

**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 2017

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

Compiled by Beverley Hill, Airport Monitoring Officer, 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

LAeq - 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.(was Centro)

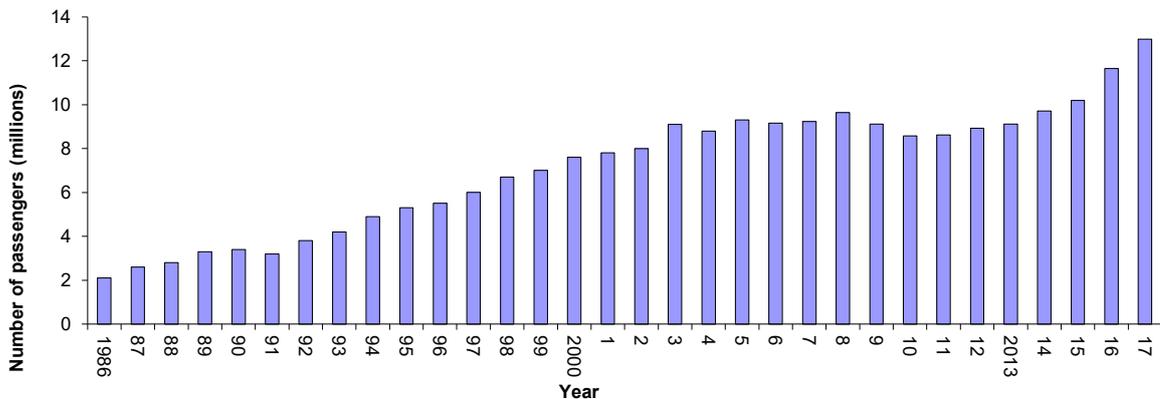
INTRODUCTION

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 2017. This enables comparison of environmental performance year on year. Figure 1 shows the growth in passenger numbers at the airport since 1986.

In 2017 Birmingham Airport had over almost 13 million passengers making this the busiest year in the history of the Airport. This is an increase of 11.5% compared to 2016.

Figure 1. Passenger numbers at Birmingham Airport 1986-2017



AIRPORT MONITORING

The role of the Airport Monitoring Officer (AMO) is to audit all aspects of the Section 106 Agreement but certain aspects will be more closely monitored by other Departments within Solihull MBC and feedback given to the Airport Monitoring Officer. Aircraft tracking is carried out on the ANOMS unit based at Solihull Council and checks are carried out on the complaints system and engine ground runs. The AMO also attends consultation meetings and liaises with Birmingham Airport regarding the Community Trust Fund and carries out other work as and when required.

The AMO also 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, the Airport Monitoring Officer should be contacted. For more information about the work of the AMO, the Section 106 Planning Agreement, general enquiries, or further help regarding a complaint, please contact Beverley Hill on 0121 704 6352 (Direct Line) or email beverleyhill@solihull.gov.uk

1. DECISION NOTICE

Schedule one of the Section 106 Agreement details the planned 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

A new baggage handling facility has opened in North check with the first phase of 32 kiosks which sees a reduction in queue time for passengers.

A new permanent bussing lounge serving the North Terminal remote stands opened in 2017 and a new access point for peak period immigration arrivals has also been created.

BAL has submitted a response to the Transport for West Midlands Plan for Growth Transport Plan .

The construction of the new 128 bedroom Hilton Garden Hotel adjacent to Diamond House is well underway and is set to open in the summer of 2018.

DoT is consulting on rail services running in the InterCity West Coast franchise to determine what will be included in the franchise when the current one ends in April 2018. Birmingham Airport would like to see enhanced rail access to the Airport for benefits to the regional and national economy.

3. SURFACE TRANSPORT

The Airport Company reviewed its Airport Surface Access Strategy in 2015 and is available at the Birmingham Airport website. The strategy, together with the Airport Master 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.

Development of the updated Airport master plan is continuing and will be open for public consultation in Spring 2018. This will identify the development needed over the next 25-30 years to facilitate passenger growth and will link up with other major plans in the area such as those Solihull MBC, HS2, Land Rover, Resorts World and the NEC.

Birmingham Airport is to revise the current Travel Plan which was last published in 2015. A draft plan has been completed and is set to be published by the end of 2018. (Further details regarding the travel plan are outlined below.)

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	2016 %	2022 target %
Car	50.5	48.0
Taxi	21.5	20.0
Train	23.1	25.0
Bus/Coach	3.2	4.0
Other	1.8	3.0

Table 2 Employee Mode Shares

Mode	2017 %	2022 Target %
Car	71.0	67.0
Train	9.1	11.0
Cycle	0.4	1.5
Bus/Coach	17.2	19.0
Other	2.1	1.0

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 Travel Plan.

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

Surface Access Group

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

This group formed in 2014 and is an amalgamation of four groups- Airport Transport Forum, Travel Plan Monitoring Group, Employers Transport Forum and Road Access Group.

The new group was formed to achieve a more focused approach avoiding duplication while still achieving the overall aim; to increase the public modal transport share. It is made up of representatives from passengers, visitors and employees and will be chaired by a representative from Birmingham Airport. The activities of the new group will be reported to the Airport Consultative Committee and Solihull MBC

The group has set out its aims and objectives and will be reviewed annually to ensure it remains relevant and effective.

The main objectives of the group are as follows:

- To implement the Airport's Surface Access Strategy and 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.
- Propose projects requiring funding from car park levy.

Airport Travel Plan

The Airport 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 promote the use of public transport and sustainable transport.

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

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.

A new 30 minute free drop and go facility was opened in April 2017 which is located adjacent to car park 5 . A covered walkway will be created in 2018 from the drop and go car park to the terminal building.

A premium drop and go area for 130 vehicles is now available after a change to the layout of the existing drop and go which has increased the traffic flow in that area

1,900 new car parking spaces have been created in car park 7 at the Elmdon site

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 Park 1 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 1995-2017

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

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 money raised in 2017 by the levy was £191,713 and this was reported to Solihull MBC.

Projects that benefitted from this include:

- Analysis of the economic impact of re-routing cross country trains via Birmingham International station.
- Liftshare joint venture with NEC, Birmingham Business Park and Resorts World

- Contribution towards the BHI (Birmingham International Station) Integrated Transport Hub Study as per funding agreement
- Staff Travel Plan and associated work
- Connectivity between HS2 and the Airport to maximise rail modal share
- Surface Access Strategy

High Speed Rail

The HS2 Hybrid Bill was deposited in Parliament in November 2013 which sets out the Government's proposals to deliver a high speed rail link from London to Birmingham (known as Phase 1 of HS2).

The HS2 Bill gained Royal Assent in February 2017 for phase 1. A range of preparatory works have commenced, including archaeological surveys and the creation of new wildlife habitats.

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

Further information on HS2 is available at <https://www.gov.uk/government/organisations/high-speed-two-limited>.

The proposals include new stations in Birmingham City Centre and on land to the east of the M42, NEC and Birmingham Airport. Passengers will connect to the airport using a rapid transit people mover but the provision of this will not be the responsibility of Birmingham Airport.

Highways England announced the preferred route for the major improvement scheme around junction 6 of the M42. After a period of public consultation the preferred route for the scheme was announced in August 2017. A modified version of Option 1 has been chosen as the preferred route .

The modification moves the route slightly closer to the south west corner of Bickenhill to reduce the effect on the Bickenhill Meadows, a Site of Special Scientific Interest (SSSI).

Sustainable Transport Information

Following a review of its fleet vehicles and a demonstration of electric vehicles a number of selected vehicles will be replaced with electric vehicles which will reduce both costs and emissions. The scheme will start early 2018 and new electric vehicle charging points are to be installed at the engineering base at Diamond House as well as some airside locations. A review of the buses that service the landside car parks is also underway to determine if it is possible to replace these with alternatively fuelled vehicles.

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 in 2018 to gain public transport information using an interactive terminal and to purchase tickets for local transport.

Following the recommendations of the Airport Travel Plan the Airport Company have developed an internet based lift share service for all members of staff. The Airport Company have also entered into a joint lift share venture with the NEC, Resorts World and Birmingham Business Park to encourage sustainable travel options and reduce the number of single occupancy journeys to the area.

4. NOISE CONTROL

Noise Action Plan

The Noise Action Plan covers noise from arriving and departing aircraft and also noise from ground operations such as engine ground running.

Birmingham Airport has 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 living close to the airport. 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.

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

Over the past 30 years the Airport has invested over £12 million to insulate more than 7,000 properties with high specification double glazing, secondary glazing, ventilator units and loft insulation.

There were 40 properties which benefitted from the work in 2017

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

Gossey Lane school in Kitts Green now falls within the 63dBa noise contour and a noise consultant carried out a survey to determine if the school would benefit from any noise mitigation measures.

The survey concluded that there were two areas that could have a beneficial effect in reducing the noise impact within the school.

As a result of this doors and high level windows will be replaced with high spec double glazing during the Easter break in 2018. Later in the year during the main summer break work will be carried out to replace a flat roof area with polyphonic plywood which will improve the sound insulation the classroom below.

Noise and Track Keeping System

Birmingham Airport uses a sophisticated noise monitoring system called ANOMS–Airport Noise and Operating 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 (Bucklands 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 also reported to Solihull MBC.

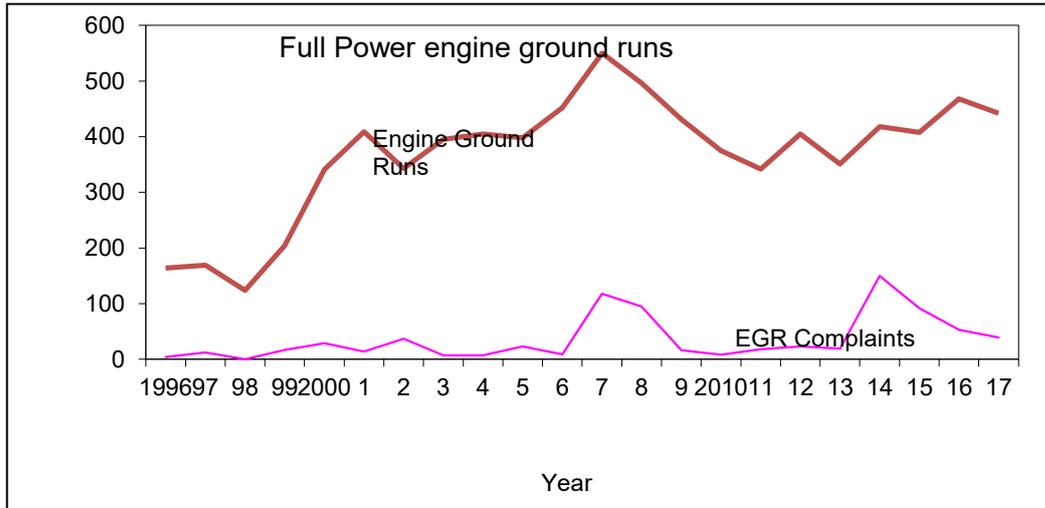
ANOMS allows its users to view all information relating to complaints including flights, noise and the location of complaints. Actual flight tracks can be viewed

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.

The Airport Monitoring Officer based at Solihull Council also has ANOMS on a dedicated terminal.

Engine Ground Running

Figure 2. Total Full power engine ground runs



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 Airfield Duty Manager (ADM) 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.

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.

Noise Action Plan

Birmingham Airport has updated the Noise Action Plan which sets out the company's noise programme to 2018. The Noise Action Plan covers noise from arriving and departing aircraft and also noise from ground operations such as engine ground running.

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. Birmingham Airport reviews its noise contours every two years and the last review was in 2016.

A revision of the noise contours has shown that the number of people exposed to aircraft noise has decreased over the years and the noise contours are decreasing.

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.

In a CDA an aircraft descends towards the airport from its cruising height in a continuous, approach with minimum thrust – rather than via the conventional

series of stepped descents. As there are no “levelling-off” procedures, which require the thrust to maintain level flight, less fuel is consumed. It also leads to reduced noise. Monitoring has shown that in 2017 almost 95% of arriving aircraft implemented a Continuous Descent Approach.

Reduced Engine Taxi

Birmingham has already included the provision for reduced engine taxiing in the UK Air Pilot entry for the Airport, making it 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. One way to reduce this is by using a reduced number of engines to taxi and push the aircraft forward.

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 under Clause 9 of Schedule 4 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

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

The Airport also has two portable noise monitor which can be left for extended periods at different locations.

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

Community Benefits

The Community Trust Fund comprises of an annual amount of £75,000 from Birmingham Airport Ltd and money created from surcharges arising from daytime and night time noise violations. 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

The Airport Company is required to review its Noise Abatement Procedures. There are two 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. Each setting will have its own noise profile and impact on communities.

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 more fuel efficient of the two.

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 is being undertaken from January to June 2018 with three airlines taking part and alternating which procedure is to be used. Portable noise monitors will be placed in the affected communities to assess the actual noise impact of the procedures.

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 85 dB(A) during the Night Period at noise monitoring terminals 1 and 2.
- No aircraft with a quota count of 4 or more will be scheduled to take off or land in the night time period.

CURRENT NIGHT FLYING POLICY

Solihull MBC agreed to a delay a review of the Night Flying Policy until April 2018 where the revised policy will be put before the Planning Committee for approval. If approved this will remain in place for 3 years.

Due to the many demands and the complexity involved in the night flying policy 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.

The provisions of the current Night Flying Policy are:

- Night Annual Limit for ATMs set at 5% of total ATMs (2330 to 0600), calculated based on the maximum Annual Limit for ATMs over the preceding 5 years
- Annual Noise Quota Count Limit of 4,000 (2330 to 0600);

- Aircraft with a Quota Count value of 4 or more are prohibited to operate during the Night Period (2330 to 0600);
- The Night Noise Violation Level, where departing aircraft registering 85 dB(A), or more, are fined a full runway charge (2330 - 0600);
- Taxiway Tango is not used between the hours 2300 and 0600 as a taxiway except in exceptional circumstances.

The proposed new night flying policy which will go the SMBC Planning Committee for approval in 2018 is outlined below and contains new restrictions making it one of the most demanding night flying policies at UK airports but also balancing this against a competitive market growth.

- Night Annual Limit for ATMs will remain at 5% of total ATMs (2330 to 0600), calculated 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.
- 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);
- Taxiway Tango/Lima is not used between the hours 2300 and 0600 as a taxiway except in exceptional circumstances. This remains unchanged.
- 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 FOR PREVIOUS NIGHT FLYING POLICY YEARS

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.

In 2017 the Department for Transport launched a consultation around night flying restrictions at London airports and this has had an effect on the Quota Count System used across all airports. The Quota Count system gives each aircraft a rating from exempt 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. The DfT consultation proposes a new category which will mean that some aircraft that are QC0 at the moment will become QC0.125 and therefore count as a movement. More information is expected in 2018 regarding this.

Table 5. Relationship between EPNdB and aircraft quota count

Noise Classification	Quota Count
<84 EPNdB	Exempt
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 8 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 1997-2017

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		
	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

NUMBER OF VIOLATIONS

Aircraft exceeding 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 85 dB(A) . As outlined above this will change to 83 dB(A) if the proposed night flying policy is accepted by SMBC.

During 2016-17 there were no violations of the Night Flying Policy .

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.

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

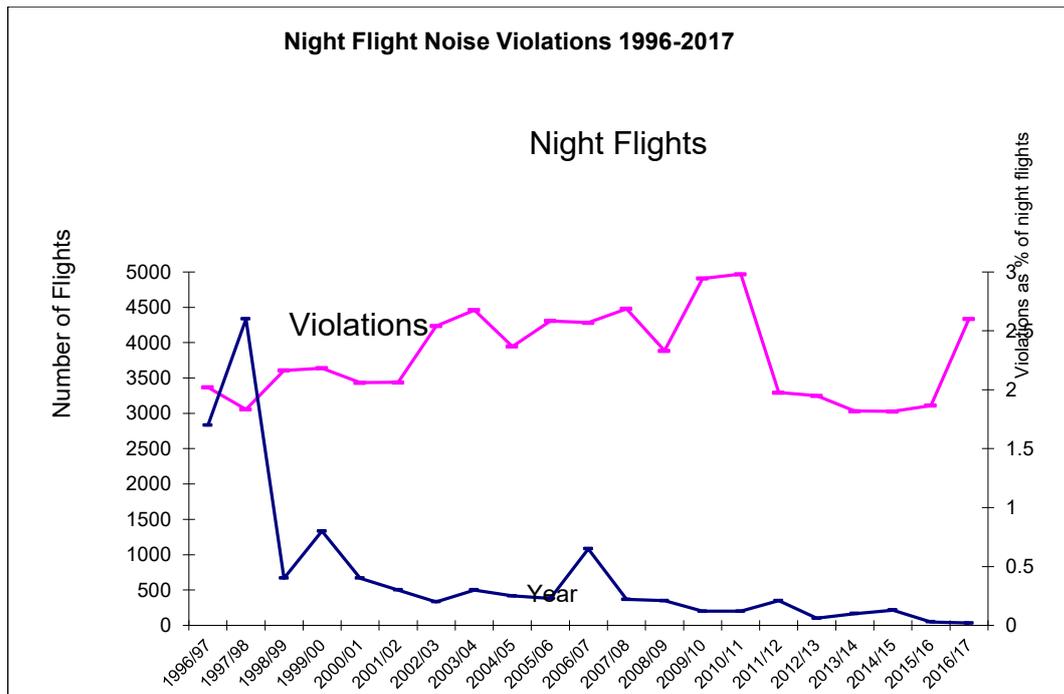
Table 8. Night-time noise violations

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

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.

Under the previous Section 106 Agreement the Airport carried out all of these repairs in the essence of being a "good neighbour" but this now forms a condition of the current Section 106 Agreement and the Airport makes £100,000 available per annum to be used to protect and repair eligible properties

Every house which has been damaged by a vortex strike, or is damaged in the future, is eligible for vortex protection.

In 2017 there were 2 confirmed vortex strikes .

7. AIR QUALITY

Schedule 7 states that the Airport Company shall maintain the air quality monitoring station (AQM) and the diffusion tube monitoring facilities and only make changes after agreement with Solihull and Birmingham Councils. Complaints relating to air quality should also be 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.

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 2016 the data capture for all monitored pollutants was above the EU target of 90% for ratified datasets with no significant data gaps. Any data capture rate above 75% is deemed representative of the full annual period. At the time of printing the ratified data for 2017 was not available so this will be updated next year.

None of the AQS objectives for CO, SO₂, NO_x and PM₁₀ were exceeded at Birmingham Airport 2 monitoring location in 2016.

The only pollutant which exceeded the Air Quality Objectives was for ozone. This 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. Table 10 shows the pollutants and their concentrations.

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 be exceeded more than 3 times a year	24-hour mean	31 December 2004
Ozone (O₃)*	100 $\mu\text{g m}^{-3}$ 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. Solihull MBC carries out its own monitoring for nitrogen dioxide using diffusion tubes.

Table 10. Comparison results for Birmingham Airport and Local monitoring sites in 2016

	Birmingham Airport	Birmingham Tyburn Roadside	Birmingham Tyburn	Birmingham Acocks Green
Annual Mean				
PM ₁₀ ($\mu\text{g m}^{-3}$)	15	18	16	-
NO ₂ ($\mu\text{g m}^{-3}$)	23	43	29	
O ₃ ($\mu\text{g m}^{-3}$)	46	37	40	42
SO ₂ ($\mu\text{g m}^{-3}$)	1	-	1	
CO (mg m ⁻³)	0	-	-	

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.

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
Total	1	0	0	0	0	2	1	1	0	0	1	1	1	13	7	2	0

Air quality does not constitute a major area of concern for complaints at BAL.

The Airport Company Environment Unit also investigates what are loosely termed 'oily deposits'. Samples are taken to Birmingham City Laboratories for independent analysis. Since 1996 none of the samples sent have been found to be attributable to aircraft.

Laboratory results have indicated that the deposits ranged from natural algae growth in ponds, through pollen coating on windows to bird excreta containing the remains of consumed blackberries.

All complaints relating to oily deposits, odour and general health concerns are logged and included in the total air quality concerns.

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 (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. However, on arrival aircraft have no set routes until they are established on the Instrument Landing System.

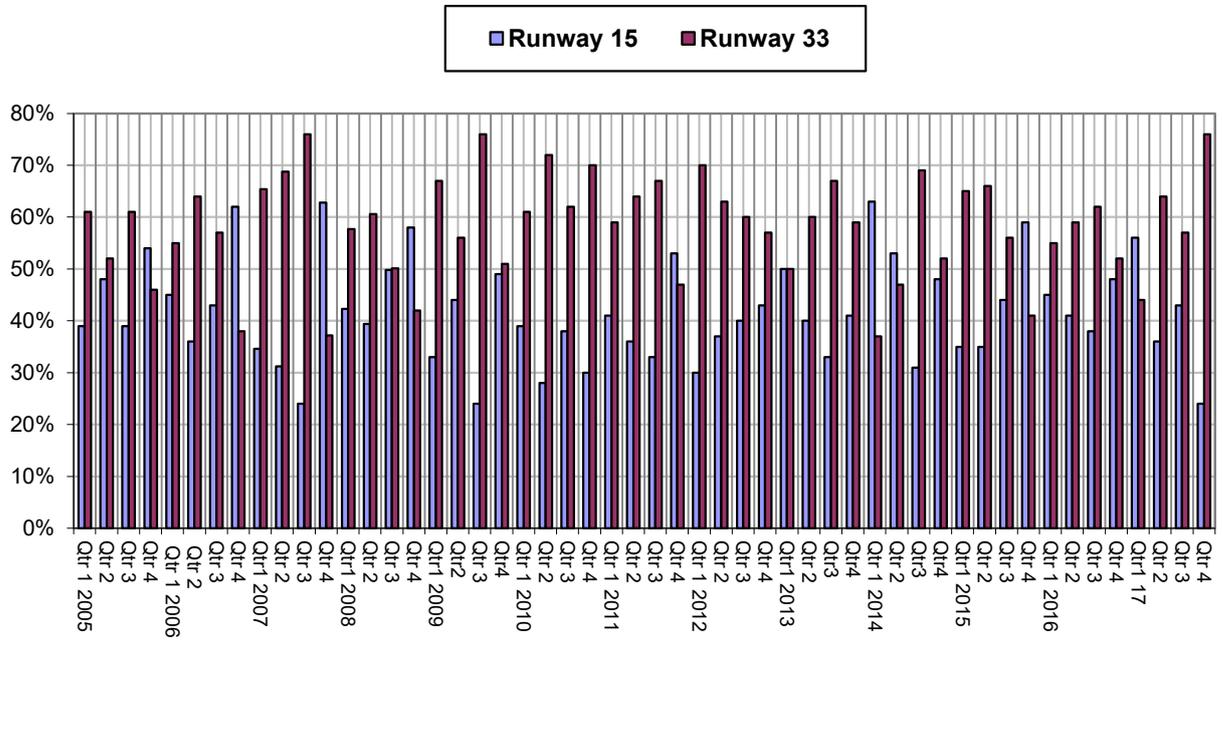
Aircraft on arrival approach the runway using different arrival procedures with the most common being the use of the Instrument Landing System (ILS). This is a precision guidance approach system which defines the centreline of the runway and the angle of approach for the aircraft's descent. Other approaches 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. 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. 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** and there are currently six NPRs, four to the North and two to the South. 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.

The departing aircraft use standard instrument departure (SID) procedures when taking off. The direction of aircraft on departure and arrival depends on the wind direction. When the wind is from a northerly direction aircraft will take off over the north-west and arrive from the south-east and vice-versa.

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 airlines performance.

Arriving aircraft do not have a specified route to follow until they join the Instrument Landing System for the final approach.

Mosun Departure

A Mosun Departure is a non-standard departure for a small number of flights usually for flights to Southern Ireland, the Canaries or Portugal. The route involves a turn to avoid entering the London Airspace.

Track Keeping

In 2006 BAL launched 'Operation Pathfinder'. This 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 2017 almost 98% 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 fiscal 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 this is built into the Operation Pathfinder Programme with the aim to further 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 94.5% 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.

Birmingham Airport has a programme to help airlines reduce CO₂ emissions by using a combination of initiatives such as continuous descent approaches,

continuous taxi and by the use of reduced engine taxiing which reduces CO₂ emissions and can reduce fuel costs to Airlines

Airspace Change

Departures to the South- Runway 15

In April 2016 the Civil Aviation Authority (CAA) gave its response to Birmingham Airports Airspace Change for aircraft on departure from Runway 15. The CAA gave permanent approval for the 'Option 6' flightpath which is used by aircraft on departure from Runway 15 and on a southerly heading.

A post implementation review has been submitted to the CAA and Birmingham Airport is awaiting its response.

Non-RNAV Southbound Departures- Runway 15

A small number of aircraft on southbound departures are unable to fly RNAV routes which are used by the overwhelming majority of aircraft. These aircraft that are unable to fly RNAV procedures instead fly a route similar to Option 5. An amended procedure was put in place on 18th August 2016 so those aircraft now fly a route which is closely aligned to Option 6.

Departures to the North- Runway 15

This relates to those aircraft that depart from Runway 15 to the South but must turn north for destinations including Scotland or across the Atlantic.

During the Airspace Change Trial it was noted that certain aircraft (particularly turbo-prop and Boeing 757-200 aircraft) flew closer to Balsall Common than was anticipated when using the RNAV departure procedure. This issue was not local to Birmingham Airport as other airports across the UK had similar issues with certain aircraft.

Re-design work to the departure route has been undertaken and is to go for simulator validation check in March 2018 and will then go to the CAA for approval at the end of 2018.

Trial of Noise Preferential Route ceiling height change

A feasibility study was undertaken to determine if raising the Noise Preferential Route (NPR) ceiling from the current 3,000ft to 4,000ft would be both possible and if it would bring any benefit in reducing the noise impact of

aircraft for local communities. As a result of this a 3 month trial was carried out in 2016. During this period aircraft were not taken off the Standard Instrument Departure (SID) routes until they had reached an altitude of 4,000ft. The data from the trial was assessed using ANOMS to determine if there would be a benefit to local communities and to understand what operational impact there may be.

For departures from runway 15 on a southerly heading (flying Option 6) it was found that there was a slight decrease in the over flight of the community of Balsall Common. As a result of this the Airport Company have permanently raised the NPR ceiling to 4,000ft for all aircraft using the Option 6 SID's. It was found that for aircraft departing from runway 15 on a northerly heading (using the northbound turn) there was no change in the over flight of neighbouring communities and as such the NPR ceiling on this route remains at 3,000 feet.

For departures using runway 33 and overflying areas such as Castle Bromwich, Hodge Hill and Kitts Green- the results showed no change to the track of aircraft over the ground and as such all NPR ceiling on these routes remains at 3,000 feet.

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 from Solihull to Scotland is being re-designed by NATS (National Air Traffic Services) as part of a nationwide proposal and any new flightpaths 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 flightpaths to the north from Birmingham Airport are Conventional Navigation procedures, based on a series of ground based beacons. The removal of these beacons is planned for 2018 and are to be replaced with newer satellite based technology. This means that flightpaths 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.

For any permanent change to flightpaths, 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 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.

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.

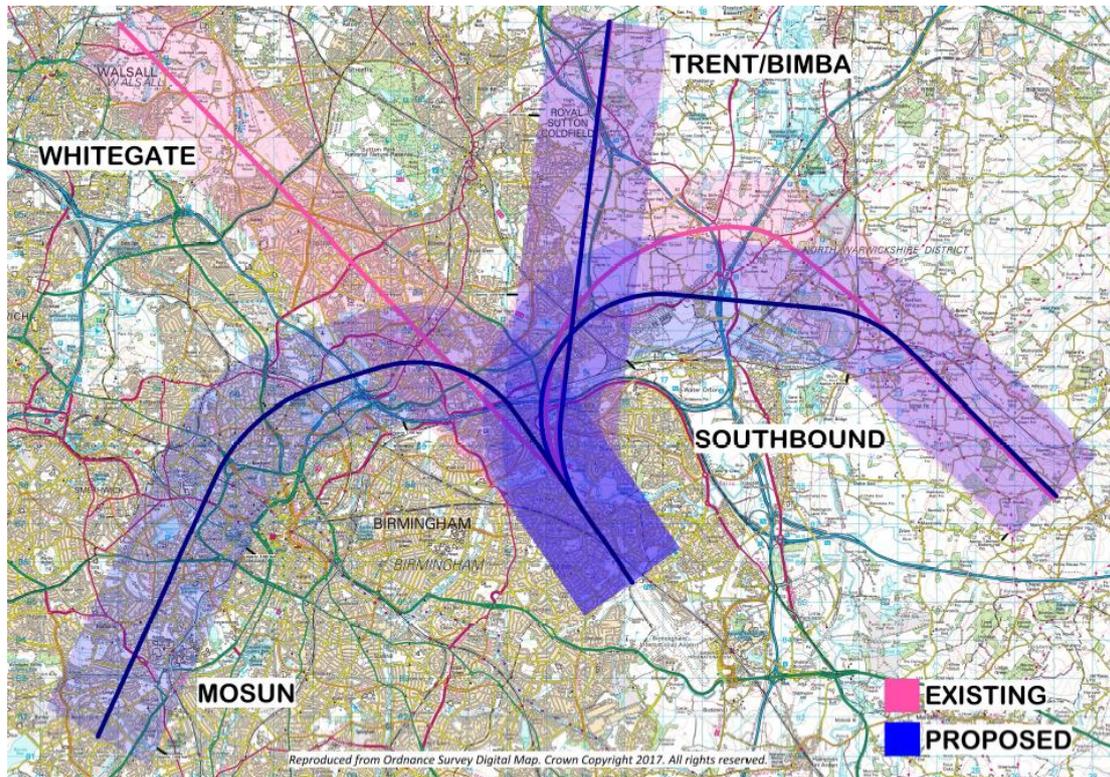
After the closure of the consultation all documentation, data and responses received have been collated and submitted to the CAA who will review the whole process. A response is expected to be received in Summer 2018. If the SIDS are approved by the CAA they will become effective later in 2018. A copy of the submission is available on the Birmingham airport website along with the consultation document and information.

The public consultation process relate 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, Southern and Mosun and the route used is dependent 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.

TRENT is used by departures 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 Manchester 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 BIMBA.

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.

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. The total air traffic movements include cargo, passenger and private/executive movements.

Table 12. Total air traffic movements at BAL 1996-2017

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
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

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

The Airport also has a nominated Charity, Acorns Childrens Hospice Fund, for which they have donated over £56,000.

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 two representatives of Solihull MBC, two from Birmingham City Council, three from the Airport Consultative Committee and two from the Airport Company and all administration costs are met by BAL.

The income raised consists of an annual £75,000 investment from the Airport Company (index linked), revenue raised from the surcharges imposed for violations of the daytime noise limit and that given in the night flying policy. Since the inception of the Community Trust Fund in 1998 over £1.3 million has been awarded to projects which have benefitted the local community.

In 2017 the Community Trust Fund awards amounted to a total spend of £83, 975. This sum has been distributed among the projects listed in table 13. 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 Birmingham Airports website

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. A range of education

materials is supplied along with computers, whiteboards and web based resources. The facilities can cater for children from nursery age to post 16.

In 2017 there were 118 school visits to the Learning Hub, involving more than 3,000 students.

Community Events

Local residents can subscribe to a Twitter feed or an email newsletter which gives details of any issues that may affect local communities

Table 13. Total Community Trust Fund awards 1998-2017

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

Table 14. Community Trust Fund awards for the financial year 2017

Name	Area	Awarded	Purpose
Knowle Football club	Knowle	£2,000.00	Rebuilding of club house
Tiggywinkles Pegasus	Castle Vale	£2,000.00	Artificial grass matting
15 th Sutton Coldfield Scouts	Sutton Coldfield	£ 578.99	Kitchen equipment
Age Concern Birmingham	Shard End	£1,738.79	It and Kitchen equipment
Spitfire Advice & Support Services	Castle Vale	£2,483.00	Carpeting for community cinema facility
Around Again	Chelmsley Wood	£2,500.00	Shipping containers for storage
St Peter & St Paul,	Coleshill	£2,000.00	New toilet and Kitchen facilities
Tile Cross Academy	Tile Cross	£2,600.00	Musical instruments
126 th Birmingham Scout Group	Shard End	£2,000.00	Building materials for office conversion
St Leonards Church	Marston Green	£1,151.10	PA and AV equipment
Northern Star Community Arts	Chelmsley Wood	£1,000.00	IT Equipment and musical instruments
North Solihull Singers	Chelmsley Wood	£ 685.00	microphones
FOLIO Sutton Coldfield	Sutton Coldfield	£2,860.00	Chairs and tables
Wishaw Cricket Club	Sutton Coldfield	£3,000.00	Upgrade to toilet facilities
Kingshurst Primary School	Kingshurst	£3,000.00	Timber shelter
St Swithin's Church	Barston	£3,000.00	Stonework restoration
Adoption Focus	Marston Green	£2,000.00	Playground equipment and toys
St Nicholas Church	Curdworth	£2,000.00	New heating system
Active8 Trampoline Club	Stockland Green	£ 630.00	Trampoline Access Steps
Sutton Coldfield Cricket Club	Sutton Coldfield	£1,000.00	Grounds Maintenance Machinery
Catherine de Barnes Cricket Club	C' de Barnes	£ 500.00	Artificial Batting Strip
Switch Radio	Castle Vale	£1,891.60	Broadcasting Equipment
298 th Silvermere Scouts	Sheldon	£3,000.00	Replacement Minibus
Centre Stage	Balsall Common	£1,000.00	Storage Container
Washwood Heath Association	Washwood Heath	£2,934.00	Pop Up Marquees
Renewal Christian Centre	Chelmsley Wood	£1,500.00	Play Equipment
Heronfield Animal Rescue Centre	Knowle	£3,000.00	Conversion of barn to classroom
Onward FC	Chelmsley Wood	£1,000.00	Goalposts and Training Aids
Story Wood School	Erdington	£2,500.00	Conversion of double decker bus into mobile venue
1 st Sheldon Scouts	Sheldon	£1,000.00	Chairs & tables for Scout Hut
Arden Forest FC	Kingshurst	£ 825.70	Folding Goalposts
Aylesford Hall	Shard End	£1,800.00	LED Lighting
Gossey Lane Academy	Kitts Green	£1,500.00	Library Furniture
Water Orton Methodist Church	Water Orton	£2,000.00	Internal redecoration
St Peter's Church	Bickenhill	£1,500.00	Repairs to stonework
Fordbridge Community Primary	Fordbridge	£1,050.00	Garden Shed
Bishop Wilson School	Chelmsley Wood	£1,959.00	Materials for construction of workshop
Sutton Coldfield Town Juniors	Sutton Coldfield	£1,000.00	Pitch maintenance tractor
The Worth Foundation	Bromford	£1,969.87	Furniture at Bromford Hub
All Stars Childcare	Castle Bromwich	£ 850.00	Climbing Tower
Hillcrescent Farm	Water Orton	£3,000.00	Large Animal Handling Equipment
Kingshurst Caterpillars Playgroup	Kingshurst	£1007.98	Childrens Benches
Bromford Lions FC	Castle Bromwich	£ 398.10	Footballs & Training Aids
Seeds of Hope	Kingshurst	£1,500.00	Painting & Decorating
Community Action in Fordbridge	Fordbridge	£1,000.00	Footballs & Training Aids
Friends of Sheldon Country Park	Sheldon	£ 913.09	Fencing Materials for petting zone
Barston War Memorial Institute	Barston	£3,000.00	Restoration works to Memorial

			Institute
Oikos Community Church	Erdington	£1,500.00	Commercial Fridge
Knowle & Dorridge Cricket Club	Dorridge	£ 500.00	Renovation of Club House
Fordbridge Parents Group PTA	Fordbridge	£ 599.98	Two Greenhouses

The Airport has a nominated charity, Acorns Childrens Hospice fund, to which it has donated over £56,000 . Birmingham Airport also provides small scale support to other causes by either hosting collections in the Terminal or through staff 'dress down days'.

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.

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.

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.

An ecology consultant was instructed to carry out a habitat management plan in Spring of 2017 and a report was submitted to Birmingham Airport.

The survey highlighted some points which need to be addressed:

- In some areas grassland management was ineffective and a new regime of grassland management is to be started to bring the fields back to an acceptable level.
- Vehicle access was limited and needed addressing
- Some areas of new hedgerow require aftercare or replacement
- A number of bird/bat boxes require maintenance and/or replacement

As part of the continuing surveys of habitat conservation and mitigation a study of protected species was carried out in 2017.

A torch survey for crayfish was carried out but no evidence of crayfish was found. Water quality appeared to be acceptable apart from one area that had poorer quality water due to car park run off. As some areas were inaccessible for the torch survey there is a chance that crayfish may still be present elsewhere and this will be investigated.

Visual bat and bird box checks were carried out in September 2017 with significant improvements having been made to the main access track which allowed checks to continue.

Only one bat, a male pipistrelle, was found this year with recommendations for maintenance to be carried out on some boxes.

Birmingham Airport have now completed a list of works to be undertaken and these have been included as a draft HEELMP with all works expected to be completed by Summer 2018.

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 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 written and this 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.

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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 to balance the needs of the growing aviation industry whilst being aware of the needs of the areas which are affected by its operations.

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.

Over £56,000 has been raised for Birmingham Airport's nominated charity-Acorns

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 will work 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 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 will pay an annual amount Solihull MBC for a period of eight years to 'contribute to the development and delivery of employment initiatives by the Council to enable residents to take advantage of employment opportunities at the Airport'. Solihull MBC will report to Birmingham Airport annually detailing on how the money has been spent.

Between 2016 and 2018 the majority of the Section 106 funding will be used to support the employer engagement element of the Birmingham and Solihull Youth Promise Plus project, which helps 16-29 year olds move into education, training or employment. Employer engagement officers will work with business onsite at the airport to encourage them to offer placements to this group of young people to improve their skills and career prospects.

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

The Solihull PACT partnership has been set up to offer recruitment support to airport employers and to target local people in the areas seeking employment. The partnership is formed of Birmingham Airport, Solihull DWP, Solihull College and SMBC. The aims of the partnership are to engage with all employers at Birmingham Airport and to support unemployed people to obtain the skills required for the jobs on offer and to support them through the recruitment process. The Solihull Pact is funded through the Flexible Support Fund, Section 106 contributions and contributions in kind from partners.

Much of the Airport's education support activities are focused on raising career aspirations and increasing students' knowledge of the World of Work with the explicit aim of improving their eventual 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 have been held to promote recruitment and to showcase the career opportunities available at Birmingham Airport and its associates.

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 has 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.

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 and this is discussed below.

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 shows a 9.7% 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
	Tonnes of CO₂	Tonnes of CO₂	Tonnes of CO₂		Tonnes of CO₂
Scope 1 (gas, owned transport, fugitive emissions)	6,041	5,433	4,939	5,193	5,049
Scope 2 (Purchased Electricity)	19,001	18,460	19,302	17,418	15,743
Total Gross Emissions	25,042	23,893	24,241	22,611	20,792

Scope 1 emissions have decreased by 16% overall from the 12/13 baseline figure and show a slight decrease compared to 15/16.

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 17 % from the 12/13 baseline figures and a significant decrease from the 15/16 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.

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 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 outlined in section 8.

Following a review of its fleet vehicles and a demonstration of electric vehicles a number of selected vehicles will be replaced with electric vehicles which will reduce both costs and emissions. The scheme will start early 2018 and new electric vehicle charging points are to be installed at the engineering base at Diamond House as well as some airside locations. A review of the buses that service the landside car parks is also underway to determine if it is possible to replace these with alternatively fuelled vehicles.

Birmingham Airport has set a 10% target for emission reduction per passenger for 2016/17 and table 17 shows that there has been a decrease of 19.35% since last year which exceeds the 10% limit set.

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.

Table 17 – Kg CO₂ per passenger

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

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

In 2017 a number of projects were funded from this money and just over 89 trees and 1005 metres of hedge were planted and these are detailed below

- Friends of Catney Common – 6 trees and 30 shrubs
- Barn End, Grove Road, Dorridge – 25m hedgerow
- Solihull MIND – 250m hedgerow
- Park View, Castle Bromwich – 70m hedgerow and 2 trees
- Stratford Road, Hockley Heath – 90m hedgerow and 16 trees
- Palmers Rough Local Nature Reserve – 30m hedgerow
- Henwood Lane, Catherine-de-Barnes (x2 schemes) – 30 trees
- Solihull Tree Wardens – 1 tree
- Friends of Damson Park – 10 trees
- Temple Balsall Cemetery – 15 trees
- Walsal End Lane, Walsal End – 400m hedgerow and 3 trees
- Whitefields Crescent, Solihull – 4 trees
- Fernhill Lane, Balsall Common – 140m hedgerow and 2 trees

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 .

Birmingham Airport continues to reduce energy costs where possible which also improves the overall energy consumption.

New LED lights has been installed in Multi storey car parks to reduce energy and maintenance costs .

Conclusion

The industry remains a highly competitive environment and Birmingham Airport continues to liaise with agents and airlines to promote the Airport and Airline services through its wider travel trade.

2017 saw new destinations and new airlines to give customers a wider choice and is the first UK airport to offer direct flights to Amritsar which continue to be very popular.

12.68 million passengers travelled through Birmingham Airport in 2017 making this the busiest year ever in the Airport history. This shows an increase of 11.5% year on year.

The focus now is to invest in capital infrastructure at the Airport to ensure future growth. An upgrade to the security area will take place in 2018 which will provide more boarding gates and a refurbishment of flooring and lighting will also take place as part of a multi-million pound investment.

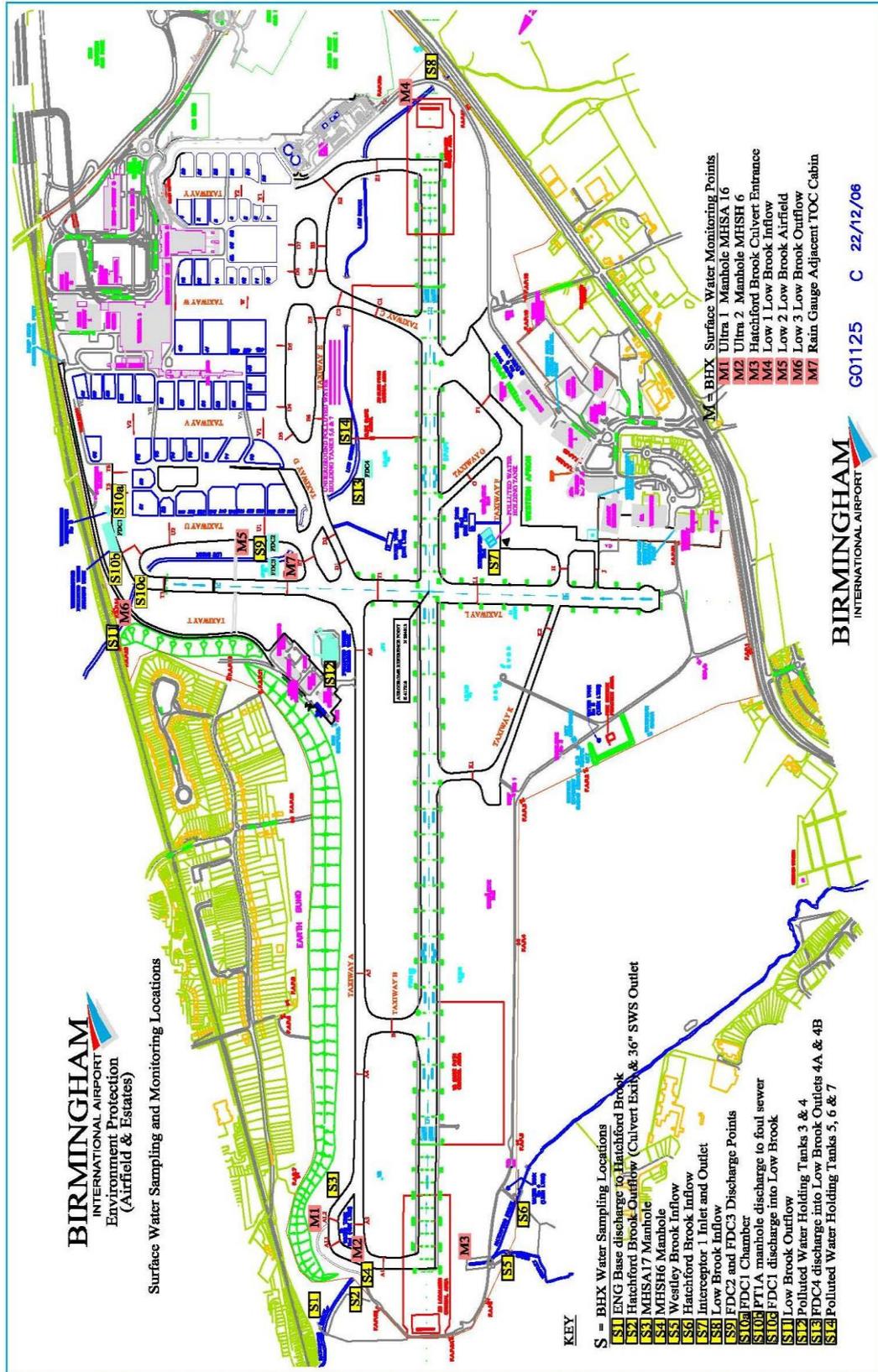
2017 saw Birmingham Airport comply with all Obligations within the Section 106 Planning Agreement.

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Map 1

Map 2- Sound Insulation Scheme Boundary

