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.

This report will also give an update on developments that have taken place at the Airport during 2020.

March 2020 was the start of the first lockdown in the UK and the virus continued throughout 2020 and into 2021 creating severe travel restrictions both for the UK and the rest of the world. This has led to an unprecedented decline in the number of flights and passengers through Birmingham Airport as it has through airports all over the world and this downturn is reflected in all aspects of this report.

Compiled by Beverley Hill, Solihull Metropolitan Borough Council

ACKNOWLEDGEMENTS

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

TABLE OF CONTENTS **Page**

LIST OF FIGURES

LIST OF TABLES

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 - *ATM*s may be exempt from night flying restrictions due to the following circumstances:

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

FEGP-Fixed Electrical Ground Power

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

HS2 *High Speed Rail*

IATA - International Air Transport Association

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

$LA_{eq(16\ hour)}$ - 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 63dBA_{eq} contour has been used to decide which properties are eligible for inclusion in the Sound Insulation Scheme.

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

NSSCN- North Solihull Strategic Cycle Network

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

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

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

RNAV- a satellite based navigation system

SAG- Birmingham Airport Surface Access Group

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

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

SIS – Sound Insulation Scheme

SMBC - Solihull Metropolitan Borough Council

SSSI - Site of Special Scientific Interest

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

TfWM- Transport for West Midlands

INTRODUCTION

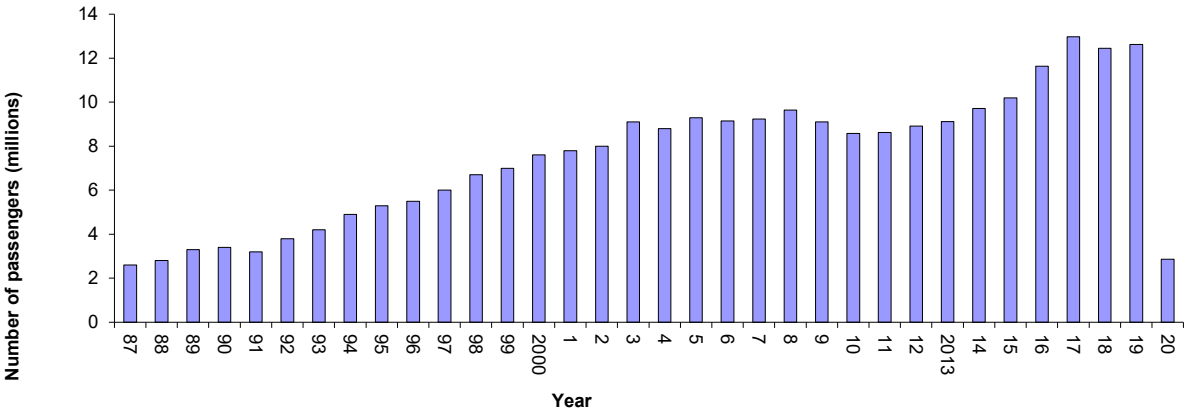
This document is laid out under the schedule headings as found in the Section 106 Agreement.

As far as practicable, the reporting period for this document has been aligned to the calendar year, with the report covering data 2020. This enables comparison of environmental performance year on year. Figure 1 shows the growth in passenger numbers at the airport since 1986.

Due to the Covid pandemic various travel restrictions have taken place since the outbreak and air travel has suffered a dramatic drop in demand which is reflected throughout this report in different chapters.

In 2020 Birmingham Airport handled just over 2.86 million passengers which represents a reduction of around 78% compared to the previous year. Like other airports across the UK and beyond this was due to the various travel restrictions that started in 2020 due to Covid and are continuing into 2021.

Figure 1. Passenger numbers at Birmingham Airport 1986-2020



AIRPORT MONITORING

All aspects of the Section 106 Agreement are audited by SMBC and officers from SMBC attend consultation meetings and liaises with Birmingham Airport regarding the Community Trust Fund and carries out other work as and when required.

SMBC acts as a point of contact for airport complaints, which are investigated in the context of the Section 106 Agreement. If the subject of the complaint is found to be within the restrictions applied to airport operations by the S106 Agreement, no further action is taken and the complainant is informed of the

situation. However if the subject of the complaint is found to breach any of the Section 106 Agreement Schedules, the matter is taken up with the Airport Company.

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

- By calling the Environmental Helpline on 0121 767 7433.
- By visiting the noise section of Birmingham Airport website www.birminghamairport.co.uk or by using this direct link, www.birminghamairport.co.uk/community-complaint

- By writing to Sustainability Team, Diamond House, Birmingham Airport, B26 3QJ

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

1. DECISION NOTICE

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

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

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

2. LAND USE AND PLANNING

Car park 6 will be leased for 2 years to HMRC from 1st January 2021. This will form one of the inland border points to relieve pressure at Dover post Brexit.

The Airport has now completed work on the new baggage system which was finished on time in September 2020. This now complies with Government standards and is required for deep scanning of baggage.

Drainage works for the ILS runway 33 glide path is now completed. The system has been validated and is working correctly.

The Grade 2 listed building at Castle Hills Farm was unfortunately partially destroyed by fire and a structural survey has indicated the structure is unsound. The Airport is liaising with SMBC heritage officers to decide its future as it forms part of the HEELMP.

3. SURFACE TRANSPORT

Airport Surface Access Strategy (ASAS)

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

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

The Master Plan and the Surface Access Strategy are available on the Birmingham Airport web site.

Works to M42

In February 2020 the Secretary of State granted development consent for the re-designing of junction 6 on the M42 to enable the motorway to cope with predicted future travel increases.

The development will see a new junction created (junction 5A) and a new 2.4 km dual carriageway link to the West of Bickenhill connecting to an upgrade of the Clock Interchange which will necessitate the re alignment of the existing Catherine-de-Barnes Lane.

For a detailed account of all the proposed changed please refer to the following documentation :

Planning Inspectorate Notification of Decision Letter
Secretary of State Decision Letter
Development Consent Order as made by the Secretary of State
Examining Authority's Recommendation Report
Post-Examination Submissions

Surface Access Group

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

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

The main objectives of the group are as follows:

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

Rail and Bus travel

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

Birmingham Airport has also entered into a collaboration agreement with West Midlands Trains which aims to improve rail access to the Airport with the focus on affordable 'train to plane' tickets and the airport is looking to promote this.

HS2 (High Speed 2)

Early ground works have now commenced. The main construction work in the area is expected to start in 2021.

An interchange station will be created linking HS2 and the Airport by an Automated People Mover which will significantly improve surface access to the Airport.

A Schedule 17 request for approval for construction of a people mover system on an elevated viaduct together with four station stops, one maintenance facility and associated works (LPA ref no. 2020/00291/HS2DIS) has been submitted. This transport system will connect the Interchange Station with new stops at Birmingham Airport, Birmingham International Station, and the National Exhibition Centre (NEC). This was approved by the Local Planning Authority in 2020.

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

The Urban Growth Company (UGC) and HS2 are working together to design and build additional elements at the Interchange Station Site which will support wider growth plans at the UK Central Hub.

The Urban Growth Company is mainly funded by the West Midlands Combined Authority (WMCA) and aims to oversee investment into the UK Central Hub to help realise the economic impact of the HS2 interchange site. Its role is to promote and develop major infrastructure in the designated area.

A UK Central Hub Growth and Infrastructure Plan has been developed covering the period up to 2033 and identifies key benefits across the UK Central Hub. This is made up of 5 major sites- Birmingham Airport, NEC, Jaguar Land Rover, Birmingham Business Park, and the site surrounding the planned HS2 interchange stations. Further details on the UGC can be found on its website https www.ugcsolihull.uk

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

Bus/Coach Travel

Birmingham Airport continues to work closely with Transport for West Midlands (TfWM) to help improve local bus services to the Airport including a new Sprint service.

Sprint is a Bus Rapid Transit (BRT) service that provides high frequency service and runs on the road with dedicated bus lanes through areas of high congestion. There are 7 routes planned for the West Midlands with 3 being

accelerated so they will be ready for the Birmingham Commonwealth games in 2022 and they form part of a long term strategy for public transport in the West Midlands.

One of these is the route into Birmingham City Centre via the Airport and Solihull and work is scheduled to be operational for May 2022. The buses will all be zero emission vehicles.

Further information on the Sprint can be found at the following link https://www.tfwm.org.uk/development/sprint/

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

Staff Travel Plan

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

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

A lift share scheme has been set up in conjunction with NEC, Resorts World and Birmingham Business Park to encourage more sustainable travel options and to reduce single occupancy journeys.

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..

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.

Due to Covid the modal share for 2020 has not been updated but will be as soon as business gets back to normal.

Table 1 Passenger Mode Shares and Targets

Mode	2010	2018 %	2023 target %
Car	60.6	48.7	47.5
Walk	n/a	0.6	0.6
Taxi	21.0	30.2	19.0
Train	14.8	17.9	25.5
Bus/Coach	2.8	2.6	4.5
Other *	0.8		2.9

*Includes park and ride, Air Rail link and other

Table 2 Employee Mode Shares

Mode	2010	2019 %	2023 Target %
Car	76.1	63.42***	57.0
Train	6.7	12.39	13.0
Cycle	1.6	1.57	3.0
Bus/Coach	11.4	12.98	19.0

Car Share	n/a	7.18	7.0
Walk	2.0	0.49	0.5
Other**	2.2	2.06	0.5

** Includes park and ride, Metro and taxi

*** This figure is now for single car occupancy only

Surveys

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

For employees, data is collected through the Annual Employment Survey and via individual organisations who are engaged with the Airport Staff Travel Plan.

Due to the impact of the Covid pandemic no surveys were completed in 2020 but will restart as soon as travel restrictions are lifted and the airport returns to more normal passenger levels.to

Car Parking

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

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.

Airport car parks have been upgraded with new barrier technology and work is on-going for the general maintenance in car park 1.

Table 3. Parking provision to passenger numbers 1995-2019

Year	Parking Spaces	Passenger Numbers (m)
1995	7010	5.33
1998	8195	6.70
2000	8195	7.60
2001	10603	7.80
2002	10626	8.00
2003	11060	9.10
2004	11855	8.80
2005	11855	9.40
2006	11480	9.15
2007	11586	9.23
2008	11124	9.63
2009	12816	9.11
2012	12697	8.9
2013	12062	9.1
2014	13381	9.7
2015	13381	10.19
2016	13255	11.63
2017	15057	12.98
2018	15057	12.44
2019	15057	12.6

Car Park Levy

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

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

The rolling car park levy balance for 2019/20 is £437,331 as at the end of December 2019. This includes the balance from the previous year, less money spent on allocated projects totalling £69,227.

These projects include:

- National Cycle to Work day event
- Transport Information point and real time information in main terminal
- Upgrading of bus and coach stops outside the main terminal
- Study analysing the impact of Metro, Sprint and extra capacity on the West Coast Mainline for the airport
- Study into the potential upgrading of the Coventry to Leamington rail corridor

This section will be updated in the annual report next year.

Sustainable Transport Information

In December 2019 Birmingham Airport launched a new all electric bus service which serves all airport car park routes with a fleet of 6 single decker vehicles. The free service replaces older diesel vehicles and uses 80% less energy compared to an average diesel bus. The new vehicles use a pantograph charging system which recharges while the bus is in use with extra charging points installed in the coach park. This supports the airport's commitment to become a net zero carbon airport by 2033.

Passengers, staff and service providers are encouraged to use low emission vehicles or electric vehicles where possible and the Airport is looking at the feasibility of installing more electric vehicle charging points for staff and customers.

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

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

The 'Cycle to Work Scheme' is promoted to employees and cycle lockers, showering facilities and staff lockers have been installed to encourage continuing use.

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

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

4. NOISE CONTROL

Noise Action Plan

Birmingham Airport reviews its Noise Action Plan every five years and the latest revision was formally adopted in February 2019.

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

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

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

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

The main aims of the Noise Action Plan have not changed and Birmingham airport will continue to measure aircraft noise to understand the impact on local communities and identify areas that can be improved. A comprehensive noise management system is in operation and is closely monitored and reported to Solihull MBC.

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

Noise Mitigation Measures

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

- A Sound Insulation Scheme that is to be paid for and organised by the Airport Company for the benefit of residents within the 63 dBA noise contour. Birmingham Airport will make a budget of £200,000 available annually to the Scheme for the purpose of insulating eligible properties.

- The Airport Company shall maintain the use of the noise and track keeping equipment and provide the agreed data to Solihull MBC.

- To record noise and track keeping complaints and report these to Solihull MBC.

- To set a daytime noise limit of 90 dB(A) for departures

Each of these obligations is explained in more detail below.

Sound Insulation Scheme

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

To be eligible for the scheme the property needs to be within the 63 dBA noise contour. These contours are produced by the Civil Aviation Authority (CAA) using aircraft tracks 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. A review of the noise contours is undertaken every two years.

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

The Airport has invested over £2.9 million to insulate properties with high specification double glazing, secondary glazing and loft insulation and has completed a three year programme whereby a further offer was made to those households that had previously declined. There are now no further eligible properties within the scheme boundary.

No work was carried out under the sound insulation scheme in 2020 due to Covid restrictions and the airport will now review how a scheme to address night noise might be developed.

School Improvement Programme

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

Due to Covid restrictions no school work was undertaken in 2020.

Noise and Track Keeping System

Birmingham Airport uses a sophisticated noise monitoring system called ANOMS–Airport Noise and Operations Monitoring System. This integrates secondary radar data with noise data captured at 6 permanent noise monitors in the local community. There are 3 North of the airfield (Buckland's End, Shard End and Stechford) and three to the South of the airfield (Hampton in Arden, Catherine-de-Barnes and Eastcote) with one noise monitor on the airfield itself.

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

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

Engine Ground Running

Full Power Engine Ground Running

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

Full power engine ground runs are only permitted after an application form has been sent to and approved by the Airport Control Centre (ACC). 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.

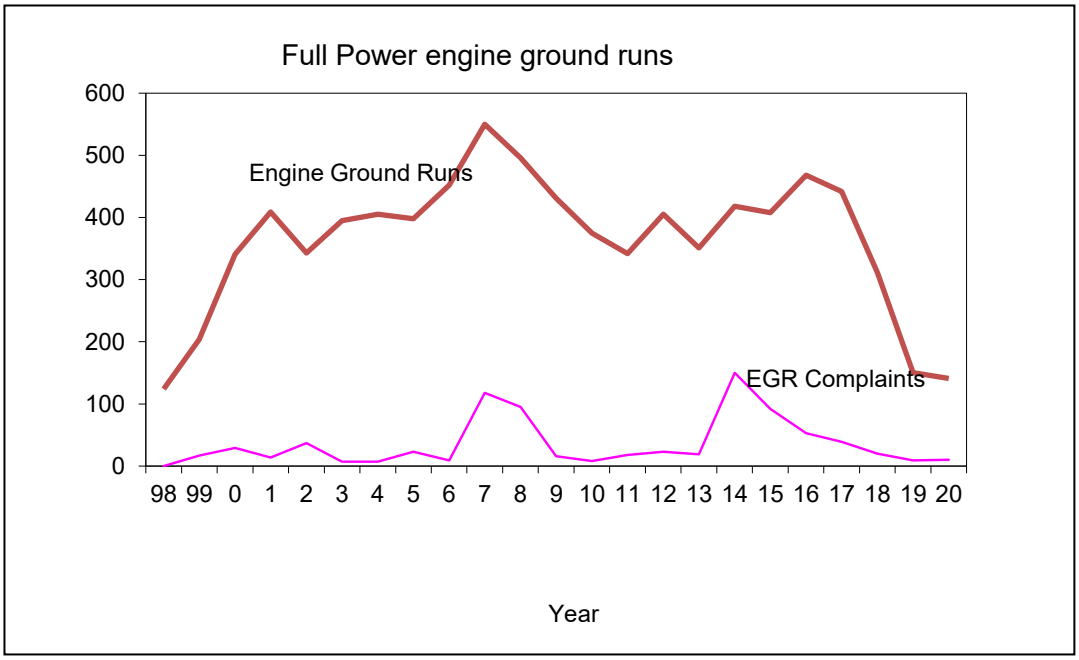
Full power engine ground runs are currently only permitted at specific locations and are not allowed during the night time period.

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.

A review of engine ground running was undertaken in 2009. A noise limit was set in 2000 following a noise monitoring exercise in conjunction with external consultants. A quarterly noise level limit was set at 79dB calculated to a 1 hour period and since this was introduced has not been exceeded and the operation rarely creates specific complaints.

Figure 2. Total Full Power Engine Ground Runs



Daytime Noise limit

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

Noise contours

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

Continuous Descent Approach

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

Reduced Engine Taxi

Birmingham has included the provision for reduced engine taxiing in the UK Air Pilot entry for the Airport, and was the first UK airport to do so. This leads to a reduction in ground noise and also reduces emissions and lowers the fuel consumption of the aircraft. 95% of fuel used by aircraft is in the air, the remainder being used when taxiing to and from the runway and by reducing the number of engines used to taxi and push the aircraft forward both fuel use and emissions are reduced.

Noise concerns

Table 4 shows the number of noise concerns received by the Airport Company's Sustainability Team since the Section 106 Planning Agreement came into force in 1996. The Airport Company is required to keep a record of all noise-related complaints and provide written details to SMBC annually. The Airport Company goes beyond this obligation and records all complaints by type and number. Since 2016 night noise complaints are recorded in general noise complaints

Table 4. Noise concerns at Birmingham Airport

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

2017	704	0	39
2018	417	0	20
2019	871	0	9
2020	436	0	10

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

Since 2019 two separate individuals have been responsible for a very high proportion of recorded complaints. Both parties have been invited into the Airport but have not engaged. Where a very large number of complaints are received and it is felt that no further progress can be made there is provision under the Airport complaints policy to allow those complaints to be logged separately from the main body of the reports to allow for more accurate numbers to be recorded without any distortion of the figures. Airports across the UK also have similar issues.

Community Benefits

The Airport Community Trust Fund is a combination of investment made by the Airport company and fines raised from noise violations to give support to projects for local communities affected by the Airport.

Since the Fund started nearly £1.8 million has been invested in over 800 local projects.

The Trust Fund was suspended in March when the first lockdown began but is now back in operation to give the support to local communities

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

Noise Abatement Departure Procedures

There are two main types of departure procedure that can be selected for noise abatement at Airports, involving different thrust and climb rate settings known as NADP1 and NADP2. These only apply to jet aircraft that are departing from the Airport which equates to about 80% of the aircraft at Birmingham. Each setting will have its own noise profile and impact on communities and currently the choice of which to use lies with Airlines and not the Airport.

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

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

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

A trial was undertaken from January to June 2018 with three airlines taking part and alternating the use of NADP 1 and 2 to give 3 months of data for R15 and R33.

Two portable noise monitors were placed at defined locations to assess the actual noise impact of the procedures and complaints were analysed. Modelling had been carried out by external consultants and it was hoped that the results would validate the modelling.

Trial Results

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

The portable noise monitor used in the Kitts Green area to record levels from departures on R33 suffered data loss for some of the trial period and this trial was due to be repeated in 2020. However due to the reduction in the number of flights during the Covid lockdown this will be postponed until flights are near to normal. The results will be reported to Solihull MBC.

5. NIGHT FLYING

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

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

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

NIGHT FLYING POLICY

The Department of Transport has launched a consultation into night flying policies initially for London airports which will end in March 2021.

The second part of the consultation will focus on the options of night flying policies beyond 2024 at designated airports and nationally. This stage will run until May 2021 for comments.

Details of the consultation can be found on the Gov.Uk website at the following address

https://www.gov.uk/government/consultations/night-flight-restrictions-at-heathrow-gatwick-and-stansted-airports-between-2022-and-2024-plus-future-night-flight-policy/night-flight-restrictions

The current night flying policy is due to be reviewed in 2021. The last review of the NFP was a very comprehensive appraisal and looked at every aspect of night flying and its restrictions. The current policy contains restrictions which

make it one of the most demanding night flying policies at UK airports and tries to balance this against a competitive market growth.
A sub group undertook an early review of the NFP early in 2021. Faced with travel restrictions through Covid and the uncertainty of a national review of night flying policies across the UK it was agreed to retain the current policy for a further three years, with some trigger points for review. The main features are:

- Night Annual Limit for ATMs will remain at 5% of total ATMs, based on the maximum Annual Limit for ATMs over the previous financial year.

- Annual Noise Quota Count Limit of 4,000 (2330 to 0600).

- Aircraft with a Quota Count greater than **1** are prohibited to operate during the Night Period (2330 to 0600); This removes 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.

- No more than 877 aircraft can be scheduled to depart between 2300 and 0500 per annum.

Quota Usage

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

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

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

A category of QC 0.125 is now in place for aircraft from 81 to 83.9 EPNdb and applies to all airports.

Table 5. Noise classification and aircraft quota count

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

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

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

Table 6 Quota utilisation 1997-2020

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
2017-18	Total	5350	23	4000	58
2018-19	Total	5505	8	4000	48
2019-20	Total	5505	69	4000	13

A condition contained within the last revision of the Night Flying Policy is a limit set on the number of aircraft that can be scheduled to depart between 2300 and 0500. This figure is currently 877 per annum. Table 7 shows the numbers in each year.

Table 7-useage against departure cap of 877 (23:30-05:00)

Year (Nov-Oct)	**Usage**
18/19	662
19/20	605

Number of Violations

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

The Section 106 Planning Agreement was implemented in 1996 and since this time night noise infringements have decreased consistently. The number of night flights has remained relatively stable and the phasing out of noisier aircraft and the night flying policy surcharge have brought about a reduction in excessively noisy night flights.

During 2019-20 there was only 1 violation of the Night Flying Policy.

Table 8 Night Flying Policy violations 19/20 (Nov 19 to Oct 20)

Date/Time	Flight No	Runway	Aircraft Type	Max Level dB(A)	Departure /Arrival
28/9/20	FTL631	33		84.2	Dep

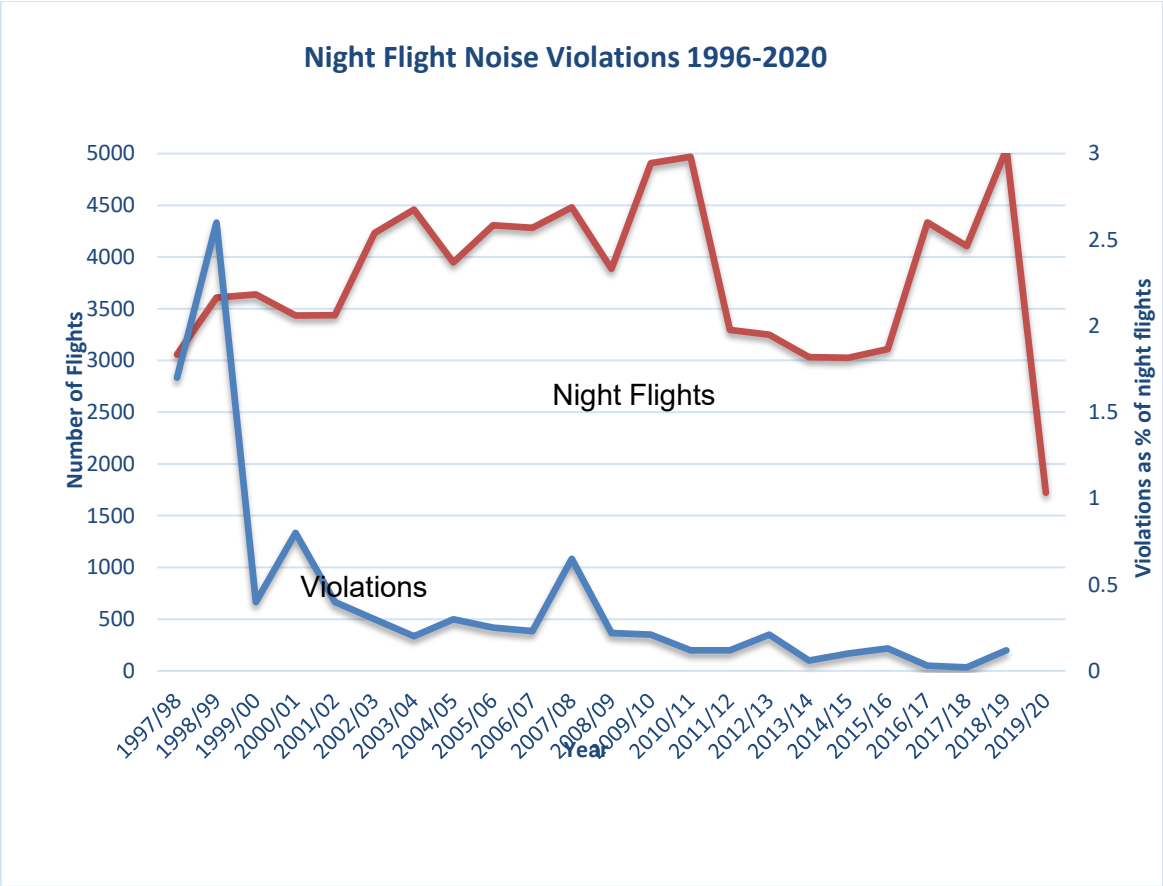
The table below details the night noise violations at Birmingham Airport since 1996 with an additional year 1990/91 included for comparison.

Table 9. Night-time noise violations

Year	Total Night Flights	Total Noise Quota	Total Infringements	Infringements (% of night flights)
1990/91	4767	n/a	n/a	n/a
1996/97	3369	n/a	57	1.7
1997/98	3056	n/a	79	2.6
1998/99	3608	2002.5	13	0.4
1999/00	3640	1936	29	0.8
2000/01	3434	1832.5	15	0.4
2001/02	3439	1854.5	9	0.3
2002/03	4234	2166	9	0.2
2003/04	4460	2161.5	15	0.3
2004/05	3947	1957	10	0.25
2005/06	4307	2172.5	10	0.23
2006/07	4283	2174.5	28	0.65
2007/08	4479	2281.5	10	0.22
2008/09	3886	2010	8	0.21
2009/10	4907	1704.5	6	0.12
2010/11	4968	1556	6	0.12
2011/12	3294	1480.3	7	0.21
2012/13	3248	1338.5	2	0.06
2013/14	3031	1402	3	0.10
2014/15	3026	1525	4	0.13
2015/16	3111	1677.75	1	0.03
2016/17	4335	1845.25	0	0.02
2017/18	4107	1691.7	5	0.12
2018/19	5044	1936.5	1	0.02
2019/20	1722	523.25	1	0.06

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 that have 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 tiles with special clips which is carried out by a contractor appointed by the Airport Company.

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

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

There were no wake vortex strikes reported in 2020.

7. AIR QUALITY

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

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 (O_3) and sulphur dioxide (SO_2). 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 2020 all of the air quality objectives were met at the monitoring station. The results at the site were comparable to other local sites.

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

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 measured 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. 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 µg 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 µg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 December 2005
	40 µg m^{-3}	Annual mean	31 December 2005
Particles (PM10) (gravimetric) (All authorities)	50 µg m^{-3}, not to be exceeded more than 35 times a year	24 hour running mean	31 December 2004
	40 µg m^{-3}	Annual mean	31 December 2004
Sulphur dioxide (SO2)	266 µg m^{-3}, not to be exceeded more than 35 times a year	15-minute mean	31 December 2005
	350 µg m^{-3}, not to be exceeded more than 24 times a year	1-hour mean	31 December 2004
	125 µg m^{-3}, not to be exceeded more than 3 times a year	24-hour mean	31 December 2004
Ozone (O3)*	100 µg m^{-3} not to be exceeded more than 10 times a year	8 hourly running or hourly mean*	31 December 2005

*** not included as part of the LAQM regime**

To enable a comparison of pollutant concentrations at Birmingham Airport with other nearby sites table 10 shows the results for sites within Birmingham.

Solihull MBC carries out its own monitoring for nitrogen dioxide using diffusion tubes across the Borough.

Table 11. Comparison results for Birmingham Airport and Local monitoring sites in 2020 (results are not verified).

Pollutant	Birmingham Airport	Birmingham A4540	Birmingham Acocks Green
PM_{10} (µg m^{-3})	13	14	13
NO_2 (µg m^{-3})	12	29	14
O_3 (µg m^{-3})	52	42	46
SO_2 (µg m^{-3})	1	Does not measure SO2	Does not measure SO2
CO (mg m^{-3})	0.12	Does not measure CO	Does not measure CO

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

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

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

Air Quality complaints are received so infrequently they are no longer recorded separately.

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 (note: this has now been replaced by CAP1616 Airspace Change Process). This contains detailed guidance on the various stages of any airspace change process and is issued by the Civil Aviation Authority who will ultimately approve any changes.

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

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

Runway Use

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

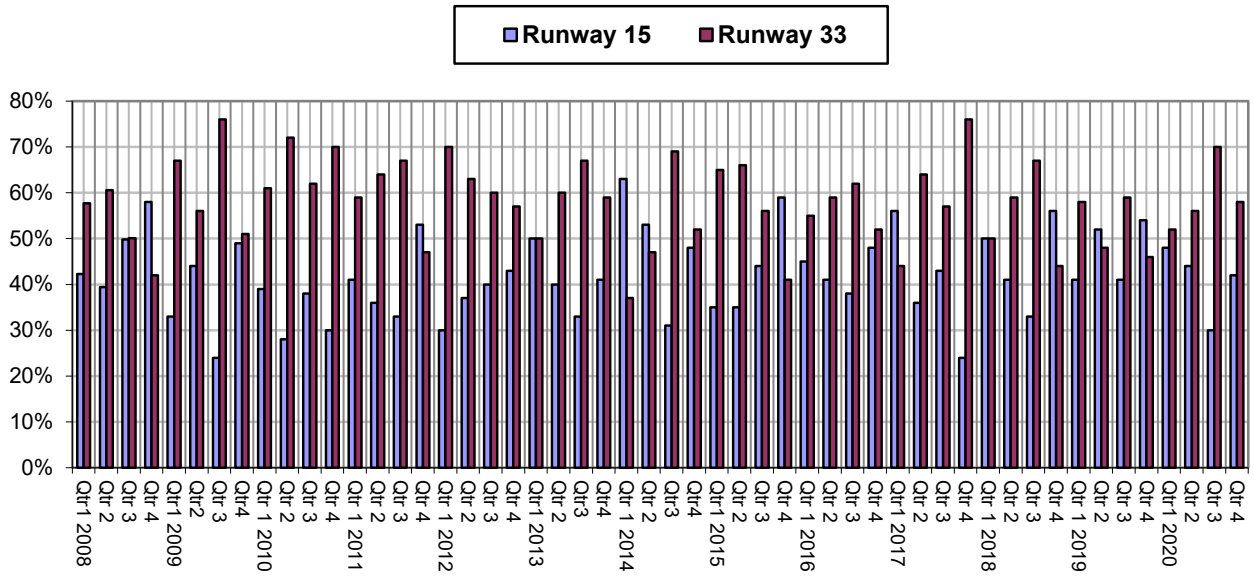
Departing aircraft have set routes they are required to follow until they get to a certain height. However, on arrival aircraft have no set routes until they are established on the Instrument Landing System.

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

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

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

Figure 4. Runway usage



Noise Preferential Routes

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

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

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

The NPR ceiling for southbound departures from Runway 15 was raised to 4000 feet in July 2016. This was following a trial to determine if it was possible to do and if it would have a perceivable reduction of noise in the community.

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

Track Keeping

In 2006 BAL launched 'Operation Pathfinder' to encourage better track keeping performance by airlines operating from Birmingham.

The Section 106 agreement states that the Airport Company will seek to achieve and maintain a target of 97% of aircraft on-track for departures. Currently the airport achieves more than this target.

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.

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

Continuous Descent Approach

The use of Continuous Descent Approaches (CDA's) started at Birmingham Airport in 2009 after a successful trial with airlines and Air Traffic Control.

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 less fuel used, less noise created and emissions are reduced.

Aircraft are collectively achieving over 90% compliance with the CDA procedure and the target is to be increased to 96%. This forms part of the Operation

Pathfinder Programme with the aim to improve compliance and reduce noise impact.

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

Continuous Climb Departures

Aircraft are given a continuous climb up to 6000 feet on departure by Air Traffic Control unless there are operational reasons not to do this. This type of departure helps reduce aircraft fuel consumption and CO_2 emissions as the highest levels of fuel burn and CO_2 emissions are generated by an aircraft climbing to 10,000 feet. Air Traffic Controllers are encouraged to transfer aircraft to the next controlling centre early to help facilitate climbs past the 10,000 feet level.

Airspace Change

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

Departures- Runway 15 - Northbound turn

This applies to flights departing from Runway 15 to the South but which turn north for destinations including Scotland or across the Atlantic.

A report was submitted to the CAA in June 2018 regarding the revised northbound SID from Runway 15. The redesigned and validated SID now enables all aircraft to fly closer to the centreline as outlined in the initial consultation documents. This minimises direct over flights to Balsall Common by aircraft using the turn and also moves aircraft further to the East of Barston. A decision was received by the CAA approving the procedure and it became effective on 23rd May 2019.

Airspace change for departures from Runway 33

All controlled airspace to the North of Birmingham Airport is being re-designed by NATS (National Air Traffic Services) as part of the Future Airspace Strategy Implementation –North (FASI-N) programme.

A public consultation was undertaken in 2017 setting out proposed new flight paths for aircraft departing to the North on Runway 33.

At the end of the consultation all documentation, data and responses received were collated and formally submitted to the CAA. It gave approval for the new SIDS in February 2019 and they became effective on 23rd May 2019.

Another reason for the change was the introduction of satellite navigation known as RNAV (Area Navigation) This enables aircraft to fly the centreline of SIDs more accurately and to use air space more effectively than the previous system of ground based radio beacons.

Air Traffic Movements

Although not required by the Section 106 Agreement, the annual number of Air Transport Movements (ATMs) is a useful indicator of the level of operation at BAL and these are reported to SMBC. The total air traffic movements include cargo, passenger and private/executive movements. Covid 19 and its travel restriction created an unprecedented decline in air travel not only from Birmingham from but from all UK airports which is reflected in the low number of ATM's. This continues into 2021.

Table 12. Total air traffic movements at BAL 1996-2020

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
2018	111,532
2019	113,850
2020	35,196

Note: these figures have not been verified

9. COMMUNITY BENEFITS

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

Community Trust Fund

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

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

The annual contribution agreed in the Section 106 is index linked and the amount contributed by BAL in 2019/20 was £88,500.26.

Since the inception of the Community Trust Fund in 1998 over £1.8 million has been awarded to projects which have benefitted the local community.

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

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

The Learning Hub

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

It is a self-contained unit and provides an insight to the airport and how it works. There is no charge to use the facilities but visits must be pre booked and are available to groups throughout the region. The facilities can cater for children from nursery age to post 16.

Table 13. Total Community Trust Fund awards 1998-2020

Year	Total Awarded (£)
1998	98,156
1999	83,993
2000	153,139
2001	103,751
2002	97,670
2003	90,212
2004	72,868
2005	65,444
2006	51,175
2007	53,027
2008	67,349
2009	49,994
2010	52,40
2011	54,067
2012	55,165
2013	68,607
2014	76,174
2015	82,516
2016	81,377
2017	83,975
2018	84,878
2019	99,454
2020	43,546

Table 14. Community Trust Fund awards for the financial year 2019/20

Name	Area	Awarded	Purpose
Art at the Heart CIC	Solihull	£1,637.88	Data Projectors for digital arts projects
The Barston Association	Barston	£2,228	PA System, tables and fridge for fundraising events
Pavilions Bowling Club	Kingshurst	£2000	Scarifier for green maintenance
237th Birmingham Scouts	Castle Bromwich	£2,574.40	Materials for sensory & veg gardens
The Lily Mae Foundation	Balsall Common	£2000	Inflatable start/finish posts for annual fun run event
Advocacy Matters	Boldmere	£3000	Laptops for advocates to assist vulnerable people
Go Girl Birmingham	Smiths Wood	£1500	Arts materials, sports & IT equipment
Berwood Farm Allotments	Erdington	£1490	Storage container for tools and chemicals
North Solihull Stars Netball	Chelmsley Wood	£1,500	Training aids and equipment
Solihull Sporting FC	Chelmsley Wood	£1500	Training aids and video recording equipment
Colebridge Trust	Chelmsley Wood	£1390	Tablet computers to tackle digital exclusion
St Andrews Church	Chelmsley Wood	£2,161.74	Sports, play and cooking equipment
New Gen Projects	Shard End	£2300	Office equipment and contribution to kitchen update
Cockshut Hill School	Yardley	£1500	Mountain Bikes
Marston Green Netball Club	Marston Green	£1000	Replacement floodlights
Three Trees Community	Chelmsley Wood	£3000	Building improvement works
West Midlands Ringing	Hampton in Arden	£2000	Power tools for conservation work
Hampton Scout & Guides	Hampton in Arden	£3000	Installation of new kitchen
Solihull Young Carers	Solihull	£1000	Contribution towards cost of new minibus
John Taylor Hospice	Erdington	£ 921.98	Equipment for new children's therapy room
Birmingham Disability	Kitts Green	£2200	Arts materials for art therapy classes
Yardley Pathfinders &	Yardley	£3000	Camping equipment and accessories
Warwickshire Wildlife Trust	Solihull	£624.94	Awning at Brueton Park Visitor Centre
Total		**£43,546.94**	

After a successful 10 year partnership with Acorns Children Hospice a shortlist of new potential charities was carried out in December 2019 with voting amongst staff members to decide the winner.

The new 3 year corporate charity partnership will be with locally based charity, Solihull Mind.

This charity provides a range of services to those with mental health problems and works across the Borough with support reaching many communities in close proximity to the Airport.

Corporate Responsibility reports are available on the Birmingham Airport website.

10. Historic Environment, Ecology and Landscape

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

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

A Steering Group has been established to advise on the Historic Environment Ecology and Landscape Management Plan (HEELMP) as outlined in the Section 106 Agreement and has members from Birmingham Airport, Solihull MBC, Natural England and Warwickshire Wildlife Trust.

Throughout 2020 the monthly monitoring programme and quarterly steering group meetings were impacted by Covid 19.

One site meeting was held in September with the new tenant farmer along with the Birmingham Airport (BAL) Team responsible for managing the HEELMP. A further virtual steering group meeting was held in December 2020. A total of 5 monitoring ecology visits were undertaken in 2020.

The Grade 2 listed building at Castle Hills Farm which forms part of the HEELMP was partially destroyed by fire and a structural survey has indicated the structure is unsound. The Airport is liaising with SMBC and heritage officers to decide its future.

Protected Species

In the summer of 2020 BAL commissioned Crestwood Environmental to undertake a crayfish survey of the watercourses at the airport. The report identified the presence of the invasive non-native signal crayfish in the Low Brook north of the A45.

Signal crayfish are known to carry crayfish plague and are one of the main threats to the loss of the native white-clawed crayfish (WCC). The presence of signal crayfish in the same stream as the white-clawed crayfish is of grave and urgent concern.

SMBC commissioned Middlemarch Environmental to produce a WCC species recover management plan which has been funded by Severn Trent. This report will inform the future management and conservation of this threatened population of WCC.

Middlemarch Environmental were contracted to undertake the HEELMP protected species monitoring for 2020-2024. They submitted a report which has identified the following:

The inspection of the bat boxes identified five species of bat using the various bat boxes. Common pipistrelle, soprano pipistrelle and brown-long-eared bats have previously been recorded using the bat boxes.

During 2020, Natterers bat and whiskered bat were recorded for the first time. The survey identified that common and soprano pipistrelle were using the bat boxes for mating.

The data shows that the numbers of bats and species present within the boxes has slightly increased. This increase could be as a result of natural uptake, or it may be as a result of the fire which occurred at Castle Hills Farm. This fire left the farmhouse as a shell and would have removed the roosting potential at the site and forced the bats to roost elsewhere.

Three barn owl boxes had signs of use by barn owl with two of these having remains indicative of earlier nesting. However, as the birds were not present at the time of survey, it cannot be accurately ascertained if these were two separate pairs, or the same pair having a second clutch (which is more likely). Three damaged bat boxes and one barn owl box were replaced.

The daytime and nocturnal torch survey did not identify any white-clawed crayfish, however, the results of all the three eDNA samples were positive for white-clawed crayfish and negative for crayfish plague. This indicates that a low population is still surviving within the two brooks.

11. Health

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

The Health Action plan was completed in 2017 in conjunction with the Airport Health group and reported to Solihull MBC.

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

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

12. Business Tourism

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

The aim is to market Solihull as a 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 Airport is currently engaged in developing the Solihull Tourism Action Plan and contributing to promoting the area as a place to visit and stay. Due to Covid restrictions no meetings were held in 2020 but plans will continue once the threat is downgraded.

13. Corporate Social Responsibility

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

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

The report outlines the investments that the Airport makes to local communities not only through the Community Trust Fund but also projects, charities and local community support and to help connect disadvantaged young people with job opportunities at the airport.

The Corporate Social Responsibility Report contains details on many topics that are also detailed in this Section 106 report such as noise, education, carbon reduction and employment.

The sustainability strategy shows the Airports' commitment to become a net zero carbon airport by 2033, prioritising zero carbon airport operations and minimising carbon offsets and how it wants to fulfil its target ahead of the UK wide target of 2050. Despite rising passenger numbers the airport has reduced its carbon emissions by 33% since 2013.

Section 3 of this report outlines steps which have already been taken to minimise emissions such as the introduction of electric buses serving the airport car parks.

The Airport is also looking at ways to reduce other environmental impacts such as air quality, waste, supply chain, water and biodiversity.

With the country affected by national lockdowns in 2020 at relatively short notice the Airport was able to secure a route to enable food from its onsite food outlets to be donated to a local foodbank. The food was still within its sell by/use by date and since the start of the pandemic approximately 2 tonnes of food has been donated that would have gone to waste.

Birmingham airport works with Sustainable Aviation who have a long term strategy with the aim of making aviation a cleaner, quieter and smarter industry. Sustainable Aviation is a coalition of UK airlines, Airports, Manufacturers and air navigation service providers. Their website can be found at https://www.sustainableaviation.co.uk/

Details of the Corporate Social Responsibilities are reported to Solihull MBC through the Airport Consultative Committee. Available on the airport website at

https://www.birminghamairport.co.uk/about-us/community-and-environment/sustainability-strategy/

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 ' which will be reviewed every three years.

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

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

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

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

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

In 2020 Covid saw reduced numbers of staff at the airport due to furlough and redeployment. Many schools and further education also had periods of closure and it was not possible to give the normal level of support to these establishments. It is hoped that when air travel gets back to more normal levels then these opportunities will be in place once more

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

The Airports Sustainability Strategy 2020-2025 is now available on the Airport website and sets out the airports commitments for the future and its overall aim to become a net zero carbon airport by 2033 ahead of the Government target of 2050 by prioritising zero carbon operations and minimising carbon offsets.

Birmingham Airport has produced a Carbon Management Plan which monitors 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 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.

The results in the table below includes tenants and concessions within the Terminal and all buildings on the Airport site where it has control over the power supply. These tables will be fully updated next year.

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 the largest contribution of these emissions. The aviation industry is taking steps to reduce these emissions through engine design and BAL continues to work with Sustainable Aviation.

Table 15. Tonnes of CO_2 for Scope 1 and 2

	Baseline 2012/13	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**
	Tonnes of $C0_2$						
Scope 1 (gas, owned transport, fugitive emissions)	6,041	5,433	4,939	5,193	5,049	6,013	5,309
Scope 2 (Purchased Electricity)	19,001	18,460	19,302	17,418	15,743	13,406	11,383
Total Gross Emissions	**25,042**	**23,893**	**24,241**	**22,611**	**20,792**	**19,419**	**16,691**

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 onwards were calculated using more accurate route planning software which shows a more accurate, but increased, figure.

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

If the 2015/16 passenger travel results were calculated using the original methodology the scope 3 the figures would show a reduction of 16 to 14 kg of Co_2 per passenger.

This will be updated in the next annual report along with other emissions data.

Table 16- Scope 3 emission totals

	2012/13 Tonnes CO_2 e	**2015/16 Tonnes CO_2 e**	**2018/19 Tonnes CO_2 e**
LTO cycle	105,428	103,123	116,959
Passenger Travel	36,135	168,515	140,740
Train-business travel	4	2	3
Flights-business travel	212	143	97
Car-business use	3	4	5

Waste Management	33	33	60
Water use and treatment	208	394	386
Electricity transmission and distribution	1501	1438	967
Total Scope 3	**143,524**	**273,652**	**259,216**

(Note: CO_2e is a figure which allows "bundles" of greenhouse gases to be expressed as a single number; and it allows different bundles of GHGs to be easily compared (in terms of their total global warming impact).)

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

The Airport is investing in smart meters to allow automatic monitoring across the site. The results from this monitoring will be reviewed to see where any reductions can be made and also to be more efficient in the management of heating and cooling.

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

There is a rolling programme of LED replacement lighting and the introduction of PIR lighting sensors in Car Park 1 further reduces energy and emissions. The introduction of LED lighting in other areas of the Airport is also being undertaken.

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

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

Birmingham Airport has set a target to become carbon net zero by 2033 and strives to reduce emission reduction per passenger. Table 17 shows that there is a downward trend. This will be fully updated next year.

Table 17 – Kg CO_2 per passenger

Year	12/13	13/14	14/15	15/16	16/17	17/18	18/19
Kg CO_2 per passenger-Scope 1 and 2 emissions	2.81	2.58	2.45	2.17	1.75	1.51	1.33

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

Arden Free Tree Scheme

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

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

Private individuals or groups who wish to create hedgerows or small woodlands on their own land can apply to the scheme for trees. Applications are open each year until August. Trees are delivered to be planted at the start of the planting season. Council officers will visit to ensure that the trees are being correctly maintained.

For 2020 the Arden Free Tree Scheme supported 30 schemes planting a total of 6431 native trees and shrubs. Fifteen of these schemes were delivered through a new partnership developed with Warwickshire Wildlife Trusts' Arden Farm Wildlife Network

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 sent to a waste to energy facility.

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

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

Conclusion

Without doubt Coronavirus has had a massive negative impact on all sections of the UK and worldwide economy and the aviation sector generally has suffered with the restrictions on travel to and from the UK.

Birmingham airport has remained operational throughout the whole of the lockdown but passenger numbers are not those anticipated for 2020 and the year has been a very testing time for all airports across the UK not just Birmingham Airport.

When restrictions were lifted after the first lockdown passengers numbers improved as air bridges were formed with other countries and June and July were busier than the previous months as restrictions were eased, but the hoped for upturn in Autumn never took off and the second lockdown saw traffic volume declining once more and air traffic generally was supressed due to Covid.

Aviation is the most challenging it has ever been and the new tiered system in the UK is also challenging to the industry but Birmingham Airport are implementing all of the necessary control measures to make passengers journey as safe as possible and so anticipate a gradual return to pre covid times with increased flights and passenger numbers when travel restrictions are eased.

2020 saw Birmingham Airport comply with all Obligations within the Section 106 Planning Agreement.

REFERENCES

[1] Developing an Integrated Transport Policy (1997)
Department for Transport, Great Minster House, 76 Marsham Street,
London SW1P 4DR
www.dft.gov.uk

[2] Automatic Urban Network air quality monitoring
www.defra.gov.uk/environment/statistics

[3] Annex 16 Volume 1 Aircraft Noise, Third Edition (1993) to the Convention on International Civil Aviation Organisation signed on behalf of the UK 7 December 1944 ICAO, External Relations and Public Information Office, 999 University Street, Montreal, Quebec, H3C 5H7, Canada
www.icao.int

[4] Birmingham International Airport and Solihull Metropolitan Borough Council (2009) Section 106 Obligation: Birmingham International Airport

[5] HMSO (1990) Town and Country Planning Act 1990
www.publications.parliament.uk

BIBLIOGRAPHY

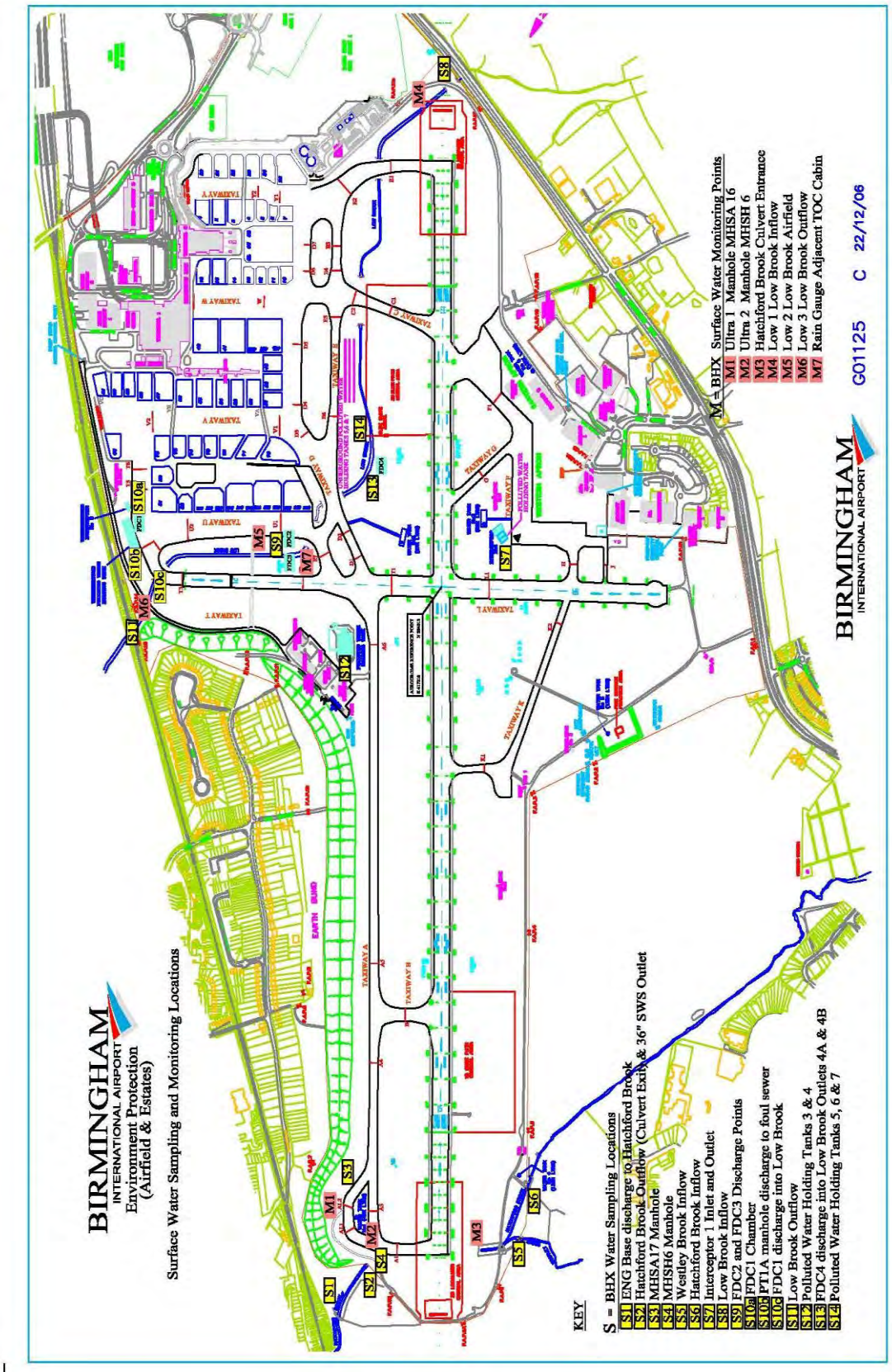
Birmingham Airport Master Plan 2018

Birmingham Airport Surface Access Strategy 2018-2023

Birmingham Airport Noise Action Plan 2019-2023

Birmingham Airport Sustainability Strategy 2020-2025

SOLIHULL LOCAL PLAN
Shaping a Sustainable Future (2013)


BIRMINGHAM
INTERNATIONAL AIRPORT
Environment Protection
(Airfield & Estates)
Surface Water Sampling and Monitoring Locations
BIRMINGHAM
INTERNATIONAL AIRPORT
G01125 C 22/12/06
M = BHX Surface Water Monitoring Points
M1 Ultra 1 Manhole MHSA 16
M2 Ultra 2 Manhole MHSH 6
M3 Hatchford Brook Culvert Entrance
M4 Low 1 Low Brook Inflow
M5 Low 2 Low Brook Airfield
M6 Low 3 Low Brook Outflow
M7 Rain Gauge Adjacent TOC Cabin
KEY
S = BHX Water Sampling Locations
S1 ENG Base discharge to Hatchford Brook
S2 Hatchford Brook Outflow (Culvert Exit) & 36" SWS Outlet
S3 MHSA17 Manhole
S4 MHSH6 Manhole
S5 Westley Brook Inflow
S6 Hatchford Brook Inflow
S7 Interceptor 1 Inlet and Outlet
S8 Low Brook Inflow
S9 FDC2 and FDC3 Discharge Points
S10a FDC1 Chamber
S10b PT1A manhole discharge to foul sewer
S10c FDC1 discharge into Low Brook
S11 Low Brook Outflow
S12 Polluted Water Holding Tanks 3 & 4
S13 FDC4 discharge into Low Brook Outlets 4A & 4B
S14 Polluted Water Holding Tanks 5, 6 & 7

Map 1

Map 2- Sound Insulation Scheme Boundary