

**ANNUAL REPORT OF THE SECTION 106 PLANNING AGREEMENT
BETWEEN BIRMINGHAM AIRPORT LIMITED AND
SOLIHULL METROPOLITAN BOROUGH COUNCIL**

This report has been written to give an update of the operations at Birmingham Airport Limited (BAL) in relation to the Section 106 Planning Agreement between Solihull Metropolitan Borough Council (SMBC) and the Airport Company, Birmingham Airport Limited (BAL).

The noise and track keeping system (ANOMS) used at BAL provides the latest technology for tracking aircraft and monitoring noise levels. A remote terminal has been installed for the use of the Airport Monitoring Officer based at Solihull Metropolitan Borough Council.

This report will also give an update on airport developments that have taken place at the Airport during 2018.

On-going monitoring has shown that the Airport Company continues to comply with its obligations in the Agreement.

Compiled by Beverley Hill, Solihull Metropolitan Borough Council

ACKNOWLEDGEMENTS

I would like to acknowledge the assistance provided by members of staff at BAL in compiling this report

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Glossary of Terms

Numbers in square brackets [] refer to references at the back of the report

Airport Company – Birmingham Airport Limited (BAL), operators of the aerodrome licence and legally bound by the Section 106 Agreement

ADM- Airport Duty Manager

AMO- Airport Monitoring Officer

airside - area of airport accessible only after proceeding through security checks, customs and passport control

annual limit - the yearly total of **ATMs** allowed during the night time period (2330 to 0600) (**exempt movements** are excluded)

ANOMS (Airport Noise & Operations Monitoring System) - aircraft noise and tracking monitoring system used by **Birmingham Airport**

apron - areas of airfield used for operations and for the temporary holding of stationary aircraft

ATF (Airport Transport Forum) - BAL led forum to aid the development of a sustainable transport strategy. Set up in accordance with the DEFRA white paper "Developing an integrated transport policy" [1]

ATM (Air Transport Movement) - a landing or take-off of an aircraft engaged in the transport of passengers, cargo or mail on commercial terms

AUN (Automatic Urban Network) - government approved air quality monitoring sites which form part of the National Air Quality Monitoring Network. Specific pollutants are monitored and the results are available on the government's web site [2]

ASAS-*Airport Surface Access Strategy*

AQMS-Air Quality Monitoring Station

BCC - Birmingham City Council

BAATL-Birmingham Airport Air Traffic Limited

BAL - Birmingham Airport Limited

BASAG-Birmingham Airport Surface Access Group

CAA- Civil Aviation Authority

CDA - Continuous Descent Approach

CSR- Corporate Social Responsibility

dB (decibel) - measure of sound that uses a logarithmic scale from 0 (threshold of hearing) to 140 (threshold of pain)

dB(A) (A-weighted decibel) - refinement of the decibel rating that matches more closely the way the human ear responds to different noise levels

DEFRA - Department for Environment and Rural Affairs

DfT - Department for Transport

EA - Environment Agency

EPAQS - Expert Panel on Air Quality Standards which reports to *Defra* and advises on health based targets for air pollutants

EPNdB (Effective Perceived Noise Decibel) - Allows not only for human sensitivity to different sound frequencies, but also takes account of the “perceived noisiness” of whistles, whines, etc. and the duration of a complete aircraft flyover.

exempt movements - *ATMs* may be exempt from night flying restrictions due to the following circumstances:

- aircraft diversions that have been brought about by changes in weather conditions at the original destination airport or an in-flight emergency
- aircraft on medical evacuation or mercy flights where there is danger to life or health, human or animal
- any take-off or landing in an emergency consistent with preventing danger to life or health
- delays to aircraft resulting from widespread and prolonged disruption to air traffic
- delays to aircraft that are likely to lead to serious congestion at the Airport or suffering to passengers or animals

FEGP-Fixed Electrical Ground Power

full aircraft engine ground running - engine running on the ground at 80 - 100% of engine power.

HS2 *High Speed Rail*

IATA - International Air Transport Association

LA_{eq} - measure which averages out noise levels that fluctuate over a given time period, it is the average sound intensity expressed in **decibels**

LAeq(16 hour) - average sound intensity over a specified time period, e.g. daytime

landside -area of airport accessible to all visitors i.e. accessible before proceeding through security checks, customs and passport control

modal share -proportion of journeys to the airport by a particular type of transport (car, bus, train etc.) and by category of user (passenger, employee etc.)

morning shoulder period - 0600 to 0700 hours (0600 - 0800 on Sundays)

Multi-modal interchange - purpose-built area designed to allow easy exchange for passengers between different modes of transport e.g. bus, train, car

NADP Noise abatement departure procedure

NATS- National Air Traffic Services

NAQS (National Air Quality Strategy) - Government initiative aimed at controlling air pollution.

NEC - National Exhibition Centre, Birmingham

night period - for the purposes of the night flying policy, 2330 to 0600

NFP-Night Flying Policy

NMT -noise monitoring terminal. BAL has 7 fixed NMTs located in the local community and on the airfield.

noise contour - line on map connecting points where the same level of noise would be expected. The 2002 63dBA_{eq} contour has been used to decide which properties are eligible for inclusion in the Sound Insulation Scheme.

NPR (Noise Preferential Route) - NPRs cover the first 3000 or 4000 feet altitude of the ***Standard Instrument Departure (SID)*** routes (note: this applies only to Departing flights)

NSSCN- North Solihull Strategic Cycle Network

passenger transport modal share - the proportion of journeys to the Airport by public transport (bus, coach, rail)

quota - the yearly limit on the total of ***quota counts*** for all ***ATMs*** at the Airport in the ***night period***

quota count - the amount of the **quota** assigned to one take-off or landing by an aircraft, as detailed in the noise classification for that aircraft type (see table 8)

RNAV- a satellite based navigation system

SAG- Birmingham Airport Surface Access Group

S106 - A legally enforceable contract between SMBC and BAL [4]. The term Section 106 refers to a section of the Town and Country Planning Act 1990 [5]

SID (Standard Instrument Departure) - standard instructions that aircraft pilots are required to observe on take-off over a particular en-route navigational beacon, produced by the CAA and published in UK AIP

SIS – Sound Insulation Scheme

SMBC - Solihull Metropolitan Borough Council

SSSI - Site of Special Scientific Interest

start of roll - position of an aircraft just before its take-off run begins

TfWM- Transport for West Midlands

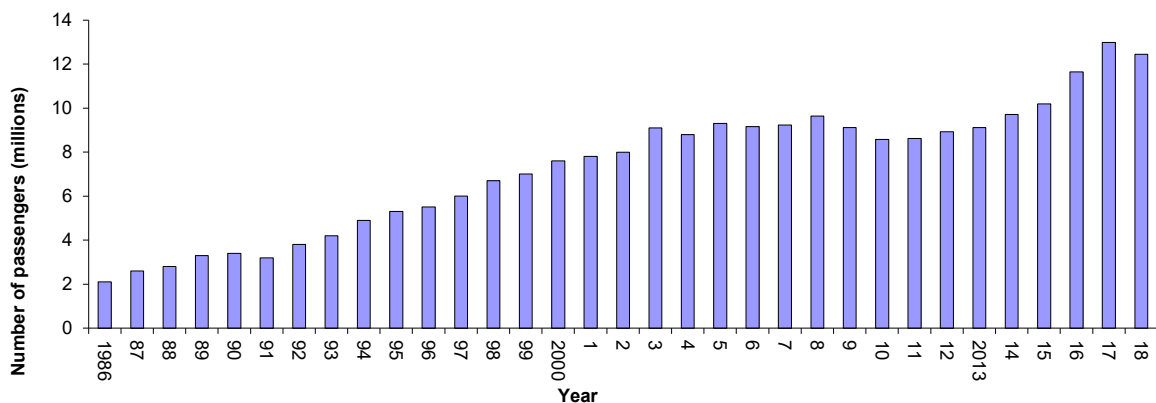
INTRODUCTION

This document is laid out under the schedule headings as found in the Section 106 Agreement.

As far as practicable, the reporting period for this document has been aligned to the calendar year, with the report covering data for 2018. This enables comparison of environmental performance year on year. Figure 1 shows the growth in passenger numbers at the airport since 1986.

In 2018 Birmingham Airport had over 12,443,143 passengers. There were some very busy record breaking months with August and October being exceptionally busy but overall the figures were slightly lower than 2017.

Figure 1. Passenger numbers at Birmingham Airport 1986-2018



AIRPORT MONITORING

All aspects of the Section 106 Agreement are audited by SMBC .There is a dedicated terminal running ANOMS at Solihull MBC which is supplied by Birmingham Airport . SMBC staff attend consultation meetings and liaises with Birmingham Airport regarding the Community Trust Fund and carries out other work as and when required.

SMBC acts as a point of contact for airport complaints, which are investigated in the context of the Section 106 Agreement. If the subject of the complaint is found to be within the restrictions applied to airport operations by the S106 Agreement, no further action is taken and the complainant is informed of the situation. However if the subject of the complaint is found to breach any of the Section 106 Agreement Schedules, the matter is taken up with the Airport Company.

In the first instance any environmental complaint relating to the Airport Company should be directed to the Sustainability Team at the Airport who can be contacted in the following ways:

- By calling the Environmental Helpline on 0121 767 7433.
- By visiting the noise section of Birmingham Airport website www.birminghamairport.co.uk or by using this direct link, www.birminghamairport.co.uk/community-complaint
- By writing to Sustainability Team, Diamond House, Birmingham Airport, B26 3QJ

In the event of continued dissatisfaction, then SMBC should be contacted. For more information about the Section 106 Planning Agreement, general enquiries, or further help regarding a complaint, please contact SMBC on 0121 704 8000 or email: planning@solihull.gov.uk

1. DECISION NOTICE

Schedule one of the Section 106 Agreement details the airport development and the conditions attached to the permission when it was granted by Solihull MBC.

The decision notice sets out the proposal for the runway extension and associated infrastructure and gives the conditions relating to the granting of the decision.

It is divided into 16 Schedules which set out the Obligations agreed between Solihull MBC and Birmingham Airport and which this report is based on.

2. LAND USE AND PLANNING

Draft Master Plan

Birmingham Airport has published its new draft Master Plan entitled 'Midlands Gateway to the World' which covers the next fifteen years to 2033 and has been open for public consultation.

The masterplan has been prepared according to the Department for Transport guidelines and part of this is a requirement to engage with local communities and stakeholders to seek their views prior to its final publication. A series of public events took place at communities most affected by Airport operations between 12th November 2018 and 22nd January 2019. The consultation is now closed and the Masterplan will be published in May 2019

Birmingham Airport has a significant effect on the local economy and as part of the draft Master Plan a study was undertaken to determine the economic impact the Airport has across the West Midlands region. Details of the Airport economic impact can be found within chapter 6 of the Master Plan.

The environmental impact of the Airport and its operations also forms part of the draft Master Plan. Some of the topics highlighted are included in this document as separate chapters such as noise issues, air quality, health and communities.

The draft Master Plan shows that passenger numbers for 2033 are forecast to be around 18 million passengers with a total capacity of 30 million which can be accommodated on the existing single runway. The document covers the impact this increase will have on the Airport site and surrounding infrastructure and communities and the wider region.

The Airport Company is to invest £500 million to improve, modernise and extend facilities to meet the increasing demand, to enhance passengers experience and to improve efficiency for all airport business partners which in turn will create jobs in the region and boost the local economy.

In order to meet its customer needs the departures lounges will need to be extended along with expansion to the existing security and bag drop areas to enable it to process the extra capacity.

Ultimately there will be a need for more aircraft stands to make better use of the runway and extra stands will be required to deal with more wide bodied aircraft.

Full details of the draft master plan can be found at www.bhxmasterplan.co.uk

Other works

The new security entrance area is up and running along with new boarding gates and dedicated channels for passengers with reduced mobility. New express lanes provide a more efficient service and enable Border Force agency to process non EU passengers more efficiently

The covered walkway which connects the free passenger drop off service to the main terminal is completed and in well used. The 30 minute free parking by the walkway has helped reduce traffic pressure to the front of the main terminal building.

Construction of the Hilton Garden Hotel was completed and opened for business in October 2018.

Planning consent has been granted for a terminal infill application between the existing short pier and the main terminal. This is to be used for retail, food and drink, toilets, seating, baggage and other ancillary use and the development would be over 3 levels.

The Elmdon Building on the Coventry Road which was opened in 1939 has now been Grade 2 listed by Historic England which states that 'it is an example of the early development of the aviation industry' and 'a statement piece of 1930's architecture'. The Airport Company is currently carrying out internal work to remediate flood damage from last year and a structural survey will also be undertaken. The Airport are currently investigating alternative commercial opportunities to reuse the building and are working closely with SMBC's conservation officers to ensure that the heritage asset is protected

A new access road will be required for a car rental company at the Airport as the current site it occupies will form a compound for HS2 construction work.

3. SURFACE TRANSPORT

Airport Surface Access Strategy (ASAS)

A draft Airport Surface Access Strategy has been produced after consultation with relevant stakeholders and covers the period 2018-2023.

The draft document takes into account the longer term spatial strategies in the region and includes the following :

The West Midlands Combined Authority (WMCA) 'Strategic Economic Plan(2016);

The West Midlands Mayor's 'Renewal Plan for the West Midlands' (2017) ;

The West Midlands Strategic Transport Plan 'Movement for Growth';

The Solihull Urban Growth Company's (UGC) Hub Growth and Infrastructure Plan (HGIP, 2017) ;

The Midlands Connect Strategy 'Powering the Midlands Engine' (2017);

Existing and future rail franchises in the region;

Network Rail's 'West Midlands and Chilterns Route Study' (2017);

West Midlands Rail Investment Strategy (2018).

The strategy, together with the new Draft Master Plan and the new Staff Travel Plan sets out a framework for the development of the surface access for the Airport and looks at all forms of transport used by both visitors to Birmingham Airport and staff with an emphasis on sustainable transport.

Birmingham Airport aims to be the most accessible airport in the UK by providing multi modal transport options. It sits in the centre of the UK's road and rail network and the Airport works with key stakeholders for improvements to be made to public transport links and road connectivity. These stakeholders include passengers, local businesses, infrastructure providers and Highways England.

Full details of the ASAS can be found at www.bhxmasterplan.co.uk/surface-access-strategy

Works to M42

A development consent order has been received by the Planning Inspectorate with regards to re-designing Junction 6 on the M42 . The proposals have been developed by Highways England to allow better movement of traffic around the A45 to ease congestion around the current motorway junction and better access to Birmingham. The airport is part of a M42 Junction 6 'Improving Operations' group chaired by Highways England and attended by local stakeholders. The group meet quarterly and hold monthly calls to discuss the performance of the junction and to discuss improvement mitigations. A consultation will take place in 2019 and a decision will be made by the Secretary of State

Full details of the proposal can be found at the following address

<https://infrastructure.planninginspectorate.gov.uk/projects/west-midlands/m42-junction-6-improvement/>

Other highway work

There is ongoing proposed work being carried out to review the feasibility of improvement works at the junction of Damson Parkway and Coventry Road which provides the current access to the Elmdon Site.

Surface Access Group

Schedule 3 conditions of the Section 106 require an Employers Transport Forum and a Staff Travel Plan Monitoring Group to be set up and to this end a group was formed- the Birmingham Airport Surface Access Group(SAG).

Activities of the group are reported to the Airport Consultative Committee in addition to Solihull MBC.

The main objectives of the group are as follows:

- To implement the Airport's Surface Access Strategy and Staff Travel Plan ;

- To propose and evaluate initiatives to ensure that passengers, visitors and staff can gain access to the Airport site safely, efficiently and sustainably ;
- To improve and encourage increased use of sustainable travel options thereby reducing dependence on private vehicles, especially single occupancy journeys ;
- To encourage on-site staff safely within their own organisations to use sustainable modes of transport and to evaluate and quantify their results ;
- Help achieve compliance with Section 106 requirements, including modal split targets and
- Propose projects requiring funding from car park levy (This is detailed below).

Rail and Bus travel

The West Midlands Rail Executive (WMRE) has recently published its plans for 2018 -2047 and sets out the regions short, medium and long term plans to improve rail travel across the region. It is comprised of 16 Local Authorities and one of the aims is to get higher frequency trains on local and regional routes.

The plan recognises the importance of Birmingham Airport to the area and also that there should be more services to provide a 24 hour access to Birmingham Airport. The full document can be viewed at

<http://wmre.org.uk/strategy/wmris>

The Air-Rail link continues to provide direct connection between Birmingham International Station and the terminal building.

HS2

Main construction work, such as the creation of new bridges, viaducts and tunnels will start in 2018/19 .

An HS2 interchange station will be created linking HS2 and the Airport and significantly improve surface access to the Airport.

When HS2 is up and running capacity on the west Coast Mainline will be freed to allow for more regional services . Passengers will connect to the Airport using a rapid transfer people mover although exact details of this are to be decided.

The West Coast Main line serves Birmingham, London Euston, West Midlands, North Wales, Manchester, Liverpool , Edinburgh and Glasgow with other main destinations between these. The new West Coast Partnership rail franchise will combine the existing InterCity West Coast services with the development and introduction of services on the new high speed network, (HS2) as soon as it is up and running.

Further information on HS2 is available at

<https://www.gov.uk/government/organisations/high-speed-two-limited>.

Bus/Coach Travel

Birmingham Airport continues to work closely with Transport for West Midlands (TfWM) and to help improve the routes and times of local buses to the Airport.

Transport for West Midlands are proposing to implement a new Sprint rapid transport service which will provide connectivity between Birmingham centre and the Airport . One route will serve Birmingham International train station and Solihull centre. The Sprint service is hoped to be running before the Commonwealth Games in Birmingham in 2022.

A new interactive digital travel information point in the terminal has been introduced to give up to date information to customers and these will also be installed airside and next to the Air Rail link. The Airport Company will be reviewing the signs and way marking posts both inside and outside the terminal to inform and direct passengers and visitors

National Express coaches also serve the Airport and stop outside the terminal building to enable potential customers not from the immediate vicinity a seamless route to the Airport.

UK Central Hub

Solihull MBC has set up an Urban Growth Company (UGC) which is mainly funded from the West Midlands Combined Authority (WMCA). The UGC aims to oversee investment into the UK Central Hub to help realise the economic

impact of the HS2 interchange site. Its role is to promote and develop major infrastructure in the designated area.

A plan has been published, UK Central Hub Growth and Infrastructure Plan, which covers the period 2018-2033. It identifies key benefits across the UK Central Hub. This is made up of 5 major sites- Birmingham Airport, NEC, Jaguar Land Rover, Birmingham Business Park, and the site surrounding the planned HS2 interchange stations.

The plan sets out the UGC vision, how it can be achieved and how this impacts on growth opportunities. Further details on the UGC can be found on its website <https://www.ugcsolihull.uk>

Staff Travel Plan

The Airport Staff Travel Plan aims to reduce the volume of car traffic generated by the Airport and meet the targets set out in the Airport Surface Access Strategy. The plan also aims to further promote the use of public transport and sustainable transport by those who work at the Airport.

There are over 140 organisations operating on site and work is on-going to engage with these companies to develop their own travel plans.

The lift share scheme set up in conjunction with NEC, Resorts World and Birmingham Business Park will continue to be promoted to encourage more staff to use sustainable travel options and to reduce the number of single occupancy journeys. Discounted public transport tickets are also offered to staff working at Birmingham Airport Ltd.

Condition 1 of Schedule 3 states:

*“The Airport Company shall use **all reasonable endeavours** to achieve a Public Transport Modal Share for passengers and employees respectively of 25% by 31st December 2012, of 31% by 31st December 2022 or 20.9 million passengers per annum whichever event occurs later and of 37% by 31st December 2030 or 27.2 million passengers per annum whichever event occurs later”* This remains unchanged from the previous Section 106 Agreement and these figures are reported to Solihull MBC.

Modal Share

Condition 2 states that the Airport Company shall continue to monitor the number of trips for passengers and employees and the number of vehicle trips per passenger and supply details to Solihull MBC.

All passenger modal share figures are taken from the Civil Aviation Authority survey which covers a period of 12 months

The Section 106 sets separate Public Transport Modal Share targets for passengers and employees. The Public Transport Mode Share now includes all modes other than private car and taxi.

The Public Transport Mode Share for passengers now includes those people arriving at the Airport on buses from off-site car parks and those passengers arriving on courtesy buses from hotels. Birmingham Airport has the highest public transport share of all regional airports in England.

Table 1 Passenger Mode Shares and Targets

| Mode | 2010 | 2016 % | 2023 target % |
|-------------|-------------|---------------|----------------------|
| Car | 60.6 | 50.5 | 47.5 |
| Walk | n/a | 0.6 | 0.6 |
| Taxi | 21.0 | 21.5 | 19.0 |
| Train | 14.8 | 23.1 | 25.5 |
| Bus/Coach | 2.8 | 3.2 | 4.5 |
| Other * | 0.8 | 1.1 | 2.9 |

*Includes park and ride, Air Rail link and other

Table 2 Employee Mode Shares

| Mode | 2010 | 2018 % | 2023 Target % |
|-------------|-------------|---------------|----------------------|
| Car | 76.1 | 65.0 | 57.0 |
| Train | 6.7 | 12.0 | 13.0 |
| Cycle | 1.6 | 2.0 | 3.0 |
| Bus/Coach | 11.4 | 14.0 | 19.0 |
| Car Share | n/a | 5.0 | 7.0 |
| Walk | 2.0 | 0.1 | 0.5 |
| Other** | 2.2 | 1.9 | 0.5 |

**Includes park and ride, Metro and taxi

Surveys

Information on modal shares is obtained through a series of surveys carried out at the Airport over the year. This is done by the Civil Aviation Authority and the reports can be viewed on their website.

For employees, data is collected through the Annual Employment Survey and via individual organisations who are engaged with the Airport Staff Travel Plan. In 2018 the Airport received a record response rate to the staff travel survey.

There is regular monitoring of road traffic on Airport Way and the number of vehicles entering the public and staff car parks.

Car Parking

Improvements are being made to car parks which will improve capacity and help the flow of traffic across the airport. New signage has also improved traffic flow across the site.

The covered walkway from the drop and go car park to the terminal is open is in use. This allows a better flow of traffic around the terminal building area which had previously become congested.

Condition 20 of Schedule 3 states that the Airport Company shall provide future passenger and visitor car parking at a rate less than the proportional increase in passenger throughput so as to achieve a reduction in the ratio of car parking provision to total annual throughput. Car parking provision in Long Stay Car Park1 will change over the coming year with the on-going alterations.

Condition 21 states that the Airport Company 'shall provide future staff car parking at a rate less than the proportional increase in employment so as to achieve a reduction in the ratio of staff car parking provision to number of staff employed'.

Users of the Airport are encouraged to use public transport when accessing the Airport site. Off-site parking is specifically excluded from the Section 106 Planning Agreement. Table 4 shows how passenger parking provision has changed relative to passenger numbers over the period.

Table 3. Parking provision to passenger numbers 1995-2018

| Year | Parking Spaces | Passenger Numbers (m) |
|-------------|-----------------------|------------------------------|
| 1995 | 7010 | 5.33 |
| 1998 | 8195 | 6.70 |
| 2000 | 8195 | 7.60 |
| 2001 | 10603 | 7.80 |
| 2002 | 10626 | 8.00 |
| 2003 | 11060 | 9.10 |
| 2004 | 11855 | 8.80 |
| 2005 | 11855 | 9.40 |
| 2006 | 11480 | 9.15 |
| 2007 | 11586 | 9.23 |
| 2008 | 11124 | 9.63 |
| 2009 | 12816 | 9.11 |
| 2012 | 12697 | 8.9 |
| 2013 | 12062 | 9.1 |
| 2014 | 13381 | 9.7 |
| 2015 | 13381 | 10.19 |
| 2016 | 13255 | 11.63 |
| 2017 | 15057 | 12.98 |
| 2018 | 15057 | 12.44 |

The Schedule also contains conditions relating to establishing a car park levy. The levy is based on the number of vehicles using the car parks over a 12 month period. The Airport Company will pay an amount of money based on the number of cars using the car parks and also on staff car parking.

The Surface Access Group agreed that the funding from the Car Park Levy will be spent on all forms of sustainable transport as described by the National Policy Framework. This will encourage walking, cycling, car share and the use of electric vehicles along with public transport and will also be available for sustainable transport initiatives, infrastructure projects and other activities which contribute to the increase in the Public Transport Modal Share targets.

The rolling car park levy balance for 2018/19 is £358,046 . This is the balance from the previous year, less money spent on allocated projects and a sum of £126,977 from 2018/19.

The majority of money for 2018/19 has been spent on developing the new transport information hub.

Other projects that have benefitted include:

Lift share joint venture with NEC, Birmingham Business Park and Resorts World.

Surface Access Strategy and various supporting maps

Bus stop maintenance

Staff Travel plan resources

Contribution to annual travel passes for staff

Sustainable Transport Information

Following a review of its fleet vehicles a number of selected vehicles will be replaced with electric vehicles which will reduce both costs and emissions. New electric vehicle charging points are to be installed at the engineering base at Diamond House as well as some airside locations

The Airport encourages passengers, staff and service providers to use low emission vehicles or electric vehicles where possible and the Airport is looking at the feasibility of installing more electric vehicle charging points.

The Airport is looking at the possibility of using their procurement specifications for service providers to ensure that low emission vehicles are used. This may include taxis, car park buses and delivery vehicles.

Also being investigated is the use of autonomous vehicles for freight and delivery movements and also for transporting staff and passengers around the Airport site

Detailed information for passengers and staff on the availability of public transport options is available within accessible/visible points within the Airport.

A new public transport information area is planned for the terminal building to enable users to obtain public transport information using an interactive terminal and the facility to purchase tickets for local transport.

To encourage walking to the Airport talks are on-going to improve pedestrian routes and to integrate them into local routes which serve the nearby communities.

Similar talks are on-going with key stakeholders to improve the provision for cyclists and potentially new cycle routes to join nearby communities.

Birmingham Airport encourages staff to cycle through the 'Cycle to Work Scheme'. Cycle lockers, showering facilities and staff lockers have been installed to encourage this and the Airport is looking at the possibility of installing more cycle lockers and facilities.

4. NOISE CONTROL

Noise Action Plan

Birmingham Airport reviews its Noise Action Plan every five years and the latest revision was carried out in 2018. It was submitted to Defra in September 2018 and formally adopted in February 2019.

The Noise Action Plan covers noise from arriving and departing aircraft and noise from ground operations such as engine ground running and covers the period up to 2023.

Noise from airport ground operations do not have to be included in Noise Action Plans but Birmingham Airport includes ground noise as they are aware that this remains a sensitive issue for those communities close to the Airport.

The conditions within the Section 106 agreement mean that there is already a robust noise management programme in place and the updated version incorporates new actions for the period it covers (2019-2023) some of which have already been actioned :

- To prohibit aircraft with a Quota Count of more than 1 to take off or land during the night time period. This becomes effective from October 2018
- To introduce a more stringent night time noise limit of 83 db(A) . This has now been actioned and the limit is in force.
- To increase the continuous descent approach to 96%
- To investigate the possibility of a 3.2° glide slope to runway 33. This would need permission from CAA and is dependant on the outcome of a trial at Heathrow.
- To assess the noise impact of using noise departure procedures NADP1 and NADP2. This is discussed later.
- To investigate the feasibility of further reducing the night time noise limit to 81 dB(A)

As with the previous plan the main aims remain the same- Birmingham airport will continue to measure aircraft noise to understand the impact on local communities and identify areas that can be improved. The plan contains a

comprehensive noise management system is in operation and is closely monitored and reported to Solihull MBC.

Birmingham Airport will continue to engage with its neighbours and stakeholders to better understand noise issues and how airport activities may have an impact on neighbours.

Noise Mitigation Measures

There are a number of mitigation measures in place to ensure that aircraft both on the ground and in the air operate in the quietest manner possible. Some of the Obligations under Schedule 4 of the Section 106 Planning Agreement are as follows:

- A Sound Insulation Scheme that is to be paid for and organised by the Airport Company for the benefit of residents within the 2002 63 dBA noise contour. Birmingham Airport will make a budget of £200,000 available annually to the Scheme for the purpose of insulating eligible properties.
- The Airport Company shall maintain the use of the noise and track keeping equipment and provide the agreed data to Solihull MBC.
- To record noise and track keeping complaints and report these to Solihull MBC.
- To set a daytime noise limit of 90 dB(A) for departures

Each of these obligations is explained in more detail below.

Sound Insulation Scheme

Birmingham Airport has operated a Sound Insulation Scheme since 1978. The scheme provides sound-proof glazing to domestic properties in the areas most affected by aircraft noise. The scheme is open to over 7,600 properties in areas around the airport and over 90% of these properties have already benefited from the scheme with the installation of double glazing to reduce the impact of aircraft noise in their homes.

To be eligible for the scheme the property needs to be within the 2002 63 dBA noise contour. These contours are produced by the Civil Aviation Authority (CAA) using aircraft track and traffic movement data for Birmingham Airport and the scheme itself is administered by the Airport's Sustainability Team. A map of the contours can be found in the appendices of this document and full

details of the Scheme are available on the Birmingham Airport website. In recent years the original 63 db(A) contour has decreased as newer, quieter aircraft have been introduced but the boundaries of the original contour are still used.

The second phase of the Sound Insulation Scheme provided repeat grants to properties closest to the airport. These grants of up to £3000 are used as a one off opportunity for householders to improve the noise climate in their homes by installing High Specification Double Glazing. This special glazing helps to reduce the noise levels within the property and has a 'C' energy efficiency rating which helps to contain and conserve heat within the property

The Airport has invested over £2.9 million to insulate properties with high specification double glazing, secondary glazing and loft insulation and are now embarking on a 3 year programme to offer the scheme to householders who had previously declined the offer. In this first phase a total of 57 properties have been contacted and so far there has been an interest from 19 properties with the majority of these being surveyed

There were 42 properties which benefitted from the scheme in 2017/18 which were located in the Kitts Green area. For the year 2018/19 a total of 68 properties have been contacted and 29 properties are due to have works carried out which will be completed early in 2019.

School Improvement Programme

As part of the Section 106 agreement the Airport company invest £50,000 per annum into a school improvement programme.

A survey of Gossey Lane school in Kitts Green had highlighted some areas of the school where remedial measures could have a beneficial effect on reducing the noise climate in the school. Some of this work has already been completed and BAL will continue to work through the remainder on a phased basis while the school is eligible for works.

Noise and Track Keeping System

Birmingham Airport uses a sophisticated noise monitoring system called ANOMS–Airport Noise and Operations Monitoring System. This integrates secondary radar data with noise data captured at 6 permanent noise monitors in the local community. There are 3 in the North of the Borough (Buckland's End, Shard End and Stechford) and three in the South of the Borough

(Hampton in Arden, Catherine-de-Barnes and Eastcote) and one noise monitor on the airfield itself.

All complaints to Birmingham Airport are responded to within 5 working days and complaint numbers are reported to Solihull MBC.

ANOMS allows its users to view all information relating to complaints including flights, noise and the location of complaints. Actual flight tracks can be viewed in 2D and 3D tracking and the height of the aircraft can be determined and the tracking of aircraft can then be printed out if required.

There is a dedicated terminal for ANOMS at Solihull MBC.

Engine Ground Running

Full Power Engine Ground Running

Engine ground running is an essential safety aspect of aircraft maintenance. However Birmingham Airport is aware that it has a noise impact on local communities and as such engine ground noise generates specific complaints.

Full power engine ground runs are only permitted after an application form has been sent to and approved by the Airport Control Centre (ACC) who then notifies the Airport's Sustainability Team. The number of full power engine ground runs that are approved are reported to SMBC and other interested parties in the Sustainability report. These are also audited by the Airport Monitoring Officer.

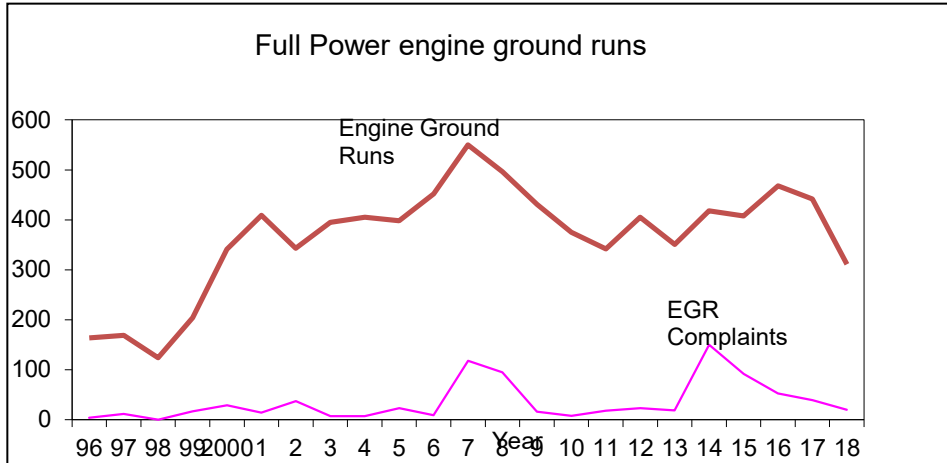
Full power engine ground runs are currently only permitted at specific locations and are not allowed during the night time period.

Engine ground running in the morning shoulder period

All full power and idle engine ground runs occurring in the morning shoulder period are monitored by the Airport's Sustainability Team.

In 2000 a noise monitoring exercise carried out by Solihull MBC's noise consultant recommended the introduction of a quarterly noise level limit, set at 79dB LA_{eq} calculated for a 1 hour period. Since this level was introduced it has not been exceeded. There was a review of the engine ground running in the Morning Shoulder Period in 2009 and as specific complaints about this are rare it was decided that the current scheme should remain in place. This has been formally agreed by SMBC's Planning Committee.

Figure 2. Total Full Power Engine Ground Runs



Daytime Noise limit

Birmingham Airport has a daytime noise limit of 90 dB(A). This applies to **departing** aircraft only as measured at noise monitoring terminal (NMT) 1 or 2 which are located 6.5 km from the ‘start of roll’ (where an aircraft applies full thrust for the first time as it starts its take-off). NMT 1 is located at Bucklands End, Hodge Hill and NMT 2 is at Eastcote Lane, Barston. For these purposes daytime is 0600 to 2330 hours.

Noise contours

Noise contours are a measure of noise represented on the ground as a line represented by differing noise level bandings and these are used to determine local noise impacts.

Continuous Descent Approach

The Section 106 Agreement requires the Airport to have a Continuous Descent Approach (CDA) Policy and this is discussed further in Schedule 8 of this report.

Reduced Engine Taxi

Birmingham has included the provision for reduced engine taxiing in the UK Air Pilot entry for the Airport, and was the first UK airport to do so. This leads to a reduction in ground noise and also reduces emissions and lowers the fuel consumption of the aircraft.

95% of fuel used by aircraft is in the air, the remainder being used when taxiing to and from the runway and by reducing the number of engines used to taxi and push the aircraft forward both fuel use and emissions are reduced.

Noise concerns

Table 6 shows the number of noise concerns received by the Airport Company's Sustainability Team since the Section 106 Planning Agreement came into force in 1996. The Airport Company is required to keep a record of all noise-related complaints and provide written details to SMBC annually. The Airport Company goes beyond this obligation and records all complaints by type and number.

Table 4. Noise concerns at Birmingham Airport

| Year | General Noise | Night | Ground Noise |
|------|---------------|-------|-------------------------|
| 1996 | 222 | 40 | Not recorded separately |
| 1997 | 256 | 75 | Not recorded separately |
| 1998 | 163 | 65 | Not recorded separately |
| 1999 | 179 | 87 | 22 |
| 2000 | 225 | 91 | 30 |
| 2001 | 145 | 74 | 14 |
| 2002 | 227 | 114 | 36 |
| 2003 | 280 | 162 | 7 |
| 2004 | 209 | 263 | 7 |
| 2005 | 232 | 100 | 23 |
| 2006 | 419 | 157 | 9 |
| 2007 | 978 | 80 | 118 |
| 2008 | 374 | 51 | 95 |
| 2009 | 223 | 73 | 16 |
| 2010 | 127 | 38 | 8 |
| 2011 | 150 | 41 | 18 |
| 2012 | 284 | 28 | 23 |
| 2013 | 224 | 24 | 19 |
| 2014 | 526 | 143 | 150 |
| 2015 | 1041 | 108 | 92 |
| 2016 | 605 | 8* | 53 |

| | | | |
|------|-----|---|----|
| 2017 | 704 | 0 | 39 |
| 2018 | 417 | 0 | 20 |

- Since February 2016 complaints regarding night noise are now included in general complaints

The Airport has two portable noise monitors which can be left for extended periods at different locations. In 2018 there was a study carried out in Barston partly as part of the NADP (noise abatement departure procedure) trials being carried out and also a request from Barston Parish Council. The study is detailed later in this schedule.

The Airport Company’s Sustainability Team produces an Annual Complaints Report, which seeks, as far as possible, to identify trends. Complaints are also reported to Solihull MBC.

Community Benefits

The Community Trust Fund comprises of an annual contribution from Birmingham Airport Ltd as agreed in the Section 106 and any revenue raised from surcharges imposed for daytime and night time noise violations

The annual contribution from BAL is index linked and the amount contributed by BAL in 2018/19 was £84,211.22 based on a 3.4% RPI uplift over the previous year.

The money is invested in a range of local projects which benefit communities. More details on the Community Trust Fund are shown in Schedule 9.

Noise Abatement Departure Procedures

There are two main types of departure procedure that can be selected for noise abatement at Airports, involving different thrust and climb rate settings known as NADP1 and NADP2 and these only apply to jet aircraft that are departing from the Airport which equates to about 80% of the aircraft at Birmingham. Each setting will have its own noise profile and impact on communities and currently the choice of which to use is down to the Airlines.

Up to 1000 feet aircraft operate in the same manner. At this point aircraft using NADP1 will keep the aircraft flaps open for longer giving a steeper lift with reduced thrust and reduced noise. For NADP2 the flaps are retracted at 1000 feet and aircraft continue to climb and are lower over affected communities.

Aircraft are free to choose whichever procedure they wish but NADP2 is currently used by approximately 85% of departures and is the most fuel efficient of the two procedures.

NADP1 is designed to provide a noise benefit for communities closer to the Airport but may lead to an increase in noise for communities further out and vice versa for NADP2.

A trial was undertaken from January to June 2018 with three airlines taking part and alternating the use of NADP 1 and 2 to give 3 months of data for R15 and R33. Two portable noise monitors along with the two centreline fixed noise monitors were placed in the two affected communities at defined locations to assess the actual noise impact of the procedures and the complaints regarding these flights were compiled. Modelling had been carried out by external consultants and it was hoped that the results would validate the modelling .

Trial Results

For departures on R15 a noise benefit was highlighted for the community of Barston and as a result of this BAL is planning to update the UKAIP to request the use of NADP1 for departures on R15. Due to the complexity of monitoring which departure option is being used the procedure cannot be enforced easily and Birmingham Airport will rely on the continuing good relations they have built with airlines to ask them to use NADP1 from R15.

The portable noise monitor used in the Kitts Green area to record levels from departures on R33 suffered data loss for some of the trial period and this trial will be repeated for departures from R33 in 2019 to get the full 3 months data. The results will be reported to Solihull MBC.

5. NIGHT FLYING

BAL is bound by the S106 to *"have and maintain a Night Flying Policy which restricts the use of the airport by aircraft taking off or landing during the Night Period and the Shoulder Periods"*.

The Night Flying Schedule, which has driven the creation of the Night Flying Policy (NFP), is a complex multi-clause part of the contract between Solihull MBC and the Airport Company but the main points can be summarised as follows.

- The NFP shall be reviewed every three years.
- The NFP shall incorporate a quota system and an annual limit
- All ATMs will be subject to a quota count. The exception to this are exempt movements and aircraft which perform below 74 db(A) as measured by ANOMS at monitoring points 1, 2, 3, 4, 5 and 6
- The airport Company will impose surcharges on aircraft breaching an agreed noise level on departure. An aircraft will be considered to be violating the level if it records above the limit of during the Night Period at noise monitoring terminals 1 and 2.
- No aircraft with a quota count of 2 or more will be scheduled to take off or land in the night time period.

NIGHT FLYING POLICY

In 2017 Solihull MBC agreed to a delay a review of the Night Flying Policy until April 2018. The policy was extremely complex and a sub committee was formed from the Airport Consultative Committee to discuss the challenges faced by Birmingham Airport while at the same time creating a night flying policy that would prove beneficial to both the affected communities and Birmingham Airport.

A new night flying policy was submitted to Solihull Planning Committee in March 2018 with the new policy coming into force in October 2018. It was also agreed that this policy would remain in place for 3 years and be reviewed in 2021.

The new night flying policy is outlined below and contains new restrictions making it one of the most demanding night flying policies at UK airports and tries to balance this against a competitive market growth.

- Night Annual Limit for ATMs will remain at 5% of total ATMs, based on the maximum Annual Limit for ATMs over the previous financial year.
- Annual Noise Quota Count Limit of 4,000 (2330 to 0600). (This remains the same as the previous policy).
- Aircraft with a Quota Count greater than 1 are prohibited to operate during the Night Period (2330 to 0600); This would remove the use of specific aircraft that have louder noise characteristics.
- The Night Noise Violation Level, where departing aircraft registering 83 dB(A), or more, are fined a full runway charge (2330 - 0600); (the limit for the previous policy was 85 dB(A))
- Taxiway Tango/Lima is not used between the hours 2300 and 0600 as a taxiway except in exceptional circumstances.
- No more than 877 aircraft can be scheduled to depart between 2300 and 0500 per annum. (This is a new restriction in the NFP).

Quota Usage

The Quota Count Limit is based on measurements of the perceived noisiness of aircraft which takes into account the type of noise (tonality) made by the aircraft in question, i.e. propeller noise, a low drone, high-pitched whistle or roaring sound or a combination of all of them.

Aircraft noisiness is measured in EPNdB (effective perceived noise in decibels). EPNdB values are clustered together into groups of 3 decibel increases for the purposes of producing a simple quota count. A rise of 3 EPNdB equates to a two-fold increase in noise energy and so the quota count doubles with increasing noisiness of the aircraft.

The Quota Count system gives each aircraft a rating from 0 through to 16 which is the noisiest aircraft. If an aircraft has a QC of 0 it is not counted towards the night movement limit.

A new QC category has been introduced for all airports following a Department of Transport consultation around night flying restrictions at London airports. A category of QC 0.125 is now in place for aircraft from 81 to 83.9 EPNdb.

Table 5. Noise classification and aircraft quota count

| Noise Classification | Quota Count |
|---------------------------------|--------------|
| Below 81 EPNdB | 0 |
| 81 - 83.9 EPNdB | 0.125 |
| 84 – 86.9 EPNdB | 0.25 |
| 87 – 89.9 EPNdB | 0.5 |
| 90 – 92.9 EPNdB | 1 |
| 93 – 95.9 EPNdB | 2 |
| 96 – 98.9 EPNdB | 4 |
| 99 – 101.9 EPNdB | 8 |
| Greater than 101.9 EPNdB | 16 |

Ref: NATS/CAA Supplements to the United Kingdom AIP SUP: 040/2012 [6]

Table 6 gives a breakdown of the quota usage for the Night Flying Policy year (October – October). There is also provision in the Night Flying Policy that the quota can be reclaimed for aircraft registering less than 74dB(A) at the Noise Monitoring Terminals.

Table 6 Quota utilisation 1997-2018

| Year | Season | Night ATM Limit | Unused ATMs % | Night Quota Count | Unused Quota Count % |
|---------|--------|-----------------|---------------|-------------------|----------------------|
| 1997-98 | Total | 4200 | 27 | 5500 | No data |
| 1998-99 | Total | 4200 | 14 | 5500 | 64 |
| 1999-00 | Summer | 4180 | 31 | 4000 | |
| | Winter | 1320 | 50 | | |
| | Total | 5500 | 34 | | 53 |
| 2000-01 | Summer | 4484 | 36 | 4000 | |
| | Winter | 1416 | 62 | | |

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| | | | | | |
|---------|--------|-------------|-----------|------|----|
| | Total | 5900 | 42 | | 54 |
| 2001-02 | Summer | 4727 | 41 | 4000 | |
| | Winter | 1493 | 61 | | |
| | Total | 6220 | 42 | | 54 |
| 2002-03 | Summer | 1427 | 38 | 4000 | |
| | Winter | 4519 | 22 | | |
| | Total | 5946 | 26 | | 45 |
| 2003-04 | Summer | 4574 | 28 | 4000 | |
| | Winter | 1444 | 20 | | |
| | Total | 6018 | 26 | | 46 |
| 2004-05 | Summer | 4435 | 23 | 4000 | |
| | Winter | 1401 | 62 | | |
| | Total | 5836 | 32 | | 51 |
| 2005-06 | Summer | 4102 | 20 | 4000 | |
| | Winter | 1295 | 20 | | |
| | Total | 5397 | 20 | | 54 |
| 2006-07 | Summer | 4319 | 22 | 4000 | |
| | Winter | 1364 | 34 | | |
| | Total | 5683 | 25 | | 50 |
| 2007-08 | Summer | 4128 | 14 | 4000 | |
| | Winter | 1303 | 27 | | |
| | Total | 5431 | 18 | | 57 |
| 2008-09 | Summer | 3969 | 24 | 4000 | |
| | Winter | 1253 | 31 | | |
| | Total | 5222 | 26 | | 50 |
| 2009-10 | Summer | 3884 | 5 | 4000 | |
| | Winter | 1227 | 0.7 | | 57 |
| | Total | 5111 | 4 | | |
| 2010-11 | Summer | 4319 | 12 | 4000 | |
| | Winter | 1364 | 14 | | |
| | Total | 5683 | 13 | | 61 |
| 2011-12 | Total | 5683 | 42 | 4000 | 63 |
| 2012-13 | Total | 5431 | 40 | 4000 | 67 |
| 2013-14 | Total | 5222 | 42 | 4000 | 65 |
| 2014-15 | Total | 5111 | 40 | 4000 | 62 |
| 2015-16 | Total | 5111 | 39 | 4000 | 66 |
| 2016-17 | Total | 4817 | 10 | 4000 | 16 |
| 2017-18 | Total | 5350 | 23 | 4000 | 58 |

Number of Violations

Aircraft exceeding the night noise limit will be subject to a surcharge, currently a full runway charge unless exempt for a specified reason. The limit is for departures that exceed 83 dB(A). The previous night flying policy had a limit of 85dB(A).

Since the Section 106 Planning Agreement was implemented in 1996, night noise infringements have decreased consistently. The number of night flights has remained relatively stable and the phasing out of noisier aircraft and the night flying policy surcharge have brought about a reduction in excessively noisy night flights. During 2017-18 there were 5 violations of the Night Flying Policy.

Table 7 Night Flying Policy violations 17/18

| Date/Time | Flight No | Runway | Aircraft Type | Max Level dB(A) | Departure /Arrival |
|---------------|-----------|--------|---------------|-----------------|--------------------|
| 06/2/18 01.32 | RSB1004 | 33 | AN12 | 91 | Dep |
| 25/2/18 03.34 | VKA103 | 15 | AN26 | 86.7 | Dep |
| 21/3/18 02.33 | VIZ101 | 33 | AN12 | 86.9 | Dep |
| 26/3/18 23.40 | UKL4003 | 15 | AN12 | 86.9 | Dep |
| 30/5/18 23.35 | MTL350P | 15 | AN26 | 86.4 | Dep |

The table below details the night noise violations at Birmingham Airport since 1996 with an additional year 1990/91 included for comparison.

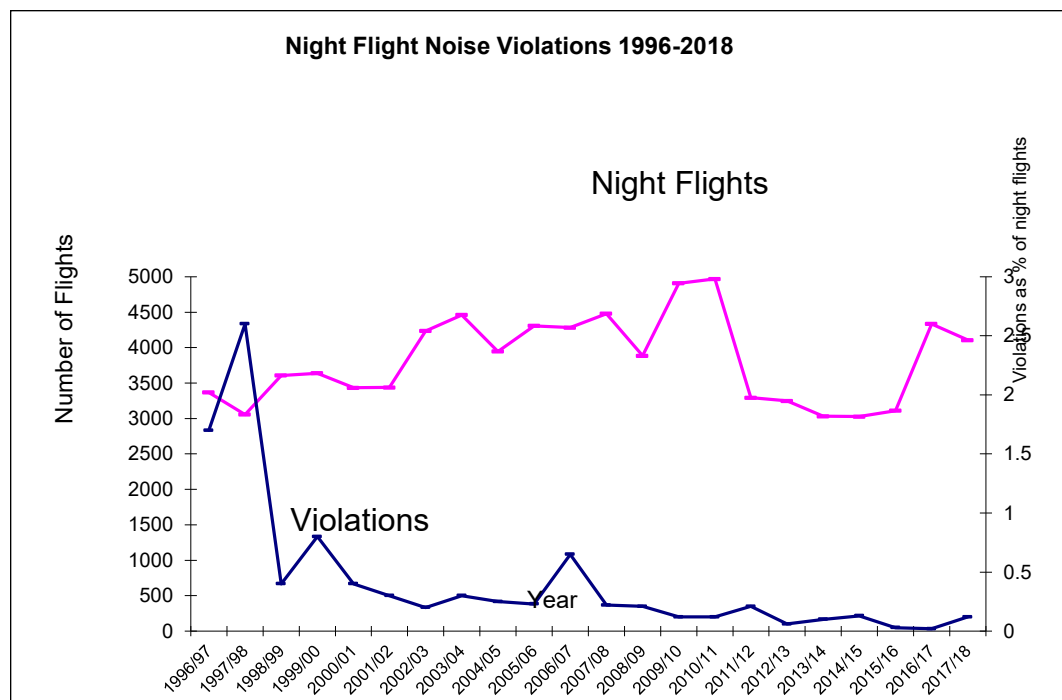
Table 8. Night-time noise violations

| Year | Total Night Flights | Total Noise Quota | Total Infringements | Infringements (% of night flights) |
|---------|---------------------|-------------------|---------------------|------------------------------------|
| 1990/91 | 4767 | n/a | n/a | n/a |
| 1996/97 | 3369 | n/a | 57 | 1.7 |
| 1997/98 | 3056 | n/a | 79 | 2.6 |
| 1998/99 | 3608 | 2002.5 | 13 | 0.4 |
| 1999/00 | 3640 | 1936 | 29 | 0.8 |
| 2000/01 | 3434 | 1832.5 | 15 | 0.4 |
| 2001/02 | 3439 | 1854.5 | 9 | 0.3 |
| 2002/03 | 4234 | 2166 | 9 | 0.2 |
| 2003/04 | 4460 | 2161.5 | 15 | 0.3 |
| 2004/05 | 3947 | 1957 | 10 | 0.25 |
| 2005/06 | 4307 | 2172.5 | 10 | 0.23 |

| | | | | |
|---------|------|---------|----|------|
| 2006/07 | 4283 | 2174.5 | 28 | 0.65 |
| 2007/08 | 4479 | 2281.5 | 10 | 0.22 |
| 2008/09 | 3886 | 2010 | 8 | 0.21 |
| 2009/10 | 4907 | 1704.5 | 6 | 0.12 |
| 2010/11 | 4968 | 1556 | 6 | 0.12 |
| 2011/12 | 3294 | 1480.3 | 7 | 0.21 |
| 2012/13 | 3248 | 1338.5 | 2 | 0.06 |
| 2013/14 | 3031 | 1402 | 3 | 0.10 |
| 2014/15 | 3026 | 1525 | 4 | 0.13 |
| 2015/16 | 3111 | 1677.75 | 1 | 0.03 |
| 2016/17 | 4335 | 1845.25 | 0 | 0.02 |
| 2017/18 | 4107 | 1691.7 | 5 | 0.12 |

The graph below shows the night noise infringements as a percentage of total night flights at BAL since the introduction of the night flying policy in 1996.

Figure 3. Night Noise Violations compared to number of night flights



6. WAKE VORTEX

Schedule 6 states that the Airport Company 'shall maintain a Wake Vortex Protection Scheme and make an annual budget of £100,000 available to be used for the purpose of protecting eligible residential properties from aircraft wake vortices'.

Wake vortices are circulating air currents which form behind an aircraft as it passes through the air. All aircraft create these but they usually break up before they reach ground level. Under certain weather conditions these vortices sometimes reach ground level.

When an aircraft is close to landing it is possible for these vortices to make contact with the roofs of properties close to the airport. They can, very occasionally, cause the movement and slippage of roof tiles. This is known as Aircraft Wake Vortex damage. It does not occur very often and at Birmingham Airport less than 0.005% of flights cause this damage and only properties with pitched roofs are affected.

Once damage is reported to the Airport an assessor will attend and determine if the damage was caused by vortices. Wake Vortex damage is easily recognizable by the assessors as the damage caused is very distinct and different to that caused by wind or storm damage. If the assessor confirms wake vortex damage the roof will come under the vortex protection scheme.

The vortex proof roof is strengthened by fixing down new modern tiles with special metal clips and the work is carried out by a contractor appointed by the Airport Company.

Under the Civil Aviation Act 1982 it is the airline who is liable for the damage and not the Airport, however due to the fact that this identification is not always possible the Airport have introduced the Vortex Protection Scheme.

Every house which has been damaged by a vortex strike is eligible for vortex protection.

In 2018 there was 1 confirmed vortex strike which was at The Meadway.

7. AIR QUALITY

Schedule 7 states that the Airport Company shall maintain the air quality monitoring station (AQMS) and only make changes after agreement with Solihull MBC. Complaints relating to air quality are also recorded and supplied to Solihull MBC.

The Environment Act 1995 introduced local air quality management (LAQM) which requires local authorities to review and assess air quality in their areas against the national air quality objectives. Where any objective is unlikely to be met the local authority must designate an air quality management area (AQMA) on either the whole of the Borough or on a section. To date Solihull MBC has not declared any Air Quality Management areas within its Borough but will continue to monitor across the Borough.

AIR QUALITY MONITORING DATA

Birmingham Airport has carried out air quality monitoring since 1995. There is an Air Quality Monitoring Station (AQMS) on site at the airport which provides continuous monitoring of particulate matter (PM10), carbon monoxide (CO), ozone (O₃), sulphur dioxide (SO₂). The AQMS is located on the airfield to the East of the runway.

The AQMS is operated by Airport staff and is calibrated every two weeks. Independent checks are carried out twice a year by Ricardo-AEA who collect the data and then validate it before an annual ratified report is produced.

In 2017 all of the air quality objectives were met at the monitoring station with the exception of Ozone which is a secondary pollutant formed by chemical reactions in the air, involving precursor pollutants, rather than emitted directly from source. It is therefore trans-boundary in nature. As a result, Local Authorities have little control over ozone concentrations in their areas. The Government has recognised the problems associated with achieving the air quality objective for ozone, and this is not included in the LAQM regime.

A copy of the air quality report is available on the Birmingham airport web site. Live data is also available through the website at www.airqualityengland.co.uk but this is not validated data.

The monitoring is intended to provide information on current air quality in the area and the levels of pollution to which any neighbouring communities may be exposed.

National Air Quality Objectives

The National Air Quality Strategy was produced to determine the ambient air quality in the UK. To meet this aim the Strategy outlined recommended maximum levels of certain pollutants to be obtained nationally. The maximum levels were devised by the expert panel on Air Quality Standards (EPAQS) and were based on medical and scientific evidence.

The strategy defines concentrations of each pollutant over a given time period that are considered to be acceptable which are outlined in table 9.

Table 9. Objectives in the Air Quality Standards Regulations (2010)

| Pollutant | Air Quality Objective | | To be achieved by |
|--|---|-----------------------------------|-------------------|
| | Concentration | Measured As | |
| Benzene (England and Wales) | 5.00 $\mu\text{g m}^{-3}$ | Annual mean | 31 December 2010 |
| Carbon monoxide (CO) (England, Wales and N. Ireland) | 10.0 mg m^{-3} | Maximum daily running 8-hour mean | 31 December 2003 |
| Nitrogen dioxide (NO₂) | 200 $\mu\text{g m}^{-3}$ not to be exceeded more than 18 times a year | 1-hour mean | 31 December 2005 |
| Particles (PM₁₀) (gravimetric) (All authorities) | 50 $\mu\text{g m}^{-3}$, not to be exceeded more than 35 times a year | 24 hour running mean | 31 December 2004 |
| | 40 $\mu\text{g m}^{-3}$ | Annual mean | 31 December 2004 |
| Sulphur dioxide (SO₂) | 266 $\mu\text{g m}^{-3}$, not to be exceeded more than 35 times a year | 15-minute mean | 31 December 2005 |
| | 350 $\mu\text{g m}^{-3}$, 1 not to be exceeded more than 24 times a year | 1-hour mean | 31 December 2004 |
| | 125 $\mu\text{g m}^{-3}$, not to | 24-hour mean | 31 December 2004 |

| | | | |
|--------------------|---|----------------------------------|------------------|
| | be exceeded more than 3 times a year | | |
| Ozone (O3)* | 100 µg m ⁻³ not to be exceeded more than 10 times a year | 8 hourly running or hourly mean* | 31 December 2005 |

* not included as part of the LAQM regime

To enable a comparison of pollutant concentrations at Birmingham Airport with other nearby sites table 10 shows the results for sites within Birmingham. Some of the sites shown in previous reports have recently moved and can no longer be shown for comparison but included are those closest to the Airport.

Solihull MBC carries out its own monitoring for nitrogen dioxide using diffusion tubes across the Borough and will start measuring PM2.5 in 2019.

Table 10. Comparison results for Birmingham Airport and Local monitoring sites in 2017 .

| Pollutant | Birmingham Airport | Birmingham A4540 (Watery Lane Middleway) | Birmingham Acocks Green |
|--|---------------------------|---|----------------------------------|
| PM ₁₀ (µg m ⁻³) | 13 | 15 | Does not measure Pm10 |
| NO ₂ (µg m ⁻³) | 21 | 37 | 19 |
| O ₃ (µg m ⁻³) | 48 | 35 | 45 |
| SO ₂ (µg m ⁻³) | 1 | Does not measure SO ₂ - | Does not measure SO ₂ |
| CO (mg m ⁻³) | 0 | Does not measure CO | Does not measure CO |

The Airport has a number of on-going initiative to reduce pollutants at the site and some are linked with carbon reduction and mentioned also in that section.

An incentive scheme is now in operation to encourage the use of fixed electrical ground power on stands by airlines which reduces the need for Auxilliary Power units and reduces emissions. More than 90% of aircraft stands use these.

Birmingham Airport has shortened the taxi time to and from the runway which helps to reduce emissions.

AIR QUALITY COMPLAINTS

Schedule 7, Clause 6 of the Section 106 Planning Agreement requires the Airport Company to record and report the number of concerns raised by the public relating to air quality, on an annual basis but the number of complaints received since 2000 have been minimal. Complaints regarding odour are also included in the figures.

Table 11. Concerns relating to air quality

| Year | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 13 | 7 | 2 | 0 | 0 |

8. AIR TRAFFIC

Schedule 8 of the Section 106 Agreement states that, subject to Civil Aviation Authority approval, the Airport Company shall implement any appropriate changes to its airspace as soon as is practicable following the completion of the CAP 725 Process. This contains detailed guidance on the various stages of any airspace change process and is issued by the Civil Aviation Authority who will ultimately approve any changes.

Other conditions relate to monitoring the performance of noise preferential routes for aircraft departure, to maintain an annual track keeping target and to have in place a continuous descent approach policy. These are all detailed below.

Air traffic services are provided by Birmingham Airport Air Traffic Limited (BAATL).

Runway Use

Birmingham Airport has one runway which operates in two modes known as Runway 15 and Runway 33 and the direction of operation is dependent upon meteorological conditions. The numbers 15 and 33 refer primarily to the points on a compass to which the direction of the runway is oriented. For an average year approximately 60% of operations use R33, with 40% using R15.

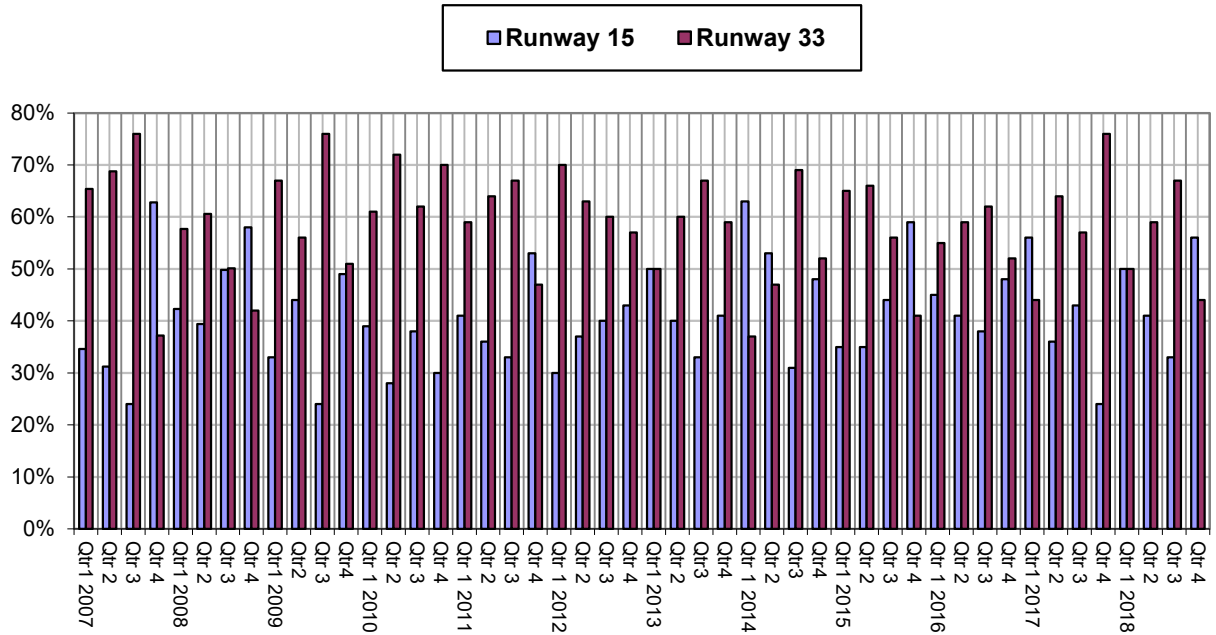
Departing aircraft have set routes they are required to follow until they get to a certain height. However, on arrival aircraft have no set routes until they are established on the Instrument Landing System.

Aircraft on arrival approach the runway using different arrival procedures with the most common being the use of the Instrument Landing System (ILS). This is a precision guidance approach system which defines the centreline of the runway and the angle of approach for the aircraft's descent. Other approaches that may be used are APV-BARO, Non-Directional Beacon (NDB) and visual approach.

Although not a specific requirement of the Section 106 Agreement, the pattern of air traffic using the runway does have an impact on how local people are affected by airport operations and Birmingham Airport report its use to SMBC. Wind direction and meteorological conditions determine runway usage not Airport activity.

The use of a Noise Preferential Route (NPR) is mandatory until an altitude equalling that of the NPR being used is achieved, or unless otherwise directed by Air Traffic Control. An NPR operates to a level of 3000 or 4000 feet dependant on which route aircraft are taking. Please see below for further explanation.

Figure 4. Runway usage



Noise Preferential Routes

Departing Aircraft fly in corridors known as Noise Preferential Routes until they reach the requisite altitude of the NPR. A noise preferential route is a corridor that is constructed around a Standard Instrument Departure Route (SID). A SID is a set of instructions which links an aircraft from the runway to the en-route airspace network.

The NPRs are for **departing aircraft only**. If an aircraft deviates from these NPRs before it gets to the requisite altitude for that NPR, (either 3000 or 4000 feet) then it is considered to be off track. Smaller aircraft less than 5700kg (such as executive jets) are exempt from adhering to NPRs. All aircraft perform slightly differently and weather conditions can cause slight variations in their flight path which is why aircraft can fly anywhere within the NPR.

The NPRs are designed to take departing aircraft over the least populated areas wherever practicable and must be designed so they can be flown by all aircraft operating from the Airport.

A trial commenced in 2016 to determine if it was feasible to raise the ceiling height of the NPR from 3000 feet to 4000 feet and what, if any, effect this would have. The results of the trial found that aircraft on a southbound departure from Runway 15 showed a reduction of noise from over flights to Balsall Common. Therefore, while the majority of NPR ceilings remain at 3000 feet, the NPR ceiling for southbound departures from Runway 15 has been raised to 4000 feet and this became effective from 1st July 2016.

There are many cases where an aircraft can be off track for legitimate reasons, i.e. meteorological conditions or to maintain separation distance for safety reasons. All off-track aircraft are identified and the airline notified of their aircraft performance.

Mosun Departure

A Mosun Departure is a non-standard departure for a small number of flights usually for flights heading to Southern Ireland, the Canaries or Portugal. The route involves a turn to avoid entering the London Airspace which means the aircraft fly approximately 70 miles less and so use less fuel and produce less emissions.

Airspace to the west of Birmingham Airport is to become controlled airspace (CAS) . This means that the time restrictions currently in place for the Mosun departure may be reduced or removed and the availability during current operational hours will become more guaranteed.

It is hoped that these amendments will come into effect at the end of 2019.

Track Keeping

In 2006 BAL launched 'Operation Pathfinder' which is a scheme to encourage better track keeping performance amongst those airlines, which operate, from Birmingham.

The Section 106 agreement states that the Airport Company will seek to achieve and maintain a target of 97% for departures.

The ANOMS system allows the Airport Company to closely monitor the track keeping of departing aircraft and the Airport holds bi quarterly meetings with

the airlines to discuss any track keeping issues. During 2018 97.6 % of aircraft were “on-track.”

Currently, there is no provision to surcharge operators whose aircraft are off track. Surcharging currently relates solely to daytime and night-time noise levels. While the Civil Aviation Act 2006 does allow airports to surcharge airlines based on track keeping performance, the track keeping programme in place at Birmingham Airport has seen continual improvements in performance without the need for financial penalties.

Continuous Descent Approach

The Continuous Descent Approaches (CDA's) started at Birmingham Airport in 2009 after a successful trial with airlines and Air Traffic Control and they are considered to be the best practice in the UK in terms of performance.

A Continuous Descent Approach allows aircraft to stay higher for longer and to descend at a steady rate instead of the previously used stepped approach. Air Traffic Controllers issue pilots with their distance to touchdown and the pilots will calculate and perform a continuous rate of descent. The benefits of a CDA is that less thrust is needed from the engines so there is less fuel used, less noise created and emissions are reduced.

Aircraft are collectively achieving over 90% compliance with the CDA procedure and the target is to be increased to 96%. This forms part of the Operation Pathfinder Programme with the aim to improve compliance and reduce noise impact.

When the Continuous Descent Approaches were started they were conducted from 4000 ft. to landing for every ILS approach. In 2015 this changed to 6000 feet and performance is currently showing a total of over 92% compliance.

Continuous Climb Departures

Aircraft are given a continuous climb up to 6000 feet on departure by Air Traffic Control unless there are operational reasons not to do this. These type of departures help lower aircraft fuel consumption and lower the CO₂ emissions as the highest levels of fuel burn and CO₂ emissions are generated by an aircraft climbing to 10,000 feet. Air Traffic controllers are encouraged to transfer aircraft to the next controlling centre early to help facilitate climbs past the 10,000 feet level.

Airspace Change

For any permanent change to flight paths, an airport must submit an Airspace Change Proposal (ACP) to the Civil Aviation Authority (CAA) and the process is governed by a document known as CAP 725. This has now been superseded by CAP1616. This gives detailed guidance on managing the airspace change process and outlines the criteria to be met when designing SIDS (Standard Instrument Departures) and a public consultation on proposed changes forms part of this process. The document is available to view on the CAA website

Departures- Runway 15

A report was submitted to the CAA in June 2018 regarding the revised northbound SID from Runway 15. The redesigned and validated SID should enable all aircraft to fly closer to the centreline as consulted during the Airspace Change Consultation Process. These are flights that depart from Runway 15 to the South but must turn north for destinations including Scotland or across the Atlantic.

A decision was received on 22nd February 2019 from CAA and the SID will become effective on 23rd May 2019.

A post implementation review of the southbound SID from Runway 15 was submitted to the CAA in July 2017. A report on this is now expected from the CAA in 2019.

Airspace change for departures from Runway 33

The UK airspace has remained relatively unchanged for the last 50 years and a major overhaul of UK airspace is underway which will increase airspace capacity and reduce delays while improving safety and bringing about benefits for the environment and for some affected communities.

All controlled airspace to the North of Birmingham Airport is being re-designed by NATS (National Air Traffic Services) as part of a nationwide proposal and any new flight paths will need to fit into the wider UK airspace changes. As well as these wider airspace changes happening there are also changes to aircraft navigation systems.

All current departure flight paths from Runway 33 from Birmingham Airport are Conventional Navigation procedures, based on a series of ground based beacons. The removal of these beacons is planned and are to be replaced

with newer satellite based technology. This means that flight paths for aircraft departing from Birmingham on Runway 33 will have to change from 'conventional' to 'RNAV' (Area Navigation) which are much more accurate and use air space more effectively. These changes are being made by NATS and not Birmingham Airport.

Flights using RNAV will be able to fly a much more accurate track resulting in flights being condensed towards the centre line instead of being dispersed across a wider swathe as currently happens.

Due to these changes the routes that currently depart from Runway 33 will need to be changed.

Birmingham Airport looked at all options available taking the changes into account and these were outlined in a consultation document which details the process and the proposed changes to the SIDS. This formed the basis of a public consultation which took place between July and November 2017. The consultation focused around those communities most affected by the proposed changes. The consultation outlined all the options and staff from Birmingham Airport were available to answer any questions

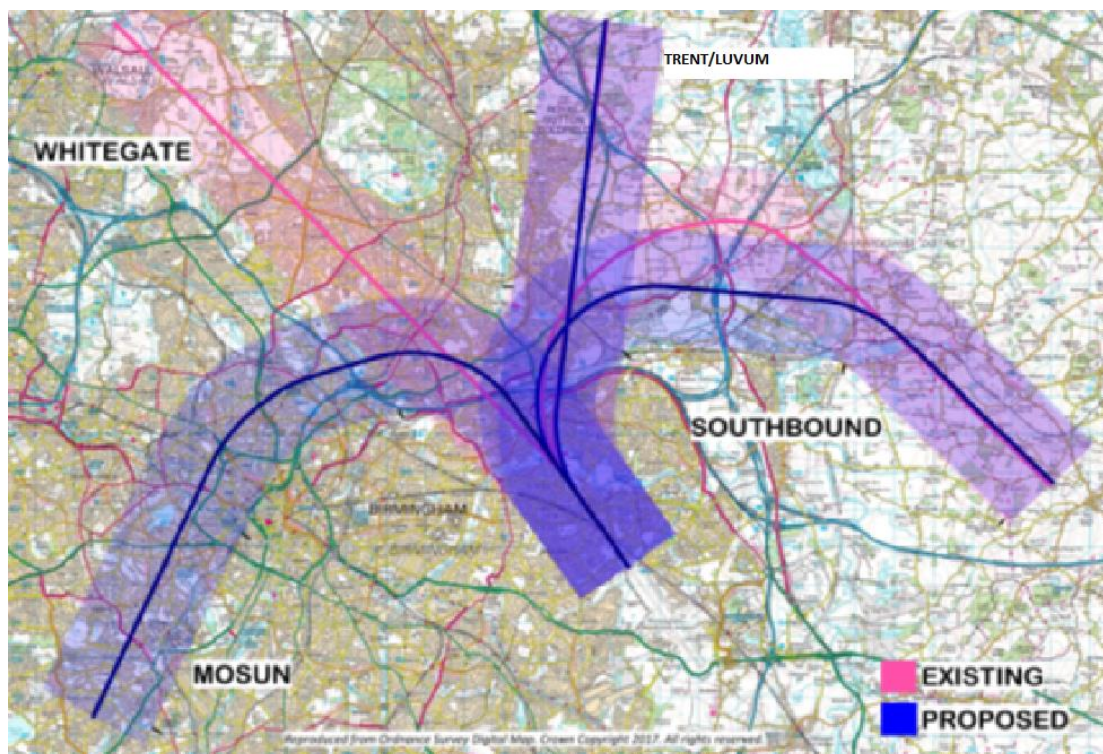
The consultation gave stakeholders and those who may be affected by the new SIDS a chance to look in detail at the proposed changes and to respond formally to them before the end of the consultation period.

The public consultation process relates only to departures to the north of the Airport, from Runway 33. Departures to the south, from Runway 15, and all arrival routes are unaffected and will not change. Where at all possible it is hoped that the new SIDs will replicate the current ones.

Details of the main points are outlined below .

The current departure flight paths from Runway 33 are shown below. They are referred to as Whitegate, Trent, Southbound and Mosun with the choice of route dependant on the flight destination.

Current and proposed SID's



The Southbound route is the most heavily used and is used by aircraft going to destinations in mainland Europe with around 68% of departures from Runway 33 following this route which equates to approximately 20,000 movements each year.

The Trent SID is used by departures heading to Scotland and beyond and is currently used by 11% of departures from Runway 33, or around 4,000 movements each year.

Whitegate takes aircraft in a north-westerly direction and is used primarily by aircraft heading for destinations across the Irish Sea or the North Atlantic and accounts for 13% of annual departures from Runway 33, or around 4,800 annual movements.

The MOSUN route is a non-standard departure procedure and currently accounts for 5% of annual departures from Runway 33, or approximately 1,600 movements. The proposal is to replace this with an RNAV SID which will be very similar to the current tracks.

Due to changes in the en-route airspace the Whitegate route will no longer be able to be used and the traffic using this will instead use the Trent SID. This

will mean an increase in the number of aircraft for this route but the aircraft will all fly very close to the centre line with less dispersion over a wider area as there currently is. The route is to be renamed LUVUM.

All of the new departure procedures have been designed in a way to ensure that they are safe, flyable by all aircraft and meet the ICAO and CAA standards for flight procedure design using RNAV-1 criteria. New SIDS also need to minimise the impact of noise and emissions on surrounding communities as far as possible while at the same time providing sufficient airspace capacity.

At the end of the consultation all documentation, data and responses received were collated and formally submitted to the CAA in April 2018.

A decision was received from the CAA on 22nd February 2019 to approve and the SIDs will become effective on 23rd May 2019

The consultation documents are available to view on the Birmingham Airport website.

Air Traffic Movements

Although not required by the Section 106 Agreement, the annual number of Air Transport Movements (ATMs) is a useful indicator of the level of operation at BAL and are reported to SMBC. The total air traffic movements include cargo, passenger and private/executive movements.

Table 12. Total air traffic movements at BAL 1996-2018

| Year | Total Aircraft Movements |
|------|--------------------------|
| 1996 | 96,266 |
| 1997 | 100,726 |
| 1998 | 108,852 |
| 1999 | 118,431 |
| 2000 | 126,633 |
| 2001 | 125,209 |
| 2002 | 125,083 |
| 2003 | 128,740 |
| 2004 | 120,799 |
| 2005 | 123,192 |
| 2006 | 119,532 |
| 2007 | 114,717 |

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| | |
|------|---------|
| 2008 | 112,470 |
| 2009 | 101,627 |
| 2010 | 96,668 |
| 2011 | 93,974 |
| 2012 | 91,841 |
| 2013 | - |
| 2014 | 96,350 |
| 2015 | 98,492 |
| 2016 | 112,016 |
| 2017 | 124,838 |
| 2018 | 111,532 |

Note: these figures have not been verified

9. COMMUNITY BENEFITS

This Schedule of the Section 106 Agreement states that the Airport Company should continue to administer a Community Trust Fund (CTF) and make an annual contribution to the fund.

Community Trust Fund

The Community Trust Fund is a registered charity run by nine Trustees and was established in 1998. The purpose of the CTF is to invest in a range of local projects, which benefit the community and environment and grants of up to £3000 are made to community groups in areas most affected by the Airports operations. The trustees comprise representatives of Solihull MBC, Birmingham City Council, the Airport Consultative Committee and the Airport Company with all administration costs are met by BAL.

The Community Trust Fund comprises of an annual contribution from Birmingham Airport Ltd as agreed in the Section 106 and any revenue raised from surcharges imposed for daytime and night time noise violations.

The annual contribution agreed in the Section 106 is index linked and the amount contributed by BAL in 2018/19 was £84,211.22 based on a 3.4% RPI uplift over the previous year.

Since the inception of the Community Trust Fund in 1998 over £1.6 million has been awarded to projects which have benefitted the local community.

In 2017/18 the Community Trust Fund awards amounted to a total spend of £83,975. This sum has been distributed among the projects listed in table 14. Any revenue in the CTF that has not been spent in previous years is carried over to the next financial year.

Full details of the scheme and the postcodes of eligible areas are available on the Birmingham Airport website

The Airport Company also provides sponsorship and education facilities to local areas.

The Learning Hub

The learning hub is a dedicated unit for the exclusive use of visiting schools and colleges which has been created in partnership with the schools of King Edward in Birmingham.

It is a self-contained unit and provides an insight to the airport and how it works. There is no charge to use the facilities but visits must be pre booked

and are available to groups throughout the region. The facilities can cater for children from nursery age to post 16.

In 2018 there were more than 80 school visits to the Learning Hub, involving more than 2,000 students.

Table 13. Total Community Trust Fund awards 1998-2018

| Year | Total Awarded (£) |
|------|-------------------|
| 1998 | 98,156 |
| 1999 | 83,993 |
| 2000 | 153,139 |
| 2001 | 103,751 |
| 2002 | 97,670 |
| 2003 | 90,212 |
| 2004 | 72,868 |
| 2005 | 65,444 |
| 2006 | 51,175 |
| 2007 | 53,027 |
| 2008 | 67,349 |
| 2009 | 49,994 |
| 2010 | 52,40 |
| 2011 | 54,067 |
| 2012 | 55,165 |
| 2013 | 68,607 |
| 2014 | 76,174 |
| 2015 | 82,516 |
| 2016 | 81,377 |
| 2017 | 83,975 |
| 2018 | 84,878 |

Table 14. Community Trust Fund awards for the financial year 2018

| Name | Area | Awarded | Purpose |
|---|------------------|-----------|--|
| C' de Barnes Resident's Assoc | Catherine Barnes | £2,500.00 | New chairs for village hall |
| Damson Wood School | Solihull | £2,078.00 | Furnishings for sensory room |
| Warren Farm Comm Project | Kingstanding | £ 444.63 | Equip't for walking football & fitness classes |
| Meriden Primary School PTA | Meriden | £1,100.00 | Wildlife watching & weather data eqpt |
| St Anne's Catholic Primary School | Chelmsley Wood | £ 756.59 | Summer House |
| St Cuthbert's Church | Castle Vale | £3,000.00 | Refurbishment of church centre kitchen |
| Lode Heath School | Solihull | £1961.69 | Camping equipment for DoE Award Scheme |
| SoLO Life Opportunities | Chelmsley Wood | £1,424.50 | Specialist chairs for disabled children |
| 231 st Brownies | Shard End | £ 800.00 | Storage Unit |
| Chelmsley Colts FC | Coleshill | £1,298.16 | Football Goals |
| Brookhill Bowling Club | Erdington | £1,900.00 | Wooden Shelters |
| St Margaret's Pre-School | Solihull | £1,784.40 | Tables & Chairs |
| Water Orton War Memorial Project | Water Orton | £2,000.00 | Contribution to war memorial costs |
| Lyndon School | Solihull | £1,510.00 | Tents & Cookers – DoE Award Scheme |
| Kingshurst Evangelical Church | Kingshurst | £2,000.00 | Coffee machine for drop in centre |
| Hodge Hill Carnival | Hodge Hill | £2,600.00 | Marquees |
| Marston Green Junior School | Marston Green | £3,000.00 | Canopy for outdoor classroom area |
| Sport 4 Life | Ward End | £2,131.83 | IT Equipment |
| Bham Disability Resource Centre | Kitts Green | £1,234.00 | Art materials |
| Marston Green Horticultural Society | Marston Green | £1,200.00 | Tables |
| Berkswell Cricket Club | Balsall Common | £ 900.00 | Sight Screen |
| Friends of Hill Hook LNR | Sutton Coldfield | £1,000.00 | Plants, bulbs and tools |
| Castle Bromwich Hall Gardens Trust | Castle Bromwich | £3,000.00 | Marquees |
| CTC Kingshurst Academy | Kingshurst | £ 495.00 | Chicken Coop for Iron Age farm project |
| Meriden Village Hall Committee | Meriden | £1,500.00 | Replacement chairs |
| Bethany Pentecostal Church | Erdington | £3,000.00 | Refitting of carpets in public areas |
| The B37 Project | North Solihull | £1,800.00 | 10,000 wildflower bulbs |
| St Mary and St Margaret Church | Castle Bromwich | £3,000.00 | Restoration of church organ |
| Birches Green Infant School | Tyburn | £3,000.00 | Outdoor exercise equipment |
| Springfield House School | Temple Balsall | £3,000.00 | Outdoor exercise equipment |
| The Pump | Kitts Green | £3,000.00 | Retaining wall to create outside space |
| Friends of OLC | Olton | £3,000.00 | Replacement classroom furniture |
| St Swithins House Trust | Barston | £3,000.00 | Kitchen refurbishment |
| Chester Road Baptist Church | Erdington | £1000.00 | Catering and drinks equipment for café area |
| Water Orton Cricket Club | Water Orton | £3,000.00 | Rainwater storage tank+ irrigation equipment. |
| Open Door Community Foundations | Bromford | £967.78 | Tools and plants for community garden |
| Birmingham Impact FC | Washwood Heath | £1986.00 | Training aids and equipment |
| Castle Vale Leisure Gardens Association | Castle Vale | £2498.56 | Polytunnel for allotment association |
| Community Environmental Trust | Castle Vale | £2673.58 | Tools and PPE for outdoor education workshop |
| Coleshill Social Bowling Club | Coleshill | £1011.00 | Green maintenance |
| Bromford Theatre Group | Bromford | £1248.56 | New stage curtains |
| Lady Katherine Leaveson Primary School | Temple Balsall | £1,173.00 | Materials for art projects |
| Stechford Village Neighbourhood Forum | Stechford | £1901.00 | Screening and chairs for community space |
| Heartlands Hospital Charity | Bordesley Green | £3000.00 | Play equipment for outdoor space |
| | | | |

The Airport has a nominated charity, Acorns Childrens Hospice fund, to which it has donated over £60,000 . Birmingham Airport also provides small scale support to other causes by either hosting collections in the Terminal or through staff 'dress down days'.

To celebrate the 30th year anniversary of the Acorns charity a midnight run down the length of the runway was planned to raise money for the charity. The run took place in December 2018 and participants were limited to staff and associated partners. More than £15,000 was raised for the charity.

The Corporate Responsibility report for 2017/18 is available on the Birmingham Airport website.

10. Historic Environment, Ecology and Landscape

Obligations in the Section 106 Agreement set out work that the Airport Company needed to undertake prior to the runway extension being used and to prepare a mitigation plan for the development as identified in the Environmental Statement which was submitted with the Planning Application.

The Section 106 Agreement outlines a number of items which are to be included in the Historic Environment, Ecology and Landscape Management Plan which include annual monitoring of the plan, details of all new hedgerows to be planted, details of the proposed management regime for existing hedgerows, replacement tree planting, tree height management, grassland management and wildlife surveys and management.

A Steering Group has been established to advise on the Historic Environment Ecology and Landscape Management Plan (HEELMP) as outlined in the Section 106 Agreement and is made up of members from Birmingham Airport, Solihull MBC, Natural England and Warwickshire Wildlife Trust and will advise on the set out measures to compensate for the effects arising from the Runway Extension on ecological issues.

HEELMP Steering Group meetings and site meetings were regularly held throughout 2018. In addition in June 2018 SMBC Ecologist delivered a site visit to attendees of the national AOA Planners Forum hosted by Birmingham Airport to highlight the relationship between SMBC and BAL and demonstrate good practice.

In November 2018 Birmingham Airport produced a draft Management Advisory Note which was reported to Solihull to further address some of the issues identified through site monitoring over recent years. This has been done in consultation with Solihull MBC.

Protected Species

Crayfish Monitoring

Following the negative survey results for white clawed crayfish over the last three years, eDNA testing was undertaken in September 2018. The results show that crayfish plague is not present in the catchment, and that white clawed crayfish are present upstream of the translocation site. In 2019 eDNA testing will be used to further pinpoint the location of the crayfish, together with further torch survey.

Bird & Bat Box Monitoring

16 new bat boxes, 6 replacement barn owl boxes and a replacement kestrel box were all installed under SMBC supervision in February 2018. Visual bat and bird box checks were undertaken in September 2018. Four female soprano pipistrelle bats were found in two locations, with evidence of use found in another box.

No evidence of nesting barn owl or kestrel was found, although evidence of use by squirrel and other bird species was found.

Breeding Bird Survey

Surveys were undertaken between April and July 2018. A total of 60 bird species were recorded during the surveys within the site. Of the species observed, eleven are considered species of High conservation concern and fourteen are considered species of moderate concern with a total of 10 species of principle concern. Three species were confirmed as breeding (sitting on active nests) Whitethroat, Buzzard and Blackbird. No Amber or Red listed species were found to be nesting on site.

Grassland Management

During 2018 significant efforts were made to bring most of the fields back into positive management. This included:

- Hedgerows were cut back to improve headlands
- Drainage improvements
- Removal of historic hay bales
- Scrub management
- Effective cut and collect of hay meadows

11. Health

Schedule 11 of the Section 106 Agreement requires Birmingham Airport to prepare a Health Action Plan and to establish a Health Forum which is now known as the Airport Health Group. The group meets on a regular basis and the primary objectives are to discuss specific issues relating to health issues arising from the Airport and its use and to guide health conscious decision making within the Airport Company and monitor the effectiveness of mitigation and community support initiatives.

The Health Action plan was completed in 2017 in conjunction with the Airport Health group and reported to Solihull MBC. The plan is to be reviewed and updated in 2019.

The group consists of representatives from the Airport Company, Solihull Public Health and Environmental Health Teams, Birmingham City Council Environmental Health and Public Health Teams and the Airport Consultative Committee

A Health Management Plan has been agreed by the group which sets out the terms of reference for the group and details its objectives. The main objective of the Health Action Plan is to record the existing and further agreed health and wellbeing initiatives put forward by the Airport Health Group. Information on the Airport Health Plan can be found in the Birmingham Airport Corporate Responsibility Report .

12. Business Tourism

This schedule relates to promoting and supporting business tourism in Solihull and to help produce a business tourism strategy with Solihull MBC.

The aim of the strategy is to market Solihull as a business tourism destination and to encourage visitors to the region and meet to the visitor's needs.

A Solihull Tourism forum has been set up and meets on a regular basis. The forum includes representatives from Solihull MBC, Birmingham Airport Company, NEC, Resorts World, Solihull Chamber of Commerce, Solihull College, Solihull BID, local hotels and other parties.

The forum is open to all businesses and organisations that operate within Solihull. The forums vision is to increase the value of the visitor economy in Solihull through improving the visitor experience and to raise the profile of Solihull.

The Forum has engaged with airlines to discuss opportunities for partnership and collaboration – including Flybe and Emirates and to encourage business and tourism to the area.

The Airport is currently engaged in developing the Solihull Tourism Action Plan which is currently in draft form and contributing to promoting the area as a place to visit and stay.

13. Corporate Social Responsibility

Condition 1 to 3 of this schedule state that the Airport Company shall continue and maintain its support to Corporate Social Responsibility in Solihull; keep under review its strategy for its programme of Corporate Social Responsibility; engage with Solihull MBC to develop the Councils Corporate Social Responsibility agenda and report annually on its CSR programme and commitments.

The Corporate Social Responsibility report is available on the Airport Website and outlines how the Airport meets its corporate responsibilities and the complexity the Airport faces in balancing the needs of growth against the impact on local communities.

The report outlines the investments that the Airport makes to local communities not only through the Community Trust Fund but also projects, charities and local community support. It contains details on many topics included in this report such as noise, education, carbon reduction and employment.

Details of the Corporate Social Responsibilities are reported to Solihull MBC through the Airport Consultative Committee..

14. Employment

Schedule 14 relates to creating a site training and employment strategy for the Airport of the Section 106 Agreement states that the Airport Company 'shall prepare and submit a Site Employment and Training Strategy for the airport ' The strategy will then be reviewed every three years.

Birmingham Airport works closely with Solihull MBC, business forums and major employers in the area along with other parties, such as Job Centre Plus, and Solihull College to develop the Training Strategy. Birmingham Airport wants to ensure that employment on site is accessible to local communities and hopes to be able to reduce unemployment in the area.

The Training Strategy is equal opportunity based and responds to issues of unemployment in the West Midlands with a focus on East Birmingham and the North of the Solihull Borough. It helps to supply on-site training, work experience and graduate placement schemes.

Birmingham Airport continue to promote employment opportunities and has gained extra funding to promote the 'Get Into' programme which is aimed at unemployed people between 16-24. This has resulted in 39 young people being offered positions with ground handling agents Swissport. More programmes are planned for 2019.

The Airport will report annually to Solihull MBC on its employment action plans and targets

Much of the Airport's education support activities are focused on raising career aspirations and increasing students' knowledge of the World of Work to improve their employment prospects. This is in line with the Company's revised CSR strategy which seeks to support priorities identified in the Health Action Plan, agreed with the Airport Health Forum in early 2016 and targeted at communities where levels of deprivation are highest.

Two job fairs were held in 2018 to promote recruitment and to showcase the career opportunities available at Birmingham Airport and its associates.

Birmingham Airport is working with Birmingham and Solihull Youth Promise Plus which helps 16-29 year olds move into education, training or employment. The programme is supported by the European Social Fund

15. Monitoring

Schedule 15 of the Section 106 Agreement Schedule 15 relates to monitoring. Birmingham Airport will pay an annual amount to monitor the performance of the obligations within the Section 106 Agreement and to produce this annual report.

16. Carbon Management

In response to the Climate Change Act in 2008 Birmingham Airport produced its climate change adaptation report which sets out how the airport will adapt to climate changes by assessing what risks there may be and prioritising them and the report is available on the Birmingham airport website.

Birmingham Airport produced a Carbon Management Plan which will monitor activities at the Airport that have an impact on the environment. It includes a review of Climate Change issues and legislation, a baseline carbon footprint and an action plan of future initiatives to measure and mitigate its carbon impact. The recent plan covers 2016-2019 and this will be reviewed in 2019.

The Airport will first control and reduce those emissions for which they are directly responsible and those that the Airport owns and controls such as gas and diesel consumption and refrigerants included in Scope 1. Fleet vehicles are also included in this.

Scope 2 covers emissions from purchased electricity. This includes tenants within the terminal itself and all buildings where the Airport Company has control over the power supply.

In 2012/13 the total Carbon Footprint of the Airport was calculated to be 168,566 tonnes of CO₂ which included Scope 1, 2 and 3. The total for 2015/16 emission figures are 296,263.

Carbon emissions from scope 1 and 2 are normalised to passenger numbers and have been used to benchmark emissions against other airport's. The reduction targets are based on the equivalent carbon emissions per passenger.

Table 15 details the total emissions for Scope 1 and 2 and 2017/18 show a 22% decrease from the baseline 12/13 emission figures .

Table 15. Tonnes of CO₂ for Scope 1 and 2

| | Baseline 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 |
|--|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| Tonnes of CO₂ | | | | | | |
| Scope 1 (gas, owned transport, fugitive emissions) | 6,041 | 5,433 | 4,939 | 5,193 | 5,049 | 6,013 |
| Scope 2 (Purchased Electricity) | 19,001 | 18,460 | 19,302 | 17,418 | 15,743 | 13,406 |
| Total Gross Emissions | 25,042 | 23,893 | 24,241 | 22,611 | 20,792 | 19,419 |

Scope 1 emissions were slightly higher than 16/17 year but still show a decrease overall from the baseline 12/13 figures.

Scope 2 emissions cover emissions from purchased electricity. This includes tenants within the terminal itself and all buildings where the Airport Company has control over the power supply.

These emissions have reduced by 29 % from the 12/13 baseline figures and a significant decrease from the 16/17 figures.

Scope 3 emissions cover aspects out of the Airport Company's direct control such as the emissions from people travelling to the airport by surface transport, aircraft landing and take-off, waste management and water use and treatment. The greatest emission in this section is the landing and take-off cycle of the aircraft which accounts for 74% of these type of emissions.

Scope 3 emissions are indicative only and as such are only calculated every 3 years and so these figures remain the same. These will be included in next year's report.

For the 2012/13 baseline figure passenger travel was calculated as a straight line for travelling from A to B. The figures for 2015/16 onwards were calculated using more accurate route planning software which shows a more accurate, but increased, figure.

There is also a more accurate figure calculated for passengers who are being dropped off to incorporate a return journey as well as this is a more accurate figure but will effectively double the figure.

If the 2015/16 passenger travel results were calculated using the original methodology the scope 3 the figures would show a reduction of 16 to 14 kg of CO₂ per passenger.

Table 16- Scope 3 emission totals

| | 2012/13 Tonnes CO₂ e | 2015/16 Tonnes CO₂ e |
|---|--|--|
| LTO cycle | 105,428 | 103,123 |
| Passenger Travel | 36,135 | 168,515 |
| Train-business travel | 4 | 2 |
| Flights-business travel | 212 | 143 |
| Car-business use | 3 | 4 |
| Waste Management | 33 | 33 |
| Water use and treatment | 208 | 394 |
| Electricity transmission and distribution | 1501 | 1438 |
| Total Scope 3 | 143,524 | 273,652 |

(Note: CO₂e is a figure which allows “bundles” of greenhouse gases to be expressed as a single number; and it allows different bundles of GHGs to be easily compared (in terms of their total global warming impact).)

The Airport has already undertaken a number of initiatives to reduce emissions and improve environmental performance. These include Operation Pathfinder, Continuous descent approach, Continuous Climb Departures and Reduced Engine Taxiing which are detailed in section 8.

The Airport is investing in smart meters to allow automatic monitoring across the site. The results from this monitoring will be reviewed to see where any reductions can be made and also to monitor usage.

Fixed Electrical Ground Power (FEGP) is provided on all aircraft stands to minimise the need to run auxiliary power units and there is an on-going programme to replace older FEGP units. An incentive scheme is now in operation to encourage the use of fixed electrical ground power on stands by airlines which reduces the need for Auxilliary Power units and reduces emissions and more than 90% of aircraft stands use these.

Energy use over the whole airport has been reduced by renewable energy which directly reduces emissions to air.

There is a rolling programme of LED replacement lighting and the introduction of PIR lighting sensors in Car Park 1 further reduces energy and emissions.

Birmingham Airport are investing in electric vehicles airside to further reduce emissions and is looking at the feasibility of installing more electric vehicle charging points.

Sustainable transport information is discussed in section 3 of this report and outlines some actions to be taken on procurement issues, travel planning and the potential that autonomous vehicles may have.

Birmingham Airport has set a target for emission reduction per passenger and table 17 shows that there has been a decrease of over 13% since last year alone with an obvious downward trend.

Table 17 – Kg CO₂ per passenger

| Year | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| Kg CO ₂ per passenger-Scope 1 and 2 emissions | 2.81 | 2.58 | 2.45 | 2.17 | 1.75 | 1.51 |

The Airport Travel Plan sets out how the Airport plan to reduce traffic generated by the airport and promotes the use of public transport and sustainable transport by those who work at the Airport. This is discussed in section 3 –Surface Access

Arden Free Tree Scheme

A further condition of this schedule states that ‘the Airport Company shall make available an annual budget of £10,000 (for a period of 20 years) for the purposes of tree planting and woodland creation schemes in Birmingham or Solihull to be agreed with the Council’. This is to help off-set carbon dioxide emissions

The Arden Free Tree Scheme is run by Solihull MBC in partnership with Birmingham Airport aimed at protecting and enhancing the rural character of Solihull by planting native trees.

Private individuals or groups who wish to create hedgerows or small woodlands on their own land can apply to the scheme for trees. Applications

are open each year until August. Trees are delivered to be planted at the start of the planting season. Council officers will visit to ensure that the trees are being correctly maintained.

The 2018/19 scheme has facilitated 20 tree and hedgerow planting schemes across Solihull Borough, five of which are SMBC sites. In total 5453 native trees will have been planted by the end of February 2019.

Waste Management

Waste recycling does not form part of the Section 106 Agreement but is reported to Solihull MBC and is included here to give information regarding recycling activities at Birmingham Airport .

Waste at the Airport is created by passengers to the Airport in the manner of food waste, newspapers, cans and plastic and glass bottles. Other types of waste such as cardboard, metals, pallets, office paper etc. is produced as business waste. Waste is now sent to a waste to energy facility .

To reduce plastic waste free water refill points are to be added across the terminal site. All single use plastic use at the site is to be looked at and a strategy developed to determine if it is possible to achieve zero single use for plastics.

Over 2019/20 Birmingham Airport intends to develop a detailed waste management plan to further improve waste reduction and recycling rates.

Conclusion

In 2018 Birmingham Airport had over 12,443,143 passengers. Despite a record number of passengers through the terminal in October and an extremely busy August overall the passenger numbers were down on those for 2017 with a reduction of 4.2%. The collapse of Monarch Airlines will account for some loss despite the Airport filling the slots with other carriers.

The industry remains a highly competitive environment and Birmingham Airport continues to engage with agents and airlines to promote the Airport and its services through its wider travel trade through a series of events. Staff attended the World Routes exhibition in China to promote the Airport and the attractions of the region for visitors and the airport continues to liaise with airlines to develop new destinations and offer more flexibility to routes.

Birmingham Airport was named as the Star UK Airport of 2018 and was up against entries from Bristol, Leeds, London Gatwick, Heathrow, Stanstead and Manchester. It was also named as the most family friendly airport in the UK and Ireland following a poll of 2000 travellers

The planned £500m investment to upgrade and improve facilities at the airport will enhance the passenger's experience and will maximise the use of its single runway to the best possible use and will help give passengers more choice of destinations and flights.

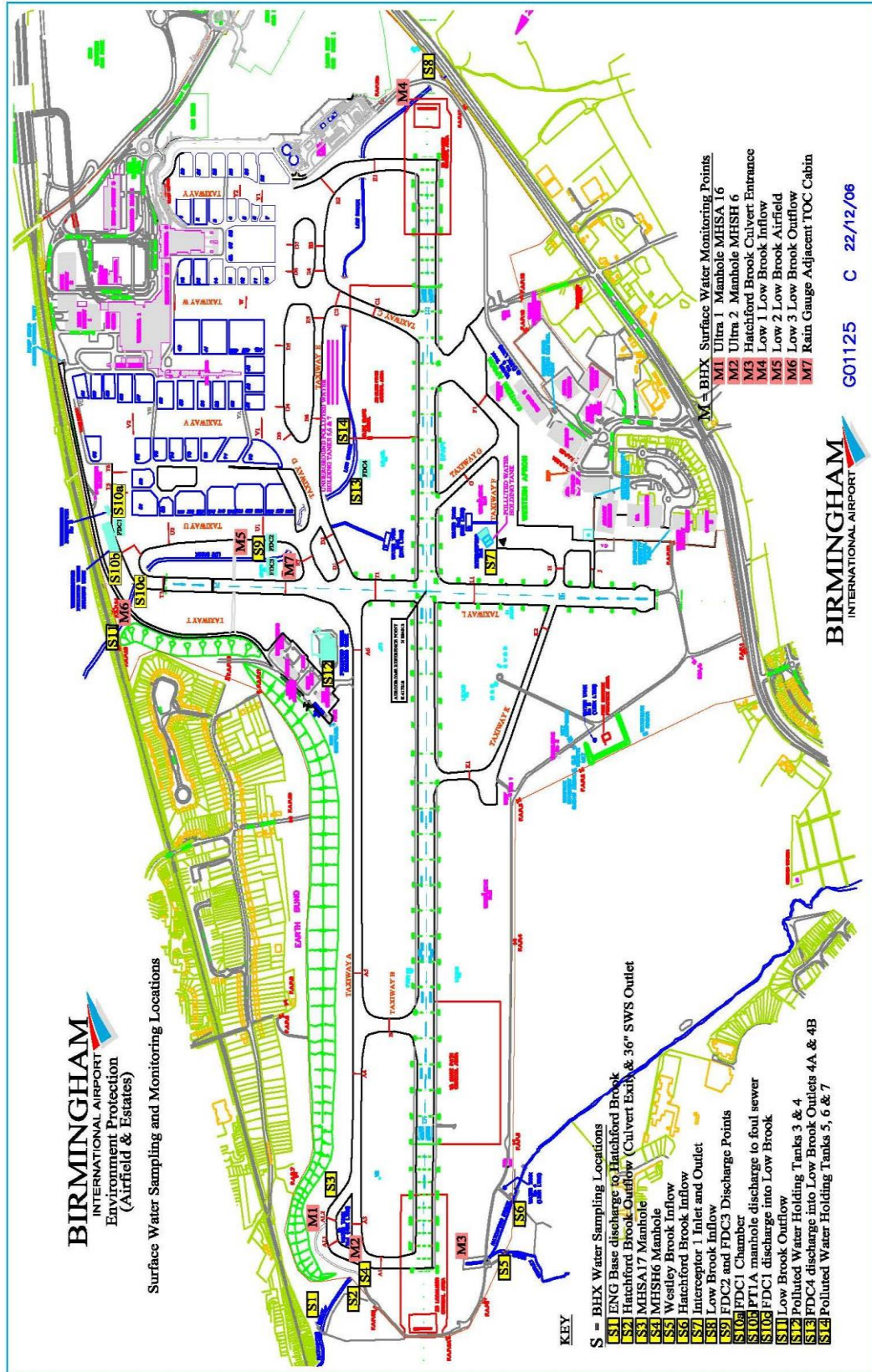
2018 saw Birmingham Airport comply with all Obligations within the Section 106 Planning Agreement.

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BIRMINGHAM
INTERNATIONAL AIRPORT
Environmental Protection
(Airfield & Estates)

Surface Water Sampling and Monitoring Locations

KEY
S = BHX Water Sampling Locations
S11 ENG Base discharge to Hatchford Brook
S12 Hatchford Brook Outflow (Culvert Exit) & 36" SWS Outlet
S13 MSHA17 Manhole
S14 MSHA16 Manhole
S15 Westley Brook Inflow
S16 Hatchford Brook Inflow
S17 Interceptor 1 Inlet and Outlet
S18 Low Brook Inflow
S19 FDC2 and FDC3 Discharge Points
S10a FDC1 Chamber
S10b FT1A manhole discharge to foul sewer
S10c FDC1 discharge into Low Brook
S11a Low Brook Outflow
S12 Polluted Water Holding Tanks 3 & 4
S13 FDC4 discharge into Low Brook Outlets 4A & 4B
S14 Polluted Water Holding Tanks 5, 6 & 7

M = BHX Surface Water Monitoring Points
M1 Ultra 1 Manhole MSHA 16
M2 Ultra 2 Manhole MSHA 6
M3 Hatchford Brook Culvert Entrance
M4 Low 1 Low Brook Inflow
M5 Low 2 Low Brook Airfield
M6 Low 3 Low Brook Outflow
M7 Rain Gauge Adjacent TOC Cabin

BIRMINGHAM
INTERNATIONAL AIRPORT

G01125 C 22/12/06

Map 1

Map 2- Sound Insulation Scheme Boundary

