

**16TH 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 2014.

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 and the Environment Agency

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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

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)

ANITA-Airport and NEC Integrated Transport Access

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

CDA - Continuous Descent Approach

Centro - passenger transport executive for the West Midlands

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

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

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

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 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

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

INTRODUCTION

This document, the 16th Annual Report of the Section 106 Planning Agreement, 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 from 2014. This enables comparison of environmental performance year on year. Figure 1 shows the growth in passenger numbers at the airport since 1986.

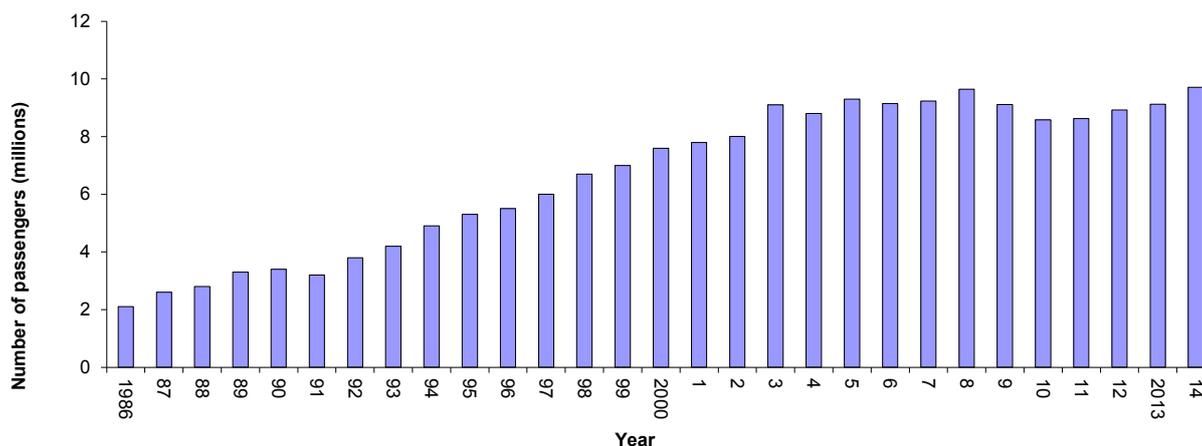
2014 saw the extended runway open and a China Southern flight was the first aircraft to make use of the new full length runway.

The Tourism minister, Helen Grant MP, visited the Airport to welcome the first direct flight from China into an airport outside of London.

The China Southern A330-200 aircraft arrived fully laden with passengers on an organised flight. The aircraft used the full length of the extended runway on departure for its 5000 mile journey to Beijing.

2014 was Birmingham Airports 75th year and also saw its 200 millionth passenger. August was also the busiest month in the history of the Airport. The growth in April put Birmingham Airport as one of the UK's fastest growing airports and there has been growth in the overall number of passengers using Birmingham Airport.

Figure 1. Passenger numbers at Birmingham Airport 1986-2014



AIRPORT MONITORING

The role of the Airport Monitoring Officer (AMO) is to audit all aspects of the Section 106 Agreement. With the new Section 106 Agreement 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. To date there has never been such a breach.

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 emailing EnvironmentTeam@birminghamairport.co.uk
- By visiting the noise section of Birmingham Airport website www.birminghamairport.co.uk
- 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 6908 (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.

Full details of the decision notice can be found on the Birmingham Airport Website.

A Draft deed of variation was submitted to Solihull MBC and accepted in 2014. This removes the Airports requirement to provide 4.2 hectares of MG4 grassland and replace it with a requirement to pay £129,000 to Solihull MBC for the purposes of habitat and biodiversity enhancement elsewhere within the borough. The money has been received by Solihull MBC with an expectation that work will commence in Spring 2015.

2. LAND USE AND PLANNING

Runway Extension

The runway extension was completed and opened in May 2014.

By extending the existing runway by 405 metres, aircraft will be able to take off from Birmingham with more fuel and fly direct to destinations previously out of reach, such as China, South America, South Africa, and the West Coast of USA, the Middle East and Pakistan.

The Tourism minister, Helen Grant MP, visited Birmingham Airport to welcome the first direct flight from China in July into an airport outside of London.

The China Southern A330-200 aircraft arrived fully laden with passengers on an organised flight. The aircraft used the full length of the extended runway on departure for its 5000 mile journey to Beijing.

Car Park Upgrade

The upgrading of car park 5 is now complete. This entailed a total re-configuration of the layout including an extension over the old A45 section, new tarmac to some areas, new bus shelters and a new re located viewing area.

Drainage Works

Drainage works to the North airfield are now complete. This works ensures that the local environment is protected and all contaminated water is sent to the treatment works at Minworth and will not be allowed to go into the watercourses on the airfield.

Other works

There is now a new transit facility created on the International Pier. This allows passengers who have a connecting flight to remain airside without having to pass through immigration or security control.

New LED lighting has been installed in the Terminal and this will be carried out in Car Park 1 in 2015. This will reduce energy costs and maintenance.

Other projects that are planned are the demolition of Hangar 1 on the Elmdon Site, installation of electric vehicle charging points in the drop and go car park, erection of a cycle shelter at Elmdon Site, relocation of the taxi corral to a site adjacent to Long Stay Car Park 5 and also improvements to this car park. These projects are either classed as permitted developments or have been given consent by Solihull MBC.

National Aviation Policy

In December 2013 the Airport Commission produced an interim report which gave recommendations for the best use of short and medium term capacity and a shortlist of long term options for further consideration in 2014.

It concluded that further studies for new runways will be carried out at Gatwick and Heathrow.

Birmingham Airport has produced a report in response to the Airport Commission consultation and this can be found at www.balancedaviationdebate.com/research. along with background details on the Governments Draft Aviation Policy Framework.

3. SURFACE TRANSPORT

Schedule 3 of the Section 106 Agreement relates to monitoring the mode of surface access used by all Airport users to access the Airport and contains 27 conditions.

Some conditions in this schedule relate to the setting up of a Tunnel Design and Safety Group and how the group will be formed and the Group's remit. Provision was made in the Planning application for a tunnel over a section of the A45 but the Airport Company do not intend to carry out this work for many years and therefore the conditions relating to the forming of The Tunnel Design and Safety Group is currently not required.

The Airport Company published an Airport Surface Access Strategy in 2007(ASAS) and this was reviewed and updated in 2015. The Strategy, together with the 'Airport Master Plan 'Towards 2030'', 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. The final draft of Surface Access Strategy covers the period 2015-2020 is available on line at the Birmingham Airport website and is out for consultation.

In 2012, Birmingham Airport's Travel Plan was launched. This included a range of measures to influence passengers, employees and visitors accessing the Airport site. It focuses on all modes of travel and its main objective is to ensure that the Airport is accessible for all uses. This was reviewed in 2015 and Birmingham Airport will work to meet the modal share targets set out within the Section 106 agreement. 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.

The ASAS also introduces a target which relates to the ratio between total vehicle trips (inbound and outbound) and total passengers. The ASAS sets a 2012 target for this ratio of 1.08. and results for 2013 show a ratio of 1.06 trips per passenger

Table 1 Passenger Mode Shares and Targets

Mode	2013 %	2016 Target %
Car	48	42
Train	23	25
Taxi	18	18
Off site car park	7	7
Bus/Coach	4	8

Table 2 Employee Mode Shares and 2012 Targets

Mode	2013 %	2016 Target %
Car	84.3	79
Train	8.1	10
Cycle	2.7	3
Car Share	2.2	4
Bus/Coach	1.6	3
Other	1.1	1

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.

ANITA Scheme

The ANITA scheme –Airport and NEC Integrated Transport Access Scheme- was an £11m scheme to improve the road system around Birmingham International Station, Birmingham Airport and The NEC and was funded by the Department for Transport. The scheme has improved transport links between the North and South of Solihull and with the increased and improved bus services has opened up job opportunities for the communities at Birmingham Airport, the NEC and further afield.

The project provided a new interchange at Birmingham International rail station, improved links between trains and buses. It links with Skyrail and the National Exhibition Centre.

The ANITA scheme has also improved walking and cycling facilities and Birmingham Airport will continue to work with the NEC, Solihull MBC, Centro and Train Operating Companies to improve connectivity to and from Birmingham Airport.

Other works

There are a number of major highway projects on going in the vicinity of the Airport.

Works to widen the A45 westbound carriageway either side of the A45 South Bridge were completed at the end of December 2014. This was funded by Birmingham Airport

In January 2014 Solihull Council commenced work to replace the existing three lane road-over-rail bridge on the A45 (Coventry Road) near the M42 Junction 6.

The original bridge dates back to 1837 and is used by around 30,000 vehicles per day. As well as having some structural defects the bridge is not ideal in its existing form as it is too narrow. The new replacement bridge will double the width to accommodate four lanes of traffic and a safe pedestrian access along the A45 towards the Airport, improve the slip road into the Airport and

generally improve traffic capacity, reduce congestion and improve general highway safety. It is expected to be completed in August 2016.

The project is one of the first steps in improving a nationally important strategic location, known as UK Central (UKC). This area contributes over £2.5bn GDP to the economy and includes the NEC, Jaguar Land Rover and Birmingham Airport.

These two projects form the first steps to improve key strategic transport links for the area and the financial benefits it will bring to the surrounding areas.

High Speed Rail

High Speed 2 is being developed in two phases and therefore two separate hybrid Bills are to be prepared for Parliament.

The Phase One Bill, covering the scheme between London and the West Midlands, was introduced in Parliament in late 2013. The Government is aiming for the Phase One hybrid Bill to become law (achieve Royal Assent) in 2016.

The Phase Two hybrid Bill, covering the proposed routes from the West Midlands to Manchester, Leeds and beyond, will be brought forward in the next Parliament, following the May 2015 General Election.

Details of the HS2 proposals can be found at the DfT website (www.dft.gov.uk) and currently the completion date is expected to be 2026.

Public Transport Information

The Airport Company continues to review the range and quality of public transport information available at the Airport, and is considering how such information can be provided as real time information and through electronic media such as mobile phones.

As part of the ANITA scheme, Real Time Information displays were installed in the Multi Modal Interchange and in the Baggage Reclaim Areas. There will also be information regarding Motorways, Rail and Bus services.

A touch screen facility was installed on the first floor of the Multi Modal Interchange, which provides onward travel information.

For passengers arriving at Birmingham Airport travel information will also be advertised on the luggage carousel information displays.

The Airport Company is working with Centro regarding surface access information and signage and how it can be improved.

Cycling

Schedule 3 contains a number of conditions to help promote cycling for staff and visitors to the Airport. The Airport Company continued to promote cycling as a convenient and healthy way for journeys to work for the 40% of staff

living within five miles of the Airport. Lockers are available for staff use and a salary sacrifice scheme was launched in 2013 to encourage staff to cycle to work. A car share scheme will also be launched in Spring 2015.

The ANITA scheme also included improvements to cycle routes for both pedestrians and cyclists.

Birmingham Airport contributed £50,000 to the Marston Green/Sheldon Country Park cycle route. Solihull MBC will commission a scheme with Birmingham City Council to complete the cycle route.

The proposed cycle route along the diverted A45 Coventry Road between the Clock Junction and the Damson Parkway Junction has now been completed and opened in its entirety in 2014. Feedback from users shows that the route is being well used.

The £2.6 million project to create a series of cycle routes connecting North Solihull with key employment sites in the area was also completed in 2014.

The 19 km cycle friendly route will enable people to cycle to and from work more easily and will link into cycle improvements created through the recently completed Airport and NEC Integrated Transport Access Scheme. The North Solihull Strategic Cycle Network scheme was supported by £1.3 million from the European Regional Development Fund and match funded by Solihull Council. The route is part of a package of activities to develop and improve the North Solihull area. The route was originally intended to be 13 km but an extra 6km was added. Usage statistics show the routes are proving very popular.

Table 3. North Solihull Cycle Network Cycle Usage Data

Location	NSSCN Phase	Pre Scheme Count	Date	Post Scheme Count	Date	Additional Cyclists
Windward Way	Phase 1	62	19/03/2012	98	08/7/2014	36
Moorend Avenue	Phase 2	43	05/04/2012	157	02/7/2014	114
Chester Road	Phase 3	107	19/06/2013	130	09/7/2014	23
Auckland Drive	Phase 4	16	06/06/2013	53	13/3/2014	37
Chelmsley Road	Phase 5/6	57	04/06/2013	115	07/7/2014	58

As part of the project, grants are available for businesses located in the North of Solihull to assist in improving cycle facilities for staff with the aim to make cycling more accessible and attractive as a way getting to work. Full details of the Scheme/Grant opportunities are available from Solihull Council web site. The new network will connect with existing routes near the Airport/NEC complex to provide the first continuous cycle link between Castle Bromwich and Solihull town centre.

Other Developments

The bussing operation at Birmingham Airport is now being operated in-house by a subsidiary of the Airport Company after the previous contract came to an end. This provides land and airside bus operations in car parks and on the airfield.

A project to upgrade the North baggage handling facility has been approved and will be completed in 2017. This will double the baggage capacity of the Airport.

Car Parking

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. As a result of the bussing operation being bought in house the number of staff employed by Birmingham Airport Limited increased over the year.

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 4. Parking provision to passenger numbers 1995-2014

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

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 and means the Airport Company will pay an amount of money based on the number of cars using the car parks at the Airport Site and this will be reported to Solihull MBC. An amount will also be paid by the Airport Company by way of a levy on staff car parking.

The levy will fund sustainable transport initiatives, infrastructure projects and other activities which contribute to the increase in the Public Transport Modal Share targets. A Travel Plan Monitoring Group will give advice on how the car park levy shall be allocated.

Based on current passenger numbers the Car Park Levy could potentially generate up to £250, 000.

Surface Access Group

Schedule 3 conditions 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.(BASAG)

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

Many issues raised in the separate groups were issues that crossed more than one group and some groups were attended by the same individuals. 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.

The newly formed group is made up of representatives from passengers, visitors and employees and membership is based upon the conditions in the Section 106 Agreement 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 travel plan produced and launched in 2012 was reviewed in April 2015. Its main aims are 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

4. NOISE CONTROL

There are a number of Obligations which relate to noise as set out in Schedule 4 of the Section 106 Agreement. Some of the conditions 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 Schools Environmental Improvement Programme subject to a minimum allocation of £50,000 in any 12 month period and report to Solihull MBC on the schools which have benefited from the scheme.
- 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
- To start a feasibility study into the provision of an engine ground running facility and submit the report to Solihull MBC

Each of these obligations is explained in more detail below.

Birmingham Airport has further mitigation measures in place to ensure that aircraft both on the ground and in the air operate in the quietest manner possible. [Details of these can be found in the noise action \(link\)](#)

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 insulated in 2014 under the Sound Insulation Scheme with a mixture of privately owned and council owned properties.

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 logged and entered onto a management facility which is incorporated into the Airport Noise and Operations Monitoring System (ANOMS) and responded to within 5 working. 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 2 D and 3 D 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

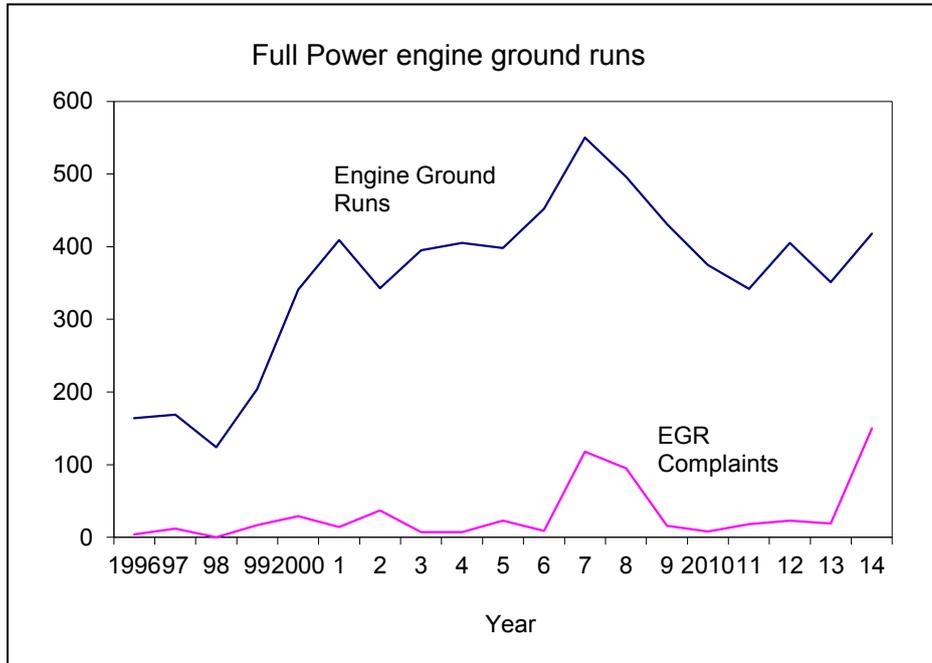
FULL POWER AIRCRAFT ENGINE GROUND RUNNING

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.

During the night-time there is a ban on full power engine ground running. In the morning shoulder period (0600-0700), Birmingham Airport and Solihull MBC have agreed a noise-limiting scheme.

Figure 2. Total number of Engine Ground Runs (full power) 1996-2014

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 Environment Team. The number of full power engine ground runs that are approved are reported to SMBC and other interested parties in the Sustainability report. (Previously the Environment Monitoring Report) These are also audited by the Airport Monitoring Officer.

Figure 4 shows the total number of full power engine ground runs that occurred between 1996 and 2014. Full power engine ground runs are currently only permitted at specific locations, with Taxiway Echo being the preferred location with Taxiway Lima as the secondary option which is closer to Elmdon.

IDLE POWER AIRCRAFT ENGINE GROUND RUNNING

In November 2009 SMBC Planning Committee approved Idle Engine Ground Running on all Aircraft Stands (with exception of the 80’s stands) during the night period

AIRCRAFT 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 Environment Team.

Since October 26 1999, the Airport Company has been operating under an obligation under the previous Section 106 Agreement to consider restrictions

on engine ground running between 0600 and 0700. At that time it was felt that the airport's restrictions on ground running were sufficient. Following a noise monitoring exercise a year later, 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

In 2013 Birmingham Airport reduced its daytime noise limit from 92 dB(A) to 90 dB(A) which was an obligation under the new Section 106 Agreement. 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.

Feasibility study into Engine Ground Running

In 2013 as part of the new Section 106 Agreement Birmingham Airport looked at undertaking a feasibility study into the siting of an Engine Ground Running Facility.

The study assessed the current regime along with future activities and determined noise and air emission assessments of any potential locations.

The initial report concluded that Taxiway Echo is not sustainable in the longer term. It restricts aircraft to run into the wind, puts pressure on the taxiway system and raises issues with jet blast and ingestion of debris into the engine. It is also not appropriate for wide bodied aircraft in the short term. Even though the engine test itself may only take a few minutes the aircraft can be in place for an hour or so.

6 possible locations were outlined but two of these were ruled out at an early stage. The remaining four locations will be examined in depth by way of a trial commencing from 25th January 2014 for a 12 month period. Noise from Engine Ground Runs over the trial period will be monitored along with any complaints received. Noise will be measured at the nearest residential property and compared to the background noise level. In the 12 month period nearly 400 runs took place with around 300 taking place at locations outside of their normal locations.

The trial has been extended into 2015 to allow the Airport Company to gather further noise data.

Noise Action Plan

Birmingham Airport produced a Noise Action Plan in 2011 which has since been reviewed. The revised Noise Action Plan was adopted by the Department for Environment Food and Rural Affairs on 4 August 2014. This followed a consultation period with the Airport Consultative Committee. The revised document can be viewed on the Airport website by the following link

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

Noise contours

One way in which the Airport determines local noise impacts is through the use of noise contours which are a measure of noise represented on the ground as a line represented by differing noise level bandings. Birmingham Airport reviews its noise contours every two years and then produces new noise contours.

The most recent noise contours, created in 2012 as part of the review of the Noise Action Plan, have shown a decrease in the area, population and number of households within all noise contour levels and at all time periods. The L_{den} 55dB and L_{night} 50dB noise contour are designated for consideration in the Noise Action Plan. There was been a decrease in L_{den} 55dB noise contour, with a decrease in area of 10%, 8% less population and 13% less households for this noise contour. Similarly, for the L_{night} 50dB contour there has been a decrease of 3.3% in area, 2.4% population and 7.7% of households.

Continuous Descent Approaches

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. Implementation of CDAs has been brought forward prior to the new requirement and monitoring has shown that in 2014 94.5% 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 single engine taxiing or reduced engine taxiing. This is where the plane taxis to or from the runway using only one of the engines to 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 5. 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

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

The number of noise complaints increased in 2014, which is probably due to a raised awareness of the Airspace Change Process. A high number of complaints were received around the same date from the Marston Green area shortly after a leaflet drop to highlight the engine ground trials. Since the initial peak in these complaints numbers have reduced.

During June 2014 the Instrument Landing System (ILS) was not working as it was being replaced and this led to an increase of complaints from the Balsall Common area

The ILS is a radio system that transmits two beams, the localiser and the glide path. The localiser defines the centreline of the runway and extends along the approach path for approximately twenty nautical miles. The glide path beam defines the angle, or glide slope, that the aircraft should fly while following the localiser course to approach the runway, safely clearing all obstacles. Arriving aircraft do not have a specified route to follow before joining the ILS which is why there is a variation on the position of arriving aircraft before they reach this point.

The Airport Company's Government and Industry Affairs Team produces an Annual Complaints Report, which seeks, as far as possible, to identify trends.

Air Traffic

The Airport Company shall (subject to the approval of the Civil Aviation Authority) implement any appropriate changes to its airspace as soon as practicable following the completion of the CAP 725 process. Further details of this are included in Schedule 8.

Community Benefits

The Airport Company will increase its funding of the Community Trust Fund, from £50,000 per annum to £75,000 per annum. The Fund will continue to be topped up with all income from surcharges arising from any daytime and night time noise violations. Details of the fund are shown in Schedule 9.

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) L_{Amax} as measured by ANOMS at monitoring points 1, 2, 3, 4 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) L_{Amax} during the Night Period at noise monitoring terminals 1 and 2.

Birmingham Airport's existing Night Flying Policy is amongst the most stringent in the UK and was designed to minimise community disturbance through a range of measures. A summary of the Night Flying Policy restrictions is detailed below.

CURRENT NIGHT FLYING POLICY

The Airport Company undertook a full review of the Night Flying Policy in 2011, including a public consultation. The review was presented to the Airport Working Party and a new Night Flying Policy was agreed in January 2012. It was agreed that the Airport would report to the Airport Working Party on progress after a year. The update was provided to Solihull MBC in 2013. The current policy was deemed to be working successfully and it was decided that no further changes need to be done at present.

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.

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. This is why the quota count doubles with increasing noisiness of the aircraft.

Table 6. 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 7. Quota utilisation 1997-2014

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		
	Total	5111	4		57
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

NUMBER OF VIOLATIONS

Aircraft exceeding night noise limit will be subject to a surcharge, currently a full runway charge (up to £4000). The limit changed from 87 dB(A) to 85 dB(A) for departures only on 1st February 2012 in line with the new Night Flying Policy. During 2013-14 there were 3 violations of the Night Flying Policy. The details are shown in Table 9.

Table 8. Night Flying Policy violations for 2013-14

Date/Time	Airline	Flight	Aircraft Type	Noise Level	Surcharge
27/1/14 01.22	Raf Avia	MTL1 501	AN26	88.7	Yes
3/7/2014 02.14	LVR105	LVR1 05	AN26	87.4	Yes
18/8/14 05.59	UKL 4091	UKL4 091	AN12	86.7	Yes

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.

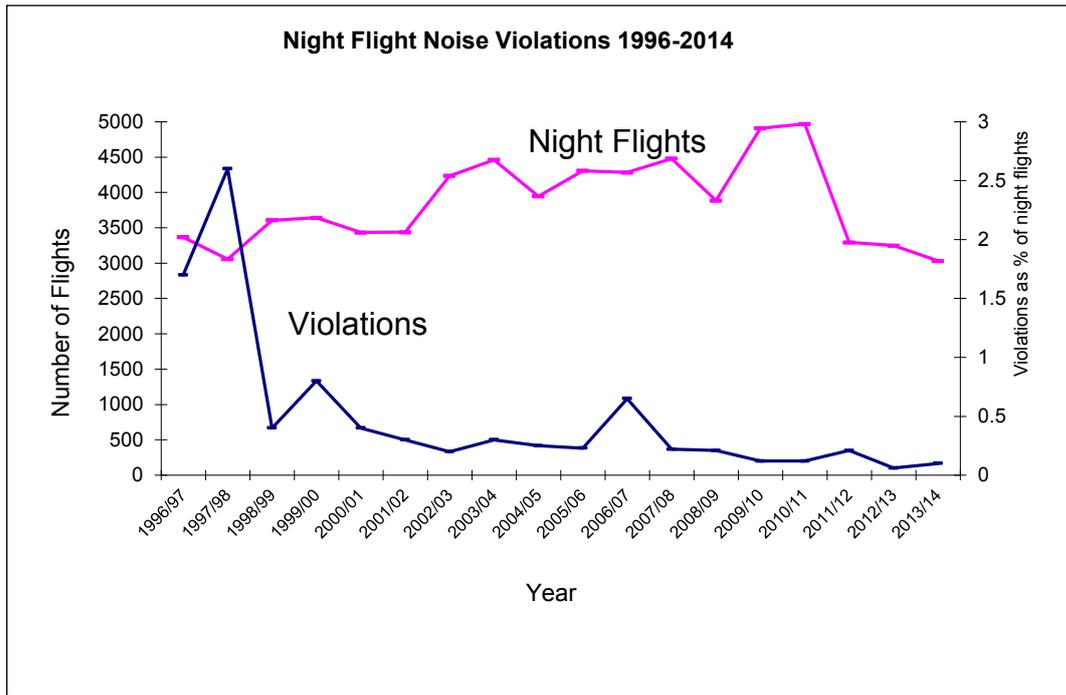
Table 9. Night-time noise violations

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
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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 to be used for the purpose of protecting eligible residential properties from aircraft wake vortices'.

Wake vortices are circulating 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 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 then 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 is carried out by a contractor appointed by the Airport Company.

Under the Civil Aviation Act 1982 it is the airline responsible and not the Airport who are liable for the damage. 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 available £100, 00 per annum to be used to protect eligible properties

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

In 2014 there were a total of 4 confirmed vortex strikes . If the properties are semi detached or terraced properties then all of the joined properties are eligible.

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 MBC. 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 it's Borough.

AIR QUALITY MONITORING DATA

Birmingham Airport has carried out air quality monitoring since 1995. There is an Air Quality Monitoring Station (AQMS) on site at the airport which provides continuous monitoring of particulate matter (PM10), carbon monoxide (CO), ozone (O₃), sulphur dioxide (SO₂) and various oxides of nitrogen (NO_x) with hydrocarbons measured via diffusion tubes. 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 which is later validated before an annual ratified report is produced.

In 2014 the data capture for all monitored pollutants was above the Defra target of 90%. Any data capture rate above 75% is deemed representative of the full annual period.

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 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 $\mu\text{g m}^{-3}$	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 11 shows the results for sites within Birmingham. There are currently no monitoring sites in the Solihull area apart from data captured at Birmingham Airport.

Table 11. Comparison results for Birmingham Airport and Local monitoring sites in 2014

	Birmingham Airport	Birmingham Tyburn Roadside	Birmingham Tyburn	Birmingham Acocks Green
Annual Mean				
PM ₁₀ (µg m ⁻³)	18	20	19 (86% capture data)	-
NO ₂ (µg m ⁻³)	25	46	30	41
O ₃ (µg m ⁻³)	45	34	40	45
SO ₂ (µg m ⁻³)	2	-	1	
CO (mg m ⁻³)	0.2	-	-	

The report published by Ricardo-AEA shows that in 2014 all of the Air Quality Strategy Objectives for the protection of human health were met at the site,

The annual mean concentration of Ozone at the Airport was similar to that measured at the two urban background sites but higher than Tyburn Roadside. The NO₂ and O₃ statistics together indicate that the quantity of emissions in the immediate vicinity of the other Birmingham monitoring stations is greater than at Birmingham Airport. The higher ozone figure at the Airport site indicates there is less NO to react with the available ozone, and therefore ozone concentrations are not depleted as they typically are at roadside sites.

Ozone is a trans boundary air quality issue and Ozone measured here could originate outside of the United Kingdom. Ozone is classed as a secondary pollutant, being formed through a complex series of chemical reactions at low level, involving nitrogen dioxide and hydrocarbon compounds, and in the presence of energy in the form of sunlight.

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 12. Concerns relating to air quality

Year	01	02	03	04	05	06	07	08	09	10	11	12	13	14
Total	16	13	5	11	20	9	15	6	3	5	3	13	1	13

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, 46 such investigations have been carried out, none of which have been found to be attributable to aircraft. There was one reported in 2014 but after testing it was found to be of natural origin and not attributable to airport activities.

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.

Odour Study

A new obligation within Schedule 7 states that Birmingham Airport will investigate the feasibility of undertaking an Odour Study and to report the findings to Solihull MBC. The Study was completed and submitted to Solihull MBC on September 2013. This was agreed and accepted by Planning Committee in February 2014.

History has shown a low level of complaints relating to odour at Birmingham Airport. There have been only 5 complaints received over 5 years which makes it difficult to analyse in depth or to determine any possible trends. Any odours are generally of a short term and sporadic nature which makes it difficult to undertake a programme of 'sniff testing'.

Odours associated to airports are generally associated with kerosene. This is a mixture of hydrocarbons which are dispersed into the air. The limits for these hydrocarbons are very low and often below the limits of detection instruments currently have. The human nose is much more sensitive and can detect odours too low in concentration for them to be measured by equipment currently on the market.

A similar study undertaken at London City Airport in 2010 concluded that the odours may not be related to aviation fuel as such but possibly with organic hydrocarbons sometimes called burnt hydrocarbons. These are believed to be most likely to form during aircraft taxiing when the engines are hot.

There is a range of technology for the use in odour study but results have been inconclusive and after studying reports carried out at other airports it would seem that current technology needs to progress to accurately monitor aviation odour.

A study in the year 2000 by the University of Birmingham showed that there was no significant effect on general or respiratory health attributable to activities at the airport to people who live nearby.

The Airport Company will continue to record complaints received and keep up to date with progress in the science. It will also continue with proactive measures to reduce odours.

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.

The other conditions relate to monitoring the performance of noise preferential routes for 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 currently being transferred from the current provider, NATS, to Birmingham Airport Air Traffic Limited (BAATL). Training and validation is on going and the transfer will become total in April 2015.

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 to the points on a compass to which the direction of the runway is oriented.

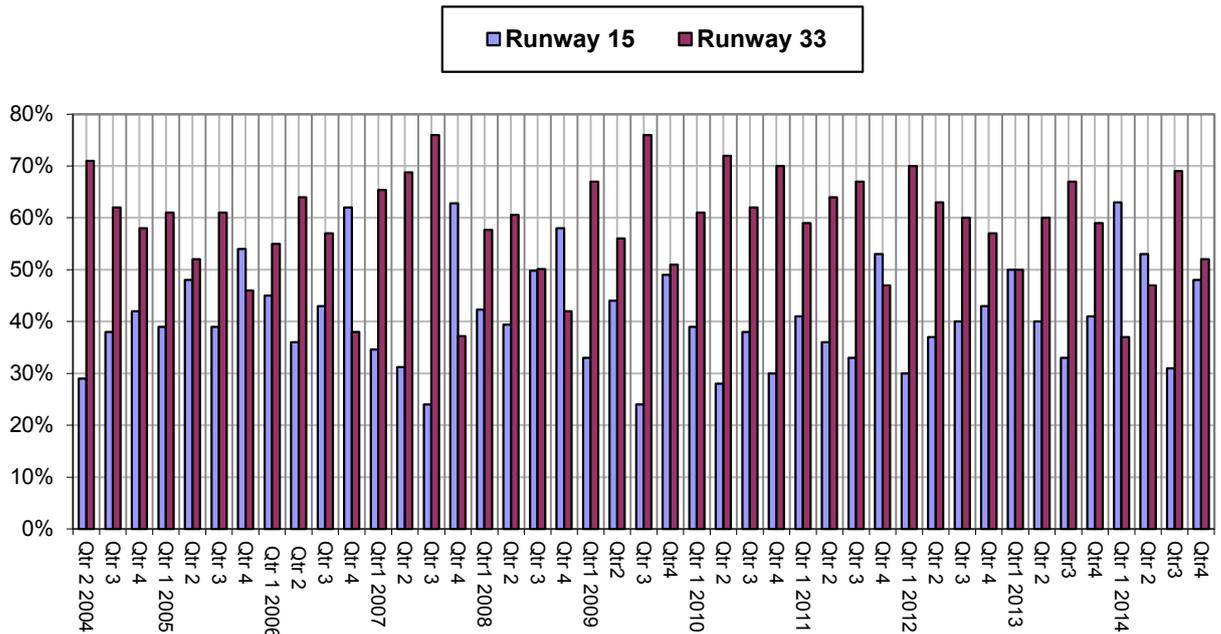
Departing aircraft have set routes they are required to follow. However, on arrival aircraft have no set routes until they are established on the Instrument Landing System.

Aircraft on arrival can approach the runway “visually” by using the Instrument Landing System (ILS), or by using the Non-Directional Beacon (NDB). The majority of aircraft use the ILS for the final approach to the runway.

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 of 3000 feet is reached unless otherwise directed by Air Traffic Control.

Figure 4. Runway usage at Birmingham Airport



Noise Preferential Routes

Departing Aircraft follow Standard Instrument Departures which are essentially lines on maps, and to enable aircraft to follow this line whilst flying aircraft fly in a corridor known as the Noise Preferential Route (NPR)

The NPRs are for **departing** aircraft only and there are five NPRs, three to the North and two to the South. If an aircraft deviates from these NPRs at an altitude less than 3000 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 are designed so they can be flown by all aircraft operating from the Airport.

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

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 before the final approach, where they join the Instrument Landing System

Please see below for details of the Airspace Change Proposal.

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. The procedure has not changed but due to the removal of the Hampton Turn there has been a change in the track over the ground. If Option 6 is accepted by the CAA then the Mosun Departure would be amended to conform to the Noise Preferential Route for Option 6.

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 biannual meetings with the airlines to discuss any track keeping issues. During 2014 98.6% of aircraft were "on-track." There is an annual ceremony to present awards to Airlines who have achieved high targets. As the Airspace Trial was taking place during this time the figure has been calculated for usage on Runway 33 only,

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.

CDA allows aircraft to descend on less power making a smooth approach without the need to level which traditionally has been the standard approach so helping emissions and also creates less noise.

With this type of approach aircraft stay higher for longer and 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 will be 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. This has now changed to 6000 feet. It was expected that initially performance levels would decrease but reports have shown that performance is currently showing a 96% improvement in performance levels,

Continuous Climb Departures are currently being studied. At present most departing aircraft from the Airport are given a continuous climb up to 6000 feet and the Airport is looking to change this to 8000 feet. This will 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 agency early to help facilitate climbs past the 10,000 feet level.

Birmingham Airport has a programme help airlines reduce CO₂ emissions and by using a combination of initiatives such as continuous descent approaches, continuous taxi and reduced engine taxi, the Airport can help airlines reduce their of CO₂ emissions . These are discussed in Schedule 16.

Airspace Change Proposal

Departures to the South- Option 5 and 6

As a result of the runway extension departure routes to the South need to be adjusted as aircraft can no longer fly the old departure routes.

In view of this there has been a trial of two new options for departures to the South of the Airport.

The Airspace Change Trial will lead to a new departure flight path to the South of the Airport and there are 2 available routes which are known as Option 5 and Option 6

These routes have already been subject to consultation and the trials are to obtain data on the routes to be submitted to the Civil Aviation Authority. The trial was intended to last for 6 months and the two options were going to alternate at the beginning of each month starting on 1st May 2014 through to October 2014 with data for 3 months for each of the Options.

Quite early in the trial it was noticed that certain types of aircraft flying option 6 were turning slightly later than was expected. As a result of this and after consultation with the Civil Aviation Authority the flight designers made minor adjustments to enable all aircraft to fly the centreline more accurately.

The modified designs had to be validated and passed to all airlines and the changes were made to all aircraft by November 2014.

Because of this delay the trial is now extended to February 2015 with the data for Option 6 collected for three consecutive months and was agreed with the Civil Aviation Authority.

The routes have been designed to be safe and flyable for all aircraft and to affect the least practicable number of households whilst meeting the CAA requirements. Any new routes are ultimately regulated by the Civil Aviation Authority and the consultation process is detailed in a CAA document- Guidance on the Application of the Airspace Change Process (CAP 725).

The trial is to use actual data from flights to measure the potential impact of the changes rather than rely on theoretical modelling. Portable noise monitors will also be placed in agreed locations to get noise data while the routes are being trialled.

When the trial finishes Birmingham Airport will collect all the noise data, track keeping performance and operation impact of each route and submit this to the Civil Aviation Authority. It is hoped this will be completed by May 2015 with a response expected from the CAA by September 2015.

Key community representatives have been informed of all aspects of the trial through meetings at Birmingham Airport and community updates which are available on Birmingham Airports Website.

Changes to Landing Threshold onto Runway 33

As well as changes to the Departures to the South as outlined above there is also a consultation regarding Arrivals on runway 33. Due to the fact that aircraft touch down slightly earlier and will be approximately 51 feet lower than previously.

NUMBER OF ATMs

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 13. Total air traffic movements at BAL 1996-2014

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	Still to get
2014	96350

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.

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 in 2014), 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 2014 The Community Trust Fund awards amounted to a total spend of £76,174. This sum has been distributed among the projects listed in table 18. Any revenue in the CTF that has not been spent in previous years is carried over to the next financial year.

Flight School

Flight School, which opened in 2012, remains very popular with both students and teachers. It is a dedicated unit for exclusive use by primary and secondary students and has been made possible through a partnership between Birmingham Airport, education and business partners.

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.

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 14. Annual Community Trust Fund awards 1998-2014

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

Table 15. Community Trust Fund awards for the financial year 2014

Stanville Primary School	Sheldon	£1500.00	Play equipment
St Stephens Hall Users	Elmdon Heath	£3000.00	Roof repairs
Castle Bromwich Bells Restoration Project	Castle Bromwich	£3000.00	Audio Visual Equipment
Boldmere St Micheals Bowls Club	Sutton Coldfield	£1976.60	Irrigation
Knowle Royal British Legion	Knowle	£re-apply	Bar refurbishment
Marsh Hill Allotments Association	Erdington	£3000.00	Shed Refurbishment
Marsh Lane Bowls Club	Solihull	£3000.00	Disabled Access Ramp
Featherstone Primary School	Erdington	£3000.00	Sports Equipment
Elmdon Church	Elmdon	£2200.00	Tree Removal
Lyndon School	Elmdon	£2030.00	Camping Equipment
Heart of England School	Balsall Common	£2835.00	Lighting Equipment
Bromford Theatre Group	Bromford	£1855.85	Stage Lights and Lap top
Castle Mound Girlguiding Site	Fillongley	£3000.00	Kitchen Equipment
Hope Community Shop	Sheldon	£500.00	Folding Tables and Chairs

Warwickshire Wildlife Trust	Elmdon	£830.59	Remote Cameras
North Solihull Singers	Chelmsley Wood	£790.00	Mixing Desk
Starz Arts	C Brom/Shard End	£1500.00	Lighting Equipment
Lyndon Methodist Church	Sheldon	£2500.00	Church Hall refurb
The Lily Mae Foundation	Balsall Common	£2500.00	New Website Design
Castle Bromwich Hall Gardens	Castle Bromwich	£2975.00	Mowing machinery
St Barnabas Primary School	Erdington	£2645.00	playpod
Centre Stage	Balsall Common	£1400.00	Audio Equipment
Timberley Academy	Shard End	£3000.00	Greenhouse/garden equipment
St Peters Hall	Balsall Common	£3000.00	Kitchen Equipment
Four Oaks Saints Cricket Club	Sutton Coldfield	£3000.00	New Scoreboard
Brownfield Road Allotments Ass	Shard End	£1400.00	Portable generator
Banbury Bowls Club	Chelmsley Wood	£2000.00	Irrigation System
Ist Knowle Scout Group	Knowle	£3000.00	Scout Hut Repairs
3 rd Olton Scout Group	Olton	£3000.00	Camping Equipment
Hillcrescent Farm	Water Orton	£2000.00	New Building
ACE Project	Bromford	£1877.47	IT Equipment
Marston Green Cricket Club		£2000.00	Fencing Materials
C Bromwich Methodist Church	Castle Bromwich	£1860.00	Emergency Lighting
Central Rescue UK	Shard End	£3000.00	Search/Rescue Equipment
St Leonards Day Centre	Marston Green	£995.58	Wheelchairs

The Airport Company also sponsored a programme of inter-school sports competitions organised by the Pilot Partnership. This is a group of primary schools in Shard End which aims to encourage children to participate in sporting activities.

Staff from the Airport Company attended the Sheldon Countryside Festival to offer advice and information to residents

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. This is known as the Historic, Environment, Ecology and Landscape Management Plan (HEELMP).

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

The historic environment conditions include provision for the conservation of the Bickenhill Conservation Area and its historic environment and setting.

The landscaping conditions include :

- A plan for monitoring and reviewing for maintenance works

- Details of new hedgerows to be planted and the in fill of gaps in existing hedgerows and a management regime for existing hedgerows. (map 3 at the end of the report shows this)

- Location and extent of replacement tree planting and a management regime for maintenance.

- Details of the treatment and height management regime for all existing trees falling within the Obstacle Limitation Surfaces area.

The ecology conditions include:

- Details of the management plan for the Castle Hills farm site of importance for nature conservation

- Details of the Management plan for the re aligned watercourses and ditches (map 4 at the end of the report shows this)

- Details of the management plan regarding invasive species

- Details of the mitigation plan for protected species

A walkover study was carried out in May 2014 to look at the establishment of the site features as specified in the HEELMP.

Low Brook and Bickenhill Brook have been realigned into a new channel which culvert under the A45 and runway extension. The planting is starting to establish and will be studied in more depth in the watercourse survey planned for 2015.

All MG5 grassland areas apart from L15 have been seeded. Those sown with MG5 will be further investigated in 2015 as part of a full National Vegetation Classification survey.

A further site meeting was carried out in July 2014 with Birmingham Airport to look at completed works in relation to the HEELMP and discuss any outstanding works. This was mainly hedge and tree planting which was planned for Winter 2014/15.

Any outstanding issues and on-going monitoring will be discussed at the next HEELMP Steering Group meeting

Monitoring of protected species (white clawed crayfish, barn owl, bats and breeding birds) will start in 2015 with an annual report being produced to detail progress.

11. Health

The newly formed Airport Health Group met in December 2014 as required by conditions in this schedule and will continue to meet on a regular basis.

The primary objectives of the group 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.

Key members of the Airport Health Group are encouraged to communicate on a regular basis, particularly if any new community health concern has been raised, and if either party is required to make a public response.

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 visitors needs.

A Solihull Tourism forum has been set up and will meet 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.

Previous meeting agendas have included Airport route development and the Airport's engagement with the emerging market of China. The Forum has also 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.

Currently progress and commitments relating to Corporate Social Responsibility are reported to Solihull MBC through the ACC committee.

Birmingham Airport currently has a number of initiatives which form part of its corporate social responsibility such as the work done with schools, grants and employee engagement.

A Community Relations Strategy has been launched which covers Investment, Engagement, Communication, Education and Employment. Information from the report will be added to the next Section 106 report in 2015.

The Strategy sets objectives 'to enable Birmingham Airport to make a practical contribution to the social and economic wellbeing of the communities it serves' and 'to promote mutual trust and understanding with its key local stakeholders'.

Birmingham Airport continues to make awards through the Community Trust Fund to benefit local community organisations. The flight school based at Birmingham Airport, which is free to use, is open to all schools to further their knowledge of the Airport and Birmingham Airport also supports individual schools for specific projects. Further details of the Community Trust Fund and the flight school are shown in Schedule 9 of this report

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 want 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.

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

Birmingham Airport now has its own dedicated Job Centre Plus to co ordinate the large number of employers across the site. It provides assistance with recruitment, advertising, interviewing and pre employment training, along with advice and help for those seeking employment.

Birmingham Airport continues to support the Baccalaureate programme to help provide young people with employment skills and presented awards at Perry Beeches Academy for students who had completed the programme. The Birmingham Baccalaureate links schools and major employers in the local area to make sure that school leavers have the skills needed to develop careers in growth areas.

Donations were also made to Glebe Farm and Lea Village Neighbourhood Management Team, Heart of England School, Coleshill Drama Group, Wolverhampton Mayor's Charity Fund and Solihull Rotary Group. Charity collections were hosted in the Terminal throughout the year to benefit local charities.

The Airport Company supported a 'partners in education' event which is linked with Solihull MBC 'step up to education' campaign to promote links between education and businesses in the area.

A meeting of the Solihull North Business Forum was attended by the Airport Company and organised by Solihull MBC. This was one of a number of initiatives to promote links between businesses in the area.

A 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.

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.

Predictions have shown that Britain will have milder, wetter winters and hotter drier summers which all create more extreme weather events.

The Airport Company has assessed potential risks and now has a good understanding of the risks that it may face and has set out a programme to manage them.

The Climate Change Adaptation Report is available on the Birmingham Airport Website.

Birmingham Airport has also 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

In 2012/13 the Carbon Footprint of the Airport was calculated to be 168,543 tonnes of CO₂ which included Scope 1, 2 and 3 but as Scope 3 details only have to be reported every 3 years for the purposes of this report details of Scope 1 and 2 will be shown. Table 17 below shows that there has been 6.82% decrease since the previous audit.

The figures are calculated using guidance issued by DEFRA and information was externally reviewed in July 2013 and included verification of methodologies and figures and the Airport is investing in smart meters to allow automatic monitoring across the site.

Table 16. Tonnes of CO₂ for Scope 1 and 2 combined

Year	Tonne of CO ₂
2012/13	25,020
2013/14	23,314

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.

Scope 3 covers aspects out of the Airport Company's direct control such as emissions from people travelling to the airport by surface transport, aircraft landing and take off cycle, 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.

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 Single Engine Taxiing amongst other things.

In 2011 solar panels were installed on the roof of the terminal building as part of the programme to improve energy performance, to cut costs and reduce carbon emissions. These save 22 tonnes of carbon dioxide each year and generate 40,000 kWh a year which is sufficient to power 12 average sized houses.

Operation Pathfinder

When aircraft depart the airport they have noise preferential routes, currently 3km wide, which aircraft should fly until they reach a height of 3000 feet. Operation Pathfinder was created in 2005 to recognise airlines that performed well and exceeded the target set by Birmingham Airport. Regular meetings with airlines, air traffic and operational staff are held to encourage airlines to achieve the target of 95 % and to share best practices. An annual awards ceremony is attended by Airlines who have achieved their targets.

The scheme now covers other items such as the use of fixed electrical ground power (FEGP) which have a lower carbon intensity compared to aircraft onboard motors

Continuous Descent Approach (CDA)

Continuous Descent Approaches were launched at Birmingham International Airport in 2009, following a very successful trial with the Airlines and ATC. Prior to the trial, airlines were achieving just over 50% compliance with the CDA profile; aircraft are now collectively achieving over 90% compliance with the CDA procedure

CDA allows aircraft to descend on less power making a smooth approach without the need to level out which traditionally has been the standard approach so helping emissions and also creates less noise. When the CDA were started they were conducted from 4000 ft to landing for every ILS approach. This has now changed to 6000 feet. It was expected that initially performance levels would decrease but reports have shown that performance is currently showing a 96% improvement in performance levels,

A CDA approach cannot always be flown due to airspace constraints or over riding safety requirements.

Continuous Climb Departures

This is where aircraft operate a steady continuous climb on departure reducing both noise impact and fuel consumption.

At present most departing aircraft from the Airport are given a continuous climb up to 6000 feet. This will change to 8000 feet. This will 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 agency early to help facilitate climbs past the 10,000 feet level.

Single engine taxiing

Single engine taxiing is encouraged where possible which again reduces CO₂ emissions.

Shutting down an engine while taxiing can reduce emissions considerably and reduce fuel burn and costs to Airlines. It also highlights good environmental practice.

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 useage.

Waste Management

Waste recycling does not form part of the Section 106 Agreement but is reported to Solihull MBC and is included here for information on what Birmingham Airport does towards recycling.

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.

Steps are taken to ensure that waste is reduced to a minimum and that it is recycled where possible. Food waste is sent to an anaerobic waste facility and other waste is sent to a materials recycling facility where the recyclable materials are hand picked.

As part of this schedule a condition 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

A total of 56 container grown, heavy standard trees have been planted with the money for 2014. The planting locations for the trees were Woodlands

Cemetery, Widney Cemetary, Meriden Park, Peel Close Island, Elmdon Park, Hobs Moat Road, Lode Lane, Campden Green Island, Mickelton Road, Malvern and Brueton Pak, Stratford Road, Lavender Hall Park, Jobs Close park and Dorridge park.

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

Employees of the Airport have formed an energy champions group to raise staff awareness to the energy use of the site and to reduce energy use where possible and promote energy saving ideas.

Fixed Electrical Ground Power (FEGP) is provided on aircraft stands to minimise the need for auxiliary power units which not only create emissions but noise as well.

The airfield was closed at night to arriving and departing aircraft for a period towards the end of 2014 from Monday to Friday to facilitate works to complete the runway resurfacing. The Airport Company took advantage of this period to replace airfield ground lighting fitted within the resurfaced pavement which are more energy efficient.

New LED lights will be installed in Car Park 1 in 2015 to reduce energy and maintenance costs.

Conclusion

The extended runway was opened in 2014 and the first flight to use the full length capacity was a China Southern flight which took place in July. The 248 seat Airbus arrived on a 5000 mile round trip from Beijing and is the only direct flight from the UK to China outside London. The Chinese tourism market is estimated to be worth about £15 million to the West Midlands Region.

By extending the existing runway by 405 metres, aircraft are now able to take off from Birmingham with more fuel and fly direct to destinations currently out of reach, such as China, South America, South Africa and the West Coast of the USA. This will improve the local economy and open up new opportunities for export and import.

The year saw an increase in passenger numbers from previous years. Many airlines increased the frequency of their flights and operated larger aircraft during the busy periods and this, along with new destinations, helped the overall passenger numbers. Summer saw five consecutive record-breaking months for passenger numbers and August was the busiest month in the history of the Airport. This resulted in 2014 being a record year for Birmingham Airport with 9.7 million passengers passing through the terminal

Passenger growth is a very encouraging sign for the Airport and the region in general and Birmingham Airport continue to engage with airlines, travel agents and tour operators to promote the benefits of the West Midlands region.

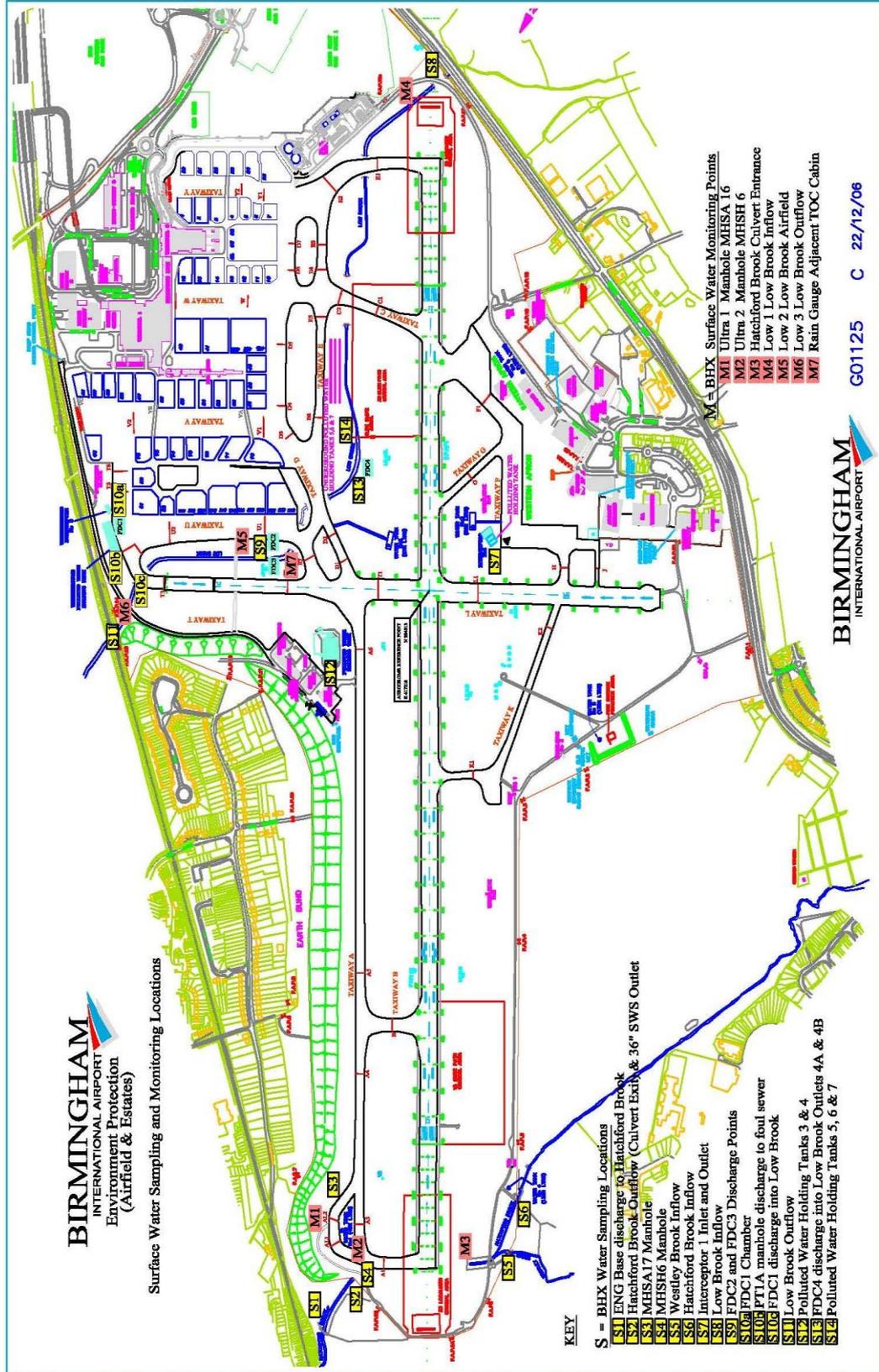
2014 saw Birmingham Airport comply with all Obligations within the Section 106 Planning Agreement.

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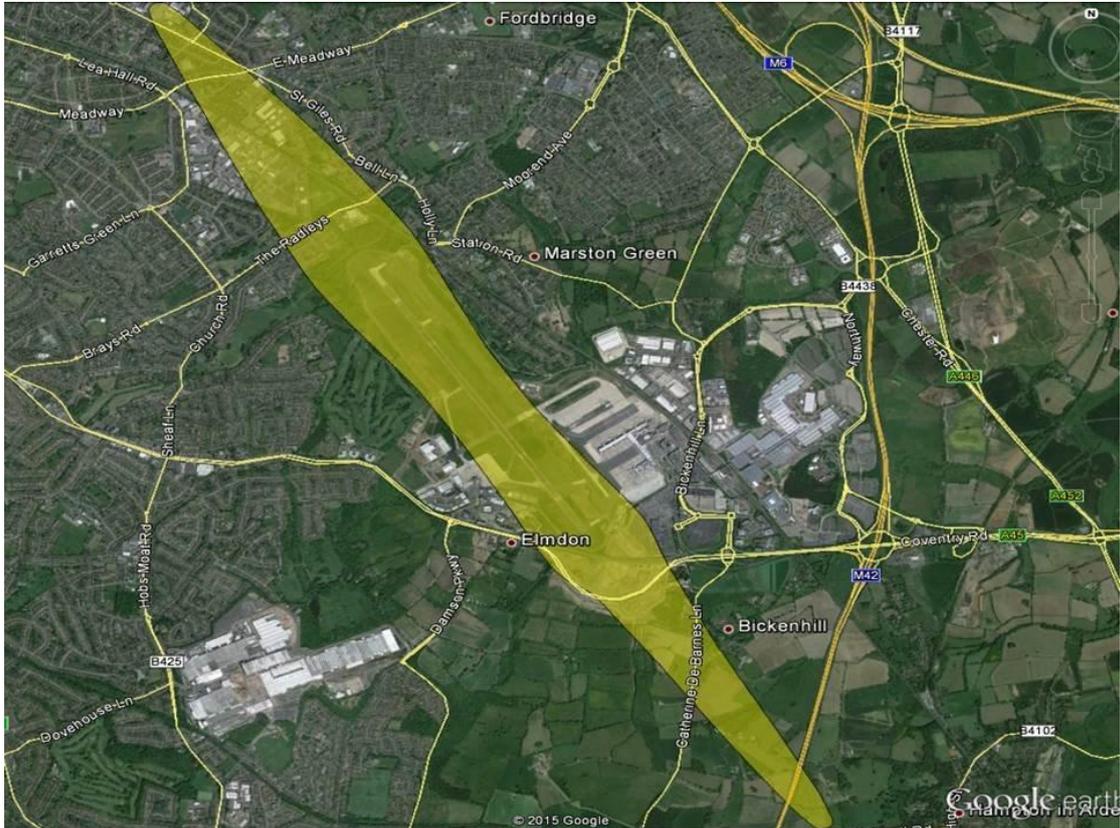
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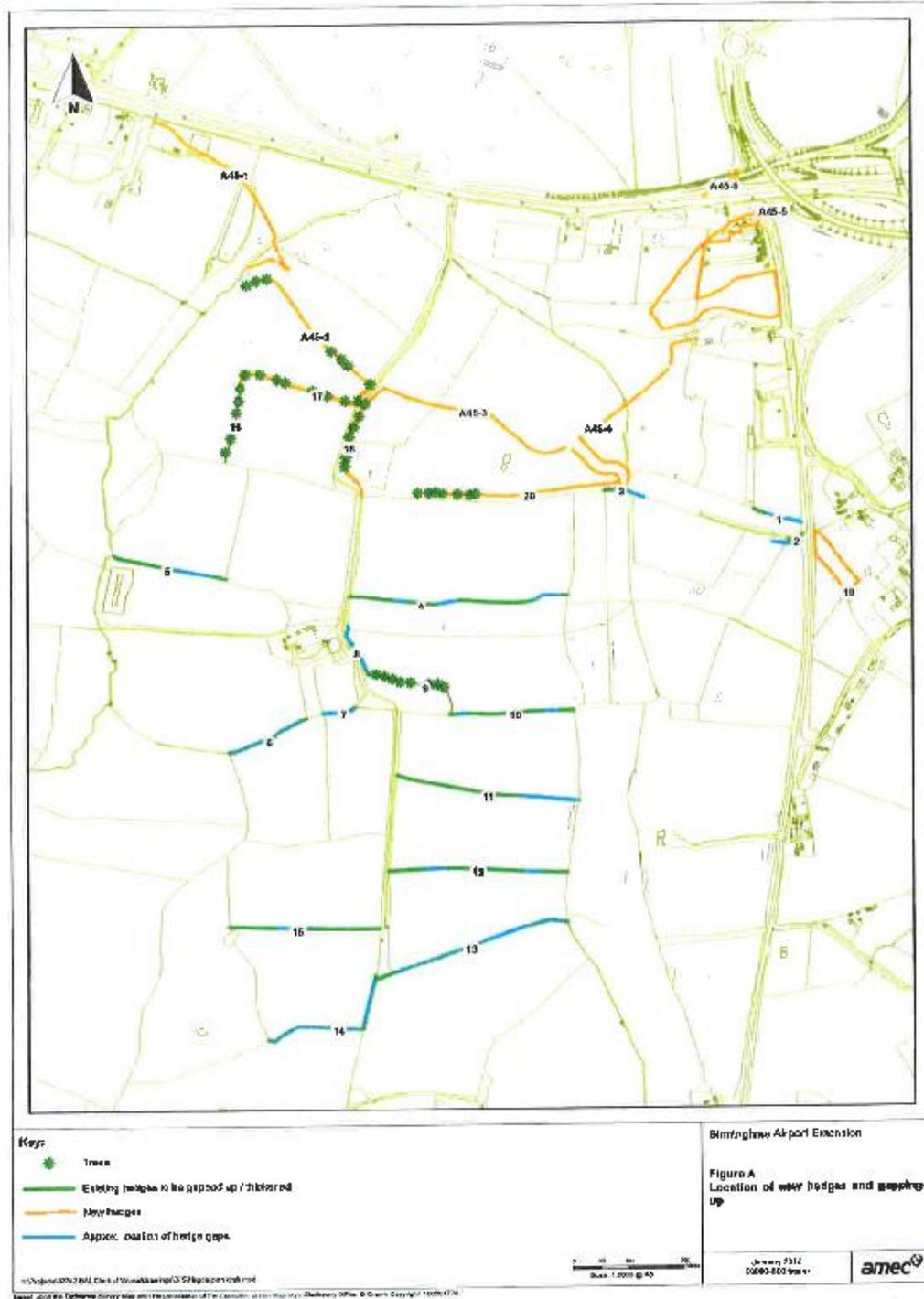


Map 1

Map 2- Sound Insulation Scheme Boundary



Map 3. Location of new hedges and gapping up



Map 4 New Confluence of Low Brook and Bickenhill Brook

