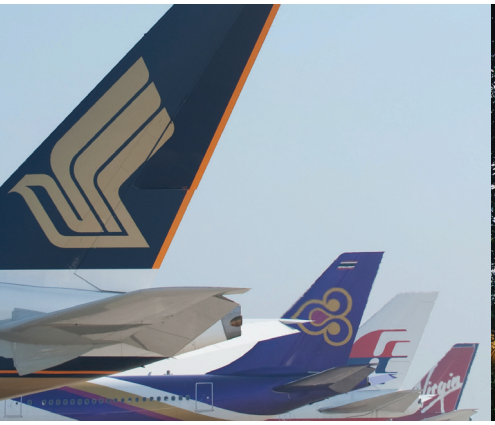
Planning Statement

Enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport

May 2013



Heathrow
Making every journey better

Planning Statement

Enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport

Date: 17 May 2013

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Status: Version – 4.0 - Final

Contents

1.0 Introduction

1.0.1 This Planning Statement seeks to set out the context within which the development of the enabling works (hereafter referred to as the Project) which will facilitate the implementation of full runway alternation on easterly operations at Heathrow Airport is being brought forward.

1.0.2 It is intended to explain the background to the Project and set out the detail of the proposed works, how this will effect the operation of the airport and the benefits it will deliver for the management of the airfield and for the more equitable distribution of noise for the communities adjoining the Airport.

1.0.3 The national, regional and local policy context will also be explained, together with the framework for the current management of noise at Heathrow. The key issues arising out of the Environmental Statement (ES) and the Health and Equalities Impact Assessments for the Project will be summarised and how the proposed mitigation measures will seek to address the negative impacts identified.

1.1 Background

1.1.1 The Cranford Agreement ('The Agreement') was a Ministerial undertaking given in 1952 to use best endeavours to avoid the operation of the Northern Runway (09L) at Heathrow Airport for aircraft departures in an easterly direction over Cranford. Therefore, for the past 60 years aircraft have typically departed to the east using the Southern Runway (09R) and arrive using the northern runway when the airport is operating on easterlies (for around 30% of the year). The reason for the introduction of The Agreement was to protect the residents of Cranford (then the nearest residential area to the airport), from aircraft departure noise.

1.1.2 The Secretary of State consulted on the prospect of ending the Cranford Agreement in the "Adding Capacity at Heathrow Airport" document, published in November 2007. Subsequently, the Secretary of State decided that The Agreement should end in a statement made in January 2009. This decision was reaffirmed by the Coalition Government when Ms Theresa Villiers, the Aviation Minister, made a Ministerial Statement on the 7th September 2010.

1.1.3 The decision permits the implementation of full runway alternation during easterly operations and this will result in changes to the pattern of aircraft noise around Heathrow Airport, through the enabling of easterly departures from Runway 09L. The subsequent redistribution of noise around Heathrow Airport will result in lower noise effects in some locations and higher noise effects in others, but will enable noise emanating from aircraft operations to be more fairly distributed around the airport than it is at present.

1.1.4 In order for Heathrow Airport Limited (“HAL”), the airport operating company, to implement the Government’s decision, new airfield infrastructure is required. The Project is therefore defined as enabling works to allow implementation of full runway alternation on easterly operations.

2.0 The Proposed Development

2.1 Description of Development

2.1.1 Details of the proposed new airfield infrastructure and noise barrier at Longford are provided in this section, along with 'red-line' plans to show the spatial extent of the development site that is the subject of the planning application submission.

Airfield Infrastructure

2.1.2 The extent of the new airfield infrastructure works is relatively limited, comprising the construction of the following key components:

- Creation of a 'Hold Area' at the western end of Runway 09L comprising:
  - The construction of a new Runway Access Taxiway (RAT) (A13E) between Alpha Taxiway and Runway 09L, situated between the existing A13 and A12 RATs, with a total area of 6198m^2;
  - Construction of a new connector taxiway linking the existing Alpha and Bravo Taxiways situated immediately to the south of the proposed new A13E RAT, with a total area of 5646m^2, to provide greater flexibility for re-sequencing aircraft and to reduce the conflict with the Terminal 5 apron as well as improving ground movement flows and access to the airfield;
  - In addition there are two small areas of additional pavement that will be required to enable A380 aircraft to access and exit the runway to meet the safety requirements of the CAA with a total area of 394m^2;
  - Existing concrete break out areas with a total area of 12,564m^2.

2.1.3 These physical works are best shown on plan '10000-XX-GA-100-000192 Site Plan'.

2.1.4 The practical implementation of the ending of the Cranford Agreement also requires additional Rapid Exit Taxiways (RETs) for Runway 09R. Without these RETs, the airport would not be able to operate a full flight schedule while on easterly operations.

2.1.5 In September 2012, HAL consulted the London Borough of Hillingdon on the creation of three RETs under Part 18 of the Town and Country Planning (General Permitted Development) Order 1995. Specifically, these are on the southern side of the runway towards Terminal 4 and on the northern side towards the Central Terminal Area. Additionally, some 20,840m^2 of existing concrete is proposed to be broken out to provide an overall reduction in the impermeable surface, thereby reducing surface water runoff from the airfield. In December 2012, Hillingdon confirmed it had no objection to the

RETs. Works to implement the RETs will proceed with the resurfacing of the southern runway this year.

Longford Noise Barrier

2.1.6 Drawing 10000-00-GA-XXX-000142 'Longford Village Noise Barrier Site Location Plan' shows the proposed location and alignment of a noise barrier to the south of Longford.

2.1.7 The noise barrier will be constructed in two sections. The western section will be 280m in length and will predominantly follow the alignment of the existing 3m high timber highway noise barrier that is situated between Wright Way and the Duke of Northumberland River. The eastern section will be 313m in length and will follow the alignment of the existing timber perimeter fence surrounding the Terminal 5 business car park. The eastern section will also include a four metre wide access gate to enable maintenance of the Duke of Northumberland River. This gap between the two sections of barrier is required due to an existing legal obligation for HAL to enable access to land owned by a third party to the west of the Duke of Northumberland River. It has been demonstrated in the noise assessment of the barrier that the gap will have a negligible effect on the noise attenuation benefit of the barrier. The majority of the barrier will be 5m high, except a small section around the south-west corner of the T5 business car park which will need to be reduced to 4m in height due to obstacle clearance limitations related to the effective operation of the airport's radar.

2.1.8 The barrier will be constructed of material giving a mass per square metre of at least 3.8kg/m^2 to provide the required noise attenuation benefits. The materials considered to best meet these noise attenuation requirement is a reconstituted wood with a transparent component to the upper 2 metres of the barrier to avoid an over powering effect for the occupiers of properties in Longford.

2.1.9 The construction methodology is provided in a separate document accompanying the application.

Operational Changes

2.1.10 Implementing full alternation on easterlies will not result in any changes to the operating hours of Heathrow Airport, nor the aircraft movement cap of 480,000 ATMs per annum, or an increase to the 57dB(A) L_{Aeq} noise contour area limit of 145km^2 conditioned by the Terminal 5 planning decision.

2.1.11 Principally, the practical implementation of ending the Cranford Agreement will result in:

- The introduction of regular departures from Runway 09L in an easterly direction over Cranford;

- A decrease in the number of aircraft arriving on Runway 09L in an easterly direction;

- An increase in the number of aircraft arriving on Runway 09R in an easterly direction; and
- A decrease in the number of aircraft departing from Runway 09R in an easterly direction.

2.1.12 There will be no operational changes when the airport is on westerly operations in the absence of the Cranford Agreement as shown in Table 2.1.

Table 2.1 Distribution of departures and arrivals when on westerly operations (77% of the time)

Runway	Movements with and without the Cranford Agreement (no change)
Arrivals (total 656)	
Northern (27R)	328
Southern (27L)	328
Departures (total 656)	
Northern (27R)	328
Southern (27L)	328

2.1.13 When the airport is on easterly operations and with easterly runway alternation, aircraft will depart from Runway 09L for 50% of the time (11.5% of the total time the airport is operating) and will depart from Runway 09R also for 50% of the time (again 11.5% of the total time the airport is operating). This will equate to 328 departures from 09L and 328 departures from 09R on a typical day during those times when the airport is on easterly operations.

2.1.14 Arrival traffic will, as with departures, be equally distributed across the two runways after the implementation of the enabling works. This means there will be 328 arrivals on each runway on a typical easterly day. This is summarised in **Table 2.2.**

Table 2.2 Distribution of departures and arrivals when on easterly operations (23% of the time)

Runway	With the Cranford Agreement	Without the Cranford Agreement
Arrivals		
Northern (09L)	630	328
Southern (09R)	26	328
Departures		
Northern (09L)	(<0.2% of the time)	328
Southern (09R)	656	328

2.1.15 Ultimately, easterly runway alternation will provide a more equitable distribution of noise around Heathrow by providing predictable periods of respite. However, while some areas will experience reduced effects, other areas will experience impacts where previously these were rare. These effects are discussed in detail later in this Planning Statement and in the Environmental Statement.

Operational Benefits of the Development

2.1.16 The proposed RATs development, together with the RETs development on the southern runway, which is currently under construction, enables the Government decision to end the Cranford agreement to be implemented, but these works also offer a number of operational benefits to the Airport.

2.1.17 From a business perspective, the RATs allow the full use of the northern runway on easterly operations. This is particularly important in terms of resilience, when schedules need to be recovered, or if the Southern Runway were to be closed for some reason.

2.1.18 With regard to the RET development this will also provide the additional operational benefits:

- Alterations to the location and alignment of the RETs will allow higher departure speeds for aircraft exiting the runway (up to 55 knots), thus allowing an aircraft to vacate the runway more quickly and reduce congestion;

- Arrivals for Terminal 4 will be able to exit right from the runway via the new RETs thus reducing the need for an additional runway crossing which delay the next aircraft arriving on Runway 09R;

- T4 arrivals taxi times will be reduced due to more direct access to the terminal and aprons; and

- Provides additional resilience (for example if the Northern Runway was closed for any reason) to allow more efficient use of the Southern Runway in restricted one runway operation.

2.1.19 Ultimately, both the RATs and RETs developments will improve the operational performance of the runways which will improve the predictability of schedules.

Community Benefits of the Development

2.1.20 The implementation of full runway alternation on easterly operations will enable, for the first time, those communities adjoining Heathrow to benefit from predicable periods of no aircraft movements over them.

2.1.21 Without full runway alternation on easterlies some communities benefit from relief from over flying but this is unpredictable as this can be lost when the wind changes direction,

because on easterly operations all landings are on the Northern Runway and all departures are on the Southern Runway. This relief is also unevenly distributed with some communities getting more relief than others. This is explained in more detail later in this statement under the section covering the noise impacts of the scheme as well as in Chapter 6 of the ES.

2.1.22 The Government decision to end the Cranford Agreement was in large part based upon the wish to see a more equitable distribution of noise around Heathrow. The implementation of full runway alternation on easterlies will result in approximately 60,000 people experiencing predictable periods of respite from aircraft noise occurring for 8 hours at a time in either the morning or afternoon period.

2.2 The Planning Application

2.2.1 The planning application is accompanied by the following documents:

- Planning application form and agricultural holdings certificate;
- Cheque for application fee of £1,690;
- Drawings:
  - 10000-XX-GA-100-000191 Location Plan
  - 10000-XX-GA-100-000192 Site Plan
  - 10000-XX-GA-100-000193 Concrete Break Out Area
  - 10000-00-GA-XXX-000142 Longford Noise Barrier Site Location Plan
  - 10000-00-GA-XXX-000143 Longford Noise Barrier Section AA
  - 10000-00-GA-XXX-000144 Longford Noise Barrier Section BB
  - 10000-00-GA-XXX-000149 Longford Noise Barrier General Arrangement
  - 10000-00-GA-XXX-000149 Longford Noise Barrier Detailed Plan A
  - 10000-00-GA-XXX-000150 Longford Noise Barrier Detailed Plan B
  - 10000-00-GA-XXX-000151 Longford Noise Barrier Detailed Plan C
  - 10000-00-GA-XXX-000153 Longford Noise Barrier Site Boundary
- Planning Statement (this document);
- Environmental Statement;
- Environmental Statement Non-Technical Summary;
- Health and Equalities Impact Assessment;
- Noise Barrier Construction Methodology Statement.

2.2.2 In accordance with the regulations and paragraph 69 of Circular 01/2006 ‘Guidance on Changes to the Development Control System’, it has been agreed with the Council’s Head of Planning that a Design and Access Statement is not required in support of this planning application given the works would be classified as “engineering operations”.

3.0 Planning Policy Context

3.0.1 This chapter sets out the main national, regional and local planning policy context against which the proposed enabling works are to be considered. Planning policy takes the form of national aviation policy, the National Planning Policy Framework (NPPF), the London Plan and Mayor's Transport Strategy and local planning policies.

3.1 UK Aviation Policy

Aviation Policy Framework (2013)

3.1.1 The Aviation Policy Framework (APF) superseded the 2003 Air Transport White Paper, which was intended to provide the UK with a 30 year strategic framework for airport capacity. The White Paper did not authorise development, but provided a policy basis against which planning decisions on aviation related development could be made. Like the 2003 White Paper, the APF is a high level strategy which sets of the Government's overall objectives for aviation and the policies used to achieve this objective.

3.1.2 One of the main objectives of the APF is:

"…to ensure that the UK's air links continue to make it one of the best connected countries in the world. This includes increasing our links to emerging markets so that the UK can compete successfully for economic growth opportunities."

3.1.3 The APF does not prescribe development of new airport capacity, it is for the Airports Commission to provide the recommendations for the location of this airport capacity which will inform a National Policy Statement for Airports. However, the APF does set out the position of the Government on aviation matters.

3.1.4 The APF explains that in the short term, making best use of existing capacity is key to improving performance, resilience and passenger experience. In this respect, the Government's decision to end the Cranford Agreement is reaffirmed and concludes that noise will be distributed more fairly around the airport, benefitting communities through easterly runway alternation and delivering operational benefits. This is set out at paragraph 1.63, where it states:

"To further improve operations and resilience at Heathrow we confirmed the ending of the Cranford Agreement. This is an informal but long-standing agreement not to use the northern runway for departures when the wind was in from the east (roughly 30% of the time)… Following implementation, noise will be distributed more fairly around the airport, extending the benefits of runway alternation to communities under flight paths during periods of easterly winds…".

3.1.5 The APF's policy on aircraft noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise.

- Noise exposure mapping will be produced down to 57dB $L_{Aeq\ 16hour}$;
- Night noise contours will be produced for the eight hour night period of 11pm to 7am; and
- The approximate onset on significant community annoyance during the day will be considered to be 57dB $L_{Aeq\ 16hour.}$

3.1.6 Paragraph 3.19 of the APF sets out the Government's position in considering alternate noise metrics other than $L_{Aeq\ 16hr}$ in communicating noise impacts to local stakeholders. Specifically, the APF states:

"Average noise exposure contours are a well established measure of annoyance and are important to show historic trends in total noise around airports. However, the Government recognises that people do not experience noise in an average manner and that the value of the $L_{Aeq,\ 16h}$ indicator does not necessarily reflect all aspects of the perception of aircraft noise. For this reason we recommend that average noise contours should not be the only measure used when airports explain how locations under flight paths are affected by noise. Instead the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities, developing these measures in consultation with their consultative committee and local communities. The objective should be to ensure a better understanding of noise impacts and to inform the development of targeted noise mitigation measures"

3.1.7 The approach to noise mitigation and compensation in the APF continues the previous approach as stipulated in the 2003 Air Transport White Paper. Noise controls that are cited in the APF include limiting departure noise, minimum height requirements for aircraft, noise-preferential routes, adherence to continuous descent approach and differential landing charges for quieter aircraft. The Government expects airport operators to make particular efforts to mitigate noise where changes are planned which will adversely impact the noise environment. This includes cases of operational changes. The APF is clear in stating that airport operators are expected to offer households exposed to levels of noise of 69dB $L_{Aeq,\ 16hour}$ or more, assistance with the costs of moving. In terms of, residential properties that experience an increase in noise of 3dB or more and which leaves them exposed to levels of 63dB $L_{Aeq,\ 16hour}$ or more, the APF states that they should be offered financial assistance towards acoustic insulation. Additionally, acoustic insulation to noise sensitive buildings, such as schools and hospitals, should be offered where noise levels are 63dB $L_{Aeq,\ 16hour}$ or more.

3.1.8 Air quality is discussed as the main additional environmental impact from airports and the APF identifies NOx and PM as being the principle pollutants. Government policy is to seek improved international standards to reduce emissions from aircraft and vehicles. The APF recognises that in general the main contributor to air pollution around airports are the road users (including those accessing the airport), rather than the aircraft

themselves. In this respect, the Government expects airport operators to work with local authorities to improve air quality.

3.1.9 The APF confirms that local authorities must have regard to the APF in preparing their local plans, to the extent that it is relevant to their particular area. The APF is also a material planning consideration for local planning authorities when making decisions on planning applications.

South East Airports Taskforce Report (July 2011)

3.1.10 Established in June 2010, the South East Airports Taskforce was asked to investigate and identify the best ways in which to make the best use of existing runway capacity and enhancing passenger experience for airports while having regard to local environmental considerations. The Taskforce identified seven priority areas focused on:

- Security;
- Border control;
- Regulatory change;
- Punctuality, delay and resilience;
- Surface access;
- Performance monitoring; and
- Passenger views.

3.1.11 Of most relevance to the proposal are the Taskforce findings on punctuality, delay and resilience. The Taskforce Report specifically identified that further use of Operational Freedoms through Tactically Enhanced Arrivals Mode (TEAM) and Tactically Enhanced Departures Mode (TEDM) could potentially deliver environmental benefits by reducing the need to stack aircraft and requiring fewer unscheduled flights, which both lead to fewer emissions. The use of Operational Freedoms would have the added benefit of improving customer experience by improving operational resilience. Operational Freedoms are not the same as 'mixed mode', which involves the scheduled arrival and departure of aircraft on both runways. Rather, Operational Freedoms are used as tactical measures to improve efficiency and clear backlogs.

3.1.12 Although the Report indicated there would be a net environmental benefit from these measures, it also acknowledged that the redistribution of noise would lead to a mix of positive and negative impacts for different parts of the community. Ultimately, the Taskforce concluded that allowing more flexible use of runways at Heathrow would help reduce disruption and facilitate recovery when it occurs, but acknowledged this freedom

must be accompanied by transparent and effective safeguards to limit the use of these tactical measures and protect local communities.

3.1.13 A trial of Operations Freedoms was undertaken by Heathrow in two phases. The first phase ran between 1 November 2011 to 29 February 2012. The second phase began on 1 July 2012 and ended on 28 February 2013. Over the coming months the Government will consider the findings of the Operational Freedoms trials, and will undertake a public consultation exercise on any operational measures it considers should be introduced at Heathrow in the future. Because the outcome of this process is uncertain, Operational Freedoms hasn't been taken into account in the environmental assessment for this Project. However, as set out in the ES, the effects of Operational Freedoms are so small as to not be significant. This is because tactical measures would account for a very small proportion of flights, between 10 to 20 flights per day. Additionally, if such measures are introduced in the future they are likely to occur equally around the normal pattern of runway alternation so their impacts will be balanced out.

3.2 National Planning Policy

National Planning Policy Framework (NPPF)

3.2.1 The NPPF provides at paragraph 14 the presumption in favour of sustainable development, referred to as a 'golden thread' running through the plan making and decision taking processes. In terms of decision taking, this means granting permission without delay where a development proposal is in accordance with the development plan. This theme is touched upon later in the Framework, where at paragraph 197 it is set out that local planning authorities should apply the presumption in favour of sustainable development in assessing and determining development proposals.

3.2.2 The NPPF refers to planning for airports at paragraph 33, where it states that plans should take account of airports role in supporting business and leisure among other considerations.

3.2.3 At paragraph 123, the NPPF sets out the Governments approach to noisy development where it states that planning decisions should avoid noise from giving rise to significant adverse impact on health and quality of life, while also recognising that development will often create some noise and unreasonable restrictions should not be imposed due to changes in nearby land uses since the development was first operated.

3.2.4 The approach to air quality follows and at paragraph 124 the NPPF states that new development in Air Quality Management Areas needs to be consistent with the local air quality action plan.

3.3 Regional Planning Policy

The London Plan (2011)

3.3.1 The London Plan sets out the Mayor's strategic policies for Greater London, including those relevant to development at Heathrow.

3.3.4 Policy 6.6 sets out the Mayor's policy for airports and maintains the stance that adequate airport capacity serving a wide range of destinations is critical to the competitive position of London in a global economy and also that the aviation industry should meet its full environmental and external costs. The policy emphasises the Mayor's strong opposition to any further capacity increases at Heathrow due to the adverse noise and air quality impacts already being experienced by residents and others in the vicinity of Heathrow and its environs. However, the policy goes on to state that the Mayor supports improvements of facilities other than the increase in the number of aircraft movements, particularly where this optimises efficiency and sustainability.

3.3.5 Policy 7.15 on reducing noise and enhancing soundscape seeks to reduce noise by minimising the existing and potential noise impact from development proposals.

3.3.6 Policy 7.14 centres on improving air quality and introduces the aim for development proposals to be 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as AQMAs). Offsetting should be used to ameliorate negative impacts associated with development proposals. Increased exposure to existing poor air quality should be minimised.

3.3.7 Policy 5.12 on flood risk management requires developments to comply with flood risk assessments and management requirements over the lifetime of the development. Policy 5.13 follows in stating that where sustainable urban drainage systems are not practical, surface water run-off should be dealt with as close to source as possible and potential attenuated in ponds for gradual release.

3.3.8 The Heathrow Opportunity Area identified in the Plan proposes a revised (from the existing London Plan) 700 ha Opportunity Area providing 12,000 new jobs 9,000 new homes by 2026. This will eventually form the basis of a Heathrow Opportunity Area Planning Framework (OAPF), however the timetable for this is not yet known.

Mayor's Transport Strategy 2010

3.3.9 The Mayor's Transport Strategy is a key part of the strategic policy framework for London and outlines the 20 year transport vision to be taken forward by Transport for London and strategic partners.

3.3.10 At section 5.12.1, the Strategy highlights the capacity constraints currently experienced by Heathrow, as well as the noise and air quality issues that Heathrow needs to contend

with. In this context, the Mayor will consider whether optimum use is being made of existing airport infrastructure, while also not favouring mixed-mode operation at Heathrow.

3.3.11 Section 5.19.3 of the Strategy highlights the difficulties associated with aircraft noise particularly as Heathrow Airport is located on the western edge of the London urban area. The Strategy outlines that the Mayor is keen to explore ways of varying aircraft flight paths to reduce aircraft noise impacts, such as the preferred direction of approach for night-time arrivals. Proposal 89 states that:

"The Mayor, through TfL, and working with the DfT, NATS and the European Commission, will:

"a) Encourage the development and use of quieter aircraft; and

"b) Seek to coordinate aircraft flight paths so they minimise their impact on London"

3.4 Local Planning Policy

London Borough of Hillingdon Unitary Development Plan (UDP) 1998 (Saved under Direction of the Secretary of State, 2007)

3.4.1 The Hillingdon UDP sets out policy and guidance for development within the Borough including specific policies for development at Heathrow Airport. The UDP is now due to be replaced by a Local Plan which must be consistent with Section 20 of the Planning and Compulsory Purchase Act 2004 and the NPPF, however some policies have been saved until they are replaced by Local Plan Development Plan Documents (DPDs.)

3.4.2 Policy A2 states that planning applications for proposals within the boundary of Heathrow Airport which are likely to have significant adverse environmental impact should be accompanied by a justification of the need for the development and, where appropriate, a full environmental assessment.

3.4.3 In relation to noise impacts, Policy OE3 states that buildings or uses which have the potential to cause noise annoyance will only be permitted if the impact is mitigated within acceptable levels by engineering, lay-out or administrative measures.

3.4.4 In relation to air quality impacts, the relevant policy, Policy OE6 has not been saved and London Plan Policy 7.14 (Improving Air Quality) and its supporting text is relevant. .

Hillingdon Air Quality Supplementary Planning Guidance (SPG) 2002

3.4.5 The SPG was prepared to provide additional guidance on the relevant UDP policies. It identifies those circumstances when an air quality assessment will be required to accompany a development proposal; provides technical guidance on the process of air

quality assessment; and provides guidance on the circumstances when air quality conditions and S106 planning obligations will be sought in accordance with national guidance and Hillingdon's UDP policies for air quality. The guidance is to ensure that air quality has been considered in enough depth and to help minimise any potential impacts.

Hillingdon Noise Supplementary Planning Document (SPD) 2006

3.4.6 The Noise Supplementary Planning Document (SPD) sets out detailed guidance for the control of noise as part of new development in Hillingdon, considering both noise sensitive development and noise-generating development. In the interim period before detailed policies in the Local Plan are produced, this SPD is intended be taken into account by Hillingdon in determining planning applications as supplementary to relevant policies in the adopted UDP.

3.4.7 Hillingdon's approach to noise and noise sensitive development is to seek their physical separation through the exercise of land use planning controls. If suitable separation cannot be achieved, Hillingdon will consider whether it is practicable to control or reduce noise levels, or to mitigate the impact of noise, through the use of conditions or planning obligations.

London Borough of Hillingdon Local Plan: Part 1 – Strategic Policies 2012

3.4.8 On 26th July 2012, the Report on the Examination into the Hillingdon Local Plan: Part 1 - Strategic Policies was published and found the document to be sound. The Strategic Policies form the basis of the Borough spatial strategy, setting out the Borough's strategic vision through a number of strategic objectives and core policies. The Strategic Policies together with other DPDs will make up the Hillingdon Local Plan that will eventually replace the policies contained in the UDP. These DPDs will cover topics including Site Allocations, Development Management, Heathrow Area (with the GLA and LB Hounslow) and Air Quality SPD.

3.4.9 In relation to Heathrow Airport, strategic objective SO23 seeks to ensure that local people benefit from economic and employment growth, and social and environmental improvements, including reductions in noise and air quality. Strategic objective SO25 seeks to maintain support for operational uses within the existing airport boundary and seeks to minimise the environmental impacts from the airport wherever possible.

3.4.10 Heathrow Airport is also specifically mentioned in the Transport and Infrastructure chapter. Policy T4 sets out the Council's position in supporting the sustainable development, renewal and growth of Heathrow within the existing airport boundaries.

3.4.11 Policy E3 states the intention to produce detailed policy for the airport as part of a Heathrow Area DPD. The DPD will also set requirements for climate change mitigation and adaptation through a low carbon emission strategy and measures to improve local

air quality. A clearer definition of the Heathrow Opportunity Area boundary and specific growth figures for Hillingdon will also be identified, to be developed with the Greater London Authority and London Borough of Hounslow.

3.4.12 Policy EM8 provides Hillingdon's strategic approach to land, water, air and noise. With regard to air quality, the policy seeks to protect existing and new sensitive receptors by requiring that new development should not cause a deterioration in local air quality. Where new development is within the AQMA, such developments should demonstrate air quality neutrality, i.e. no worsening of impacts.

3.4.13 Policy EM8 goes on to set out the Borough's strategic position on noise, namely that it will investigation target areas identified in the DEFRA Noise Action Plans, will seek the maximum possible reduction in noise levels and will seek to minimise the number of people potentially affected by noise. The policy stipulates that noise generating development will only be permitted if noise impacts can be adequately controlled and mitigated.

Other Plans & Polices

3.4.14 The nature of airport operations means that other authorities also produce policies which are of relevance and have therefore been considered.

3.4.15 The Heathrow Airport site borders onto the London Borough of Hounslow and Spelthorne Borough Council. At Spelthorne the following documents have been adopted as part of the LDF:

- Core Strategy and Policies DPD & Adopted Proposals Map - Adopted 2009; and
- Allocations DPD - Adopted 2009. Six policies remain saved form the UDP.

3.4.16 Hounslow's Local Plan is still under production and the UDP provides the relevant policies.

3.4.17 The London Boroughs of Ealing and Richmond upon Thames, Slough Borough Council, South Bucks District Council, and the Royal Borough of Windsor and Maidenhead are also in relatively close proximity to the airport. The authorities are at various stages of production of their Local Plans and policies in adopted DPDs and saved policies UDPs are of relevance and, where appropriate, have been considered.

4.0 Heathrow's Framework for Noise Management

4.0.1 As a designated airport, the Government sets the policy framework which influences how HAL responds to aircraft noise issues. As discussed earlier, the APF outlines several ways to control, mitigate and compensate for noise. We also work with airlines, air traffic controllers and local authorities towards achieving our noise objectives.

4.0.2 The Department for Transport (DfT) has direct control over noise at Heathrow and other designated airports. In June 2006, the Secretary of State published long term statutory environmental noise objectives for these airports which included setting the night flight movement and noise quota limits and restrictions.

4.1 Noise Action Plan

4.1.1 Alongside the statutory noise objectives, HAL has set and revised following consultation feedback, a long term objective for the management of aircraft noise:

To limit and where possible reduce aircraft noise impacts and demonstrate to our stakeholders that we are using best practicable means to achieve this goal.

4.1.2 As part of a new European law, Heathrow is required to publish a Noise Action Plan every 5 years. The plan sets out how Heathrow will manage the impacts of aircraft noise over the next 5 years. It was produced following a four month public consultation in 2009 and adopted by the UK Government in May 2011.

4.1.3 In the Noise Action Plan we have set five key themes for our work program over the next five years. These themes establish a framework for the airport's Noise Action Plan and help inform our priorities. They are:

1. *Reducing noise impacts wherever practicable. This includes:*
    a. *Quietest fleet practicable;*
    b. *Quietest practicable aircraft operations, balanced against NO_x and CO_2 emissions;*
    c. *Effective and credible noise mitigation schemes.*
2. *Engaging with communities affected by noise impacts to better understand their concerns and priorities, reflecting them as far as possible in airport noise strategies and communication plans;*
3. *Influencing planning policy to minimise the number of noise sensitive properties around our airports;*
4. *Organising ourselves to continue to manage noise efficiently and effectively;*

5. *Continuing to build on our understanding of aircraft noise to further inform our priorities, strategies and targets.*

4.1.4 HAL recognise that following the publication of this Noise Action Plan, it will be important to keep communities and other stakeholders informed as to the progress made. HAL are committed to reporting publicly on our performance against the action plan and the effectiveness of our actions to address community concerns. We therefore plan to report annually on our progress against the action plan.

4.2 Aircraft noise management measures

4.2.1 Heathrow Airport has a full and comprehensive range of noise management measures already in place when compared with similar airports. This is based on the evidence of our benchmarking studies and our long standing status as a designated airport. These measures cover operational procedures, stakeholder communication and engagement as well as mitigation and compensation schemes.

Noise and track monitoring

4.2.2 Most large airports have Noise and Track Keeping (NTK) systems, which take radar data from air traffic control radars and combine it with flight information such as callsign, tail number, type and destination. At Heathrow Airport, the NTK system captures data from both fixed and mobile noise monitors around the airport, to be matched to operational data.

4.2.3 This information ensures that the Aircraft Noise Contour model database (ANCON-2) is kept up to date which in turn is used as an input to the annual noise contours for each of the three designated London airports (Heathrow, Gatwick and Stansted).

Runway use

4.2.4 For safety and aeronautical technical reasons aircraft normally take-off and land into the wind. In the UK the prevailing winds are south westerly, so at Heathrow aircraft generally land from the east and depart to the west (‘westerly operations’) for about 70-80 per cent of the time, during a typical year. Over the past 6 years, there has been a trend towards westerly operations in excess of 80% during the 92 day summer period. However, the long term average is 78% westerly operations and 22% easterly operations. Over the course of a full calendar year, the typical split between westerly and easterly operations is 71%/29%, i.e. on average 29% of airport operations are in an easterly direction.

Westerly preference

4.2.5 Heathrow Airport also operates what is known as a ‘westerly preference’. This means that during periods of no wind, or light winds from the east, aircraft will often continue to land in a westerly direction making their final approach over London. The westerly

preference was introduced in the 1960s to reduce numbers of aircraft taking off in an easterly direction over London i.e. over the most heavily populated side of the airport.

Runway alternation

4.2.6 A system of runway alternation was introduced in 1972-73 for aircraft landing during westerly operations and allows arrivals to be scheduled on one runway while departures are operated from the other. Runway alternation is scheduled in advance so that communities who live under the final approaches and initial stages of departures with scheduled periods of respite from overflying aircraft. Through consultation, the Airport understands that communities living around the airport value the ability to understand in advance as to when they will be overflown.

4.2.7 Relief are periods of time without aircraft overflight that cannot be predicted due to the changes in wind direction. To this end, it is possible for one community to be overflown to a lesser degree than another and receive greater levels of respite.

4.2.8 Respite differs from relief in that it is scheduled and therefore predictable. At present, during westerly operations the application of the runway alternation patterns means that some communities under final approaches and the initial stages of departures experience scheduled periods of respite. However, the lack of easterly runway alternation means that any scheduled respite provided by westerly runway alternation can be compromised by unpredicted changeover to easterly operations required by prevailing weather conditions. This results in some communities being overflown when they may have expected not to be and other communities experiencing periods of unexpected relief from overflights.

4.2.9 The pattern of alternation has been modified several times since the 1970s and in 1999 was extended to cover the night period. The present daytime pattern provides for one runway to be designated for use by landing aircraft and the other for departing aircraft from 0600hrs until 1500hrs, at which point the runway arrangements switch from 1500hrs until after the last departure.

4.2.10 At present during easterly operations, without full runway alternation, departures always occur from the Southern Runway with arrivals occurring on the Northern Runway. Therefore, there is no scheduled runway alternation pattern which means for communities under the final approaches such as those in Windsor and for communities underl departures routes such as Hatton, there is no respite from aircraft overflights. However, for communities such as Cranford, there are no oveflights on easterly operations.

4.2.11 When runway alternation was introduced in 1972, air traffic control was given discretion to suspend its application temporarily for sound operational or safety reasons. One of the exemptions was to accommodate peak traffic build-up. This temporary suspension of alternation is known as TEAM or Tactically Enhanced Arrival Measures. TEAM is a

tactical procedure which allows for a temporary suspension of runway alternation to increase the flow of arriving aircraft. It does not provide for additional capacity. TEAM is most commonly used in the hour of 0600hrs to 0700hrs during a peak period of long haul arrivals.

4.2.12 The pattern of runway alternation may also be suspended by Air Traffic Control to allow essential maintenance of the runways, lighting and the instrument landing systems, although in practice most maintenance carried out at night is synchronised with the alternation pattern.

Night-time rotation

4.2.13 Since 1999, Heathrow has operated a night-time rotation pattern that is different from operations during the day. This night-time rotation operates from the final departure of the day to 0600hrs and consists of two main elements: a weekly rotation of the alternation between the northern and southern runways and a weekly rotation of westerly and easterly arrivals. This has resulted in a more even split between westerly and easterly operations, than the pre-1999 figure of nearly 90 per cent of early morning arrivals over flying London in an average year at Heathrow.

4.2.14 The night-time rotation between northern and southern runways combined with a rotation of easterly and westerly operations results in a four week rota of respite at night. For example, the night-time rotation for arriving aircraft in January 2013 was as follows:

- Week of 7 Jan: Runway 27L
- Week of 14 Jan: Runway 09L
- Week of 21 Jan: Runway 27R
- Week of 28 Jan: Runway 09R

4.2.15 This four week alternation pattern is dependent on weather conditions i.e. operations are changed so that aircraft head into the wind if a tailwind of over 5 knots is experienced.

Night flight restrictions

4.2.16 There are significant restrictions that govern night flights at HeathrowThe DfT are responsible for setting these night restrictions and aims to maintain a balance between protecting local communities from aircraft noise at night and the operation of services where they provide economic benefits. The restrictions set by the DfT are detailed in a statutory notice, published each season in the supplement to the UK Aeronautical Information Publication (AIP).

4.2.17 HAL strictly monitors compliance with these restrictions and reports regularly to the DfT and the Heathrow Airport Consultative Committee (HACC), who are an independent forum of local authorities, Councillors, businesses, airlines and the DfT.

4.2.18 Aircraft are classified by the International Civil Aviation Organisation (ICAO) by the amount of noise they make on arrival and departure. Night flying restrictions are divided into summer and winter seasons and consist of a movement limit and quota count system.

Night period and night quota period

4.2.19 The 'night period' is 2300hrs to 0700hrs during which the noisiest types of aircraft classified under the quota count system may not be scheduled to land or take-off.

4.2.20 The 'night quota period' is 2330 to 0600, during which time aircraft movements are restricted by movements limits with noise quotas as a supplementary measure. These are set for each season.

The quota count system

4.2.21 Aircraft are assigned quota count (QC) classifications against a certified noise level measured as 'Effective Perceptible Noise' in decibels (EPNdB) as follows:

Table 4.1: Quota count system against certified noise level measurement

Certified Noise Level (EPNdB)	Quota Count
More than 101.9	QC/16
99-101.9	QC/08
96-98.9	QC/04
93-95.9	QC/02
90-92.9	QC/01
87-89.9	QC/0.5
84-86.9	QC/0.25

4.2.22 Quota count points are allocated to different types of aircraft depending on how much noise they make; the noisier the aircraft, the higher the points allocation. Schedules showing the QC classification of individual aircraft are published as part of the statutory notice to DfT. Examples of QC noise classifications for some (but not all) of the aircraft that commonly use Heathrow Airport are set out as follows[1]:

Table 4.2 Quota count noise classification by aircraft type

Aircraft Type	Arrivals	Departures

[1] Taken from Supplement to UK AIP Oct 2012

A319	QC/0.25	QC/0.5
A320	QC/0.5	QC/1
A321	QC/0.5	QC/1
A330	QC/0.5	QC/2
A340-300	QC/0.5	QC/2
A340-600	QC/1	QC/2
A380	QC/0.5	QC/2
B737-700	QC/0.25	QC/0.5
B737-800	QC/0.5	QC/1
B737-900	QC/0.5	QC/1
B747-400	QC/2	QC/4
B757-300	QC/0.25	QC/1
B767-300	QC/1	QC/2
B777-300	QC/1	QC/2
B787	QC/1	QC/0.5

4.2.23 The night movement and night quota limits for 2012 were:

Table 4.3: Night quota limits

	Movement Limit	Noise Quota
Winter (2011/2012)	2550	4080
Summer (2012)	3250	5100

Specific Night Restrictions

4.2.24 The following summarises the specific restrictions in place limiting night operations.

1. *Any aircraft which has a quota count of 4, 8, or 16 may not be scheduled to take off or land during the night quota period;*

2. *Any aircraft which has a quota count of 8 or 16 may not be scheduled to take off or land during the night period;*

3. *Any aircraft which has a quota count of 8 or 16 may not take off in the night period, except in the period 2300 hours to 2330 hours in circumstances where:*

    a. *it was scheduled to take off prior to 2300 hours;*
    b. *the take-off was delayed for reasons beyond the control of the aircraft operator; and*
    c. *the airport authority has not given notice to the aircraft operator precluding take-off.*

Monitoring

4.2.25 HAL provides HACC and the DfT with regular reports on the use of the movements limits and the noise quotas, details of any dispensations or exemptions granted and reports on any movements by QC/8 and QC/16 aircraft during the night period. All dispensations granted by the airport have to be reported to the DfT in writing within a maximum of one week from when the flight took place.

4.3 Departure procedures

4.3.1 The following procedures and techniques are set out in full in the UK Aeronautical Information Publication (UK AIP) and form part of the noise policy framework set by DfT.

Noise preferential routing 'Track Keeping'

4.3.2 Aircraft departing from Heathrow are required to follow specific paths called noise preferential routes (NPRs) up to an altitude of 4000ft, unless directed otherwise by Air Traffic Control (ATC). NPRs were designed to avoid as far as possible overflight of built-up areas. They lead from the departure runway to the main UK air traffic routes and form the first part of the Standard Instrument Departure routes (SIDs). Associated with each NPR is a swathe extending 1.5 km each side of the nominal NPR centre line, within which aircraft are considered to be flying on track. This takes account of various factors that affect track-keeping including tolerances in navigational equipment, type and weight of aircraft, and weather conditions, particularly winds, that may cause drifting when aircraft are turning. Aircraft reaching 4000ft at any point along an NPR may be turned off the route by ATC onto more direct headings to their destinations, a practice known as 'vectoring'. ATC may also vector aircraft from NPRs below 4000ft for safety reasons, including in certain weather conditions, for example to avoid storms.

4.3.3 Changes to the NPRs are rare and stability is regarded as important so that people may know where aircraft noise will be experienced. Indeed, any significant changes to the NPRs would be subject to public consultation by the Government. The frequency with which any particular NPR is used will vary and is an operational decision for ATC, taking account of the final destination of individual flights, together with other considerations such as overall air traffic and weather conditions, both locally and along intended routes.

'1000ft rule'

4.3.4 After take-off, the aircraft are operated in such a way that they reach a height of not less than 1000ft aal (above aerodrome level) at 6.5 km from the start of roll as measured along the departure track of that aircraft. This encourages aircraft operators to gain height as quickly as possible and then reduce engine power and noise at the earliest opportunity. This point was also chosen as fewer residential areas are within this

distance and the resulting climb would benefit for residents who live further out from the airport.

4.4 Arrival Procedures

Continuous Descent Approach

4.4.1 Continuous Descent Approach (CDA) is a noise abatement technique whereby an aircraft descends at a continuous rate with the intention of joining the final approach at the correct height for the distance. This avoids the need for extended periods of level flight and is intended to keep aircraft higher for longer, using reduced thrust and thereby reducing arrival noise. As well as reducing noise, CDAs reduce fuel burn, thereby cutting emissions and producing an overall environmental benefit.

4.4.2 A CDA is not always precise and relies on the accuracy of track miles to be provided to the flight crew by ATC, pilot skill, weather and operational circumstances. Additionally, different aircraft types perform differently, requiring varying operating practices to be able to slow the aircraft down and meet speed restrictions. The requirement to fly a CDA is therefore not compulsory; rather, it is to be used whenever practicable. Circumstances where it may not be practicable could be due to a need for a period of level flight prior to joining the Instrument Landing System (ILS) to meet the ICAO requirements or to meet ATC speed and sequencing requirements.

4.4.3 The CDA achievement levels are regularly reported back to Heathrow's Noise and Track Keeping Working Group (NTKWG) and the Heathrow Airport Consultative Committee (HACC), as well as to the Flight Operations Performance Committee (FLOPC), which includes airline and ATC representatives.

'Joining point rules'

4.4.4 These rules dictate at which point aircraft must be established on the ILS before being able to descend further. At night the requirement is 500ft higher than during the daytime. During the day and at night aircraft are not permitted to fly below the glideslope, i.e. they must maintain a certain height for their distance from touchdown. The aim of these rules is to keep aircraft higher for longer and avoid prolonged periods of level flight at low levels.

4.4.5 These rules are constantly monitored by our NTK system and as with the other noise abatement procedure requirements regularly reported on to the HACC and NTKWG. Heathrow also actively engage with NATS on these issues.

Limiting the use of reverse thrust

4.4.6 To minimise disturbance in areas adjacent to the aerodrome, pilots are requested to avoid the use of reverse thrust after landing, consistent with the safe operation of the aircraft, between 2330 and 0600.

4.5 Noise limits

Departure noise limits

4.5.1 Noise limits are applied at fixed points for departing aircraft. These are monitored approximately 6.5km from the start-of-roll point, which is corresponds with the flyover measurement point in the ICAO Annex 16 Noise Certification Procedure. This also corresponds to the point at which aircraft need to have reached 1000ft through the '1000ft rule' as discussed earlier. In total there are 10 fixed monitoring locations around Heathrow which take into account all of the NPRs.

4.5.2 The departure noise limits are as follows:

Table 4.4: Departure noise limits

Time	Noise Limit
Day (0700-2300)	94dBA Lmax
Night Quota Period (2330-0600)	87dBA Lmax
Night 'shoulder' period (2300-2330 and 0600-0700)	89dBA Lmax

4.5.3 If aircraft breach the above noise limited, the airline of the aircraft is fined (currently £500 or £1000 depending on the level of the breach) and the money donated to local community projects through a large grants scheme.

Arrivals noise limits

4.5.4 There are no arrivals noise limits. A report which considered the feasibility of setting noise limits for arriving aircraft, *'Noise from Arriving Aircraft: Final Report of the ANMAC Technical Working Group'*, was published in 1999 and in light of the findings, the Government at the time decided against imposing operational noise limits for arriving aircraft. However, a code of practice for arriving flights has been development as described earlier under 'Arrivals Procedures'.

4.6 Additional noise management measures

4.6.1 The following measures have been established by Heathrow Airport Limited (HAL) to supplement those established by the DfT.

Ground noise controls

4.6.2 Auxiliary Power Units (APUs) are jet engines in the tail of an aircraft that are used to deliver electrical power and cabin conditioning while on the ground. Through HALs Operational Safety Instructions (OSI) conditions are specified for APU usage in airport procedures to limit their use and alternative systems for use whilst on the ground are supplied, including Fixed Electrical Ground Power (FEGP) and Pre-Conditioned Air

(PCA). The procedures seek to optimise the use of other services in order to limit the need to use the APU and this directly leads to a reduction in ground noise and emissions.

4.6.3 PCA is provided for all pier served aircraft in Terminal 5 and on Pier 6 Terminal 3 and mains electricity through the provision of FEGP is on most stands. FEGP and PCA will also be provided to all pier served T2 stands. Currently at Heathrow, 90% of stands are fitted with electricity connections and 21% provided with PCA.

Differential noise charges

4.6.4 Each year we publish our Conditions of Use and Airport Charges which include a differential charging structure for aircraft operating at Heathrow. The charges promote the use of quieter aircraft by charging more for the noisiest aircraft and less for the quietest. A brief summary of the charging structure as of April 2010 is set out below.

Table 4.5: Differential noise charges

Charging Category	Charge Levied	Category Definition
Chapter 3 Base	Base Charge	Jet aircraft over 16 metric tonnes and meet the noise certification standards of ICAO Annex 16 Chapter 3
Non-Chapter 3	Base Charge plus 200%	Aircraft that fail to meet Chapter 3 noise certification
Chapter 3 High	Base Charge plus 150%	Aircraft within 5EPNdB of ICAO Annex 16 Chapter 3
Chapter 3 Minus	Base Charge minus 10%	Chapter 3 aircraft that are QC/1 on both arrival and departure
Chapter 4	Base Charge minus 15%	Jet aircraft over 16 metric tonnes and meet the noise certification standards of ICAO Annex 16 Chapter 4

4.7 Local planning conditions

4.7.1 As part of the planning process for Terminal 4 and Terminal 5 a number of special conditions were attached to these planning permissions which relate to airport noise management. These include:

Terminal 4 (as permitted on 17 December 1979 and revised 20 June 2007)

- Except in an emergency, no live aircraft movements or activities involving the running of aircraft engines to be permitted to, from or onto stands 401- 403, 429- 432 and 463, between the hours of 23:30hrs and 06:00hrs local.

- Access to or egress from the Terminal site by taxiing aircraft between 23:30hrs and 06:00hrs is prohibited on the taxiway route “S” west of “V” apron, or though “Link 41” to SB1 and reverse, except in an emergency or as a consequence of essential

maintenance work on the alternative access routes. This restriction does not apply to aircraft taxiing to or from Terminal 4.

- Except in an emergency, no Auxiliary Power Units (APUs) may be operated on stands 401- 403, 429 - 432 and 463 between the hours of 23:30hrs and 06:00hrs local.

- Other than the routine servicing of aircraft on turnaround, no aircraft maintenance work which involves the running of aircraft engines is permitted on the Terminal 4 site at any time.

Terminal 5

- Under Terminal 5 Planning Condition A4, the number of air transport movements at Heathrow Airport shall be limited to 480,000 each year.

- With effect from the 1 January 2016, the area enclosed by the 57dB(A) L_{eq}16hr (07:00-23:00) contour, when calculated and measured by the CAA's Aircraft Noise Contour Model, or any system that succeeds it, shall not exceed 145 square kilometres.

- The recording and management criteria for engine testing will be extended to cover the Terminal 5 application site without any increase in the current maximum and average period of testing permitted for Heathrow with four terminals:

    - The total ground running time in any one night period shall not exceed 150 minutes
    - The total ground running time at high power in any one night period shall not exceed 60 minutes
    - The ground running time at high power in the night period shall not exceed a rolling 30 day average of 20 minutes.

- In addition to the overall airport constraint on permitted periods for engine ground running, any run on any stand on the Terminal 5 application site at idle power will not exceed 10 minutes for any single engine.

- Between 23:00hrs and 07:00hrs (local) only, check starts (maximum five minute duration) will be permitted on any stand on the Terminal 5 application site.

- During the night quota period (23:30-06:00hrs local), aircraft arriving at the Terminal 5 application site, and aircraft scheduled to depart from it in that period, will use the stands closest to the centre of the site, i.e furthest away from Longford and Stanwell, in preference to the outer stands. This would apply to both the core building and the satellites.

- During the night quota period (23:30-06:00hrs local) , and except in an emergency or for maintenance of the runway and taxiway system, taxiing operation to the north and south

of the Terminal 5 application site will be restricted to inner taxiways only. These operational constraints will be applied through Heathrow ATC in the same way as the current taxiing constraints on Terminal 4 are implemented to ensure compliance.

- No pier served stand within the Terminal 5 application site shall be used for live aircraft movements until there is available to that stand a supply of PCA (Pre Conditioned Air).

- Aircraft arriving at the Terminal 5 application site under engine power, and aircraft scheduled to leave the application site under engine power, during the night quota period shall be allocated a centre stand in preference to any other stand; provided that if all centre stands are so allocated or unavailable for use for any reason, such aircraft may be allocated to another stand.

4.8 Stakeholder communication and engagement

4.8.1 HAL participates in, as well as hosts, a number of engagement forums with a range of stakeholders where noise issues are discussed. Examples of Heathrow's stakeholder interactions are described as follows.

Aircraft Noise Monitoring Advisory Committee (ANMAC)

4.8.2 The ANMAC was set up by the Government in the early 1990's to advise on the operation of noise monitoring equipment which BAA had been required to install by the DfT under the Civil Aviation Act 1982. Since then, the committee has been used as an advisory body on various noise issues. Membership includes representatives from NATS; the Environmental Research and Consultancy Division (ERCD) of the CAA; the Scheduling Committees and their technical advisers; representatives from Heathrow, Stanstead and Gatwick Airports and a representative and technical adviser from the Consultative Committees of the three airports. The committee is chaired by the head of the Aviation Environment Division at the DfT.

Heathrow Airport Consultative Committee (HACC)

4.8.3 The HACC is an independent committee which includes representatives of airport users, local authorities and other bodies concerned with the locality. HAL meets a statutory obligation by consulting with the committee. The HACC meets six times a year and is a public forum.

Noise and Track Keeping Working Group (NTKWG)

4.8.4 The NTKWG is a group set up by HAL comprising local community representatives, air traffic control and airport personnel. It is active on noise and track-keeping and other related environmental issues and reports on these to the HACC.

Flight Operations Performance Committee (FLOPC)

4.8.5 The FLOPC is an internal committee of HAL. Its membership comprises pilots, NATS and HAL's Airside Operations team. It reviews noise, track and CDA performance, shares best practice and also advises on noise abatement procedures. A report from the FLOPC is presented at each NTKWG.

Local Focus Forum (LFF)

4.8.6 The LFF was originally set up to keep residents up to date with progress with Terminal 5. It represents residents' associations and councillors closest to the airport. With Terminal 5 now complete, the forum has continued and is now an opportunity to share with them information about pending developments and operational impacts that might affect the local area.

4.9 Sharing Information

4.9.1 Wherever possible, Heathrow endeavours to share information with local interest groups and communities and provides the means for local people to monitor and comment on airport operations. The following explains the ways in which this is achieved.

Flight Evaluation Unit (FEU)

4.9.2 HAL monitors compliance with the various noise control measures and noise queries/complaints through its Flight Evaluation Unit (FEU). The FEU responds to all queries/complaints and reports on complaints directly to DfT and the HACC on which local people are represented by both local authorities and noise groups.

4.9.3 Heathrow currently produces an annual FEU report which provides detailed information on performance against noise control measures. In addition, quarterly FEU update reports are available on Heathrow's website. The FEU reports are also regularly reported to the DfT, airlines and NATS as well as our NTKWG and HACC meetings.

Webtrak

4.9.4 WebTrak is an online facility that allows people to see flight tracks from Heathrow Airport as well as showing the aircraft type, flight number, speed and altitude they are flying at. For security reasons, the data is delayed between 24 & 48 hours so the tracks are not being viewed in real time.

4.10

4.11 Industry groups

Airports Council International (ACI)

4.11.1 ACI pursues airports interests in discussions with international organisations. The most important relationship is with the International Civil Aviation Organisation (ICAO), where international standards for air transport are debated and developed. ACI helps to develop standards and recommended practices in the areas of safety, security and environment initiatives. It also advances and protects airport interests in important policy changes on airport charges and regulation, strengthening the hand of airports in dealing with airlines.

4.11.2 HAL's membership of ACI gives us the opportunity to encourage the exchange of knowledge between European airports and share best practice as well as influence important policy changes.

Sustainable Aviation

4.11.3 Sustainable Aviation brings together the key stakeholders from UK airlines, airports, manufacturers and air traffic service providers around a long term strategy which sets out the collective approach of UK aviation to tackling the challenge of ensuring a sustainable future for the industry.

4.11.4 HAL's involvement with Sustainable Aviation enables us to engage with the relevant experts in exploring opportunities to improve environmental performance. For example Sustainable Aviation is involved in the development of a Departures Code of Practice.

5.0 Consultation

5.1 Scoping the Assessment

5.1.1 The following consultation activities were implemented to foster open, effective two-way flows of information between the consultees, HAL and the EIA Study Team:

- Stakeholder workshops;
- Individual stakeholder meetings (including on-site meetings) and discussions; and
- Consultation on the Heathrow Airport Noise Mitigation Scheme.

5.1.2 These activities have formed a 'collaborative approach' by HAL and the EIA project team from the outset of the EIA Scoping process.

Stakeholder workshops

5.1.3 Through the scoping process, a number of stakeholder workshops were held with a view to identifying the likely significant effects associated with ending The Agreement, confirming the scope of the EIA, and discussing the appropriate methodologies to be employed in the technical assessments.

5.1.4 The first of these workshops, covering the full range of EIA topics, was held on 30th November 2010 and was attended by a range of stakeholders with an interest in the project including representatives from local authorities, statutory consultation bodies and other key organisations, listed below:

Local Authorities

- London Borough of Hillingdon;
- London Borough of Hounslow;
- London Borough of Ealing;
- London Borough of Richmond upon Thames;
- Spelthorne Borough Council;
- Slough Borough Council;
- South Buckinghamshire District Council;
- Runnymede Borough Council; and

- Royal Borough of Windsor and Maidenhead

Other Key Stakeholders

- Environment Agency;
- English Heritage;
- Transport for London; and
- Greater London Authority.

5.1.5 Further to this meeting, a draft Scoping Report was issued on the 31st January 2011 to all stakeholders who attended the first workshop and comments were invited on the proposed approach to and scope of the assessment. Comments were received from Transport for London, the Environment Agency and the London Boroughs of Hillingdon, Hounslow and the Royal Borough of Windsor and Maidenhead.

5.1.6 Three further scoping workshops were held with local authority Environmental Health Officers from London Boroughs of Hillingdon, Hounslow, Richmond, Ealing and the Royal Borough of Windsor and Maidenhead on 21st January, 18th February and 22nd March 2011, to specifically consider the scope of, and approach to, the air noise assessment, including the noise contours and significance criteria that were to be applied. Feedback from these workshops was taken into account when issuing the final Scoping Report on 17th June 2011.

5.1.7 Separate consultations were held with NATS and Natural England to discuss specific issues related to runway operations and aircraft wake turbulence, and the possible requirements and expectations for any Appropriate Assessment under the Habitat Regulations 2010.

5.1.8 A site meeting was held between HAL, the EIA project team and representatives from LBH's Landscape team on 9th June 2011 to discuss potential issues associated with the development of a noise barrier south of Longford.

Scoping Opinion

5.1.9 The Council's formal Scoping Opinion was received on 22nd August 2011. However, it was not long after the formal opinion when the application process was put on hold by HAL who wished to avoid any public confusion with the Operational Freedom trails that were about to take place. On the 5 January 2012, HAL provided LBH with a written response to the Scoping Opinion.

5.1.10 When the decision was made to recommence the EIA process, HAL sent a further letter on 22nd October 2012 that provided an update of the issues raised in the earlier January letter and set out what HAL considered to be main points of future discussion:

- Confirming baseline assumptions;
- Confirming significance methodologies;
- Reviewing CGIs for the Longford noise screen;
- Reviewing Flora and Fauna chapter;
- HRA Screening;
- Review of approach to Wake Vortex;
- Confirming the methodology and outputs of Air and Ground Noise chapters;
- Review the Air Quality chapter, including outline Construction and Environmental Management Plan (CEMP).

5.1.11 It was agreed that a further EIA meeting should take place and this occurred on the 13th of November 2012. The principle point of discussion at this meeting related to the air quality baseline and whether Heathrow is already above legal limits without development. This discussion also extended to noise levels. A particular point raised by LBH was the Baker vs. Bath and North East Somerset Council case where multiple small developments were cumulatively considered to result in EIA development. However, it was not clear to HAL how this relates to the current proposal. Therefore, on the 4th of December 2012, HAL provided a further written response to the Scoping Opinion which was informed by the discussion with LBH in November.

5.1.12 The letter of 4 December 2012 was responded to by LBH on the 1st of February 2013 which set out the following areas of disagreement on the content of the Environmental Statement:

- Interpretation of the 2011 EIA Regulations and in particular the relevance of the Baker vs. Bath and North East Somerset Council (the Baker Case) to the current proposal;
- The use implementation year of 2015 as the baseline year (and 2014 for construction effects), rather than the current year;
- Consideration of Operational Freedoms in the ES, specifically Tactically Enhanced Arrivals Mode (TEAM);
- Assessment of air/ground noise using average noise contours and over single runway modes and on health and education establishments;

- Significance criteria for air and ground noise of +3dB, rather than +1dB as suggested by LB Hillingdon.

5.1.13 In taking each point in turn, HAL's position is as follows:

- Schedule 2, Paragraph 13 of the EIA Regulations 2011 states that development proposals will require EIA where: *"Any change to or extension of development listed in this Schedule where such a change or extension in itself meets the thresholds".* This is considered the basis of the Baker decision. However, the Project does not involve any change to Schedule 1 development, therefore there is no need to revisit the baseline of the airport in its entirety.

- The ES clearly explains how the baseline year has been derived.

- Operational Freedoms is a tactical measure and is not part of scheduled operations. It is therefore impossible to predict whether there will be, or the extent of, any Operational Freedoms subsequent to the SoS consultation, review of the report of the trials and decision. Be this as it may, if Operational Freedoms were to be implemented, the impacts would be so small as not to be significant.

- Appendix G of the ES provides single runway modes as 8 hour contours.

- The significance criteria of 3dB has recently been reiterated in the adoption of the APF.

5.1.14 HAL has also engaged with the London Borough of Hounslow and on the 24th of January 2013 a meeting was held to discuss the approach to the ES. Hounslow generally accepted the approach to the ES but did not agree on the significance criteria for air noise being +3dB change. It was agreed that a copy of the application documents would be provided directly to Hounslow and that further meetings would take place. One of these would be to discuss public consultation strategy and a further meeting once the application had been submitted.

5.2 Heathrow's Noise Mitigation Schemes

5.2.1 As part of the commitments set out in the Noise Action Plan, HAL also undertook a full public consultation on changes to improve Heathrow Airport's Noise Mitigation Schemes. The schemes are designed to mitigate the noise-related effects of airport operations by providing financial help towards replacement double glazing and in some cases, financial help with sale costs for people wishing to move away from the area. The consultation also set out to explain the changes that would arise from implementing full runway alternation on easterly operations.

5.2.2 With respect to the specific ground noise consultation in the Longford area, HAL consulted the 298 households in Longford with some specific questions and received a

total of 10 responses. The introduction of a part transparent noise barrier was generally supported.

5.2.3 As a result of this consultation process HAL has decided to implement a number of pilot schemes during 2013 to test the effectiveness of a new approach to noise mitigation measures which offers a wider range of products, a banded approach including funding 100% of the cost of mitigation for those properties closest to the airport, a personalised service for householders in terms of individual noise assessments and a choice of suppliers. Following implementation, feedback will be sought from those residents taking up the offer, in order to refine the scheme and process, before it is rolled out more widely.

6.0 Issues from the Environmental Assessment

6.0.1 Summarised below are the main findings from the ES in each of the topic areas.

6.1 Air and Ground Noise

6.1.1 The effects of the development on air and ground noise around Heathrow Airport is perhaps the most critical issue for consideration, as it was the fundamental reason for the imposition of the Cranford Agreement in 1952. In preparing the Air and Ground Noise Chapter of the Environmental Statement, information has been gathered from existing sources as well as from site survey work. The baseline information and the predicted noise exposure resulting from the development are presented as noise contour maps.

6.1.2 Air noise contours have been provided using ATMs for the baseline year of 2015 (the year of implementation) for both the 'with' and 'without' development scenarios. The assessment of air noise in the ES has relied upon the current standard modal split for the airport which is derived from a 20 year average of the wind direction.

6.1.3 In terms of ground noise, it has been concluded that the following operations contribute to the overall ground noise levels:

- Aircraft taxiing between stands and runway, including queuing and holding prior to departure; and
- Ancillary equipment being operated on stationary aircraft, such as APUs.

6.1.4 The following noise sources are not considered to have a material contribution to the development proposal:

- Aircraft maintenance and engine ground running;
- Fixed plant at the airport buildings and facilities (e.g. air-handling units); and
- Vehicles servicing stationary aircraft (e.g. fuel tankers, baggage handling vehicles, catering trucks etc.)

6.1.5 As with the air noise contours, the assessment of ground noise has been based upon an average annual day and the 92-day average summer day.

Existing Conditions

6.1.6 The most recent information available for air noise is for 2011. This indicates that the actual modal split of 83% westerly operations and 17% easterly. This compares to the 20 year standard modal split of 76% westerly and 24% easterly for the 92-day summer

period. This difference results in air noise contours illustrating actual modal split extending further west than shown for the standard modal split, reflecting the greater number of westerly departures. However, the actual and standard air noise contours are still very similar in shape and extents. The actual and standard air noise contours can be found in the Air and Noise Chapter of the ES.

6.1.7 Aircraft noise is typically measured using 'average-mode' noise contours which take account of the number of aircraft movements over an average 16 hour summer day (0700-2300 mid-June to mid-September) in terms of the $L_{Aeq, 16h}$ index. This has been most recently adopted in the APF which sets out that 57dB $L_{Aeq, 16hr}$ is the approximate onset of community annoyance. It also defines 63 dB $L_{Aeq\ 16h}$ as 'moderate annoyance' or a 'medium level of noise' and that 69 dB $L_{Aeq\ 16h}$ may be considered as a 'high level of noise'.

6.1.8 In general, the existing 57 dB $L_{Aeq\ 16h}$ contour enters into areas of Windsor to the west, running along the outskirts of Slough to the north-west. To the north of the Airport, the 57 dB $L_{Aeq\ 16h}$ contour falls within the M4 motorway encompassing residential areas such as Harmondsworth, Sipson and Harlington. To the east, the 57 dB $L_{Aeq\ 16h}$ contour encompasses areas of Hounslow, Isleworth and Kew extending into areas of Barnes. To the south, the 57 dB $L_{Aeq\ 16h}$ contour runs along the outskirts, crossing briefly into areas of Stanwell and Feltham. To the south-east, the contour crosses into areas of open space such as Feltham Park and Hounslow Heath. To the south-west the contour enters areas of Egham and Staines.

6.1.9 The 63 dB $L_{Aeq\ 16h}$ contour crosses into areas such as Horton, Wraysbury and Colnbrook to the west and encompasses some residential properties to the north of the A4 Bath Road. To the east, the contour enters into Hounslow. To the south, the contour enters areas of Stanwell and Bedfont.

6.1.10 At higher noise levels, the 69 dB $L_{Aeq\ 16h}$ falls mainly within the Airport boundary to the north and south however encompasses residential areas such as Stanwell Moor and Poyle to the west. To the east, Hatton and some residential properties bounded by the A4 Bath Road and A312 The Parkway also fall within the 69 dB $L_{Aeq\ 16h}$ contour.

6.1.11 Whilst the APF has re-established the use of average noise contours as the metric in which to assess the onset of community annoyance, it goes further to state that airport operators should look to use alternative measures to better reflect how noise is experienced in different localities. This is stated in Footnote 96 of the APF which suggests that such measures could include frequency and patterns of movements and highest noise levels. In light of this suggested approach and in order to better understand the noise impacts of the development, the assessment of noise effects within Chapter 6 of the ES includes the following:

- Frequency and changes in easterly movements against Noise Preferential Routes and arrival tracks; and

- Respite contours and percentages during easterly operations.

6.1.12 The intention of the alternative measures is to better establish the frequency of overflights experienced by a particular locality and to determine the adverse or beneficial effects. An increase in the number of overflights is considered to be an adverse effect, just as a decrease is considered beneficial. Furthermore, the introduction of, and/or increase in scheduled periods of respite is considered to be beneficial, as is any increase in relief. In additional to these metrics, the population of 'annoyed' and 'highly annoyed' before and after the implementation of full runway alternation is calculated.

6.1.13 When considering these measures, the localities to the west of Runway 09L, such as Windsor, experience to the majority of arrival overflights when the airport is on easterly operations. Conversely, localities to the west of Runway 09R, such as Old Windsor and Horton, receive constant relief from arrival overflights when on easterly operations.

6.1.14 Localities to the east of the airport are exposed to departure overflights when on easterly operations. More specifically, those localities to the east of Runway 09R, including Hatton and Feltham, experience the majority of departure overflights, while those communities to the east of Runway 09L including Cranford receive relief from departure overflights. An important additional point to note when considering departure overflights is the nature of departure tracks. These tracks merge together further away from the airport so that as aircraft move away to the east, they are soon on a track that is not discernable as being from one runway or the other. The implication of this is that the effect of runway alternation reduces as aircraft move further away from the airport. This is best illustrated in Figure 6.13 of the ES. Ultimately, this means that the introduction of runway alternation will become more apparent for localities under arrival tracks to the west than departure tracks to the east.

6.1.15 The noise chapter also provides a secondary assessment of the impacts of noise using annual average day-evening-night noise indicator, L_{den}, and the annual average night-time noise indicator, L_{night}.

6.1.16 The 2010 55 dB L_{den} air noise contour encompasses Windsor, Eton and areas of Burnham to the west. To the north, the contour is mainly bounded by the M4 motorway apart from some areas to the north-east where the contour extends into areas of Southall and Ealing. To the east of the Airport, the 55 dB L_{den} air noise contour extends into Hounslow, Isleworth, Barnes, Fulham and Battersea. To the south-east, the contour extends into areas of Twickenham and Feltham. To the south of the Airport, the contour crosses through Bedfont and Stanwell, and to the south-west, the contour extends into areas of Egham. The report also shows that the 2010 50 dB L_{night} air noise contour extends mainly to the west and east of the Airport. To the west, the contour extends to cross into areas of Windsor. To the east, the contour extends into areas of Fulham and Barnes.

Noise Effects of the Development

6.1.17 Chapter 6 of the ES details the noise effects of the development. These effects are summarised below:

- The primary noise assessment using the $L_{Aeq\ 16hr}$ metric found that more people will experience a beneficial effect in terms of air noise exposure by a factor of 2:1;

- Around 10,500 people will no longer be exposed to air noise levels at or above 57dB $L_{Aeq,\ 16hr}$;

- Overall, the number of people likely to be 'annoyed' or 'highly annoyed' will reduce slightly as a result of the project;

- Around 1,700 people within the 57dB $L_{Aeq\ 16hr}$ will experience an increase in noise greater than 3dB of which 350 fall within the 63dB contour and will qualify for the enhanced Residential Noise Insulation Scheme;

- To the west of the airport, the communities of Old Windsor, Wraysbury and Standwell Moor will experience an average increase in overflights from 26 to 328 per day, whereas the communities of Windsor, Datchet, Colnbrook and Poyle will experience an equivalent average reduction in overflights, from 608 to 328.

- To the east of the airport, the communities immediately to the east of the Northern Runway in Cranford will experience more departure overflights, whereas communities immediately to the east of the Southern Runway in Hatton and Feltham North will receive decreases in overflights.

- Some communities further to the east including Hounslow Heath and Norwood Green will experience an increase in overflights whereas other communities further such as Heston will experience a decrease.

- Although, around 1,500 people are no longer within the air noise 45dB L_{night} contour, the Project has a very limited impact on the nature of the night time operations. There are no significant effects in respect of night time sleep disturbance for air and ground noise;

- No educational establishments will experience a significant change in air or ground noise levels that are located within the 63dBA contour and only one within the 57dB contour;

- No healthcare facilities, community facilities, or places of worship will experience a significant change in air or ground noise levels that are located in the 63dBA contour;

- The primary noise assessment shows that 60 dwellings will experience an increase in ground noise of 3dBA or more, although none of these are within the 63dB contour. Similarly, the secondary ground noise assessment showed that 70 dwellings experiencing an increase of 3dB or more, however all of these are outside the 63dB contour;

Vibration

6.1.18 The source of new vibration effects will be at the western end of Runway 09L as aircraft begin their take off roll. This may effect structures in Longford, the nearest being approximately 250 metres away. Investigations have been undertaken at a property 475 metres from the eastern end of Runway 27L and 130 metres south of the runway centreline. The centreline of the runway is significant as the low frequency noise that causes vibration is directional and mainly found to the rear of departing aircraft i.e. extending along the centreline of the runway. It was found that a conservatory attached to the property had the potential to vibrate due to low frequency noise from aircraft at the start of roll. It should be noted that vibration only occurred in the conservatory of the property and not in the main building. However, if it is assumed that this vibration occurs over a full 16 hour day, then it may be concluded that noise induced vibration effects are significant.

6.1.19 It is expected that properties in Longford may experience similar levels of vibration, particularly if they have lightweight structures such as conservatories facing the airport. Although the properties in Longford are nearer to the runway threshold than the tested properties close to Runway 27L, the Longford properties are further from the runway centreline. Therefore, it is possible that low frequency noise will not cause vibration in Longford to the same extent as experienced in the test property. However, significant noise induced vibration to lightweight structures in Longford should not be ruled out.

Mitigation

6.1.20 In consideration of the potential noise effects of the Project, the following mitigation and compensation package has been development in order to minimise the impact of increases in noise exposure to those residents detrimentally affected by the change in the Airport's operations and which is in accordance with the most recent Government guidance contained in the APF.

- The 175 households newly exposed to the 69dB LAeq 16hr contour or more will be offered home relocation assistance;

- The 350 households newly within the 63dB LAeq 16hr contour and experiencing a noise increase of 3dB or more will be eligible for residential acoustic insulation with 100% of the cost of insulation met by HAL;

- A noise wall will be erected in Longford which reduce the impact of noise on the closest residential receptor by 3dB;

- Should any residential occupier in Longford within 475 metres from the start of roll point experience vibration effects in a conservatory or other lightweight habitable structure from aircraft departing from Runway 09L, then this will be investigated by an independent noise assessor and if remedial action is possible this will be offered to the owner of the affected property. Any remedial work recommended will be authorised up to a maximum level of £10,000.

6.1.21 In additional to these direct mitigation measures, it should be recognised that reflective alternation on easterly alternation is a form of mitigation being introduced with the Project. The alternative measures used to assess the noise impact shows that approximately 60,000 people would experience predictable periods of respite, occurring for 8 hours at a time in either the morning or afternoon periods.

6.2 Air Quality

6.2.1 The ES has considered the effects of both the construction and operational phases of the Project on the air quality in the surrounding area. The key atmospheric pollutants considered in the assessment relate to emissions from aircraft and road vehicles and are:

- nitrogen oxides (NO_X) which comprise nitric oxide (NO) and nitrogen dioxide (NO_2); and

- particulate matter (PM_{10} and $PM_{2.5}$; particles with an aerodynamic diameter of less than 10 and 2.5 micrometres respectively).

6.2.2 The *Air Quality Standards Regulations 2010* provide Air Quality Standards (AQS) from binding limit values set by two European Directives. Action on air quality is also driven by health based objectives as set out in the 2007 Air Quality Strategy for England, Scotland, Wales and Northern Ireland which sets Air Quality Objectives (AQO). The difference between the two regimes are that AQS are legally binding limit values whereas the AQO are a statement of policy intention and are not legally binding.

6.2.3 The following air quality objectives are relevant to the application:

- NO_2, 40 µg m^{-3} (annual mean) and 200 µg m^{-3} not to be exceeded more than 18 times a year (1 hour averaging mean);

- PM_{10}, 40 µg m^{-3} (annual mean) and 50 µg m^{-3} not to be exceeded more than 35 times a year (24 hour averaging mean);

- $PM_{2.5}$, 25 µg m^{-3} (annual mean) and a target of 15% reduction in concentration at urban background locations.

6.2.4 As a consequence of forecast annual mean concentrations of NO_2 exceeding the AQO by the compliance date, the LBH declared an Air Quality Management Area (AQMA) in 2001 which covered most of the southern half of the borough, including Heathrow Airport. In 2003, following further air quality monitoring and modelling studies, the Council extended the boundary of the AQMA towards the north-west of the Borough. The Council then implemented an Action Plan in 2004 with the aim of improving air quality within the AQMA in order to move towards achievement of the AQO. Monitoring data show that in 2010 NO_2 concentrations were close to or above the limit value at some locations in the Borough, including some locations close to Heathrow Airport.

6.2.5 The councils of Hounslow, Spelthorne and Slough have also declared AQMAs in their Boroughs as a result of forecast exceedances of the annual mean NO_2 objective. Hounslow amalgamated four existing AQMAs into one AQMA to encompass the whole Borough and Spelthorne declared the whole Borough an AQMA. Slough has declared two AQMAs; the first covering an area encompassing land adjacent to the M4 motorway along the north carriageway between Junctions 5 and 7, and along the south carriageway between Junction 5 and Sutton Lane; the second AQMA encompassing the A4 London Road east of Junction 5 of the M4 motorway as far as Sutton Lane.

6.2.6 With the exception of NO_2, concentrations of all other AQS pollutants in the Boroughs of Hillingdon, Hounslow, Spelthorne and Slough meet the AQOs at locations of relevant public exposure.

Baseline Air Quality Levels

6.2.7 The study area for the air quality assessment has centred on a 9km x 9km square around and encompassing the Airport. The principal source of air quality monitoring data was the Heathrow Airwatch website, which has been funded by a joint working partnership consisting of the London Boroughs of Hillingdon and Hounslow, Slough and Spelthorne Borough Councils, HAL and British Airways. The ranges of continuous monitoring sites cover the different categories of representative locations that are subject to emissions of air pollutants from: road traffic; airport sources; the local and the regional background. In addition to data available from Heathrow Airwatch, additional information associated with air quality related complaints was provided by HAL and London Borough of Hillingdon. No survey work specific to the Project was undertaken as extensive data was available to provide a robust baseline.

6.2.8 Both HAL and LBH monitor air quality levels around the Airport from 17 monitoring locations. Of these monitoring locations, six are positioned close to the Airport at locations likely to be affected by the change in operations as a result of the Project. These are Colnbrook, Green Gates, Oaks Road, LHR2, Oxford Avenue and Cranford. The specific locations are shown in the air quality chapter of the ES. Continuous monitoring data dating back to 2006 shows that:

- Colnbrook: All pollutants have been below AQO levels.

- Green Gates: All pollutants have been below AQO levels with the exception of 2010 where the annual average mean NO_2 concentration was 41 µg m^{-3}. However, it has

since been acknowledged by DEFRA that NO_2 concentrations for 2010 where not representative of a typical year.

- Oaks Road: All pollutants have been below AQO levels. However, in 2006, 2007 and 2012, the 24-hour mean PM_{10} AQO was exceeded but this was still significantly below the 35 permitted number of days exceedence per year.

- LHR2: The annual mean concentration of NO_2 has exceeded the 40 µg m^{-3} AQO since 2006. PM_{10} and $PM_{2.5}$ levels have been consistently below the AQO levels.

- Oxford Avenue: Annual mean concentrations of NO_2 exceeded the 40 µg m^{-3} AQO level in 2006 and 2010, however, as pointed out above the 2010 is not considered to be reliable. PM_{10} concentrations have been below the annual AQO level however there have been some exceedances of the 24-hour average but within the 35 permitted exceedances in each year.

- Cranford: NO_2 and PM levels have been below AQO levels. There has been some exceedence of the 24-hour mean concentration of PM_{10}, but these have been within the 35 permitted annually.

6.2.9 The baseline position shows that the air quality monitoring locations close to the application site have generally recorded pollutant levels below the AQOs. The exception is monitoring station LHR2 which is located within the Airport boundary 100m to the west of the junction of the Northern Perimeter Road and Neptune Road. Monitoring station LHR2 is positioned to measure what is likely to be the maximum aircraft-related contribution to pollutant concentrations, as during westerly operations LHR2 is located downwind and within 175m of the position of aircraft start-of-roll. For comparison, during proposed easterly operations with aircraft departing from the western end of the northern runway, residential receptor locations in Longford will be approximately 300m from start-of-roll. LHR2 is also not near any residential or other sensitive receptors.

6.2.10 The Air Quality chapter of the ES explains that there have been some uncertainties around ambient concentrations of NO_2 and NOx from vehicle emissions, in that levels have not been declining in line with national forecasts. The assessment of air quality has taken these uncertainties into account and reports them in detail in the ES.

Air Quality Findings

6.2.11 The assessment of air quality effects has predicted an overall increase in levels of NOx emission of 7.9 tonnes per annum, from 6387 tonnes to 6405 tonnes. This represents an increase of just over 0.1%.

6.2.12 In terms of NO_2 concentrations, the assessment is predicting slight reductions in levels of NO_2 to the south west of the airport, around the Stanwell area. However, there is a corresponding slight increase in concentrations to the north west of the airport around

the area of Longford. It is predicted that Longford will experience an exceedance of the 40 microgram AQO level in the 2015 in the Project case. The change in NO_2 levels is largely attributed to the change in the distribution of aircraft as a result of the introduction of runway alternation on easterly operations, i.e. an increase in take-off roll from Runway 09L near Longford and a corresponding decrease from Runway 09R near Stanwell. Further, a slight increase in NO_2 near Longford can also be associated with aircraft holding at the western end of Runway 09L, where previously this has not occurred. Aircraft taxiing emissions emission are widely distributed across the airfield and therefore has a comparatively small effect.

6.2.13 Assuming as a worst-case where there are no reductions in vehicle emissions between 2008/9 and 2015, increases of up to 1.4 micrograms m^3 in 2015 may cause new exceedances over the 40 micrograms m^3 AQO. However, the impacts of the proposal would only be classified as 'slight adverse'.

6.2.14 The dispersion modelling assessment has shown that for some residential receptors in Longford there is likely to be a small increase in annual mean NO_2 concentrations and that concentrations at some properties under the worst-case scenario (ie no improvement in emissions from road vehicles) may therefore increase above 40 micrograms m^3 as a result of the development. Even without any improvements in air quality , the 'small' change in concentrations in Longford will affect approximately 96 properties until such time that vehicle exhaust emission improvement lead to a return to a downward trend in NO_2 concentrations.

6.2.15 Emissions of PM_{10} are predicted to increase by 0.1 tonne, and $PM_{2.5}$ are also predicted to increase up to 0.1 tonne. This shows that PM concentrations decrease at most receptor locations including 84 of 101 receptors in Longford. Where there is a slight increase in PM concentrations, these can be attributed to tyre and brake deterioration from landing aircraft rather than from engine exhaust emissions and therefore the increase is localised around Runway 09R to the south of the airfield.

6.2.16 Overall emissions of CO_2 in the assessment area increase by 3.3 ktonnes in the with Project case over the baseline in 2015, from 1146.6 ktonnes per annum to 1149.9 ktonnes per annum, an increase of less than 0.3%.

6.3 Cultural Heritage and Archaeology

6.3.1 Archaeological evidence of past settlements in the area near the site has been well documented with the development of T5, the twin rivers diversion works and several other developments on and around the airport. Further, the location of the noise barrier sits alongside the Longford Conservation Area. Therefore, the impact of the proposal on the cultural heritage of the area has been considered as part of the ES.

6.3.2 The proposal has the potential to disturb archaeological remains through the excavation and earth movements. However, these proposed earthworks are less than

a metre in depth and involve the removal of top soil and levelling of ground. It should also be noted where archaeological remains may be present on the site, it is highly likely that they have incurred physical damage from previous airport development. It is therefore considered that any archaeological remains present on site would be of low value.

6.3.3 Under normal development scenarios, it is common for a planning condition to be imposed by the local planning authority, on the advice of English Heritage/GLAAS, to secure a scheme of archaeological work to record and secure any historic remains that may be present. However, considering the airside location of the site and the fact that works to the RATs will only be undertaken at night, it would not be reasonable to impose such a condition to this development as it isn't practical to undertake archaeological investigations other than in day light.

6.3.4 The assessment also explored the 'setting' of the Longford Conservation Area and those Listed Buildings within it and the wider village of Longford. The assessment concluded that the noise barrier would not be located within the settings of any of the Listed Buildings and therefore could not affect their heritage significance. In the case of the Conservation Area its heritage significance was deemed to be derived from the focus of its historic core which looks inwards towards the Bath Road.

6.3.5 The noise barrier is not considered to pose any risk to potential archaeological deposits in the area. The diversion of the Twin Rivers and the construction of the Business Car Park would have destroyed any archaeological evidence to the depths of the proposed barrier.

6.3.6 The assessment also looked at the impact of the change in the airport's operation on cultural heritage resources in those areas overflown in Cranford, the northern part of Heston, Norwood Green and Southall, where there would be an increase in exposure to noise of 3dBA or more. It was concluded that as aircraft overflying these areas during easterly operations would only be an occasional feature and as it is currently a common feature to see aircraft arriving during westerly operations, that there would only be a low magnitude of change that would not be significant on the heritage assets.

6.4 Landscape and Visual Impact Assessment

6.4.1 The EIA Scoping Report indicated that there are potentially two areas of the proposal that may have significant effects on landscape and visual receptors in the area. These are the construction of a noise barrier at Longford and the changes to air traffic movements as aircraft depart from the Runway 09L in an easterly direction.

6.4.2 Hillingdon's Scoping Opinion acknowledged that the airside enabling works will not have a significant landscape or visual impact, however the noise barrier was considered to have a significant environmental effect and therefore requires adequate assessment within the ES. The Scoping Opinion recommended that the assessment

should be carried out in accordance with the *Guidelines for Landscape and Visual Impact Assessment* and that photomontages from agreed locations should be produced showing both the existing situation and CGI of the noise barrier as it will look once implemented.

6.4.3 The Landscape and Visual Assessment is provided at Chapter 9 of the ES and looks at the two key areas highlighted at the Scoping stage. The first is the noise barrier study area which involves the areas in Longford from where the noise barrier can potentially be seen. These areas formed the basis of the view points, agreed with Hillingdon by email on the 15th of August 2011, and from which photomontages have been generated.

6.4.4 The second area of study considers any change in the tranquillity of the surrounding area as a result of the change in air traffic movements. This change is defined as a 3dB+ change in the 55 L_{den} noise contour combined with the proposed flight tracks up to where there merge with existing flight tracks.

6.4.5 The evaluation of the noise barrier considered the impact of the proposal on a range of receptors and over the barrier's construction and operation, in terms of both the impact on the existing landscape and visual impact. The landscape element considered the effects on the local landscape character of Longford and the effects on trees within the site boundary. The assessment has found that with the exception of one receptor, the impact is 'not significant' and the magnitude of the change is low. The one exception involved the removal of a number of semi-mature trees during the construction process leading to a low-medium magnitude of change. However, as these trees would be replaced once the noise barrier is in place, the level of significance is deemed to be 'not significant'.

6.4.6 The visual assessment considered a range of receptor points relating to each of the agreed viewpoints forming the basis of the photomontages along with the potential effect on residential and office receptors. These residential and office receptors are specifically:

- Residential properties on the southern side of Bath Road between 485 and 607 Bath Road;
- Residential properties on the southern side of Bath Road between 609 and 617 Bath Road; and
- Padbury Oaks office complex, also on the southern side of Bath Road.

6.4.7 In all cases, the magnitude of the effect of the noise barrier has been found to be low or negligible in both the construction and operations phases of the development. The level of significance has been found to be 'not significant' in all cases.

6.4.8 The effects on tranquillity as a result of changes to flight paths and noise levels have been assessed at five key locations, being:

- Grand Union Canal in Southall Green to the north east of the Airport;
- Capital Ring Public Right of Way in Greenford to the north east of the Airport;
- Longford Pocket Park, near the north western corner of the Airport;
- Avenue Park in Cranford, near the north eastern corner of the Airport; and
- Moor Mead in Mt Margarets to the south east of the Airport.

6.4.9 For the Grand Union Canal, Capital Ring and Longford Pocket Park, the magnitude of the effect was predicted to be 'medium'. The effect on the Grand Union Canal and Capital Ring is due to the introduction of departure overflights while the northern runway is on easterly departure mode, where previously these receptors would not be overflown on easterly operations. However, the level of significance in both cases has been found to be 'not significant', as these departures overflights will only be experienced for a maximum 11.5% of the time and only if flights are vectored onto either the BPK or BUZ Noise Preferential Routes.

6.4.10 Receptors in Longford Pocket Park will experience aircraft taxiing onto and departing from Runway 09L from a distance of 200 metres. However, as this will be partially screened by the noise barrier and views of aircraft are already characteristic of this location, the significance of this change is considered to be 'not significant'.

6.4.11 When considering the proposal against the local planning policy for the area, the scheme complies with Hillingdon's strategic Local Plan policies as well as those relevant retained policies contained in the UDP.

6.4.12 UDP policies OL1 and 5 and Local Plan Policy EM2 seeks to protect the Green Belt. The noise barrier run adjacent to an area of Green Belt and map slightly overlap in places. However, the barrier is a form of protection, rather than a development occupying areas of Green Belt that would otherwise be used for recreational or aesthetic purposes.

6.4.13 Policy BE34 of the Hillingdon UDP seeks to ensure that development adjacent to rivers compliments the riverside. The noise barrier will run adjacent to the Duke of Northumberland River, but will act as a barrier to protect the quality of the riverside. Furthermore, the part Perspex construction of the barrier will ensure that sufficient daylight will ensure that sufficient light is still provided.

6.4.14 Local Plan Policy EM3 seeks to enhance the Blue Ribbon Network and reflects the aims of London Plan Policy 7.25. It has been shown that the impact of the change in

operations will not impact the Grand Union Canal, which forms part of the Blue Ribbon Network. Therefore, the scheme is compliant with Policy EM3.

6.4.15 Local Plan Policy EM4 seeks to enhance open spaces and areas of informal recreation. It has been shown that the impact of the development on all areas of open space in the assessment is 'not significant'. It is anticipated that these open spaces will continue to be well used following the implementation of the development.

6.5 Ecology

6.5.1 The ES has set out the assessment of the potential effects of the development on ecology both within the airport and an area surrounding the airport. This has been defined as the 'zone of influence', being the area in which environmental changes could affect receptors. More specifically, the zone of influence includes:

- Areas directly affected by the noise barrier;
- A 1,000m radius of land around the proposed development;
- Areas beneath the easterly departure routes from the northern runway to a distance of 10km;
- Areas beneath the easterly arrival routes to the southern runway from a distance of 15km; and
- A 200m radius from the Start of Roll point on Runway 09L.

6.5.2 A desk study and survey work were conducted to establish whether any statutory or non-statutory nature conservation sites exist in the surrounding area and whether any notable species or biodiversity receptors are found on or near the development sites or in the surrounding area. The results of the desk study found that three statutory nature conservation sites are found in the study area, those being the South West London Waterbodies SPA (including Staines Moor SSSI, Wraysbury Reservior SSSI and Wraysbury No. 1 Gravel Pit SSSI), Windsor Forest and Great Park SAC and Richmond Park SAC. The study also found that three non-statutory nature conservation sites exist close to the development site and a further 21 are found in the study area.

6.5.3 In terms of local habitats, the areas immediately surrounding the proposed taxiways were found to be poor quality grassland as a result of the management measures necessary to satisfy the requirements of the Airport's Bird Strike Management Policy. However, the area around the proposed noise barrier supports various species of grasses, shrubs and semi-mature trees. The Duke of Northumberland River also supports species of aquatic grasses and reeds. A wide variety of animal species, both protected and notable were found on airport and near the Business Car Park, including birds, small mammals, fish and reptiles.

6.5.4 The potential effects to all of the sensitive areas and receptors were assessed in terms of the change in air quality and noise baseline brought about by the change in operations. The South West London Reservoirs SPA, Windsor Forest and Great Park SAC and Richmond Park SAC were all assessed, along with all other non-statutory sites for nature conservation.

6.5.5 In terms of air quality, the deposition rates of NOx were the principal emission assessed for change. In line with Environment Agency guidance (2010), where the increase was less than 1% of existing Airport contribution at a specific location, the change was deemed not to have a significant impact upon ecological receptors.

6.5.6 At all but one of the receptor sites, the increase in emissions is predicted to be too small to cause any significant effects. This receptor site that exceeded the 1% threshold was Receptor 176 located approximately 420m to the west of the northern runway in the Lower Colne SMI. The predicted increase in NOx at this location was assessed as being 6.2%, while the nitrogen deposition rate was 3.7%. The Lower Colne SMI comprises parts of the Colne, Wraysbury and Frays Rivers and supports a variety of habitats and species, some of which are considered to be sensitive to increases in nitrogen deposition and/or NOx. However, the site's location near the M4, M25 and other busy road means that the area already experiences elevated levels of nitrogen deposition and NOx. The assessment concludes that the increase in pollutant levels against these already elevated baseline levels is proportionally small so that any impacts on the Lower Colne SMI are unlikely.

6.5.7 The South West London Waterbodies saw both increases and decreases in predicted emissions. For example, the Wraysbury Reservoir the predicted increase is 0.3 micrograms/m^3, while at the King George Reservoir there is predicted to see a NOx reduction of 1.59 micrograms/m^3. Changes to nitrogen deposition rates were similarly small, with the maximum being an increase of 0.3micrograms/m^3 at the Wraysbury Reservoir.

6.5.8 For the Windsor Forest and Great Park SAC and the Richmond Park SAC, aircraft will be overflying at a height that will ensure NOx is dissipated over a wide area.

6.5.9 The increase in aircraft arriving on Runway 09R is the only potential significant effect on biodiversity in terms of noise. Arriving aircraft will overfly two components of the South West London Waterbodies SPA, namely the Wraysbury No. 1 North Gravel Pit and Wraysbury Reservoir. However, both waterbodies experience existing and continued noise effects of westerly departures, which are of greater amplitude then arriving aircraft. Therefore, more substantial noise disturbance events currently exist than will be experienced as a result of the development. Any birds that use these reservoirs are unlikely to be affected by the change in operation.

6.5.10 There is no potential for significant impact on biodiversity to either the Windsor Forest and Great Park SAC or Richmond Park SAC.

6.5.11 The construction of the noise barrier has been highlighted in the ES as having the potential effects on grass snakes as a result of killing, injuring or disturbing individuals. However, considering that the noise barrier occupies such a small area of habitat and that this habitat will be suitably replaced, the effects are considered to be 'not significant'.

6.5.12 The London Borough of Hillingdon seeks to protect biodiversity within the Borough through Policy EM7 of the Local Plan, and saved Policies EC1, EC2, EC3, EC4, EC5 and EC6. Other wider policy protection of biodiversity assets exist in the London Plan and the local policies of London Borough of Richmond-upon-Thames and Windsor and Eton Borough Council. The assessment described above demonstrates that the ecology of the area near the Airport and in the surrounding area will not be significantly affected by the proposal.

6.6 Land quality

6.6.1 The ES has also considered the potential effect of the proposal on land quality. In providing its findings, a documentary search of existing ground investigation was undertaken along with specific ground investigations where new sections of taxiway are planned. The findings of the survey found that levels of contaminants were at low or background levels and no exceedances were found. Therefore, the soils on the sites are suitable for human contact and present no risk of pollution to controlled waterways.

6.6.2 Surface water drainage systems are extensive throughout the Airport and are the principle mechanism for the capture of de-icing fluid applied to aircraft and hard stand areas in winter months for treatment in Heathrow's pollution control systems.

6.6.3 The potential for contamination from the Airport fuel hydrant has been considered for completeness, as this was the source of a contamination event in 2007. However, the site is not within 10 metres of the hydrant network and in any case would not extend to the hydrant depth.

6.6.4 Other potential contamination sources exist from the former quarry pits that are a historic feature of the area. Such pits are back filled with material that can lead to ground gas. However, there is no evidence of such pits in the area of the sites

6.6.5 The land quality chapter of the ES clearly sets out that the proposal will not result in any impact on ground water, future end users, construction workers, neighbouring sites, hardstand or services. The assessment is consistent with Hillingdon's Supplementary Planning Guidance on land contamination which provides the circumstances where a land contamination assessment is required to support a development proposal.

7.0 Other supporting information

7.1 Habitats Regulations Assessment

7.1.1 The application is accompanied with a Habitats Regulation Assessment (HRA) due to the proximity of the Airport to three European/International wildlife sites i.e. Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. This is a requirement of *The Conservation of Habitats and Species Regulations 2010* (the 'Habitats Regulations'). The regulations require that an Appropriate Assessment (AA) be undertaken by the "competent authority" (in this case the London Borough of Hillingdon) if the proposals are likely to have a significant effect on a European ('Natura 2000') site, specifically a SAC or a SPA in Great Britain (either alone or in combination with other plans or projects), as long as the proposals are not directly connected with, or necessary to, the management of the site. Effects on Ramsar sites need also to be considered because the UK Government has stipulated that, although these sites are designated at an international rather than a European level, they should also be considered within the HRA process.

7.1.2 As with the Ecology Chapter of the ES, the HRA has focused on the potential impact of the change in operation on the Windsor Forest and Great Park SAC, Richmond Park SAC and South West Waterbodies SPA. The HRA has found that the only potential impact of the development upon these Natura 2000 sites is the introduction of arrival flights onto Runway 09R and this would only have a potential effect on the South West London Waterbodies SPA. Within this SPA, the Wraysbury Reservoir and Wraysbury I (North) Gravel Pit are the most likely to be effected as it is these Reservoirs that are to be directly overflown by arriving aircraft. However, the HRA has concluded that these overflights are not likely to compromise the conservation value of the SPA. It is set out within the HRA that two species of birds, shoveler and gadwall, have been in decline over the past 20 to 25 years, so much so that their numbers are now below those found in many non-designated waterbodies. This is significant, as it highlights the existing low conservation benchmark of these reservoirs before the operational changes have been implemented.

7.1.3 The full analysis and assessment of the three Natura 2000 sites can be found in the HRA accompanying this application.

7.2 Flood Risk Assessment

7.2.1 A Flood Risk Assessment (FRA) has been undertaken in line with the policy requirements contained within the NPPF which states that a site specific FRA is required where the development is more than 1 hectare. The Project is entirely located in Flood Zone 1 and therefore the Sequential Test is passed and the Exception Test does not apply.

7.2.2 To ensure that overall flood risk is not increased, breakout of redundant pavement areas is proposed as part of the development to offset the increase in paved area. The proposed breakout areas are located within the same drainage sub-catchment as the

new pavement areas for the Hold Area and RAT. The extent of pavement breakout exceeds the area proposed for new pavement by approximately 326m^2 (or 0.0326 ha) and hence there will be a reduction in flood risk as a result of the reduction in overall run-off volumes. The locations of the redundant breakout areas are shown in Appendix A of the FRA.

7.2.3 The main source of flood risk on-site is assessed as being from the surface water drainage system when the capacity of the system is exceeded by rainfall runoff. Groundwater flood risk has also been considered, but assessed not to be a risk. Flooding from rivers, the sea or other surface water bodies are also not assessed as presenting a risk.

7.2.4 It has been demonstrated that:

- For all return periods the development would result in a reduction in flood risk to off-site third parties;
- The additional paved areas may cause localised increases in flood volume but overall flood volumes would decrease. The potential for localised issues during the 1 in 5 year on-airfield design standard would be investigated further by HAL to determine whether any new drainage infrastructure should be installed;
- Overall, during the 1% AEP (annual exceedance probability) plus climate change event significant surface water flooding is predicted across the airfield, which would be reduced under the development proposal;
- The extent of pavement breakout exceeds the area proposed for new pavement by 0.0326 ha and hence a reduction to overall airfield flood risk is provided.

7.2.5 Due to the decrease in total pavement area, there would be no detriment or impact on water quality or on receiving watercourses.

7.3 Wake Vortex

7.3.1 The formal Scoping Opinion of the London Borough of Hillingdon requested that Wake Vortex be considered in a similar way to Flood Risk. Although an assessment was not specifically required, Hillingdon considered that either a chapter within the ES or a suitable statement would be beneficial. This would include maps showing the areas experiencing a change in impact and the number of properties affected. At a meeting with Hillingdon officers on the 13 November 2012, it was agreed that the assessment of wake vortices would be provided as a standalone statement, rather than a chapter of the ES. The assessment can be found at Appendix X of the ES.

7.3.2 Wake vortex is the disturbance of air generated by aircraft in flight and is physically exhibited as a pair of circulating air masses counter-rotating from each wingtip. This occurs primarily upon landing at low airspeeds when the aircrafts flaps and landing gear are deployed and in low or no wind conditions. Large, wide bodied aircraft such as the

B747, B777, A380 and A330 are capable of generating a wake vortex of sufficient energy to damage properties on the ground in certain conditions.

7.3.3 HAL currently operates a successful Wake Vortex Protection Scheme providing that any roof damage attributed to a wake vortex strike, and verified by one of HAL's appointed assessors, is repaired with subsequent remedial measures also undertaken such as roof strengthening through various mechanisms (ie by clipping individual tiles and nailing them to the battens) to be robust enough to withstand any future strike.

7.3.4 The implementation of full runway alternation on easterly operations will lead to a greater number of aircraft arriving on Runway 09R and departing from Runway 09L, with corresponding reductions in Runway 09R departures and Runway 09L arrivals. This means that the risk of vortex strike will increase to the west of Runway 09R, where more aircraft will be on final approach. The Wake Vortex Statement has concluded that only a small number of properties are at risk of property damage in this area, these being located at Stanwell Moor and section of Coppermill Road approximately three kilometres to the west of the Airport.. This is largely a reflection of the type of land uses under the five kilometre approach path to Runway 09R, being the Wraysbury Reservoir, M25 and semi-rural land.

7.3.5 Damage caused by wake vortex from departing aircraft is far less common, as aircraft are at a higher altitude over affected properties than arriving aircraft.

7.3.6 HAL intends to continue the Wake Vortex Protection Scheme and this will ensure that any property damaged by verified wake vortex damaged is repaired and the roof strengthened. Where over 65% of properties in an area have received vortex strike damage then these are and will in future be declared as "blanket areas" and all roofs in a road so effected will be re-roofed and strengthened.

7.4 Construction Environmental Management Plan

7.4.1 The construction of the RATs and the noise barrier are not anticipated to cause disturbance to the immediate area or an impact on the natural environment. However, for completeness through the EIA Scoping process it was agreed that an outline Construction Environmental Management Plan (CEMP) would be provided with the application (see Appendix C of the ES). The constructed period is expected to run for 10 months from April 2014.

7.4.2 The final CEMP will be refined in consultation with London Borough of Hillingdon and the Environment Agency where required and will contain full details of the following components:

- *Relevant legislative and Policy Framework* associated with the proposed construction, ensuring that all consents, permits or licences required for the works are obtained and HAL's Environmental Policy is communicated to all on-site contractors.

- *Register of environmental risks* associated with construction, reflecting any mitigation measures identified in the ES to reduce or avoid negative environmental effects. The register provides a key tool to catalogue and monitor the levels of environmental risk posed by various operational activities and to ascertain and continually benchmark the effectiveness of the environmental measures being implemented by continually reviewing and updating the register.

- *Environmental Objectives* that are measurable and obtainable will be established for the project.

- *Roles and responsibilities* of all personnel involved in the construction.

- *Communication and co-ordination* procedures and mechanisms.

- *Training and awareness requirements* for all personnel prior to the commencement of construction activities which identifies the appropriate level of induction and training necessary, including in health and safety, key environmental issues on site and specific environmental management requirements and environmental incident response.

- *Checking and corrective action* procedures to indicate how any non-compliance would be identified, recorded, addressed and prevented in the future.

- *Environmental control measures* and specific procedures to manage the key environmental aspects of the project will be developed by the contractor prior to work commencing.

7.4.3 The environmental control measures that are expected to be adopted during construction in relation to this Project are:

- Noise and vibration management;

- Air quality;

- Water quality;

- Ecology;

- Visual impact;

- Archaeology;

- Site transportation and traffic management; and waste management.

7.4.4 The considerations above are discussed in detail in the outline CEMP accompanying the application.

8.0 Health & Equalities Impact Assessment

8.1 The planning application is also supported by a Health and Equalities Impact Assessment (HEqIA) with the purpose of identifying whether there are any health consequences as a result of the introduction of easterly runway alternation and to make recommendations to mitigate negative effects and improve positive effects. The HEqIA also assessed whether the impact of the development will affect a whole population or have a disproportional affect upon individual groups within a population.

8.2 The conclusions of the HEqIA are as follows:

Air Quality

8.3 Across study area there is the potential for a slight increase in health cases related to particulate matter. However, these increases are so small (taking hundreds of years before one additional case would be presented) that the changes are considered to be negligible. Across the study area, there is predicted to be a reduction in the health effects associated with NO_2 concentrations.

8.4 Stanwell is predicted to experience a reduction in all health cases directly attributable to the Airport. Longford is predicted to experience a very small increase in emissions of NO_2; the small nature of this increase means that the associated health effects are considered to be negligible.

Noise

8.5 The modelling of changes in noise predicts that the number of people expected to be 'highly annoyed' and experience the resultant health outcomes is dependent on the noise metrics that are used. Overall, there is predicted to be a decrease in the number of people 'highly annoyed' by 50 based on 57dB $L_{Aeq\ 16\ hr}$ noise contour, which is not considered to be a material change. There is also predicted to be an increase in noise at the higher noise bands, experienced by between 100 and 200 people.

8.6 People living closer to the airport and closer to the easterly departure routes on the northern runway are expected to experience higher levels of noise, i.e. residents in Cranford. As the aircraft movements are redistributed, those people living at other locations around the airport (principally further away from the airport) are expected to experience a decrease in noise exposure.

8.7 The analysis predicts a reduction in the number of people categorised as Highly Sleep Disturbed and no health effects are predicted for cardiovascular disease resulting from changes to noise.

8.8 Although some schools are expected to experience an increase in noise levels, none are expected to experience an increase of more than 5dB, therefore any effects on reading age are subject to uncertainties and cannot be predicted with confidence.

Visual Amenity

8.9 The construction of a noise barrier at Longford would reduce the effects of ground noise for the local residents. The noise barrier is not expected to be visible from most of viewpoints around Longford. The height and selected materials (including a transparent upper 2m) would help prevent potentially adverse effects. There may be slight annoyance for a very small number of residents.

Communities

8.10 Many communities in the ten local authorities around Heathrow Airport would experience a slight reduction in noise. Closer to the Airport, Stanwell is predicted to benefit from improvement to air quality.

8.11 Longford is expected to experience an increase in noise, which is partly mitigated through provision of a noise barrier, although this may be a source of slight annoyance (in terms of slightly reduced visual amenity) for a small number of properties. The slight increase in NO_2 emissions predicted at Longford is not anticipated to influence health outcomes.

8.12 With a greater number of aircraft taking off in an easterly direction from the northern runway, the areas around Cranford are predicted to experience the greatest increase in noise, with the anticipated changes in health outcomes associated with annoyance and sleep disturbance to be largely found in this area.

Population Groups

8.13 Although the report identified individual groups within the population likely to be affected by the change in operations, these groups would be affected in the same way as the wider population. Therefore, there are no disproportionate effects on equality groups. The potential exception to this conclusion is that the area most affected by increases in noise contains a higher proportion of younger people. The combination of an increase in annoyance (and potentially sleep disturbance at home) and increase in noise whilst at school could have a combined impact on this group of the population throughout the day and night. The other exception is for people from a South Asian ethnic background who make up a large proportion of the population in the noise impact area and are at greater risk from cardiovascular diseases.

Management Measures

8.14 A number of management measures have been recommended in the HEqIA. These are as follows:

	Objective	Proposed Measure
1	Support practical measures to manage the effects of aircraft noise on local school children.	Consider providing support to those local schools where an increase of 3dB in the 57dB contour is predicted. This support may include practical measures that help to manage the effects of air noise inside and outside of the classroom.
2	Support residents in understanding when they are likely to experience aircraft noise, including full runway alternation on easterly operations.	Informal feedback supports the view that residents value the certainty of knowing when they are likely to be overflown and to what extent. The implementation of full runway alternation on easterly operations is largely governed by wind direction and so the extent of its implementation will, by its nature, be partial and allow residents to gradually get used to the associated effects. Communication with residents to provide clear and comprehendible information on how the air noise effects of the airport's operations will affect each of the neighbourhoods around the airport. Mechanisms to provide weekly schedules and real time information on westerly/easterly operations and alternations should be developed. This should be accessible to local residents, particularly community and voluntary networks and organisations, and make use of local media (without solely communicating via the internet).
		There are a number of residents who are predicted to experience a change of over 3dB as a result of implementing full runway alternation on easterly options (above 57dBLAeq). These residents are more likely to experience annoyance as an indicator of a change in their community and their well-being. Measures to provide benefit to this community should be explored and feedback from existing pilot schemes should be considered to optimise community benefit measures.
3	Support vulnerable population groups around the airport in understanding the predicted changes.	Make use of analysis of the demography in geographical locations around the airport to understand the composition of the populations living near the airport. This should include vulnerable population groups or those groups that are predicted to experience disproportionate effects, compared to the population as a whole. This information can then be used to help communication between the airport and the communities, particularly on issues such as air noise. This could cover community-specific information to explain the current likely exposure to air noise and the changes resulting from implementing full runway alternation on easterly operations at particular locations. Understanding the demography will also help to influence the most appropriate

		ways to communicate with populations.
4	Focus on mitigating potential negative effects of night time construction activities on the residents of Bath Road, Longford	A Construction Environmental Management Plan should be prepared. Where residual effects remain compensation measures should be considered such as additional noise insulation, where practical.
5	Ensure the Longford noise barrier is constructed and maintained to high quality standards.	The Longford noise barrier should be constructed using the materials assumed at the time of the assessment and this should be monitored to ensure these remain through detailed design and construction. A commitment to maintenance should be demonstrated; deterioration of the transparency of the top part of the noise wall could be considered to be detrimental to visual amenity.

8.15 HAL has considered all of the above management measure and intend to implement all of the recommendations.

9.0 Conclusions

9.1 The application seeks planning permission for a Runway Access Taxiway and associated taxiway widening to Runway 09L. Although the scale of the development is relatively small in the context of the wider airport infrastructure, the implications of the development will change eastern operations by allowing runway alternation where it was previously not possible.

9.2 The introduction of easterly runway alternation has been made possible as a result of the Government ending the Cranford Agreement, which did not allow regular departures from the Northern Runway during easterly operations as a way to protect the residents of Cranford from the effects of departure overflights.

9.3 The Government's policy decision to end the Cranford Agreement was published in the document "*Adding Capacity at Heathrow: Decisions following Consultatio*n" dated 15 January 2009. Paragraphs 74 & 75 of this document state:

"Ending the Cranford Agreement would redistribute noise more fairly around the airport…..The Secretary of State has therefore decided in the interests of equity to confirm the provisional view set out in the consultation document. Therefore the operating practice which implements the Cranford Agreement should end as soon as practicably possible. He notes that this would enable runway alternation to be introduced when the airport is operating on easterlies, giving affected communities predictable periods of relief from airport noise."

9.4 On 7th September 2010, the coalition Government's Secretary of State for Transport (Theresa Villiers) reaffirmed support for the decision to end the Cranford Agreement in a ministerial statement as follows:

"The previous Government's decisions in 2009 also included a commitment to end the Cranford Agreement. This decision was based on the desire to distribute noise more fairly around the airport and extend the benefits of runway alternation to communities under the flight paths during periods of easterly winds. We support that objective and do not intend to re-open the decision…….. I will look to BAA to ensure that proper consideration is given to appropriate mitigation and compensation measures for those likely to be affected by the proposals."

9.5 The APF published in March 2013 also makes specific reference to the ending of the Cranford Agreement. Paragraph 1.63 of the APF states that:

"To further improve operations and resilience at Heathrow, we confirmed the ending of the Cranford Agreement. This is an informal but long-standing agreement not to use the northern runway for departures when the wind was in from the east (roughly 30% of the time)… Following implementation, noise will be distributed more fairly around the airport, extending the benefits of runway alternation to communities under flight paths during periods of easterly winds…".

9.6 With regard to the improvement in the operation and resilience of Heathrow the benefits of providing the additional RATs on the Northern Runway and RETs on the Southern Runway have been set out above in paragraphs 2.1.16 to 2.1.19. The RATs will allow full use of the Northern Runway for departing aircraft in an easterly direction, which will be of particular benefit if and when the Southern Runway is closed for any reason, or when the airport needs to recover from unscheduled events such as heavy snowfall or fog. The RETs on the Southern Runway will allow landing aircraft approaching from the west to exit the runway more rapidly and also provide direct access to Terminal 4 which will reduce taxiing times to the terminal and avoid crossing a live runway thus improving the flow of arriving aircraft.

9.7 The Environmental Statement and the Health and Equalities Impact Report have demonstrated that the key considerations for the determination of this planning application relate to the operational stage of the development, rather than the development itself, or from its construction. Furthermore, it is the re-distribution of air noise upon the surrounding communities resulting from the change of aircraft operations from the introduction of full alternation of runways on easterlies that is the main difference in effect from the current mode of operation.

9.8 Chapter 6 of the ES has set out the effects of the changes in the operation of the airport on the distribution of noise.

9.9 The noise assessment re-affirms the basis for the Government's decision to end the Cranford Agreement, in that it will result a fairer distribution of noise around the communities adjoining the Airport, to the extent that within the 57dBA leq contour some 10,500 less people will be exposed at this level. Also in terms of the changes in noise levels that will result from full runway alternation on easterlies, this will have a beneficial effect of at least 1dB for over 36,000 people, with just over 18,500 experiencing and increase in noise of 1dB or more.

9.10 An important factor mentioned in the Government's decision on ending the Cranford Agreement was that it would present the opportunity to provide predictable relief, which in chapter 6 of the ES has been defined as respite. This will benefit not only those that would be exposed to lower noise levels, but will also provide a defined period of no overflights for those that will be impacted by increased noise levels. The assessment has shown that approximately 60,000 people would experience predictable periods of respite, occurring for 8 hours at a time in either the morning or afternoon periods.

9.11 From the consultations and inter action between HAL and local residents over many years, it is known that the local community value highly guaranteed periods of respite from aircraft noise. The introduction of full runway alternation on easterly operations will enable these periods of relief to be guaranteed and thus they can be described as respite, irrespective of any changes in wind direction during the day.

9.12 However, the noise assessment has also demonstrated that approximately 1,700 dwellings (4,500 people) will be subjected to an increase in noise levels of 3dB or more within the 57dBA leq contour. In recognition of this impact, and in line with the advice contained in the APF, HAL is proposing to offer mitigation to those residents most affected by the projected increases in noise, by offering financial assistance to some 175 property owners who may wish to move. Also noise insulation will be offered to the owners of the 350 properties that will be subject to the 3dB or more increase within the 63dBA leq contour. This full cost of this insulation will be met by HAL following an independent noise assessor's visit to each property for those owners that want to take advantage of the offer.

9.13 In recognition of the impact of increased noise levels in Longford from both ground noise from aircraft taxiing and from the start of roll of aircraft engines on the Northern Runway at take off, it is proposed to build a 5 metre high noise wall to help screen those occupiers of properties located on the south side of the Bath Road in Longford. This is forecast to reduce noise levels by around 3dB for those properties closest to the wall. It is also considered that the visual screening effect of the noise wall blocking views of the runway will also help to reduce the perception of noise.

9.14 The ending of the Cranford Agreement will introduce the benefits of respite to a wide community, and the Environmental Statement has shown that this will be the case for residents of Windsor, Stanwell, Bedfont, Hatton Cross and some areas of Hounslow. However, the ES has also identified where communities will experience overflights where previously there were none. A mitigation scheme is proposed which seeks to resolve the impact that the introduction of easterly runway alternation will generate in accordance with Government guidance.

9.15 This Planning Statement has set out the policy context for the development and summarised the findings of the Environmental Statement. In balancing the material considerations for and against this development, it is considered that substantial weight can be placed in favour of the development which will allow a Government decision to be implemented.

9.16 In the light of the Government's decision to end the Cranford Agreement and the reaffirmation that the assessments accompanying this planning application have provided for the basis of that decision, taken together with the proposed mitigation in line with recent Government policy advice, the Council is requested to approve the development.