was suggested that a comment that this is addressed at Action 21, Appendix B would suffice.</p>	<p>BAL has added further commentary - see Section 5.2 and Action 21, Appendix B.</p> <p>“Birmingham Airport also has a new action to investigate the feasibility of a 3.2° glide slope to runway 33 (and ideally runway 15) which could potentially take aircraft closer to the height they were on approach prior to the runway extension. It should be noted that to implement slightly steeper approaches requires a policy change from the CAA, which is dependent on the outcome of a trial at Heathrow.”</p>
<p>It was suggested that Action 18 should incorporate the need (from Jan 19) to provide a detailed analysis of night time ATMs in line with the new Night Flying Policy to ensure the new total ATM limit is not breached.</p>	<p>This is specific to reporting to the ACC. As agreed at the committee’s August meeting, a new reporting template for inclusion in the sustainability report will be circulated with members of the Night Flying sub-committee. BAL doesn’t feel that this needs to be addressed within the NAP since it has already committed to it.</p>

<p>It is accepted that the Noise Contours are based on averages and theoretical calculations. It was suggested that in Appendix C it would be helpful if there were some explanation of how the chart was prepared and from what data. It was felt that the use of averages is meaningless and ‘sanitizes’ the issues. For example, by using averages, it appears that no one is impacted at over 63 dB at night or 69 dB in the day. It was also suggested that it would be beneficial if maximum noise levels were also recorded because local populations are only interested in noise damaging to health, acknowledged as circa 70 dB(A). It was felt that there are many occasions when this happens but the impression from the noise contours is that this does not happen.</p>	<p>The production of noise contours and the averaging of sound within them is covered in Section 2. BAL does not feel that additional reference to this would further understanding.</p> <p>BAL is not aware of any policy in which noise levels greater than 70 dB(A) from individual aircraft operations are referred to as being detrimental to health.</p> <p>BAL is committed to reviewing the health impacts of aviation through the Airport Health Forum.</p>
<p>It was noted that the use of Leq numbers as the contour lines appear to suggest that the noise levels are manageable (and within the levels not detrimental to health). It was suggested that all of the benchmarks being used should be consistent and that if the Leq and dBA comparatives are to have any real meaning, then this variation should be explained.</p>	<p>BAL acknowledges that Lmax (dB(A)) and LAeq values do not directly correlate, however LAeq forms an important part of noise modelling and is therefore included in the plan.</p>
<p>It was observed that although reference is made to the possibility of reviewing the current 90dB(A) daytime noise level, no timescale is mentioned. It was suggested that with Appendix A item 6 stating that <i>“on average 99.94% of aircraft have been less than 87dB(A) at our noise monitors”</i>, it would not seem unreasonable that a reduction to 85dB(A) would present a realistic target for immediate inclusion in this plan.</p>	<p>Action 20, Appendix B states that the commitment to investigate the feasibility of decreasing the daytime noise limit from 90 dB(A) will be carried out by the end of 2019 – see ‘timescale’ column.</p> <p>BAL is unable to prejudge what would be an appropriate limit until full investigative works have been carried out.</p>

<p>It was felt that in light of recent/current activities relating to Airspace Change and based on previous performance, that it would be appropriate to make provision in the report to increase the current target of 97% compliance to 99%, this level having previously been achieved in 2013 according to statistics.</p> <p>It was observed that during discussions at ACC the figure of 100% consistency was quoted as being achievable after the introduction of RNAV procedures was complete and that it does not therefore seem unreasonable that at this point the target should be increased from 97% to at least 99%. It was argued that not only would this be a meaningful target but an appropriate measure for future activities and that if 100% were achieved and maintained, then at the next review its importance as a statistic may be negated. It was also suggested that this could instigate a review of the size of NPR corridors as part of the next Noise Action Plan review.</p>	<p>BAL is unable to commit to reviewing the track-keeping target whilst the current conventional procedures are in operation for departures from runway 33 and whilst the existing Northbound Turn remains in use for departures from runway 15.</p> <p>This is due to the way in which aircraft interpret these procedures and neither the Airport nor the Airlines can make any further improvements to aircraft track-keeping on these procedures.</p> <p>BAL has submitted new procedures for aircraft departing from runway 33 and for aircraft departing runway 15 using the northbound turn to the CAA.</p> <p>These new procedures should improve track-keeping performance and, subject to their approval an implementation, BAL commits to reviewing the track-keeping target and has amended action 14 to incorporate the below:</p> <p>“subject to the approval and implementation of new departure procedures from runway 33 and new northbound turn from runway 15, BAL commits to reviewing the track-keeping target 12 months after their implementation.”</p>
<p>It was noted that the plan acknowledges an increase in affected population whilst pointing out that the introduction of newer, more modern planes is reducing the noise impact of individual movements. It was felt that there is a lack of easily comparable precise data, whether through diagram or text, concerning the number of people affected by noise since, for example, 2000. As this figure is increasing, historical comparative data was felt to be very relevant. It was suggested that the graph shown in section 2.3 is imprecise and that tabulated figures would be more appropriate. It was noted that some data is provided in Appendix C but that the table provides no age- comparable data.</p>	<p>A table has been added beneath the graph in section 2.3.</p>

<p>It was argued that the suggested improvements of increasing the glide angle and the assessment of Noise Abatement Departure Procedures were first suggested over two years ago and that any change is likely to be at least two or three years away. It was questioned why there could not be a considerable speeding up of this process.</p>	<p>BAL is committed to delivering on all actions as soon as is practicable. With specific reference to the NADP trial, this has now taken place and BAL will present its findings in November 2018. With regard to increasing the angle of the glideslope, BAL is unable to further progress this action without a regulatory change from the CAA.</p> <p>See section 5.2 and Action 21, Appendix B.</p> <p>“Birmingham Airport also have a new action to investigate the feasibility of a 3.2° glide slope to runway 33 (and ideally runway 15) which could potentially take aircraft on approach closer to the height they were prior to the runway extension. It should be noted that to implement slightly steeper approaches requires a policy change from the CAA, which is dependent on the outcome of a trial at Heathrow.”</p>
<p>It was noted that there is no mention of the detrimental impact of the ‘politically expedient’ decision to introduce Option 6, It was suggested that if the comment in the Executive Summary (final paragraph Page 3) to reduce the number of people affected by aircraft noise is to mean anything, then a review of this decision should be included as a specific action. It was also noted that the Post Implementation Review of this decision and its impact has still not been received or commented on in any way in the Draft Report, despite being over twelve months overdue.</p>	<p>The Noise Action Plan does not relate specifically to any airspace changes or decisions relating to them. This was dealt with under a separate process, which at the time was CAP 725. It is therefore not appropriate to reference this in the Plan.</p>
<p>It was noted that there is reference to Balsall Common and Balsall Street East and argued that Balsall Common is quite a way from aircraft landing on Runway 15 while Balsall Street East is only on the periphery (and outside the Noise Contours included later in the NAP. While it was accepted that there is some noise impact in these areas, it was argued that this it is nowhere near the impact on Barston and Eastcote Lane, and that these areas have been ignored for political expediency. It was suggested that the Noise Contours demonstrate the lack of a noise impact assessment when the Option 6 decision was taken and that this is a further reason for the inclusion of an Option 6 Reconsideration within the Noise Action Plan.</p>	<p>BAL acknowledges that the introduction of a 3.2-degree approach may provide a benefit to a number of communities located both to the north and south of the airfield. The specific reference to Balsall Common and Balsall Street East has therefore been removed and the text has been amended as follows – see section 5.2.</p> <p>“Birmingham Airport also have a new action to investigate the feasibility of a 3.2° glide slope to runway 33 (and ideally runway 15) which could potentially take aircraft on approach closer to the height they were prior to the runway extension. It should be noted that to implement slightly steeper approaches requires a policy change from the CAA, which is dependent on the outcome of a trial at Heathrow.”</p>

<p>It was suggested that the Year 2022 Average Summer Day 16-Hour Leq Forecast Contours-Scenario 2, include runway extension and Option 6, as presumably do many of the Noise Maps included in Appendix D. It was suggested that if Option 6 is taken into consideration then there should be some reflection, within the noise contours, of the 20 degree turn after 2.2 nautical miles (near Walsal End).</p>	<p>Forecast noise contours (including 2022) do not form part of the Noise Action Plan process and nor are they included in this plan. BAL is therefore unsure of the relevance of this comment or how it is applicable to this plan.</p>
<p>It was suggested that the Quota Count regime is currently based on the position that was in place in 1998 when noisy aircraft such as BAC 1-11's were operating at Birmingham and that there should be a requirement to review this with the next NFP review (due 2021). It was argued that over the last few years the original ceiling has never been in any danger of being breached and many ACC members believe this should be reduced before 2021</p>	<p>A commitment to review the Annual Quota Count limit at the next Night Flying Review in 2021 has been added to the table on page 21.</p>
<p>With reference to noise violations, it was argued that the timescale should refer to the ongoing NADP process with the option to reduce the level currently proposed (in line with the 2018 NFP review) should the statistics and the preferred NADP enable this. It was suggested that this could be covered by an additional comment at Action 22.</p>	<p>Action 23, Appendix B has been added and updated as follows:</p> <p>We will investigate the feasibility of decreasing the night-time noise limit from 83dB (A) to 81dB (A).</p>
<p>It was suggested that the timescale for investigating the feasibility of reducing the 90dB(A) level was unrealistic, as evidence from noise monitors indicates over 99% of movements are below 87dB(A).</p>	<p>In order to make any changes to the noise violation levels, a full and comprehensive investigation and analysis exercise must take place. This is a resource intensive task and owing to ongoing projects, including the commitment to investigate to further reduce the night noise level and a study in to NADP, this is the earliest that this can be actioned.</p>
<p>It was noted that there is no mention of previous/current airline fining levels for non-compliance. It was felt that this data should be transparent and designed to encourage the use of quieter aircraft. It was also argued that there should be a trend for increasing levels of fines for each new plan review.</p>	<p>The number of aircraft fined for the duration of the existing plan can be found in appendix A, action 12.</p> <p>The noise violation level for night time operations is based on a runway charge. This charge is reviewed and increased annually.</p>

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