

Report of the Head of Planning, Green Spaces and Culture

Address: Northern Runway, Heathrow Airport

Development: Enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport including the creation of a new 'hold area' at the western end of the northern runway, the construction of new access and exit taxiways, and the construction of a 5 metre high acoustic noise barrier to the south of Longford Village.

LBH Ref Nos: 41573/APP/2013/1288

Drawing Nos: SEE APPENDIX A

Date Application Received: 17 May 2013

Date Application Valid: 20 May 2013

1. SUMMARY

The application seeks permission for physical works to land next to the north and south runways at Heathrow Airport. The works include the creation of a new 'hold area', new access and exit taxiways and a noise barrier (acoustic fence) on land adjacent to the airport.

The development on the runways would normally be carried out under Permitted Development rights. However, these rights are removed if the development triggers the need for an environmental impact assessment (EIA) by virtue of giving rise to likely significant environmental effects. Whilst the physical works are relatively minor, they enable Heathrow Airport Limited to implement the ending of the Cranford Agreement. As a consequence, the works will directly result in operational changes to the airport that are likely to have significant noise and air quality effects in the context of the EIA Regulations 2011.

Currently, the airport has significant restrictions on the use of the northern runway for departures over Cranford. This was a result of a ministerial decision in 1952 to protect the residents of Cranford from adverse noise impacts from the airport. In 2009 the Government announced the ending of the Cranford Agreement; however the airport cannot change its operations until the physical infrastructure works have been completed.

This planning application is for the necessary enabling works to Heathrow's northern runway to be fully used for take-offs to the east over the village of Cranford. These works will therefore effectively implement the Government's decision to end the Cranford Agreement.

The applicant presents the case that the full runway alternation provides a more equitable distribution of the adverse impacts of noise, and potentially allows more respite periods to be scheduled for those under the flight paths to the west of the airport.

The Council accepts that there are large numbers of people, particularly in the Royal Borough of Windsor and Maidenhead, who will benefit from greater periods of respite from noise when planes take off to the east over Cranford. However, the Council needs to carefully consider the impact on those who will experience a significant increase in noise.

The submitted planning material tries to identify and assess the environmental implications of the proposals, and suggests ways by which compensation could be offered or mitigation introduced. It also makes references to modern planes now being quieter. However, as set out in this report, the submitted technical material is considered inadequate and insufficient in a number of areas. Officers do not consider that the application properly assesses noise impacts and these are considered to be crucial in light of the impacts on the health and well being of residents or on educational establishments (local schools). The application also fails to provide adequate mitigation for those who are acknowledged to suffer from significant increases in noise.

It is also considered that aircraft operations facilitated by the development would result in a significant and unacceptable worsening of local air quality, to the detriment of the health of the local population. No specific or adequate mitigation measures are proposed as part of the application to address this concern.

The Environmental Statement does not comply with the 2011 Environmental Impact Assessment Regulations as it does not adequately assess the effects of the development. It also does not adequately consider cumulative impacts with other proposed operational changes. The applicant does not consider it necessary to assess the cumulative impacts with those recommended by the Airports Commission because no decision has been made to proceed with them yet. The applicant argues it is simply a recommendation for the Department for Transport to consider. The Council does not agree with this approach. There is clear guidance on what should be encompassed by a cumulative assessment. The Council considers the recommendations of the Airports Commission to be suitably advanced to be captured by the Infrastructure Planning Commissions definition of cumulative development.

Although not explicit in the application, (nor assessed in terms of environmental impact), the proposed works could facilitate the introduction of 'mixed-mode' operations and other operational changes recommended by the Airports Commission to the Department for Transport albeit within the existing cap of 480,000 air traffic movements per annum and night time operating constraints. If the applicant were to apply for mixed-mode operations this would raise significant concerns given the potentially serious and adverse noise impact that this would have on local communities. With this in mind, if Members are minded to approve this application, Officers would strongly recommend that a condition is imposed on the planning permission which prohibits mixed-mode operations and those recommended by the Airports Commission.

Finally, part of the Longford noise barrier is to be constructed within the Green Belt. As a consequence, the applicant is required to demonstrate very special circumstance. No such justification has been presented and therefore this part of the development is considered unacceptable.

Refusal is recommended.

1.1 Background

It is useful to explain how the airport currently operates and what changes to the existing situation would be facilitated by the current planning application.

For safety and technical reasons, aircraft normally take-off and land into the wind. As Heathrow's prevailing winds come from a westerly direction, aircraft generally take off to the west and land from the east. This is known as westerly operations. The Airport also

operates a westerly preference which means that during periods of no wind (or light winds from the east); aircraft will usually continue to take off to the west and land from the east.

Taken together, during a typical year, aircraft using Heathrow Airport land from the east and depart to the west around 70 percent of the time, meaning that most departures (which generate the most noise) take place to the west of London, and most aircraft make their final approach over London. This has the benefit of reducing the worst noise impact of the airport on London, as take-off noise levels are usually higher than landing noise levels.

Runway Alternation

Heathrow Airport has operated a system of runway alternation since 1972 which means that under normal daytime operations, one of the airport's two main runways is used for take-off and the other for landing - with switching taking place at 3.00 pm.

For example, in week one, the northern runway is used for one week for take-offs and the southern runway is used for landings until 3.00 pm when take-offs switch to the southern runway and landings switch to the northern runway. In the following week, the southern runway is used for take-offs until 3.00 pm and the northern for landings.

As this is scheduled, communities and businesses under Heathrow's flight paths usually know in advance when they will be most affected by aircraft noise and benefit from what is known as respite.

However, runway alternation currently only fully operates on westerly operations (approximately 70 percent of the time) because of the Cranford Agreement (see below), which prohibited easterly take-offs from using the airport's northern runway and because the airport is currently not configured to accommodate such movements - hence the current planning application and proposed works.

The Cranford Agreement

The Cranford Agreement refers to a Ministerial undertaking given in 1952 that prohibited Heathrow Airport's northern runway being used for aircraft departing in an easterly direction. The aim of the Agreement being to reduce the impact on the residents living in and around Cranford from the worst aircraft (which is generated when the planes take off) noise.

On the 15 January 2009 the then Labour Government confirmed the ending of this Agreement and also confirmed its support for Heathrow Airport's plans to build a third runway. However on 7 September 2010 the new Coalition Government issued a Ministerial Statement that abandoned the previous Government's support for a third runway at Heathrow. The Statement committed the Government to retaining runway alternation and confirmed that it would not approve the introduction of mixed-mode operations. The Statement also confirmed that the Coalition Government would "not reopen" its predecessors decision to end the Cranford Agreement.

The Statement noted that a number of infrastructure and operational changes by the airport operator (BAA) and NATS would be needed to implement this decision, and that BAA "was developing proposals for ending the Cranford agreement with a view to confirming the necessary works by the end of this year". It also specifically confirmed that the Government would:

"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".

This position was further reiterated within the Coalition Government's 'Aviation Policy Framework' document released in March 2013.

In October 2012, the Mayor of London advised Government that: *"In general, the Mayor welcomes moves to improve airport performance and capacity utilisation, but only on condition that they be achieved without adversely impacting local residents. In particular, given the disproportionate noise impact of Heathrow airport, the Mayor cannot accept any change that increases these impacts on Londoners, is deeply concerned by the potential negative consequences for local residents that would flow from the cessation of the Cranford Agreement (and) expects the data to be made freely available to ensure that the impacts on residents affected by this change could be fully understood."*

Mixed Mode Operation

Mixed-mode operation refers to the permanent scheduling of planes taking off and landing from the same runway at the same time. Full mixed-mode could increase Heathrow's runway capacity by around 15% - to accommodate up to 110 movements per hour, but operating the airport in this manner would have serious adverse impacts on noise exposure with the tens of thousands of people currently worst affected by noise losing periods of respite.

Paragraph 6.28 of the London Plan opposes mixed-mode operations at Heathrow in order to mitigate noise effects on local communities. It should be noted that the airport already operates a form of mixed-mode operation, (in the early morning from 6.00 am) when dual use of the airports runways for arrivals is permitted.

The recent "Operational Freedom's Trial" tested a number of mixed-mode operating procedures. The purpose of such trials was to explore whether such measures could help to maintain the schedule, mitigate disruption and deliver a net environmental benefit through reduced stacking and by cutting the number of unscheduled flights during the night period. The Government has instructed the Airports Commission to consider these trials and provide recommendations on whether they should be implemented on a permanent basis. Although the Airport Commission has issued its interim report, we are yet to receive a formal decision on whether the trials were a success.

Although this planning application does not appear to be suggesting that the physical works are to enable full mixed-mode operations, it is clear that the works proposed would allow the airport to adopt full mixed-mode on both easterly and westerly operations on both runways if current restrictions were removed, which could facilitate a greater degree of mixed-mode operations than is currently possible.

Benefit of the Proposed Development

The Cranford Agreement was originally enacted to allow relief from noise disturbance for residents of the village of Cranford. As the airport grew the Cranford Agreement meant that areas to the west of the airport became increasingly impacted by noise. The Council accepts that the ending of the Cranford Agreement will, to some extent, distribute noise more evenly around the airport. This will invariably result in an improved environment to those living to the west, predominantly in the Royal Borough of Windsor and Maidenhead.

The Council recognises this as a benefit of the scheme. Table 6.11 of the ES shows that there will be a reduction of 10,500 people exposed to the level at which Heathrow Airport Limited believes is the point at which significant disturbance from noise begins.

Whilst the benefits are acknowledged, it should also be recognised that over 4000 people will experience significant adverse effects.

The key concern is that the Council considers the methodology used by the applicant to measure noise impacts to be fundamentally wrong and that the ES misrepresents the significant effects (i.e. far more than 4000 people are likely to suffer adverse impacts). Furthermore, the Council cannot accept noise level increases to those already at risk from significant disturbance without mitigation (and adequate and sufficient mitigation is not proposed).

So whilst it is recognised that there will be benefits, the Council must give appropriate protection to those who will be adversely affected.

2. RECOMMENDATION

A: That planning permission is refused for the following reasons:

- 1) The scheme would facilitate altered aircraft movements/operations (including queuing), and the application fails to demonstrate that these would not result in significant adverse noise impacts on the health and well being of residential populations, users of schools and community facilities. The scheme would also fail to provide adequate and sufficient mitigation measures to affected residents, schools and community facility users to offset the resultant negative noise and associated health and well being impacts. As such the scheme is considered contrary to Paragraph 123 of the National Planning Policy Framework, London Plan (July 2011) Policies 2.6, 3.2, 5.3, 6.6, and 7.15, Hillingdon Part 1 Local Plan Policies EM8 and T4, Hillingdon Local Plan: Part Two Saved UDP Policies (November 2012) Policies A1, A2, OE1 and OE3, the Noise Policy Statement for England (March 2010) and paragraph 3.12 of the Aviation Policy Framework (March 2013).**
- 2) The scheme would facilitate altered aircraft movements/operations (including queuing), and the application fails to demonstrate that this would not result in an unacceptable deterioration in local air quality (failing to sustain compliance with European Union health-based air quality limit values), and additionally no specific mitigation measures are proposed to minimise the exposure of the nearby impacted communities to the resultant polluted air, contrary to paragraph 124 of the National Planning Policy Framework, paragraph 3.47 of the Aviation Policy Framework (March 2013) Policies 2.6, 3.2, 5.3, 6.6, 7.14 of the London Plan (July 2011) and Policies EM1, EM8 and T4 of the Hillingdon Local Plan: Part 1, Hillingdon Local Plan: Part Two Saved UDP (November 2012) Policies A1, A2 and OE1.**
- 3) The Environmental Statement fails to comply with relevant Environmental Impact Assessment Regulations 2011 (including the requirements of Schedule 4 Part 1- 'Information for inclusion in Environmental Statements') in that it does not adequately:**
 - a) Describe the likely significant effects from noise impacts**

or

b) Set out the measures to prevent, reduce and where possible offset any significant adverse effects on the environment.

- 4) The Environmental Statement fails to provide a cumulative assessment of the proposed development and the associated operational airport changes with the recommendations of the Airports Commission and the ability to operate 'mixed mode' within the existing air transport movement limits.

The Environmental Statement therefore fails to comply with Schedule 4 Part 1(b) of the 2011 EIA Regulations.

- 5) The applicant has failed to demonstrate that the proposed acoustic screen by virtue of its height and overall size would not represent an incongruous and visually dominant form of development and would not harm the character and appearance of the wider area, and detract from the openness of the site and therefore be harmful to the Green Belt. The proposal is therefore be contrary to policies OL1, OL4, BE13 and BE19 of the Hillingdon Local Plan: Part Two Saved UDP Policies (November 2012) and to Policy EM2 of the Hillingdon Local Plan Part One - Strategic Policies (November 2012), Policy 7.16 of the London Plan (2011) and Paragraph 79 and 87 to 89 of the National Planning Policy Framework.

INFORMATIVES

1. The decision to REFUSE planning permission has been taken having regard to all relevant planning legislation, regulations, guidance, circulars and Council policies, including The Human Rights Act (1998) (HRA 1998) which makes it unlawful for the Council to act incompatibly with Convention rights, specifically Article 6 (right to a fair hearing); Article 8 (right to respect for private and family life); Article 1 of the First Protocol (protection of property) and Article 14 (prohibition of discrimination).

2. The decision to REFUSE planning permission has been taken having regard to the policies and proposals in the Hillingdon Unitary Development Plan Saved Policies (September 2007) set out below, including Supplementary Planning Guidance, and to all relevant material considerations, including the London Plan (February 2008) and national guidance.

Part 1 Local Plan Policies

PT1.BE1 Built Environment

PT1.HE1 Heritage

PT1.EM1 Climate Change Adaptation and Mitigation

PT1.EM3 Strategy for Heathrow Opportunity Area

PT1.EM4 Open Space and Informal Recreation

PT1.EM6 Flood Risk Management

PT1.EM7 Biodiversity and Geological Conservation

PT1.EM8 Land, Water, Air and Noise

PT1.T4 Heathrow Airport

PT1 E3 Strategy for Heathrow Opportunity Area

Part 2 Local Plan Policies

A1 Airport Capacity

A2 Traffic

A6 Development proposals within the public safety zones Heathrow

BE19 New development must improve or complement the character of the area.

BE3 Investigation of sites of archaeological interest and protection of archaeological remains

BE13 New Development to harmonise with area

BE19 New Development to compliment and improve character of area

BE36 Proposals for high buildings/structures in identified sensitive areas

BE38 Retention of topographical and landscape features and provision of new planting and landscaping in development proposals.

EC2 Nature conservation considerations and ecological assessments

EC3 Potential effects of development on sites of nature conservation importance

EC5 Retention of ecological features and creation of new habitats

OE1 Protection of character & amenities of surrounding properties

OE2 Assessment of environmental impact of proposed development

OE3 Buildings or uses likely to cause noise annoyance - mitigation measures

OE8 Development likely to result in increased flood risk due to additional surface water run-off - requirement for attenuation measures

R17 Use of planning obligations to supplement the provision of recreation, leisure and community facilities

London Plan (July 2011)

2.6 Outer London: vision and strategy

3.2 Improving health and addressing health inequalities

4.1 Developing London's economy

5.3 Sustainable Design and Construction

6.6 Aviation

7.2 An inclusive environment

7.14 Improving air quality

7.15 Reducing noise

8.2 Planning obligations

National Planning Policy Framework

3. CONSIDERATIONS

3.1 Site and Locality

The application site falls within Heathrow Airport's operational land and comprises a number of land parcels adjacent to the airport's existing northern runway. The proposed Longford noise barrier lies partly in the Green Belt. The noise barrier provides a 2 metre extension to an existing barrier that is approximately 600m long and runs between the Western Perimeter Road and the Duke of Northumberland River, and around Heathrow Airport's T5 business car park (the terminal point for the pod passenger system to the northwest of the airport). Approximately 185m of the barrier is within the Green Belt where it borders the business car park.

Heathrow Airport itself is bounded by the A4 Bath Road to the north, the A30 Great South West Road to the south, the M25 to the west and the River Crane to the east. Both the A4 Bath Road and A30 Great South West Road as well as the A312, The Parkway (located approximately 800m to the east of the airport boundary).

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The airport is also connected to the M4 motorway from a spur road at junction 4a which is located adjacent to the northern boundary. Numerous bus and coach routes operate within the airport, mainly from Heathrow Central Bus station but also from Heathrow Terminal 4 and Terminal 5 bus stations.

There are direct connections to the Piccadilly line from four respective stations at Heathrow Terminal 1, 2 & 3, Terminal 4, Hatton Cross and Terminal 5. Rail connections to Central London are also available via the Heathrow Express and the Heathrow Connect services from the stations serving Terminals 1,2,3, Terminal 4 and Terminal 5. The airport will also be served by Crossrail services from 2019.

3.2 Proposed scheme

The application is for the physical works needed to allow implementation of full runway alternation during easterly operations at Heathrow Airport and comprises two elements:

First Element: The creation of a new 'Hold Area' at the western end of 9L Runway including;

- The construction of a new Runway Access Taxiway (RAT) between Alpha Taxiway and Runway 09L, with a total area of 6,198 sq. m.
- The construction of a new connector taxiway linking the existing Alpha and Bravo Taxiways situated immediately to the south of the proposed new RAT, with a total area of 5,646 sq.m. 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.
- Two small areas of additional pavement to enable A380 aircraft to access and exit the runway to meet safety requirements with a total area of 394 sq.m.
- Concrete break-out areas with a total area of 12,564 sq.m.

Other Work – Not Forming Part of This Application.

The applicant advises that the practical implementation of the ending of the Cranford Agreement would also require additional Rapid Exit Taxiways (RETs) for Runway 09R to allow it to operate a full flight schedule while on easterly operations.

The applicant previously consulted the London Borough of Hillingdon about the creation of these RETs under Part 18 of the Town and Country Planning (General Permitted Development) Order 1995, and reports that the Council confirmed it had no objection to these works in December 2012 which it intends to start work on later this year.

Second Element: Creating a new noise barrier

A new / replacement noise barrier is proposed to the south of Longford to be constructed in two sections. The western section would be 280m in length and would 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 would be 313m in length and follow the alignment of the existing timber perimeter fence surrounding the Terminal 5 business car park. The eastern section would also include a four metre wide access gate to enable maintenance of the Duke of Northumberland River.

The majority of the proposed barrier would be 5m high, except a small section around the south-west corner of the T5 business car park which would be 4m in height due to limitations related to the airport's radar. The barrier would probably be constructed of reconstituted wood with a transparent component to its upper 2 metres.

3.3 Relevant Planning History

Heathrow Airport has a complex planning history that includes the following key events:

- 1946 - London Heathrow Airport officially opened following its conversion from a military airfield. This was followed by construction of additional runways and infrastructure.
- 1951 - Construction of new terminal buildings.
- 1955 - Terminal 2 opened.
- 1960's - Further runway extensions.
- 1968 - Terminal 1 opened.
- 1970 - Terminal 3 expanded.
- 1986 - Terminal 4 opened.
- 1975 - Piccadilly line extended from Hounslow West to Hatton Cross.
- 1977 - Piccadilly line extended from Hatton Cross to Heathrow Central.
- 1984 - Piccadilly Line Terminal 4 Loop opened.
- 1986-M25opened.
- 1986 - Terminal 4 opened.
- 1987- British Airports Authority (airport owner) privatised.
- 1998 - Heathrow Express link to Paddington opened.
- 2001 - Planning permission granted for Terminal 5. As part of the planning permission granted for Terminal 5 in 2001, an annual limit of 480,000 air traffic movements (total movements from arrivals and departures) was placed on Heathrow's operations. While this planning application does not seek to amend this cap, the proposed works could significantly alter how and when the 480,000 air traffic movements are scheduled.
- 2002- Construction of Terminals begins.
- 2006 - Pier 6 completed at Terminal 3 to accommodate the Airbus A380.
- 2007 - New 87m air traffic control tower enters service.
- 2008 - Terminal 5 opened and Heathrow Terminal 5 Piccadilly line station open.
- 2008 - Work starts on Terminal 28.
- 2009 - British Airways moves to Terminal 5. Terminal 2 closed.
- 2010- Old Terminal 2 demolished.
- 2011 - Terminal 5C opened.

4. CONSULTATIONS

A site notice was displayed in Longford Village. Individual letters were sent to the owner/occupiers of approximately 4,600 properties in the borough that are located south of the M4. The application was advertised in the local newspaper. The following neighbouring boroughs were also consulted London Borough of Hounslow, South Buckinghamshire, Slough Borough Council, London Borough of Ealing, Spelthorne, Royal Windsor & Maidenhead, London Borough of Hammersmith & Fulham, London Borough of Richmond and London Borough of Ealing.

Two rounds of further consultation followed involving press notices and written consultation with neighbouring boroughs and with statutory consultees following receipt of additional

information in respect to the submitted Environmental Statement under Regulation 22 of the relevant legislation. The press notice for the 2nd Regulation 22 consultation was 28 December 2013 with a 21 day period of public consultation.

At the time of writing this report, 68 responses had been received from the public with 32 respondents in favour of the scheme and 36 against.

The geographic spread of these responses in favour and against are tabulated below.

4.1 EXTERNAL CONSULTEES

Area	For	Against
Longford	-	10
Cranford & Craneswater	1	7
Hayes	2	2
Harlington	-	3
Harmondsworth	1	4
Sipson	1	-
Windsor	19	-
Old Windsor	2	2
Ealing	1	-
Feltham	3	2
Southall	1	-
West Drayton	1	-
Twickenham & Isleworth	-	3
Colnbrook	-	1
Ruislip	-	1
Iver	-	1
Total	For	Against
	32	36

Below is a summary of the issues raised. Some of the original language in the written replies received is retained, rather than précis out altogether, to better capture the array of opinion offered on the scheme that inevitably focused primarily on noise impact of the scheme both positive and negative perceptions.

1. Against increasing use of the northern runway as the noise during takeoff is far too great.
2. Can't see what a 5m high sound barrier would achieve.
3. Since the ending of the Cranford Agreement the noise from Heathrow has got intolerable. Longford seems to get all the after hour take offs, which can go on after 2 am, so residents are constantly woken up from the noise.
4. Why not construct the unsightly sound barrier within the periphery of the airport boundary alongside the western perimeter road, rather than destroy the environmentally pleasant vegetation which has recovered alongside the Duke of Northumberland river.
5. The sound barrier will look very unsightly from the village side.
6. The type of barrier will not prevent vibration and noise adequately.

7. Some properties are not included in mitigation area although immensely affected.
8. I fully support this application as a Windsor resident.
9. Great concerns regarding this fundamental change at Heathrow with its detrimental impacts on Longford in terms of air quality, noise and vibration. Noise levels of approximately 80db already exist constantly with a peak of in excess of 100db. Feel the scheme will have impact on property value and see no evidence of compensation for this.
10. The noise and vibrations from late night take-offs already disrupts sleep it is difficult to get back to sleep. This does not come to the notice of the authorities as most of the properties have been bought up by the BAA or the Heathrow Lodge Motel. Constantly have to put up with disruptions without any compensation. Do not wish to put up with additional fumes and noise that is inevitable in a holding area. Once and for all, a final decision on Heathrow needs to be made, instead of all these annoying stop-gap measures.
11. Live in a historic grade 2 listed building and are worried about the effects on the fabric of the building.
12. Will be directly affected by the creation of a new hold area at the western end of the northern runway, allowing aircraft to queue for take-off, leading to intolerable noise and air pollution. The construction of a five metre high acoustic noise barrier to the south of Longford Village will not be sufficient to shield from the unbearable noise and air pollution, and vibration, from aircraft using the runway. Also believe the size and form of the barrier is incompatible with the local environment and character of our village, and creates a barrier or wall similar to those in Northern Ireland or parts of the Middle East. The proposed barrier is not fit for purpose.
13. Have personal experience of aircraft using the northern runway for take offs during the recent Operational Freedom Trials. I was unable to open any doors or windows because of the noise of aircraft running their engines on the ground, revving to take off, the smell of oil, aviation fuel and burning rubber, plus the awareness of other toxic chemicals. I have modern triple glazing but was still severely affected by the noise and vibration from aircraft, with furniture and object rattling throughout my property, every sixty seconds or so.
14. It is not only noise that is our problem but the fumes and vibration from standing aircraft. A noise barrier would not lesson these. Find that fume problems have increased a lot since T5 opened and would increase more if Heathrow get their way.
15. Given the problems that already exist it is of considerable concern that Heathrow has not yet reached its authorised capacity (480,000 air transport movements and a terminal capacity of 80mppa). Reaching this capacity will bring increased pollutant emissions from the increased flights, increased on-airport emissions, and increases from extra road transport accessing the airport.
16. The Cranford Agreement was settled to protect vast numbers of residents from Hounslow and Cranford from the noise of aircraft taking off. By ending it, the aircraft noise will drastically increase in these areas, and will reduce less in comparison in areas such as Windsor and Maidenhead, where the noise will not be felt as loudly as in Hounslow/Cranford as these 2 areas are further away from the airport. Again the lesser number of residents are being benefited and it seems that postcodes still hold sway when it comes to the government making policy.
17. BAA has started easterly take-off which is causing huge nuisance and extreme harassment to the residents living in this area of Cranford and Craneswater from extreme noise, with kids wailing up and crying.
18. Also for young it affects next day's work and can not concentrate. Pets are also seen very much disturbed due to this blasting take off noise contours and they starts screeching and barking as soon as they hear take off engine clamour.

19. The deafness levels of people in this area is also significantly high due to very extreme noise pollutions.
20. BAA never plays fair with residents and has never provided any fair support for double glazing in Craneswater and other houses adjacent to Bath Road.
21. I'm against any expansion of Heathrow, mainly as the area is too over populated and I can see the issues the airport is having on resident's health, with the pollution and ever increasing noise. Heathrow say they will implement a full alternation easterly during operations but how long will this last before they say they wish to maximize the operations for economic reasons. The airport is in the wrong location and out of date for the needs of London and the rest of the country.
22. The agreement was made for a reason it should be kept for the same reasons. The noise and pollution will destroy Longford as a place to live and pollute and destroy Harmondsworth to some degree. The study showed that Gatwick was the most suitable place for a new runway so why not build it there when its possible to and stop heaping misery on thousands of people who already suffer so much at Heathrow.
23. You should let Heathrow expand.
24. I strongly oppose the current application unless measures are taken to ensure that the current residents can keep noise to a minimum, at least inside their houses. The letter from Heathrow airport states that "Government policy requires that [mitigation is provided] for properties experiencing an increase of 3 decibels or more that fall within the 63dBA leq contour. While you may experience some increase in aircraft noise, your property does not fall into this category and will not be eligible for mitigation". I would like to know how Heathrow airport has come to the conclusion that I will not experience an increase of 3 decibels or more taking into account that my house will be right below the path of aircrafts during take off over London when using the northern runway.
25. At long last the noise from easterly departures will be equally shared between both communities. Just how anyone could be against the fair and equitable distribution of the noise disturbance from Heathrow I don't know but I guess if you live in Cranford you would have a selfish interest in blocking the government's plans.
26. I believe this change will allow a much more balanced distribution of aircraft noise than the current situation. Windsor residents have no respite during easterly operations.
27. My father is buried in Harmondsworth Cemetery. If this work goes ahead it might mean yet more expansion of Heathrow, with my father's remains and other remains having to be exhumed and reburied, and the loss of yet more green space, which the cemetery affords.
28. We would welcome the ending of the Cranford agreement with open arms. If we could have afternoon or morning respite it would make a big positive difference to our lives.
29. The construction work outlined in the planning application will facilitate the introduction of full runway alternation at Heathrow irrespective of wind direction.
30. This is great news living to the south of the Southern Runway. At least now the aircraft noise will be shared with those living close to the Northern Runway, east side, especially when the wind direction is from the east. Otherwise we are subjected to noise of aircraft taking off all day on theses days. Good thinking by the Government to end the Cranford agreement, which is biased towards one section of the community.
31. The new proposal means the planes will go over my house. This proposal is unacceptable and Heathrow should consider the locals living in the area instead of their profits and accommodating airlines that might not even be safe from other countries.

32. As a resident of Old Windsor, I would be adversely affected by these plans. It's all part of Heathrow Airport's strategy for finally getting permission for a 3rd runway. Aircraft noise is pretty intolerable as it is. This application, if approved, will make it worse.
33. Any work to improve Heathrow (including the 4th runway) must be good for the area and the UK. The few should not be allowed to jeopardise the future of the area.
34. If I understand the proposal correctly it will lead to a reduction of aircraft noise over Windsor in which case we fully support ending the Cranford agreement. My only concern is that this is a covert way to preliminary construction works for a third runway in which case you don't have our support.
35. After listening and reading all types of media for & against Heathrow expansion I am against all new works at Heathrow as I believe a new hub Airport is the correct way forward for the long term future of London. So I am against the inconvenience of more noise and peoples family homes being ruined.
36. All the Windsor residents who live under the landing flight path of the northern runway at Heathrow have been subjected to nearly 5 continuous days of landing aircraft. The reality of this is that an aircraft flies very low over us every 2 minutes from 5am through to 11pm. That's at least 18 hours a day of almost continues aircraft noise and disruption. In the summer this can be continues for many weeks. The severity of this noise makes it almost impossible to hear radio, television or any conversation for 10 or 20 seconds of each landing aircraft. Removing the Cranford agreement alone will not free us from this misery. If you do not allow this planning application to go through, Heathrow will not be able to introduce runway alteration during easterly operations and you will be condemning thousands of Windsor residents to more decades of unlimited noise, sleep deprivation and aggravation. Windsor residents accept that aircraft noise is inevitable as we are living near Heathrow and under a flight path. Our only ask is that this burden of arriving aircraft be shared equally between all in the area, at the moment it is not.
37. If Heathrow stuck the hours they should be flying, more people would support their applications, but when we still have 747's taking off just above us at well past midnight on a regular basis, I might add no local resident in their right mind will support any expansion to this airport.
38. As a resident of Old Windsor under the western flight path of the southern runway, I am against the proposed changes to Heathrow operations should they result in increased use of the southern westerly approach. However, I would be willing to withdraw my objection should an appropriate package of sound proofing be offered. I would expect all windows in the house to be properly double glazed (not just secondary glazing to bedrooms). I would also expect compensation for any loss in property value as a consequence of these changes.
39. The residents of Hanwell and Ealing have not been consulted on the impact of this initiative, and have found out by accident. We are currently bombarded by noise which has been consistently independently measured within range 67-71 Lden and increasing (accredited Institute of Acoustics expert). E.A.N.A.G. wrote on 28/7/11 advising that the consultation was flawed (effectively token and ineffective) and should be undertaken properly. It noted that "substantial mitigation arrangements need to be introduced for the many Ealing residents subjected to noise at 55 db Lden". This was not picked up by Ealing Council or reported to residents. Ealing residents are not consulted or represented.
40. No independent regulation of Heathrow, no independent complaint adjudication system. There should be no interim options of any sort considered until a national aviation strategy is agreed.
41. The airport must be allowed to expand, it is to important to the economy of the surrounding area. Get the expansion approved and built sooner rather than later or

other European main hubs will take business from us. Where would the 100,000 people who's jobs are linked to the airport go if we drag our feet and let Boris Island take over as the UK main hub?

42. Planes are much quieter now than they were 30 years ago. More flights during the day would reduce the need for night flights.
43. It is time to stop Heathrow expansion. It is time to LISTEN to the people. The unreasonable aircraft noise affects everyone. The destruction of peoples homes and environment affects hundreds.

EXTERNAL:

Old Windsor Parish Council

Oppose submission due to the absence of essential mitigation measures. The following conditions are sought:

The owners of all dwellings, community buildings, offices and similar places of work within areas subject to the latest EU or similar recommendations or statutory requirements regarding noise annoyance or health requirements shall be offered high specification noise mitigation measures before the commencement of the work described in this application.

Such mitigation shall apply to all windows, doors, roofs and similar elements and shall include energy efficient acoustically attenuated ventilation units to ensure appropriate air changes each hour to each enclosed space and shall be upgraded as recognised standards are modified. Wherever property owners accept the provision of noise mitigation within 3 calendar months of the applicant's offer, details shall be agreed and installed within 2 years of the commencement of the application works. The relevant local authority shall be empowered to determine specification and installation details if requested by property owners and applicants shall reimburse the local authority for any reasonable expenses incurred in so doing. In the absence of the above condition objection s raised.

Chairman Royal Borough of Windsor & Maidenhead Aviation Forum

Fully support proposals necessary to implement abolition of Cranford Agreement but would request that approval requires additional noise mitigation/insulation measures so that residents of Wraysbury and adjacent areas suffer no more noise by volume and timing than at present

Richings Park Residents' Association, Iver

Whilst we understand that the Heathrow enabling works will provide more operational freedom at the airport and that this will not result in any changes to the operational hours nor the aircraft movement cap, HAL is being disingenuous in their presentation of the environmental impacts, which have not been fully and properly assessed, and therefore an informed decision on the application cannot be made.

HAL states that they will be dispersing environmental impacts and providing respite to nearby communities, but it is over simplistic to claim the transfer environmental impacts from one location to another and subject a new community of people to the significant effects of aircraft noise and pollution.

For these reasons, as provided in more detail below, we would ask the planning authority to reject this application.

No ground noise measurements have been undertaken in the wider area to validate empirical calculations and therefore the environmental impacts are not fully known and insufficient mitigation is proposed. Levels of ground noise exposure have been calculated using the LimA noise modelling suite. This is a very narrow calculation of noise disturbance and does not take into consideration the very real and wide reaching impact of ground noise from existing operations on the surrounding communities beyond Longford. Richings Park is already experiencing a considerable amount of ground noise, with many complaints from residents - this has not been acknowledged by HAL because their calculations suggest that the ground noise impact only has a very limited distribution beyond the airport. We have frequently brought it to their attention that this is not the case.

With the planned operational amendments, there will be more ground noise from queuing and holding aircraft prior to take-off on the western end of the northern runway. Whilst HAL is proposing an improvement to the Longford noise barrier, this will only have a marginal and localised reduction in noise for a very small number of people in the immediate vicinity. There is no proposal to understand and mitigate the far-reaching effects of ground noise on the wider community. Therefore for these reasons Hillingdon Borough Council should reject this planning application.

The cumulative effects of this scheme and other operational freedoms have not been calculated, which is effectively salami slicing the environmental impacts.

Chapter 6 of the Environmental Statement: "During consultation it has been requested that the air and ground noise assessments consider the cumulative effects of Operational Freedoms. These cannot be assumed to be in use in 2015 and are currently subject to review following the end of the trial in March 2013 trial. If these freedoms were to be adopted, these would not form part of a standard operating practice as by definition they are tactical measures used to help prevent or recover from delay and disruption. Since the extent of delay or disruption cannot be forecast it is not possible to predict how and when the freedoms would be used."

While the above statement says that Operational Freedoms may be tactical measures, they should not be considered in isolation because any increase in operational intensity will result in an increase in environmental impacts. HAL cannot be certain that these Operational Freedoms will only be used on infrequent occasions; they have not offered any data from their trials to confirm the frequency of use and have not undertaken any scenario-based calculations to assess the worse case effects. When the trials were operating, there was an unprecedented rise in noise complaints to the airport and from residents in Richings Park experienced a significant increase in noise disturbance, particularly ground noise. This will be in addition to further ground noise disturbance from easterly departures on the northern runway, which has not been acknowledged by HAL.

The cumulative environmental effects from other noise sources have not been considered

In Section 6.1.4 of the planning application, HAL has said that other airport "noise sources are not considered to have a material contribution" but not offered any explanation or evidence for this. At the very least, aircraft engine ground running must make a contribution to overall ground noise, as well as other sources such as on-site vehicles. These should be considered in the context of the whole effects and correlated with noise monitoring surveys. Also, the cumulative noise impacts on the area should be considered in the context of other planned schemes, such as the Crossrail link, WRAtH.

The full extent of the noise impacts is underestimated because the calculation of noise contours has not been validated by noise monitoring surveys in some communities.

The CAA's noise contours for Heathrow Airport show Richings Park, Iver to be outside of the 57 dBA Leq contour. Noise modelling uses radar data extracted from Heathrow's Noise and Track Keeping (NTK) system and analyses flight tracks of departures and arrivals, and flight profiles during the summer period. The NTK system captures data from both fixed and mobile noise monitors around the airport, and these are then matched to operational data. However, there is no survey information for Richings Park, yet residents have repeatedly complained of increasing noise disturbance as far afield as Iver Heath. Aircraft noise measurements recorded by residents for each departing aircraft are between 56 and 60 dBA. This indicates that the noise contours are underestimated and that the 57 dBA Leq contour is wider for Heathrow than is currently presented. As such, a wider contour that is more representative of the actual noise levels would capture more people than is presented and demonstrate that the noise disturbance is much wider than currently estimated.

If the cumulative effect of air and ground noise were presented on a wider 57 dBA contour, this would demonstrate that implementing easterly aircraft departures on the northern runway could mean more people will experience significant adverse effects from the proposed change to operations.

Air quality will reduce in Longford. Although HAL is stating that there will only be minor increases in air pollution, they are concentrated increases and therefore, this is not consistent with the Government's aspiration to reduce air pollution. HAL is largely relying on a reduction of motor vehicle emissions to control its own air pollution impact (ref. paragraph 6.2.14) and is not offering any solution to this problem.

An additional 5050 people will be exposed to noise levels above 63 dB LAeq16h.

Of these, 4450 people (1700 dwellings) will experience significant adverse effects. Only 20% will qualify for the Residential Noise Insulation Scheme. HAL has acknowledged in its application (section 8.13) that a greater proportion of this noise affected population is from a South Asian ethnic background and that these people are at greater risk from cardiovascular diseases. These impacts are disproportionate and have not been explained. Instead, HAL has just said that there will be community benefits from the scheme (section 2.1.20-22). Therefore for these reasons Hillingdon Borough Council should reject this planning application.

Iver Parish Council:

Fully support the response from Richings Park Residents' Association

Denham Parish Council:

The Parish Council fully concurs with the report by South Bucks District Council relating to aircraft noise and pollution. Object

Spelthorne District Council:

That the Council raise a very strong objection to the proposal, due to the adverse noise impact easterly alternations will have on the residents of Stanwell Moor.

If the London Borough of Hillingdon is minded to approve the application, it is required by condition that extends the mitigation measure currently proposed by the applicant to residents in the higher noise contours, to all residences within the 57dB LAeq 16hr contour that are likely to experience a significant adverse increase in noise level of 3 or more dB LAeq 16hr impacts

Spelthorne District Council - Environmental Protection Unit:

The application is seeking enabling works at the airport to allow full runway alternation during easterly operations, the Secretary of State in 2009 having determined that the Cranford Agreement (operational for 30% of the year) would end. The Planning Statement sets out the likely conditions that would follow without the Cranford Agreement, such as a decrease in the number of flights arriving on the northern runway during easterly operations, a subsequent increase in the number of aircraft arriving on the southern runway during easterly operations and a decrease in the number of flights departing from the southern runway during easterlies. During the period when the airport operates on easterlies and without the Cranford Agreement aircraft will depart from the southern runway 50% of the time and also from the northern 50% of the time.

Section 6.2 of the report provides only a brief summary of the assessment on air quality the proposed changes will make during both the construction and operational stages of the development. From this it is predicted that there will be a 0.1% increase in NOx levels (from 6387 tonnes to 6405 tonnes) if full alternation is granted. The report summarises that concentrations of nitrogen dioxide (NO2) are predicted to reduce in areas to the southwest of the airport around the Stanwell area whilst a slight increase in nitrogen dioxide concentrations is predicted in areas towards the northwest of the airport around Longford resulting in a predicted exceedence of the nitrogen dioxide (NO2) Air Quality Objective in 2015. The report attributes this predicted change in air quality to the northwest of the airport to the increase in aircraft holding likely at the western end of the northern runway which has not previously been encountered.

The Planning Statement refers to a dispersion modelling assessment which has identified some residential receptors in the Longford area where a small increase in NO2 is likely to be experienced and those where the objective is likely to be exceeded. Environmental Health have not had the benefit of seeing this dispersion modelling to determine what likely effects the full alternation will have on existing air quality conditions in the Stanwell area.

Paragraph 6.2.15 does however indicate that there will be a slight increase of 0.1 tonne in PM10 and PM2.5 levels. The assessment predicts a decrease in PM levels to the northwest of the airport within Longford area but an increase in PM levels attributable to the deterioration of tyres and brakes from landing aircraft to the south of the airfield as a result of the increase in the volume of aircraft landing on the southern runway.

Environmental Health have not had the benefit of seeing this dispersion modelling referenced in the Planning Statement to determine what likely effects the full alternation will have on existing air quality conditions in the Stanwell area and other areas to the south of the airport.

Overall air quality monitored by Spelthorne Borough Council in the Stanwell / Stanwell Moor areas achieved the national air quality objective in 2012. Monitoring of nitrogen dioxide concentrations measured at the automatic monitoring station in Oaks Road during 2012 measured annual average nitrogen dioxide concentrations of 30.6µg/m3. Nitrogen dioxide concentrations at this location have decreased since 2008. Concentrations of PM10

monitored at the Oaks Road monitoring station have also shown a general decreasing trend since 2006 falling well below the annual mean of 30.6µg/m³. The Council also operates a number of diffusion tube locations within the Stanwell area. In 2012 none of these locations exceeded the 40µg/m³ annual mean objective with the highest concentration recorded at the junction of Bedfont Road / Long Lane.

In 2011 the Council commissioned Cambridge Environmental Research Consultants (CERC) to carry out modelling to generate maps of predicted pollutant concentrations (nitrogen dioxide and particulate matter) for 2011 and 2015 for the borough using the ADMS-airport model. This work identified that annual average nitrogen dioxide concentrations in 2011 within the area to the south of the airport (Southern Perimeter Road / Airport Way) would range between 35 - 50µg/m³. The modelling predicted forwards to 2015 which again indicated annual average nitrogen dioxide concentrations at these levels. Particulate Matter (PM₁₀) was predicted for 2011 to range between 20 and 24µg/m³ at the same location and within Stanwell Moor Village. The Source Apportionment undertaken again in 2011 indicated that the largest contribution from Heathrow Airport on concentrations of NO_x, PM₁₀ and PM_{2.5} arises from ground level sources (take off, landing, taxiing, hold and push back phases, as well as emissions from aircraft APUs.

As above Spelthorne Borough Council have not seen a copy of the dispersion modelling or Environmental Statement undertaken as part of this application. Therefore not enough information has been submitted to determine what level of impact the predicted changes in nitrogen dioxide and particulate matter are likely to have on existing air quality to the south and southwest of the airport. The summary provided within the planning statement does not quantify the level of increase in PM levels predicted for areas such as Stanwell Moor and Stanwell Village and there is no discussion or recommendation for additional monitoring to be undertaken within the locality of the airport should permission be granted particularly in areas where changes in air quality are predicted to assess the level of these impacts.

South Bucks District Council:

The London Borough of Hillingdon is informed that South Bucks District Council is extremely concerned about the impact of the ground noise likely to be generated on areas of South Bucks, particularly to residents at the southern end of Iver, Old Slade Lane and Richings Park. Therefore the Council strongly objects to the proposal and a detailed survey should be undertaken in the immediate vicinity of the airport, including Old Slade Lane, Iver and Richings Park in order to establish the existing impact from the ground noise at Heathrow and the likely increases in noise as a result of this proposal. Furthermore, it is advised that the results of this survey should be compared with the localised improvement purportedly offered by the proposed noise barrier to establish whether that would have any discernible effect.

London Borough of Hounslow

Glossary of Terms

APF	Airports Policy Framework
DFES	Department for Education and Schools
CPS	Cranford Primary School
HAL	Heathrow Airport Limited
NPSE	Noise Policy Statement for England
NPPF	National Planning Policy Framework

Executive Summary

The London Borough of Hounslow wishes to comment on the proposal to revoke the Cranford Agreement. The substantive comment is based on the increased levels of aircraft noise that communities within the London Borough of Hounslow will experience.

The basis of these comments include:

- Disagreement to the proposed significance criteria used by HAL i.e. an increase of +3dB leading to inadequate and insufficient mitigation proposals for the surrounding communities.
- Disagreement in the methodology related to the noise assessment of schools leading to an underestimate of measures necessary to adequately mitigate the effect.
- Lack of control of future environmental impacts, mixed mode remains a possibility unless accompanied with a planning condition/legal agreement establishing operational use of the Northern Runway.

Our principal concern and therefore our focus is on our schools.

The Council of the London Borough of Hounslow (hereafter referred to as “the Council”) has been asked to comment by the London Borough of Hillingdon on the proposal to remove the Cranford Agreement from the suite of operational practices used by Heathrow Airport Limited (HAL).

The Council's principal areas of concern to relate to increases of aircraft noise in the Cranford area.

The Cranford Agreement effectively prevents aircraft from departing off the northern runway in an easterly direction i.e. over London, emergencies excepted. The agreement was established in the 1950's to prevent the worst excesses of departure noise affecting the nearby community of Cranford.

The arrangement also acts as a capacity constraint and a barrier to HAL adopting mixed mode operation i.e. allowing aircraft to arrive and depart from both runways at the same time.

On 7th September 2010 the Minister for Aviation Theresa Villiers announced that the agreement would be revoked with the intent:

“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”

Thus changing the balance of aircraft noise that communities are exposed to, from Heathrow's operations.

Mrs Villiers also stated

“I can confirm that we remain firmly committed to retaining runway alternation and will not approve the introduction of mixed mode operations at Heathrow. This government believes that any potential benefits mixed mode might bring to the airport are outweighed by the negative impact such operations would have on local communities”

And

“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.

It is the current council policy to oppose the revocation of the Cranford agreement. However the following factors have influenced the decision not to object to the application outright because:

- it has been stated that there is no intention to introduce mixed mode;
- It has been stated that the revocation of the agreement will be adequately mitigated;
- it is recognised that some communities within the London Borough of Hounslow will benefit from reduced noise levels, mainly within the Hatton Cross area.

Taking the above into consideration the Council is concerned that in relation to the application

- there is no impediment to the introduction of mixed mode
- that the mitigation package is offered do not fully mitigate the effects of the revocation.

The Council expects these concerns to be addressed.

It is the intent of noise policy in the UK to reduce levels of aircraft noise for people who suffer from a poor noise environment with priority being given to those who suffer the highest noise exposure.

Aviation Policy Framework

Government policy is outlined within the Aviation Policy Framework (APF) which was published on the 22nd March 2013.

The Department for Transport's website describes the APF as follows

"The aviation policy framework sets out the government's policy to allow the aviation sector to continue to make a significant contribution to economic growth across the country. It provides the baseline for the Airports Commission to take into account on important issues such as aircraft noise and climate change. It sets out government's objectives on the issues which will challenge and support the development of aviation across the UK"

Particular relevant points to this application are reproduced below (original paragraph numbers shown in square brackets):

[3.12] *"The Government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction with industry.*

[3.13] *This is consistent with the Government's Noise Policy, as set out in the Noise Policy Statement for England (NPSE)93 which aims to avoid significant adverse impacts on health and quality of life.*

[3.14] *Although there is some evidence that people's sensitivity to aircraft noise appears to have increased in recent years, there are still large uncertainties around the precise change in relationship between annoyance and the exposure to aircraft noise. There is evidence that there are people who consider themselves annoyed by aircraft noise who live some distance from an airport in locations where aircraft are at relatively high altitudes. Conversely, some people living closer to an airport seem to be tolerant of such noise.*

[3.15] *To provide historic continuity, the Government will continue to ensure that noise exposure maps are produced for the noise-designated airports on an annual basis providing results down to a level of 57dB LAeq 16 hour. To improve monitoring of the specific impact of night noise, we will also ensure that separate night noise contours for the eight-hour night period (11pm–7am) are produced for the designated airports.*

[3.16] This does not preclude airports from producing results to a lower level or using other indicators to describe the noise impact of their operations, as appropriate (see paragraph 3.19 below). Some airports already map noise exposure to lower levels every five years under European legislation and we encourage those that routinely produce such contours on a voluntary basis to continue to do so, as a means of facilitating improved monitoring, transparency and communication of the impact of aircraft noise. Other airports which have significant night operations may also wish to produce separate night noise contours on a regular basis.

[3.17] We will continue to treat the 57dB LAeq 16 hour contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance. However, this does not mean that all people within this contour will experience significant adverse effects from aircraft noise. Nor does it mean that no-one outside of this contour will consider themselves annoyed by aircraft noise.

[3.18] The Airports Commission has also recognised that there is no firm consensus on the way to measure the noise impacts of aviation and has stated that this is an issue on which it will carry out further detailed work and public engagement. We will keep our policy under review in the light of any new emerging evidence.

[3.19] 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 averaged manner and that the value of the LAeq 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 seek to explain how locations under flight paths are affected by aircraft 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.

In relation to the Cranford Agreement the Policy Framework states the following

[1.63] "To further improve operations and resilience at Heathrow we confirmed the ending of the Cranford agreement.⁴³ 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). This decision needs to be implemented by Heathrow Airport Ltd and a planning application will shortly be submitted for the necessary changes to airport infrastructure. Following implementation, noise will be distributed more fairly around the airport, extending the benefits of runway alternation to communities under the flight paths during periods of easterly winds, and delivering operational benefits by letting the airport operate consistently whether there are easterly or westerly winds.

The section on noise mitigation is also particularly relevant to this application

"Noise insulation and compensation

[3.36] The Government continues to expect airport operators to offer households exposed to levels of noise of 69 dB LAeq, 16h or more, assistance with the costs of moving.

[3.37] The Government also expects airport operators to offer acoustic insulation to noise-sensitive buildings, such as schools and hospitals, exposed to levels of noise of 63 dB LAeq, 16h or more. Where acoustic insulation cannot provide an appropriate or cost-effective solution, alternative mitigation measures should be offered.

[3.38] If no such schemes already exist, airport operators should consider financial assistance towards acoustic insulation for households. Where compensation schemes have been in place for many years and there are few properties still eligible for compensation, airport operators should review their schemes to ensure they remain reasonable and proportionate.

[3.39] Where airport operators are considering developments which result in an increase in noise, they should review their compensation schemes to ensure that they offer appropriate compensation to those potentially affected. As a minimum, the Government would expect airport operators to offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3dB or more which leaves them exposed to levels of noise of 63 dB LAeq,16h or more.

[3.40] Any potential proposals for new nationally significant airport development projects following any Government decision on future recommendation(s) from the Airports Commission would need to consider tailored compensation schemes where appropriate, which would be subject to separate consultation.

[3.41] Airports may wish to use alternative criteria or have additional schemes based on night noise where night flights are an issue. Airport consultative committees should be involved in reviewing schemes and invited to give views on the criteria to be used.

Planning Policy Considerations

Noise and planning policy is governed by the National Planning Policy Statement (NPPF). Paragraph 109 states that:

The planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability;

Further clarity on noise policy is given within the Noise Policy Statement for England which states in paragraph 1.6

Noise Policy Vision

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

And in paragraph 1.7

Noise Policy Aims

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and where possible, contribute to the improvement of health and quality of life.*

The London Plan is a material consideration in the determination of this application with the following specific policies having a direct bearing

In referring to "Strategic Aviation" Policy 6.6 part B states

The Mayor:

a *strongly opposes any further expansion at Heathrow involving an increase in the number of aircraft movements there, due to the adverse noise and air quality impacts already being experienced by residents and others in the vicinity of Heathrow and its environs*

b *supports improvements of the facilities for passengers at Heathrow and other London airports in ways other than increasing the number of aircraft movements,*

particularly to optimise efficiency and sustainability, enhance the user experience, and to ensure the availability of viable and attractive public transport options to access them.

Policy 6.6 part C states

The aviation industry should meet its full environmental and external costs. Airport operators should increase the share of access journeys by passengers and staff made by sustainable means, minimize the impacts of airport servicing and onward freight transport, and take full account of environmental impacts when making decisions on patterns of aircraft operation.

In relation to planning decisions part D states

Development proposals affecting airport operations or patterns of air traffic (particularly those involving increases in the number of aircraft movements) should:

- a give a high priority to sustainability and take full account of environmental impacts (particularly noise and air quality)*
- b promote access to airports by travellers and staff by sustainable means, particularly by public transport.*

The Mayor is opposed to the introduction of mixed mode operation at Heathrow as stated in paragraph 6.28, a extract of which is reproduced below.

However, he agrees with the Government that the noise problems and poor air quality at Heathrow have reached such levels that further increases in the number of air traffic movements there are untenable. He supports the Government statement of 7 September 2010 opposing mixed-mode operations and supporting runway alteration, westerly preference and related measures to mitigate noise effects on local communities.

The London Plan also considers the wider aspects of noise within policy 7.15

Policy 7.15 Reducing Noise and Enhancing Soundscapes

Strategic

A The transport, spatial and design policies of this plan will be implemented in order to reduce noise and support the objectives of the Mayor's Ambient Noise Strategy.

Planning decisions

B Development proposals should seek to reduce noise by:

- a minimising the existing and potential adverse impacts of noise on, from, within, or in the vicinity of, development proposals*
- b separating new noise sensitive development from major noise sources wherever practicable through the use of distance, screening, or internal layout in preference to sole reliance on sound insulation*
- c promoting new technologies and improved practices to reduce noise at source.*

The London Borough of Hounslow's Aviation Policy is material to the consideration of this application. Seven aspects of the policy are particularly relevant

Policy 2.5 Noise insulation in Public Buildings including schools

The Council will campaign for a noise insulation / ventilation scheme that reduces daytime noise levels to appropriate WHO/British Standard / UK Building Control standards / School design standard

Policy 2.11 Mitigating the effects of Aircraft Noise.

All premises used for educational purposes should meet the new build criteria for noise and ventilation.

Policy 2.12 Campaigning for our Schools.

Hounslow Council will campaign for total mitigation from the effects of aircraft noise within schools and school grounds.

Policy 3.2 Cranford Agreement

The Council will oppose any move to dissolve the Cranford agreement to protect the Cranford community from the worst effects of Heathrow.

Policy 3.4 Mixed Mode

The Council will oppose any move towards the introduction of mixed mode operation because of the disbenefits it will inevitably bring.

Mitigation Policy 3.6

Without prejudice to other policies, the Council will campaign for mitigation measures that will help alleviate the current situation and, in the circumstances where further development is inevitable, devise suitable mitigation measures for such developments.

Mitigation Policy 3.7

Funding Base for Mitigation. Hounslow Council will campaign for the broadest possible funding base for mitigation measures.

The London Borough of Hounslow is an education authority. As such it is obliged to provide buildings that are fit for this purpose which includes the provision of proper acoustics conditions for teaching. Noise and school design parameters are detailed in the document "Acoustic Performance Standards for the Priority Schools Building Programme Version 1.7 June 2013" issued by the Department for Education and Schools (DFES). In a similar fashion to its more widely known predecessor, Building Bulletin 93, the principal noise metric used to determine acoustic conditions in schools is a measure of the noisiest half hour period to which the establishment is exposed, this is known as the LAeq,30 minute.

The future of the airports and the aviation industry in the UK is currently being considered by the Airports Commission under the chairmanship of Sir Howard Davies. The Commission have been tasked with:

- The examination of the scale and timing of any requirement for additional capacity to maintain the UK's position as Europe's most important aviation hub, and the examination and evaluation of how any need for additional capacity should be met in the short, medium and long term.

In line with this requirement the commission is conducting an evidence review. A number of discussion papers have been issued including one on noise.

On the 17th December 2013 the Airports Commission published its interim report. As well as outlining its shortlist of options for developing hub capacity in the UK the Commission announce that the following short term measures should be introduced including:

- an 'optimisation strategy' to improve the operational efficiency of UK airports and airspace, including
 - airport collaborative decision making
 - airspace changes supporting performance based navigation
 - enhanced en-route traffic management to drive tighter adherence to schedules
 - time based separation

- a package of surface transport improvements to make airports with spare capacity more attractive to airlines and passengers, including
 - work to provide rail access into Heathrow from the south
- trials at Heathrow of measures to smooth the early morning arrival schedule to minimise stacking and delays and to provide more predictable respite for local people

A further report will be produced by the Commission no later than summer 2015. This will report on the following:

- its assessment of the options for meeting the UK's international connectivity needs, including their economic, social and environmental impact;
- its recommendation(s) for the optimum approach to meeting any needs; and
- its recommendation(s) for ensuring that the need is met as expeditiously as practicable within the required timescale.

The Commission will base the recommendations in its final report on a detailed consideration of the case for each of the credible options. This is expected to include the development or examination of detailed business cases and environmental assessments for each option, as well as consideration of their operational, commercial and technical viability. As part of its final report in summer 2015, it will also provide materials, based on this detailed analysis, which will support the government in preparing a National Policy Statement to accelerate the resolution of any future planning applications for major Future Operational Changes at Heathrow.

Within the document "A quieter Heathrow" HAL explains its thinking in relation to further operational changes at Heathrow.

Quieter operating procedures

We will work with the CAA, NATS and airlines to explore and employ smarter operating procedures to reduce the noise impact of aircraft on residents. We will: take full advantage of opportunities to manage airspace differently, working with local communities to identify changes that could benefit them. We will continue to trial new airspace management procedures to test the concept of providing predictable periods of respite from early morning arrivals and for some of our departure routes. We will review the results with a view to introducing the changes permanently if communities value them and they are operationally feasible; take steps to better understand the noise and operational impacts of ending the practice of 'westerly preference' through a study we have commissioned from NATS; [authors emphasis]

and

propose a significant increase in fines for aircraft that exceed the airport's departure noise limits at night and invest the funds in local community projects.

Operational Freedoms Trials

The Operational Freedoms trial was a recommendation of the Government's South East Airport Taskforce which was set up in 2010. It explored whether new procedures could be used to bring benefits to passengers, by providing a more punctual service; the local community through less late-running flights; and to the environment, by reducing aircraft stacking times and reducing emissions.

The trial ran in two phases. The first phase ran between 1 November 2011 to 29 February 2012. The second phase began on 1 July 2012 and ran until 28 February 2013.

It is the Council's view that the trials increased the noise burden experienced by the local community and that there is no tangible benefit to the airport for their implementation.

Within its conclusions the independent authority that had oversight of the trial the CAA, stated that:

"The CAA would agree with HAL that it is possible that the freedoms trialled did benefit airport operations. Intuitively, greater operational flexibility should help air traffic controllers to get the airport back on schedule. But the benefits claimed in the HAL report have not been statistically proven. [Author's emphasis]"

Revocation of the Cranford Agreement and Aircraft Noise Assessment of Harm - Noise Metrics

In order to assess the potential harm in terms of increase of aircraft noise due to the revocation of the Cranford Agreement HAL have used 16 hour LAeq contours. In most cases the assessment stops at the 57 LAeq,16 hour contour, the level at which the Government suggest is the onset of significant annoyance.

The Council take the view that whilst useful for assessing long term trends in aircraft noise LAeq,16 hour is not necessarily an appropriate metric for assessing changes in aircraft noise exposure when operational amendments are proposed.

This view was endorsed by the Department of the Environment, Transport and the Regions at the Terminal 5 Inquiry. The Inspector reported the following:

The Department of the Environment, Transport and the Regions accepted however that it would be wrong of me to judge the effects of Terminal 5 by use of the LAeq 16hour contour alone

This led the then Secretary of State for Transport Stephen Byers commission a new piece of work known as Attitudes to Noise from Aviation Sources in England (ANASE) study. Following a peer review in 2007 certain aspects of this work were considered by some to be flawed, a view that was disputed by the report authors. In 2013 the London Borough of Hillingdon commissioned the report authors to review and address these criticisms.

The Hillingdon report, validating the ANASE results and rebutting the criticisms. indicates that the onset of community annoyance is nearer to 51 LAeq,16 hour. This level is similar to that found by researchers who have investigated noise and annoyance around other major European airports.

Having considered the Hillingdon report, the Council is of the view that this work reinforces the Council view that relying solely on the LAeq metric to assess changes in aircraft noise is inappropriate.

HAL have repeated their noise analysis within Appendix G using the alternative metric of Lden which is the metric of choice within the European Union. The 55 Lden contour is regarded as the level at which significant annoyance offers within the exposed population . 55 Lden covers a smaller geographical area compared to that suggested by ANASE it more accurately reflects levels of community annoyance than LAeq,16 and is therefore a more realistic metric for assessment purposes.

The LAeq,16 hour and the Lden are metrics that describe noise exposure over a 16 hour and a 24 day respectively. LAeq contours generated by the ANCON 2.3 model are average contours over 80 summer days, Lden contours are generated a whole

years data. Within any 24 hour period the airport may change its mode of operation a number of times whether it be alternation of the runways or changing the direction of aircraft arrival and departure. Over the 80 days (or the year) the east west split will also change dependent on the weather hence DfT commission both actual and standard contours (based on a 28:72 east : west split) so that trends in noise energy can be considered.

The revocation of the Cranford agreement will allow regular departures off the northern runway for the first time. This radically changes the levels and the nature of noise those communities in Hounslow will experience as departure noise is different to arrivals noise.

Like LAeq,16hour, Lden does not provide an adequate assessment for short term, within day changes to the distribution of aircraft noise. Therefore the contours which most accurately represent this impact are the those produced at the request of the Local Authorities i.e. the four single mode contour plots within Appendix G figures 35 to 38.

In relation to noise metrics and schools, it is necessary to consider the worst half hour noise exposure within the school day LAeq,30minute. In the Council's assessment the 8 hour single mode contours are used as a surrogate (see paragraph 5.7).

The Council has drawn the conclusion that the 55Lden contour should be used to define the area for assessing where harm occurs. Additional noise metrics need to be used where necessary.

Assessment of Harm - Noise Significance Criteria

HAL's position on significance is outlined within paragraph 6.7.4 - 6.7.10 of the Environmental Statement, with paragraph 6.7.7 stating the following:

- *If two different noise environments differ by 1 dB on the LAeq,16 index there is approximately a 20% probability that a social survey would show no change in annoyance.*
- *If two different noise environments differ by 2 dB on the LAeq,16 index there is approximately a 16% probability that a social survey would show no change in annoyance.*
- *If two different noise environments differ by 3dB on the on the LAeq,16 index there is approximately 12% probability that a social survey would show no change in annoyance.*

Using this as a basis HAL have adopted the view that 3dB is the minimum increase in noise that can be considered significant.

The Council considered that these statements can be rephrased and reconsidered as follows:

- If two different noise environments differ by 1 dB on the LAeq,16 index there is approximately 80% probability that a social survey would show a change in annoyance
- If two different noise environments differ by 2 dB on the LAeq,16 index there is approximately a 84% probability that a social survey would show a change in annoyance.
- If two different noise environments differ by 3dB on the on the LAeq,16 index there is approximately 88% probability that a social survey would show a change in annoyance.

Given 80% of people are affected by a 1dB change in noise it is the Council's view that this is a much more reasonable trigger for assessment of significance and the trigger for mitigation and it is this that must be adopted.

The Council notes that within other areas of the aviation industry it is considered appropriate to pursue operational measures that will result in a substantially lower reduction of noise than 3dB, for example, within the recent consultation in relation to noise at night the DfT have noted that the proposal to increase the angle of approach for aircraft landing at Heathrow to 3.25 degrees compared to the current angle of 3 degrees would bring noise benefits. The Council agrees that this proposal is likely to give rise to a reduction of aircraft and this is worth pursuing.

The Council also notes that a trigger of 1dB is used to trigger noise mitigation when new roads are planned and developed.

Cumulative Impacts

The Council have noted that the revocation of the Cranford Agreement is one of a number of potential changes that may occur within the short to medium term the other operational changes may include the introduction of operational freedoms and the revocation of "westerly preference" (see paragraph 3.7 above). It has been the practice of Heathrow to expand and make changes to its operation on an incremental basis.

Also the Airport Commission's interim report states:

Given developments in aircraft technology over time, the Government should review the need for a westerly preference with a view to introducing a 'no preference' policy.

Each time a change is proposed the baseline against which the change is assessed will be reassessed to include current operation. By taking these changes incrementally an increase of 3dB will never occur whilst cumulative increases will be greater. Given that this is the first of a number of potentially significant changes, lower criteria of significance should be adopted to reflect this concern.

The Council is of the view that, using the precautionary approach, a change of 1dB, which will be noticed by 80% of the population within a social survey, is significant and should be adopted as such.

Noise Mitigation

Heathrow's position within the UK is unique, it is within London and because of its proximity to this centre of population its operation affects over 700,000 people that lie within the 55 Lden contour.

Given its proximity to London and the number of people it affects the Council expects HAL to accept its social responsibility and mitigate all the effects of its day to day operation. The paucity of the HAL mitigation scheme has been recognised within the deliberations of the Airports Commission which within its Noise Discussion paper (paragraph 5.40) stated the following:

..... In Europe, compensation schemes also often cover a wider area around the airport than occurs in the UK. In France compensation arrangements are governed by ACNUSA (the independent Airport Pollution Control Authority), which establishes a compensatory regime out to the 55Lden footprint.⁹⁹ All of Spain's major airports have compensation arrangements within the 60L and L, and/or 50dB(A)LDEN

The Cranford Agreement is being revoked so that the noise burden is more equally shared amongst local communities. It is not being revoked to facilitate expansion or improve resilience. It is accepted by the Council that some people within Hounslow will benefit from the revocation however whilst it is government policy to revoke the agreement it is also a requirement of the Minister, NPPF, the London Plan, the NPSE and the Council's own policies to fully mitigate any effects of doing this.

The Council is of the view that whilst this application facilitates the revocation of the Cranford agreement, the mitigation required to alleviate the effects of doing this is not being offered, particularly when the implications of the use of the chosen noise metric (LAeq16hour) and the test of significance (+3dB) being used by HAL is considered.

Operational Restrictions

Further comment is provided below in relation to the specific mitigation offered in relation to the worsening of the noise environment experienced by homes and schools. However it is the Council's view that the revocation of the Cranford Agreement, without offering further operational restriction(s) in its place, leaves local communities with a great deal of uncertainty regarding potential future operational changes at Heathrow.

With the revocation of the Cranford Agreement all physical and operational impediments will have been removed that would stop the introduction of mixed mode operation at Heathrow. Whilst at the time of writing neither the Government nor HAL are publicly pursuing the introduction of this practice, it remains the case that it is a relatively simple step to take.

In these circumstances the Council believes it is incumbent on HAL to provide certainty regarding its future operation therefore as part of this application the Council is requesting that the London Borough of Hillingdon place a condition on HAL requiring them not to introduce mixed mode operation within the next 15 years.

Assessment of the Effect of Revoking the Cranford Agreement on Homes

The tables below are reproduced from the Environmental Statement and Appendix G Noise Supplementary Information respectively. These tables show the number of people and residential properties that suffer a worsening of their noise environment. Two separate noise metrics are considered the LAeq metric used in the UK and Lden.

Noise Magnitude and Significance of Changes in LAeq, 16h where LAeq, 16h is greater or equal to 57 dB¹

	Increase / Decrease	Magnitude	Dwellings	Population	Significance
Increase	≥5 and <6 dB	High	350	1050	Significant - Adverse
	≥4 and <5 dB	High	800	2000	Significant - Adverse
	≥3 and <4 dB	High	550	1400	Significant – Adverse
	≥2 and <3 dB	Medium	1100	3000	Not Significant - Adverse
	≥1 and <2 dB	Medium	4250	11100	Not Significant – Adverse
Decrease	≥1 and <2 dB	Medium	14400	33950	Not Significant -

¹ Environmental Statement Enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport May 2013 Page 85

se					Beneficial
	≥2 and <3 dB	Medium	900	2150	Not Significant – Beneficial
	≥3 and <4 dB	High	0	0	Significant Beneficial -
	≥4 and <5 dB	High	0	0	Significant Beneficial -
	≥5 and <6 dB	High	0	0	Significant Beneficial -
Total Increases (≥1dB)			7050	18550	Adverse
Total Decreases (≥1dB)			15300	36100	Beneficial
Total Significant Adverse Effects			1700	4450	Significant Adverse
Total Significant Beneficial Effects			0	0	Significant Beneficial

Noise Magnitude and Significance of Changes in Lden where Lden is at least 55 dB

	Increase / Decrease	Magnitude	Dwellings	Population	Significance
Increase	≥5 and <6 dB	High	300	800	Significant - Adverse
	≥4 and <5 dB	High	700	1800	Significant - Adverse
	≥3 and <4 dB	High	3650	10250	Significant – Adverse
	≥2 and <3 dB	Medium	2800	7500	Not Significant - Adverse
	≥1 and <2 dB	Medium	7550	20150	Not Significant – Adverse
Decrease	≥1 and <2 dB	Medium	22350	53350	Not Significant - Beneficial
	≥2 and <3 dB	Medium	1300	3050	Not Significant – Beneficial
	≥3 and <4 dB	High	0	0	Significant Beneficial -
	≥4 and <5 dB	High	0	0	Significant Beneficial -
Total Increases (≥1dB)			15000	40500	Adverse
Total Decreases (≥1dB)			23650	56400	Beneficial
Total Significant Adverse Effects			4650	12850	Significant Adverse

From table 4.1 [6.12] it can be seen that using the HAL criteria of significance of +3dB, 4450 people and 1700 properties suffer “Significant Adverse Effects”.

Using the Hounslow Criteria of significance +1dB(A) 18550 people and 7050 suffer “significant effects” that should be mitigated.

Considering the alternative metric of Lden, Table 4.2 [G7], the numbers of people and properties affected are considerably higher. Using the HAL criteria of significance of +3dB, 12,850 people and properties 4650 suffer “significant Adverse Effects”.

Using the Hounslow Criteria of significance +1dB 40,500 people and 15,000 properties suffer significant effects that should be mitigated.

HAL Propose that 175 households newly exposed to 69 LAeq,16hour dB are offered home relocation assistance and a further 350 households newly exposed to 63 LAeq,16hour dB and a noise increase of 3dB or greater will be eligible for residential acoustic insulation with the cost met by HAL.

When consulted on a revised noise insulation scheme the Council advised HAL that all properties within the 55 Lden contour should attract residential noise insulation, the cost of which should be met by HAL. Not to do this would leave these properties unmitigated which is contrary to the statement of the Minister.

It is the Council's view that any domestic premises, community buildings, educational establishments and religious establishments that suffer an increase of 1dB and are within the 55LDEN noise contour should attract a suitable offer of mitigation which includes an offer in noise insulation.

Note that the increased likelihood of the abolition of westerly preference is likely to increase the noise burden experienced by these premises.

Assessment of the Effect of Revoking the Cranford Agreement on Schools

As stated above (paragraph 3.6) the London Borough of Hounslow is required to provide school buildings that meet prescribed standards for noise. The noise level within for example, a school classroom, is a function of the external noise level and the construction of the school.

The standards required by the DFES and the policy on this matter as described by the APF use different measures of LAeq that are not comparable. The former requires classrooms to be built to ensure that a 30 minute LAeq of 35dB must be achieved. This is the worst 30 minute period within the school day. The latter requires schools to be within the 16 hour 63LAeq dB contour noise contour to qualify for assistance with the provision of mitigating measures.

It is the case within the London Borough of Hounslow that some schools are outside of the 63 LAeq,16hour contour will suffer internal levels of noise greater than the required 35dB. The Council has no choice but to rectify this situation by the provision of additional noise insulation. The matter of who pays for these interventions is currently being debated between HAL and the Council however at the time of writing the cost is currently met by the Council.

The Council considers this to be a flaw in Government policy which must be rectified to prevent damage to children's education.

HAL Assessment of Schools

HAL outline their assessment methodology for the effect of noise and schools in paragraph 6.8.51 of the Environmental Statement and page G15 of Appendix G Noise Supplementary Information.

HAL's assessment is based on the LAeq16h dB noise contour.

Paragraph 6.8.52 of the Environmental Statement advises that there is no statistical correlation between LAeq,16h and LAeq,30minute noise metrics. HAL then go on to advise that "for the purposes of the assessment LAeq, 30minute is considered to be 5.5dB higher than LAeq,16h.

The Council consider this to be a flawed assertion because schools need to be assessed for the worst noise conditions over a half hour period within the school day. The intrinsic averaging nature of a 16 hour LAeq noise contour, means that the changes in noise level within the 16 hour period, are nullified.

When giving consideration to assessment of aircraft noise the APF suggests that it is acceptable to use alternative metrics to the LAeq16h dB noise contour. Whilst HAL have produced 8 hour single mode contours as part of their planning submission, no associated conclusions have been drawn.

For a valid assessment to be made on schools the current highest noise levels experienced by the school need to be compared with the highest noise levels experienced by the school if the Cranford Agreement is revoked, allowing departures to the east off the northern runway.

HAL have derived the following increases in noise exposure using their methodology: Hounslow: Educational Establishments exposed to ≥ 70 dB L_{Amax} , derived ≥ 50 dB $L_{Aeq, 30min}$ and increases air noise²

Increase in L_{Aeq}	Number	Names
≥ 3 dB	3	Cranford Community College
		The Cedars Primary School
		Hounslow Pupil Referral Unit
2-3	2	Cranford Junior School
		Cranford Infant and Nursery School
1-2 dB	1	Berkeley Primary School

Educational Receptors defined by 2010 PointX dataset and Reviewed against 2011 OS AL2 dataset.

The HAL analysis also outlines predicted Lmax levels reproduced below.

Analysis for Requested Schools

School	$L_{Aeq, 30min}$, dB with Cranford	$L_{Aeq, 30min}$, dB without Cranford	Change	L_{Amax} , dB (Boeing 747-400 departing Runway 09L)
Cranford Primary	68.0 dB	70.5 dB	+ 2.5 dB	90.0 dB
Beavers School	69.1 dB	69.2 dB	+ 0.1 dB	87.9 dB
The Cedars	61.4 dB	65.5 dB	+ 4.1 dB	85.8 dB

Note: $L_{Aeq, 30min}$ estimated from $L_{Aeq, 16hr}$ based on approach described within Appendix G of the Environmental Statement

Hounslow's Assessment of Schools

At the request of local authorities HAL have produced a set of four single mode aircraft noise contours The Council asked for HAL to overlay these contours onto a plot of the borough's schools. The four contour maps provided were labelled as follows:

- Figure 1: Air Noise, 2015 Single Mode 8 hour LAeq Contours, 27L arrivals / 09R departures with school location.
- Figure 2 Air Noise, 2015 Single Mode 8 hour LAeq Contours 27R Arrivals / 27L Departures with school location.

² Email From Stephen Allen to Rob Gibson dated 1st November 2013

- Figure 3 Air Noise, 2015 Single Mode 8 hour LAeq Contours 90L Departures / 09R Departures with school location.
- Figure 4 Air Noise, 2015 Single Mode 8 hour LAeq Contours, 09R Arrivals / 09L Departures with school location.

These single mode contours are a more reasonable, but less than perfect surrogate for the highest noise exposure level experienced on the ground, when the airport is operating in a particular mode. Whilst they provide an indication of what the highest LAeq,30 minute level will be when the airport is operating in that mode, this is likely to be an underestimate. The reasoning for this is given in Box 1 below:

Why an LAeq,8hour is likely to be lower than a LAeq,30minute

During any 8 hour period during the school day the external aircraft noise level can be affected by the following:

- Mode of runway operation
- The types of aircraft that fly over.
- The flight path of the aircraft i.e. which Noise Preferential Route(NPR) is being flown.
- The numbers of aircraft flying overhead.
- The prevailing weather conditions

When assessing the LAeq,30minute for the purposes of establishing proper acoustic standards the aim is to establish the noisiest 30 minute period which equates to the following

- Mode of runway operation - worst
- The types of aircraft that fly over – those likely to be the largest eg B747-400 series
- The flight path of the aircraft i.e. which Noise Preferential Route(NPR) is being flown – nearest
- The numbers of aircraft flying overhead – greatest frequency
- The prevailing weather conditions - summer

When considering an 8 hour period what is being assessed is an average of the following i.e.

- Mode of runway operation – worst (as a single mode contour is being used)
- The types of aircraft that fly over – all types
- The flight path of the aircraft i.e. which Noise Preferential Route(NPR) is being flown – variable
- The numbers of aircraft flying overhead- variable through the day
- The prevailing weather conditions - summer

Aircraft noise monitoring undertaken at Beavers school further illustrated this point. During the period 23rd to 26th March 2013 levels of greater than 72LAeq,30 minutes dB were recorded whilst the single mode contour for this mode of operation (departures to the east of the southern runway) provided by HAL, predict that the noise exposure would be between 66-69 LAeq, 8hour dB, at least 3 dB less.

Assessment of Schools Noise Exposure Using Single mode Contours Using the contours provided the Council has derived the following table³.

³ The +3dB criteria is used because this is the contour banding. The Council remains concerned about increases of noise exposure less than 3dB.

School Noise exposure dB(A) due to revocation of the Cranford Agreement based on Figure 4 (8 hour single mode contour, easterly departures of the northern runway) and associated increase in noise.

School	Noise exposure dB(A) due to revocation of the Cranford Agreement based on Figure 4	Increase in noise dB(A) due to revocation of the Cranford Agreement
Beavers School	69-72	+3
Berkeley Primary School	66-69	+6
Cranford Primary	Greater than 72	+6
Cranford Community College	63-66	+9
St Marks Catholic School	63-66	+6
Heathland School	63-66	+3
Cedars Primary	66-69	+6

The Council's analysis shows that seven of the boroughs schools suffer an increase of noise of +3dB or greater. Cranford Community Collage suffers an increase of 9dB. Cranford primary school will be at a level of greater than 72 dB(A).

In relation to the levels quoted for LAFmax by HAL the Council notes that it is custom and practice for aircraft noise modelling to produce Lmax values Lmax "slow". The levels that are of interest when considering schools design are Lmax fast. It has been demonstrated that Lmax fast values are generally 4dB greater than Lmax slow⁴. This leads the Council to the conclusion that external LAFmax levels at Cranford Primary School will be around 94LAFmax dB.

Note that the increased likelihood of the abolition of westerly preference is likely to increase the noise burden experienced by these schools.

Mitigation and Educational Establishments

HAL draws the conclusion from the HAL environmental statement that no additional mitigation is required to reduce the noise in schools that results from the revocation of the Cranford Agreement.

The assessment undertaken by the Council shows that noise levels for some schools increase by up to 9dB. Therefore the Council does not agree with HAL's Assessment.

To ensure that the effect of the revocation of the Cranford Agreement is fully mitigated the following is required.

- 1) Each school within the borough needs to be screened to see if it is affected by the revocation of the Cranford agreement (worst LAeq,30 minute period in the school day)
- 2) Those schools that are not screened out in 1 above need to be assessed to establish if there is a worsening of the internal acoustic environment (worst LAeq,30 minute period in the school day).
- 3) Mitigating measures must be offered to those schools where there is a worsening of the acoustic environment unless the resultant internal noise level is lower than 35dB LAeq,30 minute. This must include internal and external teaching environments.

⁴ HACAN Aircraft Noise and London Heathrow Noise Monitoring Noise Monitoring Report Second Report March 2007 Bureaux Veritas

- 4) The above assessments are required for all schools. Those which have attracted mitigating measures via HAL schemes previously must be re-assessed to ensure that the level of insulation remains adequate. If it is not further mitigation must be installed.

Cranford Primary School (CPS)

The Council's assessment of the future noise exposure of CPS estimates that the level of noise experience by the school when the northern runway is being used for departures to the east will be greater than 72dB(A) with LAFmax levels of 94dB. Given that the current average split of westerly to easterly operations at Heathrow is 72:28 percent the Council is concerned that with the revocation of the Cranford Agreement this school will not be able to provide an acceptable acoustic environment regardless of any mitigation that is offered.

If the potential removal of westerly preference goes ahead, this will increase the length of time that this school is exposed to the highest levels of noise.

In these circumstances the Council requires that in the short term, operations restrictions are placed on the use of the northern runway during term time so that these noise levels are not experienced by the school. In the long term, should HAL wish take advantage of this change in government policy CPS must be moved so that an acceptable acoustic environment can be provided.

Air Quality

The Council does not appear to be affected by the revocation of the Cranford Agreement however it is noted that an area to the immediate west of the northern runway suffers increases in nitrogen dioxide levels with sensitive receptors newly exposed. It would appear that no mitigating measures are being considered for this harm. The Council is of the view that this is contrary to the requirements of both the European Directive on Air Quality 2008/50/EC and the principles of air quality management under the auspicious of Local Air Quality Management with the Environment Act 1995.

The Council is of the view for this to go unchallenged could set a precedent that could compromise policies that are designed to improve air quality. Therefore the Council would support any attempt the London Borough of Hillingdon may make to rectify this matter.

Conclusion

The revocation of the Cranford Agreement result is a significant redistribution of the aircraft noise experienced around Heathrow Airport. This is most significant in the area of Cranford where regular departures of the northern runway will be experienced for the first time.

The method of assessment used by HAL to demonstrate this worsening whilst being in compliance with the methodologies within the APF does not capture the deterioration in the noise environment experienced by Cranford residents and schools due the "averaging nature" of LAeq,16 hour.

The combination of this averaging effect of LAeq16 and HA's use of the 3dB significance criteria means that the impact of the revocation is not adequately mitigated, particularly in the case of the schools. The Council asks that the London Borough of Hillingdon do not grant planning permission until such time adequate mitigation is provided as requested within this report.

The revocation of the Cranford Agreement removes a significant impediment to mixed mode operational at Heathrow. The Council is of the view that HAL should submit to a compact or

planning condition stating that mixed mode will not be introduced within 15 years of the date planning permission is given. The Council asks the London Borough of Hillingdon to consider the imposition of such a condition should permission be granted.

The London Borough of Hounslow requests that where appropriate account of cumulative noise impacts is considered in the context of the planning application and HAL review their offer of mitigation accordingly.

Royal Borough of Windsor & Maidenhead:

Executive Summary

The Royal Borough of Windsor and Maidenhead (RBWM) lies 12 miles to the west of London and covers some 76 square miles and has a population of around 144,000. Situated due west of Heathrow Airport many of the communities lie directly in line with the two parallel runways (with some ≈2 miles from a runway terminus) and are affected by aircraft both taking off and landing.

The current planning application received by the London Borough of Hillingdon sets out the practical measures (principally the creation of aircraft taxiways), required at the airport in order to fulfil the decision made at national government level to abolish the Cranford Agreement.

The abandonment of the Cranford Agreement has stood as a long term objective for the RBWM. The measures proposed by the applicant would allow for the existing noise burden to be shared more equitably between different communities. It is for this reason the Royal Borough supports application for the early abandonment of the Cranford Agreement, subject to conditions regarding substantial noise mitigation and the introduction of easterly alternation.

Background

The original intention of the Cranford Agreement was to provide a measure of protection to the residents of Cranford given their proximity to the end of the northern runway. This was at a time when takeoff noise was the dominant source of noise as the aircraft climbed very slowly and the numbers of over-flights were considerably less than they are present day.

The development and technological advancement of aviation has changed the 'character' of the noise around Heathrow such that with the improvements to aviation performance and the significant growth and increase in the number of movements, landing noise near defined flight paths has increasingly become the dominant factor.

This is further exacerbated by there being no system of runway alternation on easterly operations as compared with the eastern side of the airport. On such days this results in around 650 low flying landing aircraft directly over-flying one swathe across the Borough. During sustained periods of anti-cyclonic conditions this unrelenting level of disturbance is both wholly intolerable and inequitable.

The Borough is acutely aware it is—probably unique amongst those local authorities around Heathrow Airport in that it is supportive of the early abandonment of the Cranford Agreement given the current lack of respite during intolerable easterly operations and the positive benefits that abandonment of the Cranford Agreement would bring in terms of sharing the 'existing' burden of excessive noise around the airport more equitably. In the

latter regard some London communities would also get some benefit from the introduction of departure alternation.

Implications

Should the application submitted be approved, the Royal Borough is also mindful of the implications and threats that would arise from the resultant removal of the Cranford Agreement, in that it could pose a threat or pressure for the introduction of 'mixed mode' operations. Such operations could be seen by the airport as a relatively easy short term capacity 'fix' allowing aircraft to both land and take off on both runways – thus negating any potential benefits that would otherwise be derived from the half-day respite currently experienced under separated mode arrangements which are vital for the surrounding communities.

Whilst allowing mixed mode would potentially allow for increased movements (i.e. enhanced runway capacity and / or greater operational flexibility), it is likely to evoke a likely strong public reaction in those communities where the pattern of noise exposure changes and/or increases and the quality of life is dramatically worsened.

The derived community benefits of 'easterly alternation' through the abandonment of the Cranford Agreement is a subject close to the hearts of both this Council and also thousands of local residents currently affected by easterly operations. The abandonment of the Cranford Agreement must bring with it the long awaited respite to the severe and intolerable nuisance caused to these many thousands of local residents in Windsor and nearby villages during easterly operations.

It is worth noting that the Royal Borough tacitly supports this application. However, the abandonment of the Cranford Agreement does present a number of serious dilemmas for the Royal Borough of Windsor and Maidenhead, namely:

- Whilst abolishing the Agreement would 'share' the excessive noise burden around the airport more equitably, thereby allow runway alternation to be introduced (affording much needed respite to local residents), it would also inevitably 'shift' ~50% of the noise burden to other communities such as Old Windsor, Wraysbury and other parts of Windsor that are more aligned with the southern runway (09R). These types of operational changes always stimulate strong public reactions.
- The existence of the Agreement currently constrains the airport from introducing the aforementioned 'Mixed Mode' operations. It is accepted that such operations would be one way of optimising existing runway capacity. However, such a move would be strongly opposed due to the resulting intensification of operations and could lead to an increase in flight numbers over the current capped limit (480k atm).
- This 'Mixed Mode' intensification would be exacerbated particularly due to the resultant denial of alternation. This would prevent any respite afforded to residential communities from incessant flights and the associated consequential adverse environmental & infrastructure impact.
- Furthermore, it must be noted that whilst Mixed Mode is operated at many other airports, the huge volume and far closer greater frequency of landings and departures at Heathrow sets it aside from other airports due to the complexity and potential risks of such an operation.

There is no single acceptable solution, with 'winners and losers'. On balance, there are a greater number of 'winners' resulting from the abandonment of the Cranford Agreement and

results in sharing the noise burden more equally amongst all communities around Heathrow Airport.

Previous Analysis

Previous analysis confirmed the following outcomes if the Cranford Agreement was abolished:

- There would be an overall improvement in the noise climate for Windsor at most times of the day of around 2-3 dB
- For Old Windsor and Wraysbury, there would be an increase of up to 8dB during easterly operations, with a worsening in the early morning and evening period of around 2dB.
- The introduction of Mixed Mode operations would have a radically adverse impact upon the communities of Old Windsor and Wraysbury (in particular) which does not exist at the current time.
- The introduction of Mixed Mode operations would result in a disproportionate deterioration in Old Windsor and Wraysbury relative to the improvement in Windsor. This is one of the major reasons for RBWM's policy of being totally opposed to the introduction of Mixed Mode operations at Heathrow Airport.

Conclusion

The Royal Borough of Windsor & Maidenhead has considered the above factors and considers the abandonment of the Cranford Agreement to be an ideal situation from a local community perspective and as such supports the application in question.

However, the Borough would seek Conditions to be included in the granting of any permission for the applicant to install or significantly contribute toward improved noise mitigation and insulation packages for those communities such as Wraysbury and Old Windsor which will be adversely affected by the abandonment of the Cranford Agreement.

Furthermore, the scheme specification and eligibility criteria to be adopted should relate to complying with the WHO Night noise standards.

The Borough will continue to advocate the retention of a movement cap, the maintenance of segregated mode, and the introduction of easterly alternation to provide some respite to all communities around Heathrow Airport

Natural England:

Natural England does not consider that this application poses any likely or significant risk to those features of the natural environment¹ for which NE would otherwise provide a more detailed consultation response and so does not wish to make specific comment on the details of this consultation.

The lack of case specific comment from Natural England should not be interpreted as a statement that there are no impacts on the natural environment. Other bodies and individuals may make comments that will help the Local Planning Authority (LPA) to fully take account of the environmental value of this site in the decision making process.

In particular, we would expect the LPA to assess and consider the possible impacts resulting from this proposal on the following when determining this application:

Protected species:

Where there is a reasonable likelihood of a protected species being present and affected by the proposed development, the LPA should request survey information from the applicant before determining the application (Paragraph 99 Circular 06/05)2.

Natural England has produced standing advice, which is available on our website Natural England Standing Advice to help the local planning authorities to better understand the impact of particular

Local wildlife sites:

If the proposal site is on or adjacent to a local wildlife site, e.g. Site of Nature Conservation Importance (SNCI) or Local Nature Reserve (LNR) the authority should ensure it has sufficient information to fully understand the impact of the proposal on the local wildlife site, and the importance of this in relation to development plan policies, before it determines the application.

Biodiversity enhancements:

This application may provide opportunities to incorporate features into the design which are beneficial to wildlife, such as the incorporation of roosting opportunities for bats or the installation of bird nest boxes. The authority should consider securing measures to enhance the biodiversity of the site from the applicant, if it is minded to grant permission for this application. This is in accordance with Paragraph 118 of the National Planning Policy Framework. Additionally, we would draw your attention to Section 40 of the Natural Environment and Rural Communities Act (2006) which states that 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Section 40(3) of the same Act also states that 'conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'.

English Heritage:

I note that the applicant's assessment in the Cultural Heritage chapter of the Environmental Statement (p159) is that, on balance the operational effect on sensitive heritage assets is not considered to be significant. This is due to the fact that increased noise and visual effect from easterly operations would be experienced on an intermittent basis, of up to 20% in extreme cases, and because overhead aircraft movements to the north east of the runway are already typical during westerly operations.

The methodology which has been used seems to me to be sound - however, the Cultural Heritage section doesn't deal well with any further impacts of aircraft on the Southern Overflying Zones (see paragraph 8.6.2), which contains Richmond Park and other heritage assets. However refusal is not recommended.

Beyond that, when dealing with cases such as these we look for the EIA to make practical mitigation recommendations. In the case of noise impacts from flights this could include measures such as alterations to flight path trajectories or gradients to reduce noise over particularly sensitive areas, or for agreements to be put in place which limit flights on particular paths from certain types of aircraft with louder engines.

English Heritage - Greater London Archaeology Advisory Service Unit (GLAAS):

I have discussed this with GLAAS colleagues and we take the view that this is a sensitive location within the prehistoric landscape, especially bearing in mind the proximity to several

cursus monuments and other Neolithic features. Archaeological interventions have been successfully pursued under artificial light in many other circumstances and the health and safety issues will need to be addressed to undertake the development in any event. I am not therefore minded to alter my advice to LB Hillingdon to apply a condition to safeguard the archaeological interest.

It seems to me that the issues that arise here are firstly, would the imposition of an archaeological condition be justified in this case? And secondly, if imposed what would actually be required to comply with such a condition?

On the first point, I have previously emphasised the location of the proposed works in an extensive and well documented archaeological landscape of at least regional significance as illustrated for example by the publication of 'Landscape Evolution in the Middle Thames Valley. Heathrow Terminal 5 Excavations Volume 2' published by Framework Archaeology and BAA Heathrow in 2010. A strong case could be made for elements of this landscape, notably the Stanwell Circus and its associated monuments, being of national significance. The desk-based assessment accompanying this planning application (Framework Archaeology, 2010) concludes that there is 'high potential for survival' in area 09RAL where the taxiway works are proposed and that 'Service trenches and their easements will have severely damaged or destroyed archaeological deposits; however, archaeological survival can be expected to increase in areas between services and in areas where services are less densely configured' (paragraph 6.3.1). It follows that it is reasonable to conclude that there is potential for revealing archaeological features the significance of which would lie in their contribution to understanding this historic landscape. There are of course numerous precedents for archaeological interventions of various scales in relation to development around Heathrow Airport and none that I am aware of which excludes archaeological involvement in potentially sensitive works. With reference to the two taxiway applications determined in 2011 and 2012, I can find no evidence that GLAAS was consulted and consequently no indication that a decision was taken not to intervene. Leaving aside for a moment the specific logistical concerns of this location I am convinced that an archaeological recording condition would be fully justified and necessary for the development of the new taxiways and holding area to be compliant with policy set out in the NPPF (esp. paragraph 141). I am not comfortable with the conclusion of ES paragraph 8.8.4:

"Where archaeological features are present it is likely they will have incurred physical damage from the historic development of Heathrow Airport, and this damage will have diminished their significance. However, overall it is considered that where present, buried archaeological remains would be of low value."

As noted above the value of such archaeological remains ought to be considered within a wider landscape context and the effect of cumulative harm from numerous developments in the area taken into account. The above conclusion lacks transparency and appears to me contrived to achieve an outcome of no significant impact (8.8.7) which is not justified by the evidence. In my view such a conclusion could only reasonably be reached if the specific locations were shown (rather than simply presumed) to have been so heavily disturbed as to preclude meaningful survival; and that is not the conclusion reached by the applicant's own desk-based assessment.

However, I do agree with the ES conclusion (8.6.11) that the new noise barrier would not require such a condition because it lies in a location which has previously been subject to extensive archaeological investigation.

As I understand it, you do acknowledge that in 'normal' circumstances recording would be justified (ref: your letter of 31st July) so that in reality your primary concern is to ensure that a recording condition could be complied with without triggering onerous restrictions. This takes us to the second point of clarifying what an archaeological recording condition would actually require in this case. I have in previous correspondence indicated considerable flexibility from my original advice to the LPA once I was apprised in outline of the operational issues. Clearly I accept that a condition cannot impose such restrictions that a planning consent cannot be implemented and have indicated that, although less than ideal, a 'watching brief' would be acceptable in the circumstances. Exactly how such a watching brief would be mounted is for the developer to set out in a written scheme of investigation (wsi) which is where the specific detailed logistical matters you raise should be addressed - the preparation of written schemes of investigation is not a service which GLAAS offers to developers. Whilst a wsi is normally produced after a planning consent has been issued there is nothing to preclude you preparing such a document in advance

Once a draft wsi has been prepared I would be able to comment upon it, and if significant issues remain unresolved a meeting may be necessary. I would expect your client to demonstrate what flexibility they can to enable meaningful observation and recording to be undertaken. Likewise if some locations can be shown to be so damaged by services or other modern works as to preclude meaningful results then the watching brief could be set aside in those places. Ultimately, it would of course be open to your client to lodge an appeal against a recording condition.

Original comments [still relevant]:

The above planning application has been noted by the Greater London Archaeological Advisory Service (GLAAS) as affecting a heritage asset of archaeological interest or lying in an area where such assets are expected based on information held in the Greater London Historic Environment Record and/or made available in connection with this application. The National Planning Policy Framework (Section 12) and the London Plan (2011 Policy 7.8) emphasise that the conservation of archaeological interest is a material consideration in the planning process. Paragraph 141 of the NPPF says that applicants should be required to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) and to make this evidence publicly available. Heathrow lies in an area of demonstrably high potential for prehistoric and Roman archaeology due to the presence of Neolithic ritual monuments, extensive Bronze Age field systems and settlements and later prehistoric and Roman settlement. Major excavations of regional and national significance have taken place in advance of the construction of Terminal 5. The applicant's assessment indicates that the proposed works lie in areas where further archaeological remains may be expected to survive. However, the scale of the works is relatively localised and the character of archaeological remains relatively well understood so it is possible to conclude that the development would not cause sufficient harm to justify refusal of planning permission provided that a condition is applied to require an investigation to be undertaken to advance understanding of their significance.

The archaeological interest should be conserved by attaching a condition as follows:

No development shall take place until the applicant (or their heirs and successors in title) has secured the implementation of a programme of archaeological investigation in accordance with a Written Scheme of Investigation which has been submitted by the applicant and approved in writing by the local planning authority. No development shall take place other than in accordance with the Written Scheme of Investigation.

Reason

Heritage assets of archaeological interest are expected to survive on the site. The planning authority wishes to secure the provision of appropriate archaeological investigation, including the publication of results, in accordance with Section 12 of the NPPF

Informative

The written scheme of investigation will need to be prepared and implemented by a suitably qualified archaeological practice in accordance with English Heritage Greater London Archaeology guidelines. It must be approved by the planning authority before any on-site development related activity occurs. I envisage that the archaeological fieldwork would comprise the following:

Excavation

Archaeological excavation is a structured investigation with defined research objectives which normally takes place as a condition of planning permission. It will involve the investigation and recording of an area of archaeological interest including the recovery of artefacts and environmental evidence. Once on-site works have been completed a 'post-excavation assessment' will be prepared followed by an appropriate level of further analysis, publication and archiving. Or in areas of lesser impact, a Watching Brief

An archaeological watching brief involves observation of ground works and investigation of features of archaeological interest which are revealed. A suitable working method with contingency arrangements for significant discoveries will need to be agreed. The outcome will be a report and archive.

Highways Agency:

No Objection

Transport for London:

No objection to the proposal

Environment Agency:

It is understood that the new noise barrier will be located in the same location as the existing. We are pleased to see in section 2.8 of the planning statement and 2.3 of the construction methodology report, the intention to construct the upper section of the proposed noise barrier with transparent materials. This will help with light availability and minimise the impacts of shading on the watercourse.

Precautions should be taken when working near a watercourse to ensure that building materials/waste does not fall into the Duke of Northumberland during construction.

BAA Safeguarding:

No objection raised.

Greater London Authority:

Strategic issues

The application raises strategic planning issues in respect of aviation, noise, air quality and transport. However, insufficient information has been provided to allow the proposals to be properly assessed and for a fully informed view to be taken on their acceptability.

Recommendation

That Hillingdon Council be advised that insufficient information has been provided to allow the Mayor to reach a fully informed view on the application's compliance with the London Plan and its acceptability, but that the possible remedies set out in paragraph 64 could address this deficiency. The application need only be referred back to the Mayor if the Council resolves to grant permission.

Context

On the 25 July 2013 the Mayor of London received documents from Hillingdon Council notifying him of a planning application of potential strategic importance to develop the above site for the above uses. Under the provisions of The Town & Country Planning (Mayor of London) Order 2008 the Mayor has until the 4 September 2013 to provide the Council with a statement setting out whether he considers that the application complies with the London Plan, and his reasons for taking that view. The Mayor may also provide other comments. This report sets out information for the Mayor's to use in deciding how he wishes to respond to Hillingdon Council

The application is referable under Category 3A1 (b) of the Schedule to the Order 2008: (Development which is likely to prejudice the residential use of land which exceeds 4 hectares and is used for residential use). This quantum has been verified by GIS analysis of the submitted maps of noise exposure increases against GLA land use data and shows that over 20 hectares of such land would be adversely affected by the proposals even by the applicant's 3dB significance threshold is used (as discussed below).

Once Hillingdon Council has resolved to determine the application, it must refer it back to the Mayor should it resolve to grant permission.

The environmental information for the purposes of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 has been taken into account in the consideration of this case.

The Mayor of London's statement on this case will be made available on the GLA website www.london.gov.uk.

In 2011, Hillingdon Council and the applicant were advised that GLA officers had a number of concerns in respect of the assessment methodology and detail used in the applicant's draft EIA documentation

The relevant issues and corresponding policies are as follows:

- Aviation London Plan; the Mayor's Transport Strategy;
- Ambient noise London Plan; the Mayor's Ambient Noise Strategy;
- Air quality London Plan; the Mayor's Air Quality Strategy;
- Transport London Plan; the Mayor's Transport Strategy.

For the purposes of Section 38(6) of the Planning and Compulsory Purchase Act 2004, the development plan in force for the area is the Hillingdon Local Plan: Part 1- Strategic Policies, November 2012, the extant saved policies of the London Borough of Hillingdon Unitary Development Plan (UDP) 1998, and the 2011 London Plan.

The following are also relevant material considerations:

- Aviation Policy Framework; (TSO, March 2013).
- Heathrow Operations - Ministerial Statement by Theresa Villiers MP; (Department for Transport, Sept 2010).
- Mayor of London's Response to the Government's Draft Aviation Policy Framework; (Oct 2012),
- Mayor of London's "2020 Vision: The Greatest City on Earth" (June 2013)
- Mayor of London's submissions to the Government's Aviation Commission (July 2013)
- Mayor of London's draft Control of dust and emissions from construction and demolition SPG; (Aug 2013)
- South East Airports Taskforce Report; (Department for Transport, July 2011)
- Early Minor Alteration to the London Plan
- The National Planning Policy Framework and Technical Guide to the National Planning Policy Framework

In October 2012, the Mayor advised Government that:

"In general, the Mayor welcomes moves to improve airport performance and capacity utilisation, but only on condition that they be achieved without adversely impacting local residents. In particular, given the disproportionate noise impact of Heathrow airport, the Mayor cannot accept any change that increases these impacts on Londoners, is deeply concerned by the potential negative consequences for local residents that would flow from the cessation of the Cranford Agreement (and) expects the data to be made freely available to ensure that the impacts on residents affected by this change could be fully understood."

Paragraphs 24-25, Mayor of London's Response to the Government's Draft Aviation Policy Framework, (Oct 2012).

The Governments Airport Commission

On the 7 September 2012 the Government announced the setting up of an Airports Commission (led by Sir Howard Davies) to examine the need for additional UK airport capacity and recommend to Government how this can be met in the short, medium and long term. The Commission is due to submit its short to medium term findings to the Government by the end of 2013. The Commission will then submit a final report including recommendations on long term options to the Government by summer 2015.

Air Traffic Movement cap

As part of the planning permission granted for Terminal 5 in 2001, an annual limit of 480,000 air traffic movements (total movements from arrivals and departures) was placed on Heathrow's operations. While this planning application does not seek to amend this cap, the proposed works could significantly alter how and when the 480,000 air traffic movements are scheduled.

Mixed Mode Operation

Mixed-mode operation refers to the permanent scheduling of planes taking off and landing from the same runway at the same time. Full mixed-mode could increase Heathrow's runway capacity by around 15% - to accommodate up to 110 movements per hour, but operating the airport in this manner would have serious adverse impacts on noise exposure with the tens of thousands of people currently worst affected by noise losing periods of respite.

Paragraph 6.28 of the London Plan confirms the Mayor's support for the Government's 2010 opposition to mixed-mode operations at Heathrow in order to mitigate noise effects on local communities. It should be noted that the airport already operates a form of mixed-mode operation, (in the early morning from 6.00 am) when dual use of the airport's runways for arrivals is permitted.

The recent "Operational Freedoms Trials" tested a number of mixed-mode operating procedures, but the CM and the DfT are yet to take a formal view on whether the trial was a success.

The physical works proposed by this planning application would allow the airport to adopt full mixed-mode on both easterly and westerly operations on both runways, (should current restrictions be removed), and could facilitate a greater degree of mixed-mode operation than is currently possible.

Aviation

London Plan policy 6.6 (Aviation) confirms the Mayor's view that adequate airport capacity serving a wide range of destinations is critical to the competitive position of London in a global economy, and that airport capacity serving the capital and wider south east of England must be sufficient to sustain London's competitive position.

The policy however also confirms:

- The Mayor's strong opposition to any further expansion at Heathrow involving an increase in the number of aircraft movements because of the adverse noise and air quality impacts already being experienced by residents and others in the vicinity of Heathrow and its environs, (6.68a).
- That the aviation industry should meet its full environmental and external costs ... and take full account of environmental impacts when making decisions on patterns of aircraft operation, (6.6C).
- That planning decisions should give a high priority to sustainability and take full account of environmental impacts (particularly noise and air quality), (6.6Da).

The Plan then goes on to confirm that the Mayor agrees with the Government that the noise problems and poor air quality at Heathrow have reached such levels that further increases in the number of air traffic movements there are untenable and that development proposals which affect airport operations (particularly those involving an increase in the number of air traffic movements) should be carefully scrutinised, and particular attention should be given to environmental impacts, (paragraph 6.28).

The London Plan therefore clearly recognises the importance that aviation plays in maintaining London's world city status, but also that the environmental impacts of changes in airport operations must be very carefully assessed in planning terms, particularly in relation to noise and air quality.

The submitted planning material does include a wide range of technical material that looks to identify and assess the environmental implications of the proposals, and suggests ways by which compensation could be offered and mitigation introduced. It also makes references to modern planes now being quieter. However, as set out below, the submitted technical material is considered insufficient in a number of areas, and is therefore currently

inadequate to allow the Mayor or his officers to fully assess the strategic implications of the proposals against relevant London Plan policies.

Although not explicit in the accompanying material, (nor assessed in terms of environmental impact), the proposed works could facilitate the introduction of 'mixed-mode' operations, albeit within the existing cap of 480,000 air traffic movements per annum and night time operating constraints. Mixed-mode would comprise a 'permanent scheduling' of de-alternated runway operations and would raise significant strategic concerns given the potentially serious and adverse noise impact on local communities — as set out in London Plan policy 6.6 (Aviation). The Mayor is opposed to mixed-mode operations as it would result in businesses and communities benefiting from fewer periods of respite.

Noise

The applicant has sought to identify the noise implications of its proposals within its submitted documentation. GLA officers however have a number of concerns in respect of the methodology and assumptions that have been used. These include the following.

Under current normal circumstances, when the airport operates on easterlies, the northern runway is used for landings and the southern runway for take-offs. As set out in the Transport for London's comments below, the applicant has only considered the noise impact of runway alternation and not the potentially worst case scenario its proposals could facilitate — the introduction of full mixed-mode operation. The impact of alternating easterly operations alone is expected to result in 1,770 households (within the 57dB LAeq,16hr) experiencing a significant worsening of exposure to noise of greater than a 3dB increase.

This comprises 70 households in the Longford area being exposed to additional ground noise at the western end of the northern runway (for which the proposed noise barrier is intended to mitigate), and 1,700 households in the Cranford area. In contrast, it is not expected that any households would benefit from a significant decrease (greater than a 3dB decrease) in noise exposure, although up to 60,000 people will have predictable periods of respite.

The submitted assessment uses a change of 3dB as a test of a significant effect however it is acknowledged that significant effects occur with changes of less than 3 dB. It should also be noted that paragraph 5.1.12 of the Planning Statement states that the London Borough of Hillingdon objected to the criteria of a 3dB change as the test of a significant effect and requested that a change of] dB should be used. Likewise the London Borough of Hounslow also requested that a 1dB change be used (paragraph 5.1.14).

Nevertheless the applicant has used a 3 dB change citing the Governments recent Aviation Policy Framework of March 2013. However, the reference to 3dB in this document occurs in relation to sound insulation grant schemes which are designed to mitigate the worst aspects of aircraft noise and does not establish or promote a general significance threshold. In addition, the APF states in paragraph 3.14 that although there are uncertainties, there is evidence that people's sensitivity to aircraft noise has increased in recent years. It should also be noted that a 3dB increase in noise represents a doubling of the number of aircraft noise events. Bearing this in mind it would seem both reasonable and precautionary to also assess significance at a lower change level than 3dB.

Paragraph 8.8 of the Planning Statement also states that some schools will experience an increase of "more than 5 dB" but that the consequential effects of this are uncertain. This is an important aspect of the proposals and needs fuller clarification and assessment.

Furthermore, Hillingdon Council has identified a range of deficiencies in the applicant's submitted technical material and asked the applicant to respond to its concerns. These include:

- The use of 2015 as the baseline year.
- The selection of particular metrics in the submitted Noise Assessment Methodology.
- The presentational scale of some of the submitted documentation and the need for GIS datasets.
- Definitions of certain operational terms.

GLA officers share many of the concerns raised by the Council and support the request which would allow officers from both planning authorities to better assess and fully understand the implications of the proposals.

The applicant has advised Hillingdon Council that it will respond to its request in "mid-September" and GLA officers would wish to review this information and engage positively with the applicant on these matters to seek to clarify and resolve all strategic concerns before the application is referred back to the Mayor at Stage 2. To assist this process, the applicant is also requested to provide land use category maps that clearly show the potential impacts of its proposals on existing residential areas, education and healthcare facilities, and areas of recreational open land such as parks and playing fields.

Air quality

Introduction

Heathrow airport is located within the London Borough of Hillingdon. The London Borough of Hounslow lies to the east and south-east of the airport, Spelthorne Borough Council to the south and south-west of the airport and Slough Borough Council to the west of the airport. The London Borough of Hillingdon declared an Air Quality Management Area for the annual mean nitrogen dioxide objective in 2001 that covered most of the southern half of the borough including Heathrow Airport. Monitoring data in 2010 showed that NO₂ concentrations were close to or above the objective at some locations in the borough including some locations close to Heathrow Airport.

The proposed development has potential implications on local air quality as a result of construction activities (including vehicle movements) and operational activities. An air quality assessment forms part of the application for planning permission for enabling works to facilitate the implementation of full runway alternation on easterly operations at Heathrow airport. If implemented, the assessment concludes that whilst there would be changes to the spatial distribution of pollutant emissions from aircraft on the ground and during the LTO cycle, there would be no material change in the overall total emissions.

Overall the assessment provides a comprehensive study of the impacts of the proposed changes at Heathrow on local air quality. However, further information as set out below is required to allow a full assessment of the air quality implications of the proposals in accordance with London Plan policy

Construction impacts

Little information is provided in the assessment report on construction impacts. The report states that "any additional vehicle movements on the local road network are expected to be

a very small percentage of total movements” and that “any increase in exhaust emissions from on-site plant and machinery would be very small and insignificant above the baseline”.

However, no data is provided to support this statement. In addition the report goes on to say that “dust emissions may occur during construction, although sensitive receptors are located at sufficient distance from site activities to not be affected by dust deposition or elevated levels of PM10.” Regard could have been given to the 2010 Institute of Air Quality Management guidance on the assessment of the impacts of construction on air quality, which provide a simple qualitative appraisal of the likely outcome of the construction phase. Regard should also now be given to the Mayor’s draft Control of dust and emissions from construction and demolition SPG (2013).

A Construction Environmental Management Plan will however be produced by the contractor prior to construction, which will detail best practice mitigation measures based on those contained in the GLA’s best practice guidance and this should be encouraged.

Operational Activities

The proposed changes to the airport operations will result in a redistribution of pollutant emissions within the airport as a result of the increase in take—off roll (and initial climb) emissions on runway 09L and decrease on runway 09R. This will result in a shift in the spatial distribution of annual aircraft NOx emissions, focusing them more towards the western end of runway 09L during easterly operation and less towards the western end of runway 09R. In turn this will increase the aircraft contribution to NOx and N02 concentrations in Longford and reduce it in Stanwell.

ADMS-Airport modelling has been used to quantify the change in concentrations around the airport of NOx, N02, PM10 and PM2.5 as a result of changes to the aircraft operations. A nine sq.km assessment area centred on the airport has been modelled as well as specific sensitive receptor locations. However, the submitted material raises a number of air quality concerns including:

- Section 7.7.10 refers to the emission sources that have been quantified in the assessment. It is noted that emissions arising from taxi — out and in and other operations required prior to LTO are not specifically stated. This should be clarified.
- Section 7.7.21 states that estimates of ground movement times-in-mode (for take-off roll, taxiing, hold and landing roll) are based on the 2008/09 study. It is questioned whether this is a reasonable assumption for aircraft movements in 2015 when passenger numbers are forecast to be different. In contrast to this, for Aircraft Support vehicles
- (Section 7.7.34) the activity data has been scaled from the 2008/9 inventory by the ratio of passenger numbers. It is unclear why a consistent approach has not been followed.
- A sensitivity analysis has been undertaken on the use of an alternative met year and how this impacts on predicted air pollutant concentrations. The results show that it can change the modelled N02 concentrations by up to 2ug/m3. This therefore needs to be taken into account in the conclusions of the results.
- For road transport, the study has utilised the emission factors contained in the Defra July 2012 EFT. A sensitivity study assuming no improvement in road transport emissions since 2006 has also been conducted but then ruled out on the grounds that it was too pessimistic as the monitored concentrations in 2012 were less than the modelled concentrations under this scenario in 2015, with the exception of London Hillingdon and Oxford Avenue. Whilst the 2012 EFT goes some way towards addressing the uncertainties in the road transport emission factors, there are still

uncertainties and therefore the results should be taken with some caution. Beyond 2015 though it is hoped that NO_x/N₂O emissions will reduce with the introduction and wider adoption of Euro 6/VI.

- Section 7.7.49 states that the 2008 version of the LAEI has been used for sources within the M25, which includes the latest policy on the Congestion Charge and the Low Emission Zone. Whilst this was the most up to date version at the time of publication of the Environmental Statement, it is worth noting that this has now been superseded by the 2010 LAEI, which was published in July 2013.
- The conclusion of the air quality assessment is that concentrations of N₂O are predicted to increase to the immediate north-west of the airport and decrease to the south-west, primarily owing to the increase in take-off roll emissions of NO_x on runway 09L and decrease on runway 09R. There are no predicted exceedences of the hourly mean objective and the maximum increase in annual mean N₂O concentrations is 1ug/m³. In 2015 at two residential receptors to the south of Longford located between Bath Road and the Western Perimeter Road. At these locations, the predicted concentrations increase from 39.0 and 38.8 to 40.5 and 40.3ug/m³ respectively, leading to new exceedences.

Overall there are seven residential receptors identified as newly exceeding the Air Quality objectives. This is referred to as being “small” and of “slight adverse impact” according to the EPUK criteria 3. The air quality changes have also been assessed against the London Councils Guidance⁴. Most of the receptors in Longford fall into APEC band A (62 out of 101) and 39 fall into APEC band B — which may or may not be sufficient on air quality grounds for refusal, however appropriate mitigation must be considered.

At locations outside the Longford area the maximum increase in N₂O concentrations was 0.2pg/m³ and to the south of the airport the modelling has shown improvements in annual mean concentrations of N₂O with one receptor being predicted to no longer exceed the objective under the project.

For all PM fractions, concentrations are predicted to be well below the objective levels with and without the proposed development going ahead. It would be useful to see a summary of the number of receptors at which concentrations are predicted to get worse and the number at which concentrations are predicted to improve divided into concentration change bands as the current report does not provide this. This would then allow a more succinct assessment as to the impact of the proposed operations to be obtained.

Mitigation

Section 7.5 provides information on the mitigation measures that are to be incorporated into the scheme. This solely covers controlling emissions during the construction phase as operational practices are covered in the Airport's Air Quality Action Plan. It is therefore recommended that consideration be given to additional mitigation measures to address this issue.

Air Quality neutral

As set out above, it is currently unclear as to the exact number of receptors at which air quality will improve and deteriorate and it is currently unclear whether the proposals would be air quality neutral.

Transport

The proposed development relates to land within the Heathrow Airport envelope; more specifically in and around the northern runway area. Whilst the proposals would constitute relatively minor physical works to the northern runway for which construction vehicle movements should be co-ordinated through a construction logistics plan to avoid peak hours and minimise highway and traffic impact to the highway network in the vicinity - along with the erection of a noise barrier, they will, more importantly, potentially result in significant changes to the pattern of air traffic. The applicant states that the proposals will permit greater flexibility linked to the practical implementation of the ending of the 'Cranford Agreement' and enable the airport to operate a full flight schedule while on easterly operations.

In terms of any impact on the wider transport and highway network, mixed-mode operations could result in the airport accommodating more flights in a given time period and thereby intensify the demand for all travel, including passengers, logistics and freight, and across all modes. As with noise and other environmental aspects, the potential impact on the transport network should be assessed in line with London Plan policies 6.3 and 6.6.

Once all such assessments have been submitted and considered it might be open to the Mayor to ask that the proposed works be only permitted if subject to strict conditions, for example retaining runway alternation whether the airport is operating on easterly or westerly preferences or requiring the airport to operate within strict and enforceable environmental and transport limits.

Legal considerations

Under the arrangements set out in Article 4 of the Town and Country Planning (Mayor of London) Order 2008 the Mayor is required to provide the local planning authority with a statement setting out whether he considers that the application complies with the London Plan, and his reasons for taking that view. The application need only be referred back to the Mayor if the Council resolves to grant permission in order that the Mayor may decide whether to allow the draft decision to proceed unchanged or direct the Council under Article 6 of the Order to refuse the application. There is no obligation at this present stage for the Mayor to indicate his intentions regarding a possible direction, and no such decision should be inferred from the Mayor's statement and comments.

Conclusion

London Plan policies on aviation, noise, air quality and transport are relevant to this application. As set out above, insufficient information has been provided to allow the proposals to be properly assessed by the Mayor and to allow him to reach a fully informed view on the application's compliance with the London Plan and hence its acceptability. This should be urgently addressed by the applicant and GLA officers given all necessary information and opportunities to fully assess and seek to resolve any strategic planning concerns the application raises before it is referred back to the Mayor at Stage 2

Heathrow Association for the Control of Aircraft Noise (HACAN):

We accept that it is government policy that the Cranford Agreement will end. Our concern is that this application is being made in isolation from possible future changes, such as the ending of westerly preference or the introduction of the operational freedoms trials on permanent basis. Because this application is being submitted separately, it is not possible to assess the cumulative impact of all the potential changes. More information is required on these other impacts before a decision can be made.

Heathrow Villages Conservation Area Advisory Panel:

I am writing on behalf of Heathrow Villages Conservation Area Advisory Panel. The proposed changes to easterly take-off from runway 9L will have a huge and very negative impact on Longford and those who live there. The noise barrier will be of little help and an additional major problem will be air quality as aircraft queue up to take off. Residents are experiencing these effects at present as aircraft take off from this runway from 10.30pm while the southern runway is being re-surfaced; the noise and kerosene smell is terrible. The scrapping of the Cranford Agreement, which has led to the submission of this application, will not just affect Cranford residents but those in Longford too - at the other end of the runway. We therefore hope that permission will not be granted.

6.2 INTERNAL CONSULTEES

Environmental Protection Unit - Noise Team (initial comments)

I refer to the above detailed application to undertake enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport including erection of a 5m high noise barrier at Longford.

I have considered section 6 of the Environmental Statement on noise prepared by AMEC and Rupert Taylor and I have number of concerns with regards to the assessment/methodology.

My comments/concerns are laid out below:

Noise metrics used for the assessment

This is something we have raised concerns about previously and continue to have concerns as it does not adequately reflect noise experienced by residents. This is reiterated in the Aviation Policy Framework (APF) in paragraph 3.19 which states “ *the Government recognises that people do not experience noise in an averaged manner and the value of the LAeq indicator does not necessarily reflect all aspects of the perception of aircraft noise*”.

The LAeq,16h used in the assessment averages noise from all westerly and easterly runway modes over a 92-day summer period and in our opinion does not adequately assess the noise impact that would be experienced by residents from the ending of the Cranford Agreement. It is our opinion, that a better assessment which would reflect the actual noise experienced would be to use LAeq,1hour and LAMax for both ground and air noise.

Significance criteria

Table 6.10 of the ES provides a summary of significance criteria for all sensitive receptors to be considered. The table assumes that for air noise, ground noise and combined noise effects are only significant where noise level changes are ≥ 3 dB. We do not agree with this as recent evidence suggest that significant effects occur with changes of less than 3dB. For example, a threshold of 1dB has been used before as a significant change in aviation noise level for airport developments (Bristol International airport is a point in case where, medium significance was attributed for LAeq,16 hour > 57 dB and a change of 1-3 dB). Additionally, the Noise Insulation Regulations 1975 (amended 1988) require highways authorities to carry out or make a grant for sound insulation works if ‘noise caused or expected to be caused by

traffic using or expected to use that highway makes an effective contribution to the relevant noise level of at least 1dB(A).

The APF in paragraph 3.39 states "where airport operators are considering developments which result in an increase in noise, they should review their compensation schemes to ensure that they offer appropriate compensation to those potentially affected. As a minimum, the Government would expect airport operators to offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3dB or more which leaves them exposed to levels of noise of 63dB LAeq, 16h or more"

The above is a minimum standard and it is entirely within Heathrow's remit to provide mitigation at a lower level. The London City Airport provides mitigation at 57dB, LAeq,16h. In fact, in table 6.10 under primary assessment, outdoor LAeq,16h ≥ 57 dB and change ≥ 3 dB is considered to be highly significant. Thus in table 6.22, 50 residential dwellings will experience a noise increase of between 2 and 3 dB where noise levels are greater than or equal to 57 dB LAeq,16h with full easterly runway alternation and is considered to have significant adverse effect but will not be provided with insulation.

Longford Noise Barrier

The construction of the Longford Wall is welcomed as this will ensure some protection is afforded to residents of Longford from ground noise.

However, on page 2 of the ES, the total length of the barrier is stated to be 593m long, whereas in the Jacobs document for the barrier, the length on the plan is stated to be 585m, thus there is a difference of 8m. If the barrier is not designed to the correct length, it could mean some residents may not get adequate protection and thus the effectiveness of the barrier would be compromised.

Paragraph 6.14.4, page 111 of the ES states the wall will provide an average attenuation of 3dB but the methodology for assessing the effect of the noise barrier has not been provided. Without such assessment details and calculations to support this we are not able to adequately assess the conclusion given in this section. As a minimum we would have expected a noise map showing the benefit of the barrier including the assumptions made in calculating the mitigation.

A lot of the ground noise that would be experienced by the residents of Longford would come from "start of roll" noise. Start of roll noise takes the form of a sudden, loud roaring noise, which lasts a significant duration because the aircraft is initially stationary. Start of roll noise also contains a large low frequency content and, it is our concern that the proposed noise barrier would not adequately attenuate the low frequency noise. No mention of low frequency noise has been made in the ES or whether it has been taken into account in designing the barrier. The low frequency content of start of roll noise also means its impact would not be adequately represented by the LAeq metrics used in the ES. We believe that as part of the assessment C weighting should also have been considered as an alternative.

In terms of noise induced vibration, paragraph 6.12.6 on page 110 of the ES states "*The findings indicate that significant noise induced vibration effects at properties with lightweight structures in Longford cannot be ruled out*". The para goes on to say "*effects will be assessed and if possible mitigated as part of the Airports' Mitigation Package*". However, no details have been provided on what form these mitigations will take, when would detailed assessment be undertaken, how many properties will be affected.

Reflective Alternation

Section 6.4.5, page 62 of the ES makes reference to reflective alternation. The suggestion is that communities closest to the runway ends will be able to “predict with much greater certainty the periods when they will be overflown or not”. There is no further information as to how this conclusion was reached and what assumptions were made. No detailed information is provided on how this would be different from the current runway alternation and whether the “reflective alternation” would follow similar alternation periods as the current runway alternation. How this would work in practice. Without such detailed information we are not able to fully assess the benefit/disbenefits of such alternation.

Secondary Assessment

Paragraph 6.7.25 of the ES makes reference to an alternative assessment for community annoyance in terms of Lden. The results are provided in Appendix G. Paragraph 3.19 of the APF states *“the Government recognises that people do not experience noise in an averaged manner and that the value of the LAeq indicator does not necessarily reflect all aspects of the perception of aircraft noise”*. The APF goes on to state *“ the Government encourages airport operators to use alternative measures which better reflect how air craft noise is experienced in different localities”*. The results of the alternative assessment shows (table G.7) that 4650 dwellings would experience adverse significant effects in terms of Lden 55dB compared to only 1700 dwellings using the airport’s preferred metrics of LAeq,16h. The APF suggests alternative assessment measures should *“inform the development of targeted noise mitigation measures”*. However, the ES does not provide details as to what would be done with the alternative assessment results. This appears to be a futile exercise as no mitigation is proposed for these properties.

Schools and other child care centres

There is a requirement to provide school buildings that meet prescribed standards for noise. More information is required to demonstrate:

- A 30 minute LAeq of 35dB is achieved for each effected school as per DFES standards;
- An assessment of the LAeq,30min and Lmax values for each effected school for the worst half hour period within the school day
- Details of the set of mitigation measures provided for all schools affected adversely by a <1dB affected or greater change.

Further information is also on the impact on nursery and other child care centres including Littlebrook Nursery Bath Road

Environmental Protection Unit - Air Quality Team

Achieving air quality compliance around Heathrow has been recognised as an issue for a number of years, as is reflected in the documents below:

The National Air Quality Strategy 2007 states:

“At Heathrow, the annual average EU limit for NO₂ is currently being exceeded in a number of places, mainly in the north and north east close to the airfield, and around major roads including the M4. Source concentrations are a mix of aircraft and other aviation emissions, and vehicles on the surrounding road network” (Paragraph 109 of Volume 1)”

The Air Transport White Paper 2003 states:

“There are mandatory EU limits for levels of these pollutants (NO₂ and PM₁₀) in the air irrespective of the source. These limits come into effect in 2005 for particulates and 2010 for NO₂. We are committed to meeting these standards, and it is clear that major new airport development could not proceed if there was evidence that this would likely results in breaches of the air quality limits”. (para 3.29)

The Air Transport White Paper Progress Report states:

“At Heathrow, reducing air pollution levels is vital before the airport can expand further” (page 5 para 1.8)

The Aviation Policy Framework states:

“Emissions from transport, including at airports, contribute to air pollution. EU legislation sets legally binding air quality limits for the protection of human health. The Government is committed to achieving full compliance with European air quality standards”. (Para 3.47)

The legislative context of air quality is described within the applicant's ES in regards to European and UK legislation although there is no explicit recognition of the potential legal implications of needing to abide by European legislation in regards to ensuring limit values are met and compliance maintained. The legal implications are discussed below.

As a member of the EU, the UK Government is required to achieve its obligations under European legislation. The EU limit values are legally binding EU parameters that must not be exceeded as described in Directive 2008/50/EC (“the Air Quality Directive”). For the annual mean nitrogen dioxide limit, the deadline for compliance was 2010. The legislation allows Member States to apply for an extension to this deadline for up to a maximum of five years, i.e. 2015. The condition of a successful application for this time extension is the submission of an air quality action plan to the European Commission setting out appropriate measures to meet the air quality limits within the extended compliance time limit.

Of relevance to this planning application is the current legal situation in regard to breaches of the air quality limit values for nitrogen dioxide within the Greater London Area, of which the Heathrow Area is a separately defined zone. This is identified in the “Air Quality Plan for the achievement of EU air quality limit values for nitrogen dioxide (NO₂) in Greater London Urban Area (UK0001)” submitted to the European Commission in 2011. This confirms that compliance with the EU limit value for annual mean nitrogen dioxide is not expected in the area until 2020-2025. The UK did not submit an accompanying action plan detailing how compliance will be achieved by 2015, the maximum allowed under the legislation.

Meeting air quality limits is recognised within the planning legislation, as demonstrated by: the need to:

“sustain compliance with and contribute towards EU Limit Values” (National Planning Policy Framework),

“the need to minimise exposure to existing poor air quality and aim for development proposals to be “air quality neutral and not lead to further deterioration”. (London Plan)

“development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.” (Local Plan Part 1, Policy EM8, LB Hillingdon)

The implementation of the current planning application, as it currently stands, which is without mitigation measures to address the issue, does not conform to Policy EM8 of the LB Hillingdon Local Plan Part 1, or the regional and national planning frameworks in regards to local air quality. Its implementation will cause deterioration in local air quality levels, it does not sustain compliance with EU limit values and there are no mitigation measures suggested to minimise the exposure of the nearby impacted communities.

The change in implementing full runway alternation during easterly operations, from an air quality perspective, is described as producing changes in the spatial distribution of emissions around the airport. Whilst it is accepted that the implementation of the Project does not increase the number of flights in and out of the airport it is the re-distribution in where the emissions are emitted which is the cause of the air quality concerns.

It should be noted that this is a change in operation which is also not directly in the control of the airport as it is also dependent on wind direction. A year with more easterly winds will produce the need for more flights departing from the northern runway, assuming a 50:50 runway alternation split.

This ending of the Cranford Agreement was last assessed in terms of air quality impacts as part of the Adding Capacity at Heathrow documentation which concluded that loss of the Cranford Agreement would:

“affect the distribution of NO₂ concentrations around the western end of the airport by up to 13% at some receptors and by up to 5% at the eastern end of the airport”. (para 3.141, Adding Capacity at Heathrow Consultation Document)

The applicant's ES states there will be no material change in the overall total emissions although Table 7.11 indicates an increase of 7.9 tonnes of NO_x with the Project in place, the increases arising from the ground level aircraft emissions portion including taxi-out, hold, take-off roll and landing roll.

For PM₁₀ the increase is 0.1 tonne with the Project in place, the increase coming from the ground level emissions associated with taxi-out.

The airport location is within the AQMA declared by Hillingdon for exceedences of the annual mean NO₂ limit value. The monitoring data for the surrounding air quality monitoring stations is detailed in the report and in general, confirms that, in regards to annual mean nitrogen dioxide levels close to the airport, the concentrations in residential areas to the west of the airport are lower than the air quality limits, increasing to above the EU limit value moving towards residential areas to the north east of the airport.

The air quality assessment has referred to the monitoring data around the airport up to and including 2012. A forecast, using an air quality model has been undertaken to project a baseline to 2015, chosen to represent the first full year of implementation of full runway alternation. The baseline for the operation of the airport has been based upon an east/west split of 28.3%/71.7% to correspond with the meteorological data from the emissions inventory year of 2008/09. As noted above, the east/west split is not within the airport operators control and will vary with wind direction from year to year.

Operational Phase

The main effect of relevance to LB Hillingdon is described as increasing the aircraft NO_x contribution in Longford to the north-west of the airport, this in turn increases the NO₂ concentrations in this residential area.

Impacts to the north east of the airport

The last modelling exercise in the public domain in regard to the operation of Heathrow airport with no Cranford Agreement in place was undertaken as part of the Adding Capacity at Heathrow consultation (Air Quality Studies for Heathrow, CERC for DfT, 2007). The air quality modelling supporting this suggested increases at receptor points to the north east as well as to the north west of the airport. The Project ES does not indicate any such impacts to the north east. Clarity was sought on this issue and the HAL Technical Note (19th September 2013) states that the difference is due to the use of a more detailed refined emissions inventory, as prepared for 2008/09, than that used originally for PSDH (original baseline year 2002). The refinement has led to an approximate decrease of 23% ground-based NOx emissions. This is accepted as a feasible explanation for this difference.

Residential impacts to the northwest

The Longford area currently experiences levels of air quality close to, and at receptors closer to the road network, above the EU limit value. The highest levels are concentrated in the area closest to the airport boundary and in receptors closest to the main road network. The impact of the Project increases the pollution levels across the Longford area by 0.4ug/m³ to 1.5ug/m³ dependent on the proximity to the airport boundary. The consequence of this impact is to cause exceedences of the air quality limit value in certain areas which were previously compliant, and, worsen the exceedences in areas currently over the limit value.

The main receptors impacted by the implementation of the operational change are those located closest to the airport boundary in the south-west of Longford. The Project ES states there will be new exceedences of the air quality limit value for annual mean nitrogen dioxide at seven residential locations rising to twelve new exceedences under worst case scenario in regard to road traffic emissions. To clarify, these are relevant receptors where compliance has been achieved prior to the proposed implementation of the Project. There is also a worsening of the pollution levels at receptors which are already exceeding the limit value.

From the data provided, the overall impact of the project is to bring thirty nine residential receptors within the classification of APEC B (London Councils Air Pollution Criteria), where although refusal on grounds of air quality may not necessarily be sought, appropriate mitigation measures must be considered.

Sensitivity tests

HAL were requested to provide the sensitivity test data as referred to in the Project ES in regard to the effects of using a different meteorological year and of using a worse-case roads emissions approach. The HAL Technical Note (19th September 2013) demonstrates that modelled concentrations are sensitive to both scenario changes.

Meteorological data test

When using 2002 weather data, the data indicates an increase in concentrations in the Longford area, as opposed to the baseline case used in the ES using the 08/09 weather data. This is not an insignificant issue, as at the receptor point closest to the airport this change results in an increase of 2.3ug/m³, as opposed to 1.5ug/m³. This test demonstrates the importance of wind direction in regard to spatial change in both the distribution of emissions and also the influence this has on the operational runway use ie how many departures will occur from the Northern runway in any given year due to the difference between east/west split, 28.3%/71.8% in 2008/09 and 31.0%/69.0% in 2002.

Worst case roads emission test

The impact of this test causes a greater number of both new exceedences and worsening of impacts at receptors already in exceedence, throughout the Longford study area. It increases the number of receptors across the whole area to a level requiring appropriate mitigation. The HAL report suggests the use of this worst case scenario as not realistic. This approach needs to be treated with caution. It should be noted that the Emission Factor Toolkit used in the ES (version 5.1.1) has now been updated to version 5. 2 and that the assertion in the ES that the impact of Euro V1 starts to become significant in the fleet from 2015 could be judged over-optimistic. For example, the LAQM Helpdesk Advice note on the Emissions Factor Toolkit, June 2012, indicates that the new emission factors are higher for vehicle types out to 2020 when considering lower speeds typical of many urban areas, and remain higher for cars and LGVs at higher speeds.

Mitigation

Environmental measures incorporated into the scheme are identified as mitigation measures during the construction phase. The air quality effects from this phase are considered small and could be contained by requiring compliance with a Construction Environmental Management Plan based upon the GLA best practice guidance for demolition and construction. This approach is supported if accompanied by a condition which seeks prior approval of the LPA..

Other potential options to mitigate changes in local air quality are identified as largely restricted to operational practices and reference made to the HAL Air Quality Action Plan. No further operational measures have been identified as part of the assessment in terms of addressing the air quality impacts. This issue had been previously flagged up by the Environment Agency (EA letter re scoping document, July 2011) who stated they expected to see the developments' impact fully addressed.

The approach in the ES to mitigation is inadequate.

The emissions of concern in regard to the air quality impacts associated with this operational change emanate from ground level aircraft emissions including taxi-out, hold, take-off roll and landing roll. The Heathrow Air Quality Strategy 2011-2020, referred to in the Project ES, identifies that emissions from aircraft are not directly in the control of the airport operator. Certification of aircraft engine emission standards is governed by International regulations, operational procedures and restrictions are governed by European and national legislation.

As the airport operator, HAL have introduced a NOx charge as part of its landing charges to encourage airlines to operate planes with lower emissions. As the HAL Air Quality Strategy acknowledges (page 15) with lifetimes of aircraft generally between 30 and 40 years, the introduction of cleaner aircraft is a long-term solution. This will not deliver compliance with the EU directive in any short timescale.

As demonstrated by the sensitivity test above, another compounding factor in relation to control of emissions from this particular source is the influence of meteorological data. This not only impacts on where emissions are physically dispersed, it also influences the number of departures that will occur on the northern runway in any given year

Significance evaluation

The redistribution of emissions around the airport which show beneficial changes in one community but adverse in another community (para 7.9.2, ES), is not considered relevant in terms of gauging air quality significance, when, as is the case here, the proposal actually

brings receptors from compliance into non-compliance and worsens the current levels already above the limit value.

Conclusions

The conclusion within the Project ES that the overall effect of the Project on local air quality is considered not significant (para 7.9.9) is not supported. The practical implementation of the Government policy to end the Cranford Agreement would lead to an operational change which would cause exceedences of the European Union limit value at receptors which were previously compliant and would worsen the concentrations in areas currently non-compliant ie above the EU limit value.

This conclusion is supported by evaluation of the two sensitivity tests. The results of these tests have demonstrated how issues, out of the control of the airport operator, such as changes in yearly meteorological data and the speed of penetration of cleaner vehicles on the fleet accessing surrounding road networks, can cause a further deterioration in the air quality in the residential areas in Longford.

The Air Quality Directive is clear that limit values should be “attained within a given period and not to be exceeded when attained”. (Article 2). There are no mitigation measures identified within the Project ES to specifically address the issue of the exceedences at the relevant receptors caused by the change in operation. There is no supporting evidence to show that the non-compliance period will be short lived and hence meet the Air Quality Directive definition of limit value as “to be attained within a given period and not to be exceeded once attained”.

Recommendation

This change in operational practice is not supported due to the resulting air quality impacts unless planning conditions are set which fully mitigate the impacts and protect the residential areas of Longford.

Should the application be approved, there should be a condition applied to define the operational use of the runway and not permit mixed mode operation or the ending of westerly preference.

Environmental Protection Unit – Air Quality Team (further comments)

Further to my previous comments I can confirm I have reviewed correspondence received from Heathrow Airport Ltd on 3rd December 2013 and have the following comments to make.

Section 1 Concerns on Air Quality

This clarifies the air quality concerns but omits the additional concern that no mitigation measures have been included to ensure that these exceedences are addressed and compliance met as soon as possible. This is what is required by the air quality legislation.

Section 2 Modelling and Inherent Uncertainty

It is agreed that modelling is inherently uncertain however the comments have been made on what has been presented by HAL in the ES.

It is agreed that variables as stated eg weather conditions, background concentrations, non-HAL related traffic, can all play a part in elevating concentrations hence my concern and the need for a precautionary approach.

No details are given in regard to the specific action plan measures HAL are concerned that, if applied at Longford, could adversely impact on residents in another location therefore I cannot offer any comments on this statement.

The second statement is a little confusing as this then offers to carry out actions to help reduce NOx emissions from airport operations impacting on this locality.

Three options have been suggested for mitigation, the emission savings have not been quantified. It is unclear how these will deliver the reduction needed to secure compliance as soon as possible, which is what the air quality legislation requires

Flood and Drainage Management Officer

The plan 10000-XX-GA-100-000191 Ver. 1.0 (site plan blue line) received 5 June 2013 shows that of the area proposed for further hard standing, a slightly larger area of hard standing will be broken up so that the proposed works will have not make flood risk worse as they will not increase the surface water runoff from the site. However this is not a sustainable option and future developments should be informed by a site wide strategy to manage water, as there is considerable flood risk caused by Heathrow which should be reduced by future development in accordance with the NPPF and London Plan as well as Hillingdon's Local Plan Part 1.

Trees & Landscaping Team:

LANDSCAPE CHARACTER / CONTEXT:

Heathrow Airport is situated on approximately 1,277 Ha of land in the south of the Borough and operates two parallel runways, to the north and south of the site. The airport has been operated in accordance with the Cranford Agreement, a ministerial undertaking given in 1952 to using the northern runway for departures in an easterly direction over Cranford.

The Cranford Agreement ended in January 2009 and the current application and Environmental Statement seek to establish a new modus operandi which involves utilising the northern runway for easterly take-offs.

The operational requirements are all 'airside' and have little direct effect on the landscape. These comments refer to the proposal to erect an acoustic barrier outside the main airfield, immediately to the south of Longford Village, to mitigate the noise of aircraft engine noise in the north-west corner of the airfield.

PROPOSAL:

The proposal is to carry out enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport including the creation of a new 'hold area' at the western end of the northern runway, the construction of new access and exit taxiways, and the construction of a 5 metre high acoustic noise barrier to the south of Longford Village.

Saved policies OL1-OL5 seek to protect the visual amenity of the Green Belt, expect comprehensive landscape improvements and prevent conspicuous development which might injure the visual amenity of the Green Belt by reason of siting, materials or design.

Saved policy BE38 seeks the retention and utilisation of topographical and landscape features of merit and the provision of new planting and landscaping wherever it is appropriate.

The National Planning Policy Framework advises that the essential characteristics of the Green Belt are its openness.

In this case there is no doubt that the loss of openness, however limited, will harm the essential character of the Green Belt. There remains a concern that Heathrow has not demonstrated the very special circumstances to justify the development within the Green Belt. Due to the alignment of the acoustic barrier and the adjacent land uses there is very limited scope for comprehensive planting proposals to mitigate the visual effect of the acoustic barrier. However, if the Council is minded to approve this development, officers have been working with Heathrow to ensure that the visual impact of the 5 metre high acoustic barrier will be reduced to a minimum. The lower 3 metres of the barrier will be constructed of timber, much of which will be located on a similar alignment to an existing 3 metre high timber boundary fence. The upper 2 metres of the barrier will be constructed of glass, or transparent sheeting supported by steel stanchions. Some lengths of the fence will be part-screened by existing planting to the north of the fence. Opportunities will be taken, wherever feasible, to plant climbing plants at the base of the fence and (where space permits) trees will be planted to reduce the visual impact of the structure and to reduce the risk of birds colliding with the glazed panels.

RECOMMENDATIONS:

No objection subject to the above observations and conditions COM9 (parts 1, 2, 5 and 6).

Environmental Impact Assessment & Sustainability Officer Initial Comments:

Proposal

Enabling works to allow implementation of full runway alternation during easterly operations at Heathrow Airport including the creation of a new 'hold area' at the western end of the northern runway, the construction of new access and exit taxiways, and the construction of a 5 metre high acoustic noise barrier to the south of Longford Village.

Summary

I object to the proposed development due to the inadequacies of the noise and air quality assessments and the manner in which these have been presented within the Environmental Statement (ES). I do not consider that the ES has accurately presented or described the significant environmental effects. As a consequence, the mitigation proposed is also insufficient.

Reason for Refusal

The Environmental Statement does not comply with the Environmental Impact Assessment Regulations. It fails to meet the requirements of Schedule 4 Part 1 of the Regulations in that it does not:

- Describe the likely significant effects from noise impacts.
- Provide a suitable cumulative assessment of the noise and air quality impacts on the population
- Set out the measures to prevent, reduce and where possible offset any significant adverse effects on the environment.

Background

The development would normally be carried out under Permitted Development rights. However, these rights are removed if the development would result in significant environmental effects and therefore triggering EIA. The development is considered to require EIA by virtue of the operational impacts of ending the Cranford Agreement. The physical construction works themselves will have limited environmental impacts, but the operational effects arising from these works were considered likely to have significant environmental effects with regards to Noise and Air Quality.

EIA requires an Environmental Statement (ES) to be produced to support the planning application and inform the decision. The ES is not a determining factor in the decision making; it simply helps support the final decision. Nonetheless, there are statutory requirements for what an ES should cover. These are set out in Schedule 4 of the EIA Regulations (2011). The requirements for the ES relevant to this objection are:

3. *A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.*

4. *A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects of the development, resulting from—*

- (a) the existence of the development;*
- (b) the use of natural resources;*
- (c) the emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant or appellant of the forecasting methods used to assess the effects on the environment.*

5. *A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.*

It is widely considered that a 'bad ES' is not necessarily grounds for refusal because the ES is not the determining factor in decision making. However, where an ES is considered to fundamentally misrepresent the impacts and effects of a development then this could support a reason for refusal.

In this instance, I do not consider the ES adequately describes the environmental effects, nor the measures envisaged to prevent, reduce or offset the significant adverse effects relating to Noise and Air Quality.

The detailed reasons for the objection are set out below. They are based on the standard approach to assessing significance i.e. [IMPACT x RECEPTOR = EFFECT].

Technical Observations - Noise Methodology

The ES predominantly bases significance on impacts measured to a 57dB Laeq16. Heathrow Airport Limited describes this metric as being an average dB of noise over a 16 hour time period (7am-11pm). The ES considers that 57dB is onset of significant noise annoyance. It is the use of this metric that is fundamentally wrong to determine significant effects. The applicant also argues that the use of this metric is appropriate because it is given support within the recently published Aviation Policy Framework which states:

3.17 We [DfT] will continue to treat the 57dB LAeq 16 hour contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance. However, this does not mean that all people within this contour will experience significant adverse effects from aircraft noise. Nor does it mean that no-one outside of this contour will consider themselves annoyed by aircraft noise.

3.18 The Airports Commission has also recognised that there is no firm consensus on the way to measure the noise impacts of aviation and has stated that this is an issue on which it will carry out further detailed work and public engagement. We will keep our policy under review in the light of any new emerging evidence.

However the Aviation Policy Framework (APF) contains a raft of caveats for the use of this metric. This undermines the use of the 57db LAeq16 as a sole determinant in assessing noise:

3.19 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 averaged manner and that the value of the LAeq 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 seek to explain how locations under flight paths are affected by aircraft 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.

Further question marks were raised over the use of the metric to determine noise effects through the recent consultation on the APF:

The Aviation Policy Framework confirms the existing high level policy objective on aviation noise, along with the current regulatory status of the noise designated airports. These positions were generally supported by the consultation responses. Responses were, however, polarised on the question of whether to retain the 57 dB LAeq,16h contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance, and whether to map noise to a lower level at the designated airports. Generally, responses from the aviation sector and business organisations supported the status quo whereas local authorities, environmental groups and the public supported a move to lower levels. (Para 23 Draft Aviation Policy Framework Consultation: Summary of Responses)

The Aviation Policy Framework confirms that we will maintain the existing policy on the onset of significant community annoyance and on mapping noise exposure at the designated airports. This will have the benefit of allowing noise exposure levels to be compared with historic trends at these airports. However, to facilitate improved monitoring, transparency and communication of the impact of aircraft noise, airports may wish to consider producing contours to a lower level or using other indicators as appropriate. (Para 24 Draft Aviation Policy Framework Consultation: Summary of Responses)

Nearly 60% of all respondents to the consultation disagreed with the retention of the metric. These respondents were made up of environment groups, local authorities, and local communities. Nearly 30% agreed with the retention. These were made up of airports, businesses and some airlines amongst others.

Importantly, the Institute of Acoustics' response to the consultation also questions the use of the metric:

The contour should be retained to monitor trends over time. However there are still many uncertainties over relating 57 dB LAeq, 16hour to the onset of significant annoyance (the relevance of the 92 day summer average, changes in sensitivities over time and population, the role of non-acoustic factors etc). Many living outside the 57 dB contour are annoyed that they are not considered in an area deemed 'significantly affected' and this only results in a more negative response.

It is clear even from the Aviation Policy Framework that the use of this metric alone is not sufficient to determine the impact of this application. The applicant has focussed on a small part of the APF and is ignoring the historic context of the metric or even its precision in determining effects. The metric dates back to the 1980s and was used in the determination of Terminal 5 at Heathrow and was the basis for setting air transport movements. However, the use of the metric was questioned even during the T5 inquiry in the late 1990s:

Even the Department recognised the deficiencies of the LAeq system. They also accepted that it is difficult to establish the true relationship between the noise of individual events and their number and that it would have been useful if further social surveys had been carried out. The survey on which the use of the LAeq 16hr is based was carried out in 1982 and the relationship between the LAeq and community annoyance was statistically weak even at that time. Since then the number of aircraft movements at Heathrow have increased willingness to tolerate noise may well have change. Whilst I have doubts as to the continued validity of the LAeq as the sole index of the noise climate, I accept that it is a useful indicator particularly for comparing the differences between the 4 terminal case and that with Terminal 5. (Para 34.4.43 Inspector's Report, T5 Inquiry)

As a result of this criticism the DfT made a commitment to revise the assessment methodology:

The Secretary of State has already announced his intention, independently of Terminal 5, to conduct a new study of aircraft noise and the perceptions of people subject to it. (Para 60, T5 decision, 20 November 2001)

The output of this was the publication of the 'Attitudes to Noise from Aviation Sources in England (ANASE)' study in 2007. Unfortunately, the use of this study became a victim of the determination of a third runway at Heathrow and was eventually shelved. As a consequence, there has never been a firm decision to replace the approach to assessing noise that was considered inadequate in 1985.

The 'shelving' of the ANASE study does not validate the use of the metric in the ES. It demonstrates that there is limited consensus on what the appropriate metric should be, but what is certain though is that there is firm consensus that the metric alone cannot determine noise effects. This has been set out in one of the Discussion Papers used within the recently assembled Airports Commission looking at aviation capacity and growth:

The Government's response to consultation on the APF decided against using a lower contour value to mark the approximate onset of significant community annoyance. But the APF noted that 'This does not preclude airports from producing results to a lower level or using other indicators to describe the noise impact of their operations, as appropriate' and went on to 'recommend that average noise contours should not be the only measure used when airports seek to explain how locations under flight paths are affected by aircraft noise [...] the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities.' (Para 3.49 Discussion Paper 5 – Aviation Commission July 2013)

There is now a wealth of knowledge on the effects of noise on people particularly related to health. In 1999 the World Health Organisation (WHO) published Guidelines for Community Noise which describes the onset of 'serious annoyance' as 55db Laeq 16hr. An updated WHO report (2011) on noise effects to health found that 'high levels of annoyance result in the loss of over 3,500 disability adjusted life-years (DALYs) each year by individuals living with noise levels above 55 dBA Lden'

A recent British Medical Journal paper concluded that research had found:

High levels of aircraft noise were associated with increased risks of stroke, coronary heart disease, and cardiovascular disease for both hospital admissions and mortality in areas near Heathrow airport in London.

The general consensus is that effects on the population from noise should not be determined through the use of an individual metric. It is recognised that the 57db Laeq 16hr metric is useful to determine historic levels and future noise trends but it should not be the sole determinant in understanding effects. Instead an assessment should use a variety of metrics including Lden, Laeq and Lmax to inform the true effects of noise.

Unfortunately the ES relies solely on the 57dB Laeq 16hr to determine the significance of effects. Whilst there is some supporting information presented in appendices using different metrics, these have not been used to influence the assessment of significance.

As a consequence, the submitted ES fails to adequately assess the significant effects on local communities.

Inadequacies of the Assessment Using the Chosen Metric

The ES remains flawed even if the chosen metric was deemed appropriate. The Government advises that significant levels of annoyance can begin at 57dB Laeq 16hr although this is heavily caveated and questioned as set out above. The ES states that significant environmental effects will occur at 3db higher than this baseline metric. In addition, the proposals offer noise mitigation measures to be triggered at noise levels 6dB higher than this.

It is accepted within the methodology that annoyance from noise impacts commences at 57Laeq 16hr. Over 250,000 people currently experience noise at this annoyance level. Table 6.26 of the ES shows that 17400 people will experience increased noise effects. This includes more than 10000 who will suffer annoyance for the first time.

The ES concludes that no one is exposed to significant benefits, i.e. a 3db decrease in noise levels. However, 4250 people will suffer significant adverse effects. These people will be

exposed to noise levels that will have significant impacts on health with increased risks of stroke, coronary heart disease, and cardiovascular disease.

The methodology acknowledges that mitigation will only be triggered for those suffering a 6dB increase. In other words mitigation will only benefit those who get an additional 3 dB increase above the level at which they are considered to have significant adverse effects.

All 17400 people will be exposed to adverse effects, including impacts on health, reduced living quality and increased risk of stroke, coronary heart disease, and cardiovascular disease but will receive no mitigation.

The EIA regulations require an ES to provide:

5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment. [Schedule 2, Part 1(5)]

The ES shows that considerable amounts of people are exposed to noise annoyance levels that can have adverse health impacts. These people have never benefited from mitigation. The development would result in further significant adverse effects to people that the ES does not propose any mitigation for. The very purpose of the EIA Regulations is to ensure that significant environmental effects are assessed and wherever possible offset.

Secondary Assessment

As stated above, the 57dB Laeq 16hr is not an appropriate metric to assess effects from noise. The applicant has acknowledged feedback in the ES scoping exercise and provided a secondary assessment using an alternative metric. This is contained within appendix G. This assessment uses the 55dB Lden metric which is considered by many to be the onset of noise disturbance. 55dB Lden equates broadly to 54dB Laeq 16hr. Table G10 shows that with the Ending of the Cranford Agreement 701,200 people will be exposed to the 55dB Lden contour. This includes nearly 20,000 exposed to annoyance levels for the first time, and a total of nearly 40,000 experiencing an increase in adverse effects.

The assessment shows no significant benefits of the scheme, but 12,600 people will experience significant adverse effects, i.e. an increase of 3dB. No mitigation is proposed despite the concluding that so many people are currently exposed to significant effects and more people will have further increases.

In general, the ES relies purely on a statistical exercise. It calculates the difference between those that benefit against those that disbenefit and concludes that the development is acceptable. However, this is focussing on the impact i.e. the change in numbers, not what that change does to the population. It also implies that the current impacts are at an acceptable level. The existing situation may have been accepted during the T5 decision making, but subsequent research and expertise reveals that this is not the case. It is therefore not appropriate to only assess the magnitude of change.

Thousands of people will be exposed to increased noise levels and in turn, significant health risks and impacts on standards of living. The effects to these people can only be offset by appropriate mitigation and not by a simple comparison with those who benefit. No mitigation has been presented, so as proposed the development would result in significant effects to the population.

The ES is therefore fundamentally flawed and the decision makers are not presented with a robust assessment of the measures to reduce the effects.

Failure to Assess the Cumulative Impacts in the ES

The cumulative assessments in the Environmental Statement and Health Impact Assessment do not adequately consider cumulative health impacts of those suffering from noise disturbance and adverse air quality.

The assessment submitted focuses on the cumulation of the 'slight increases in air quality' with those who suffer 'slight noise increases'. It does not make a cumulative assessment of those already exposed to poor air quality with the 17400 (40,000 55dB Lden) who will be exposed to noise increases, and certainly not the 4250 (12,600 55 dB Lden) who experience significant adverse effects.

It is acknowledged that there is significant health problems associated with poor air quality, and there are many areas within the noise contours exposed to levels exceeding minimum standards for health. In these areas, people will also be exposed to the health impacts from increased noise. The combined health effects from adverse noise and air quality impacts have not been adequately considered. It is necessary for the applicant to make a cumulative assessment of these impacts to satisfy Schedule 4, Part 1[4] of the EIA Regulations. Therefore, the current ES does not comply with the regulations.

The applicant has not adequately undertaken this cumulative assessment. The decision makers have not been provided with the appropriate information to understand how what the cumulative health impacts from air and noise will be on the population.

Air Quality in the Environmental Statement

The ES also concludes that areas within Longford will see new exceedences to the minimum EU standards for health with regards to Air Quality. It describes this exceedence as a slight adverse effect. However, it has been made clear to the applicant in the ES Scoping Report that the air quality methodology needs to be tailored to reflect the local receptors. In this case, air quality levels in areas around Heathrow are considered highly sensitive to change. This is not reflected in the ES. Accordingly, the increase from a below to above exceedence levels is deemed a low rise.

This fails to adequately present the sensitivity of the receptor. If an area goes from below to above exceedence levels, this is in breach of EU minimum standards for air quality and is therefore significant.

The ES therefore fails to adequately present the significance of effects and provides no mitigation to offset the impacts.

Ecology Comments

Longford Noise Barrier

A noise barrier is proposed near to the village of Longford to mitigate the impacts from ground noise. This noise barrier follows the length of an existing 3m barrier but will be increased in height to 5m.

The barrier will result in solid structure spanning a considerable length. At 5m high there would be a considerable impact on landscape. To mitigate for this problem, it has been agreed that the top two metres would be finished in a transparent material (details to be finalised). However, this generates problems for birds because they are unable to differentiate between the clear sky and transparent structure.

The transparent section is necessary to retain the sense of openness for residents and from public spaces. A 5m high barrier would otherwise be restrictive and have a negative impact on the landscape. To mitigate for the bird strike a number of finishes were discussed for the transparent section. These ranged from decals of birds of prey (recommended by RSPB to prevent bird strike to domestic windows) through to other forms of finishes that obscured the views of birds.

Following a site visit it was determined that the most suitable finish would be through the use of natural vegetation the details of which are to be determined through the following condition if the proposal were to be approved:

'Prior to commencement of development, a scheme for the treatment of the Longford Noise Barrier shall be submitted and approved in writing by the Local Planning Authority. The scheme shall demonstrate the use of new or existing natural vegetation to protect the transparent part of the noise barrier from bird strike. The development must proceed in accordance with the approved scheme.'

REASON

To ensure the development contributes to ecological enhancement in accordance with Policy EM7 (Local Plan) and Policy 7.28 of the London Plan.

Environmental Impact Assessment & Sustainability Officer: Additional Observations:

Summary

The following is an addendum to previous comments made. This addendum relates solely to cumulative impacts as a result of the publication of the Airports Commission: Interim Report [the Interim Report] dated 17 December 2013.

As a result of the Interim Report I now wish to add a further objection to the proposed development based on the cumulative impacts with other changes to the airport. The Environmental Impact Assessment does not adequately describe all the significant environmental effects as required by Schedule 4 Part 1 of the EIA Regulations. In particular, the Environmental Statement fails to assess the cumulative impacts of the proposed development with the operational changes at Heathrow Airport as recommended by the Airports Commission- Interim Report to the DfT.

Background

The Airports Commission was set up to recommend options for maintaining the UK's status as an international hub for aviation. Part of its remit was to produce an Interim Report by the end of 2013 that would report on:

Its assessment of the evidence on the nature, scale and timing of the steps needed to maintain the UK's global hub status; and,

Its recommendation(s) for immediate actions to improve the use of existing runway capacity in the next five years – consistent with credible long-term options.

Heathrow Airport Limited's Submission for Short Term Benefits

To assist the Commission in developing short term and immediate measures, Heathrow Airport Limited (HAL) presented a number of measures related to the operation of Heathrow. These included:

1. Redesigning the airspace local to Heathrow and the London Terminal Manoeuvring Area.

2. Introducing runway alternation when the airport is operating with aircraft landing or taking off heading east.
3. Introducing measures assessed during the recent Operational Freedoms trial.
4. Putting an end to the routine use of both runways for arrivals between 06.00 and 07.00.
5. Changing the policy of concentrating aircraft on only a few flight paths to one using a greater number of routes in a pattern that provides predictable periods of respite from aircraft flying overhead.
6. Reassessing the policy of 'first come, first served'.
7. Ending the policy of westerly preference.

[taken from HAL submission to the Airports Commission– Guidance Document 01, Proposals for making the best use of existing capacity in the short and medium terms, 17 May 2013]

These measures could all be implemented within the current air traffic movement cap of 480,000 and importantly would not require any new infrastructure or physical changes to the airport.

As a consequence none of these measures would require a planning application to be introduced and therefore would not trigger the need for a planning application.

Recommendations from the Commission

The Airports Commission- Interim Report accepted the HAL submission and in turn has included these operational changes within their recommendations to the Department for Transport.

Assessing Cumulative Impacts

The Environmental Statement for the works to enable the ending of the Cranford Agreement needs to consider

(4) A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, **cumulative**, short, medium and longterm, permanent and temporary, positive and negative effects of the development, resulting from—

- (a) the existence of the development;
- (b) the use of natural resources;
- (c) the emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant or appellant of the forecasting methods used to assess the effects on the environment.

(5) A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.

Determining cumulative assessments with other developments is complex. EU guidance on EIA suggests that cumulative impacts should be considered in the context of existing and future planned activities.

Further clarity about how to assess cumulative impacts was provided by the Infrastructure Planning Commission (IPC) following two significant Judicial Review decisions on the implementation of EIA. These decisions, Rochdale ex parte Milne (1999) and Rochdale ex parte Tew (2000) are collectively known as the Rochdale Envelope. The advice by the IPC issued in guidance called 'Using the Rochdale Envelope' in 2011 states:

In assessing cumulative impacts, other major development should be identified through consultation with the local planning authorities and other relevant authorities on the basis of those that are:

- Under construction
- Permitted application(s), but not yet implemented
- Submitted application(s) not yet determined
- Projects on the IPC's Programme of Projects
- Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited
- Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward

Need for Cumulative Assessment

On submission of the application HAL advised the Council that they did not consider there was a need to undertake a cumulative assessment of 'Ending the Cranford Agreement' with the other operational changes put forward to the Airports Commission. In part this was because there was considerable uncertainty about whether the proposed changes would be approved. I.e. it would need to be approved by the Airports Commission- Interim Report and then the DfT.

The Interim Report changes that. There is now only one final stage of approval to go through. In effect, this means the recommendations are in a similar position to a planning application submitted to a determining authority but not yet approved. In these circumstances, it would be expected that an EIA includes the 'submitted but not yet approved' application within the cumulative assessment.

Lack of Assessment for the Proposed Changes

Another concern is that there is a considerable amount of uncertainty regarding the assessment of these proposed changes prior to implementation. The original policy decision to end the Cranford Agreement was based on a minimal assessment. However, the need for physical works to the runway was always known to trigger a planning application and subsequent EIA. The initial high level assessment would then be supported by a much more detailed local level assessment.

The other proposed operational changes do not require such infrastructure changes. Accordingly, there would be no secondary detailed level of assessment. This heightens the concern of the Council that if this proposed application were approved, there could be considerable unassessed cumulative impacts with a range of other measures.

Communication with DfT

The Council wrote to Rupesh Mehta of the Department for Transport on 29 October 2013 seeking confirmation of the environmental appraisal framework for recommendations emerging from the Airports Commission's Interim Report. The Council received a reply on 29 November 2013 which contained no information on the appraisal framework. The DfT would not outline even broad mechanisms for assessing the environmental effects of the Airports Commission recommendations.

Conclusion

The Airports Commission has now made final Interim Recommendations to the DfT for changes to operations at Heathrow. As a consequence, it is reasonable to expect the

proposed development to come forward alongside the recommendations of the Airports Commission. The Council is concerned that some of these operations alone would have significant environmental effects, i.e. more night flights and ending westerly preferences.

The Council considers that there would be considerable combined effects between the proposed development and the other operational changes. Furthermore, the Council is concerned that there is no adequate assessment framework for ensuring the impacts on residents are properly considered.

I therefore object to the proposed development based on the lack of a cumulative assessment of the cumulative effects of the proposed development.

If it was deemed that a cumulative assessment was not appropriate at this stage or there are changes to the Airports Commission- Interim Report recommendations, then any subsequent approval of the proposed development should be conditioned to ensure that no further operational changes can occur at the airport.

Highways

Neither the alterations to the taxiways or the proposed noise barrier would have any physical impacts on public highways, roads or pedestrian ways. The operational impacts would not increase the capacity of the airport and it is not considered that the proposed operational changes would impact on the number of vehicle trips associated with the operation of the airport or have any associated impacts on the highway network. Therefore I have no objection.

Director of Public Health:

It is interesting to note in section 6.2.8 of the report that in response to the issue/query "...Whether ending of the Cranford Agreement and thus a more efficient operation of the airport would mean an increase in flights." the response was that it would not. It may not represent an overall increase in flights (ie. number of aircraft using Heathrow), but it would result in an increase in flights over Cranford

There is no disputing the fact that the introduction of regular departures from the Northern Runway in an easterly direction over Cranford will result in an increase in the number of easterly departures over Cranford.

Easterly departures from the Northern Runway can only happen when the airport is on an 'easterly operations' when the wind is blowing from the east. This typically occurs for around 29% of the year. As such residents of Cranford can expect, for almost a third of the year, to experience aircraft departures at night - which they currently do not experience.

No mention is made in the report of whether the wind is expected to blow from the east predominantly on a seasonal basis (ie. autumn, winter, spring and summer). This is an important omission as if the departures were to increase over Cranford during the summer months, residents would be more likely to have their windows open and therefore experience probable noise related health impacts.

They have based their health assessment on a 2002 EU position paper - ignoring the fact that in the intervening period there has been a myriad of reports about aviation and noise - concluding with the most recent British Medical Journal article.

The section of the applicant's report that deals with the methodology used for the Health Impact Assessment (HIA) and EIA which considers the potential health effects of 'aircraft and ground noise' makes no mention of noise events (ie. noise louder than 35 decibels) such as aircraft travelling overhead and their impact on an individual's blood pressure (Note: People with high blood pressure -Hypertension, have an increased risk of developing heart disease, stroke, kidney disease and dementia).

This is clearly identified in as a health impact by Jarup et.al in the HYENA Study (Hypertension and Exposure to Noise near Airports', Environmental Health Perspectives, March 2008; 116(3): 329-333) of night time noise from aircraft or traffic. Their research revealed that volunteers in their study blood pressure (BP) increased noticeably after they experienced a noise event - even if it did not wake them.

The applicant has been 'selective' in the way in which they appear to have sought to gather evidence to inform their HIA.

The focus of the HIA and EIA was the relationship between noise and health for (a) annoyance, (b) sleep disturbance and (c) cognitive performance. This is not adequate in that sleep disturbance does not represent a sufficient indicator for health impact as health impacts relating to elevated BP can still be experienced even whilst the individual is sleeping. In summary, the submissions would tend to underestimate health impacts.

7. MAIN PLANNING ISSUES

7.1 THE PRINCIPLE OF THE DEVELOPMENT

Policy A4 of the Hillingdon Local Plan Part 2 states:

'A4 New development directly-related to Heathrow airport should normally be within its boundary and will not normally be permitted outside the airport. Development not directly-related to the operation of the airport will not be permitted within its boundary. For the purposes of this policy, directly-related development Includes passenger and cargo terminals, maintenance facilities, oil storage depots, administrative offices, warehousing, storage and distribution facilities, car parking and catering facilities.'

The development within the airport boundary is directly related to the operation of Heathrow Airport, and there would be no objection to that work in terms of policy A4.

Policy A1 of the Hillingdon Local Plan Part 2 states:

'A1 - The local planning authority will oppose any proposals for development which extend Heathrow airport on land to the north of Bath road or otherwise increase the airport runway capacity, which result in significant harm to the local environment and, subject to the limitations of circulars 11/95 and 1/97, fail to include sufficient measures to mitigate or redress the effect of the airport on the local environment.'

The above policy is clear that the Council will oppose proposals for development which would increase the airport runway capacity, and result in significant harm to the local environment, and fail to include sufficient measures to mitigate or redress the effect of the airport on the local environment. As is discussed in the following sections of this report, there are concerns with regard to environmental impacts and these are not considered to be appropriately mitigated, and as such the scheme is considered contrary to policy A1.

7.2 Noise

7.2.1 Noise and Policy Context

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. It is designed to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. The NPPF sought to consolidate all policy statements, circulars and guidance documents into a single, simpler framework and replaces the planning guidance documents, such as PPG 24, Planning and Noise (1994), which is cancelled by the NPPF.

Paragraph 109 of the NPPF states that:

'The planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.'

Paragraph 123 of the NPPF concentrates on noise in more detail and states:

'Planning policies and decisions should aim to:

- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;
- Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established;
- And identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.'

The above policy refers to "significant adverse impacts" and "other adverse impacts" which are not defined numerically in the case of aviation noise although reference is made to further research being underway in this regard.

The Noise Policy Statement for England (NPSE) supplements the NPPF and provides the framework for noise management decisions to ensure noise levels do not place an unacceptable burden on society.

The overarching policy objective as set out at paragraph 1.6 is to 'Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.'

Paragraph 1.7 provides further detail stating:

'Noise Policy Aims - Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

a) Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development;

b) Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development; and

c) Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development. '

It is noted that a key objective of the NPSE is to contribute to the improvement of health and quality of life, however this could reasonably be paraphrased as an objective of reducing noise which might have detrimental impacts on health or quality of life. It is therefore considered that the overarching objective of the NPSE is to seek improvements above the existing situation which is consistent with the objectives set out in the NPPF.

The Aviation Policy Framework (APF) was published in March 2013 by the Department for Transport (DfT). The APF replaces the 2003 Future of Air Transport White Paper in conjunction with relevant policies. It provides the baseline for the Airports Commission to take into account on important issues such as aircraft noise and climate change. It will also, alongside other policies, inform any decisions which the Government may take in response to recommendations made by the Airports Commission which is due to issue its interim findings in December 2013 and its final report and recommendations in 2015.

The APF defines the Government's objectives and policies on the impacts of aviation in the UK and so sets out the parameters within which the Airports Commission will work.

On managing aviation's environmental impacts, and specifically noise, paragraph 18 indicates that ' Our overall objective on noise is to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.

Of particular relevance to this application is the specific commentary in relation to the ending of the Cranford Agreement which is set out at paragraph 1.63 of the APF, this 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). This decision needs to be implemented by Heathrow Airport Ltd and a planning application will shortly be submitted for the necessary changes to airport infrastructure. Following implementation, noise will be distributed more fairly around the airport, extending the benefits of runway alternation to communities under the flight paths during periods of easterly winds, and delivering operational benefits by letting the airport operate consistently whether there are easterly or westerly winds.

It should, however be noted that the APF is in effect a government policy document and, unlike other legislation such as the Crossrail Act 2008, does not have the effect of granting planning permission for the development associated with the ending of the Cranford

Agreement. Paragraph 1.63 of the APF is quite clear that a planning application is required and it is therefore apparent that full and proper assessment of the planning impacts of the application must be carried out as part of this process having regard to all relevant legislation and policies including the Town and Country Planning Act, The Environmental Impact Regulations, national planning policy and the adopted development plan.

The government's policy decision to end the Cranford Agreement cannot be taken in any way to predetermine the outcome of this planning application which must be considered on its individual merit having regard to the information before the Local Planning Authority. Indeed, much of the information required to assess these impacts has first been produced as part of the ES accompanying this planning application (or, as referenced in this report, still has not been produced) the policy direction set out in the APF therefore could not have had regard to this information which is both significant and material.

Issues relating to Noise and other local environmental impacts are dealt within in section 3 of the document and key paragraphs are set out below.

Paragraph 3.12 states "The Government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction with industry.

Paragraph 3.13 states 'This is consistent with the Government's Noise Policy, as set out in the Noise Policy Statement for England (NPSE) which aims to avoid significant adverse impacts on health and quality of life.'

Paragraph 3.14 states 'Although there is some evidence that people's sensitivity to aircraft noise appears to have increased in recent years, there are still large uncertainties around the precise change in relationship between annoyance and the exposure to aircraft noise. There is evidence that there are people who consider themselves annoyed by aircraft noise who live some distance from an airport in locations where aircraft are at relatively high altitudes. Conversely, some people living closer to an airport seem to be tolerant of such noise.

Paragraph 3.15 states 'To provide historic continuity, the Government will continue to ensure that noise exposure maps are produced for the noise-designated airports on an annual basis providing results down to a level of 57dB LAeq 16 hour. To improve monitoring of the specific impact of night noise, we will also ensure that separate night noise contours for the eight-hour night period (11pm–7am) are produced for the designated airports.'

Paragraph 3.16 states 'This does not preclude airports from producing results to a lower level or using other indicators to describe the noise impact of their operations, as appropriate (see paragraph 3.19 below). Some airports already map noise exposure to lower levels every five years under European legislation and we encourage those that routinely produce such contours on a voluntary basis to continue to do so, as a means of facilitating improved monitoring, transparency and communication of the impact of aircraft noise. Other airports which have significant night operations may also wish to produce separate night noise contours on a regular basis.'

Paragraph 3.17 states 'We will continue to treat the 57dB LAeq 16 hour contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance. However, this does not mean that all people within this contour will experience significant adverse effects from aircraft noise. Nor does it mean that no-one outside of this contour will consider themselves annoyed by aircraft noise.

Paragraph 3.18 states 'The Airports Commission has also recognised that there is no firm consensus on the way to measure the noise impacts of aviation and has stated that this is an issue on which it will carry out further detailed work and public engagement. We will keep our policy under review in the light of any new emerging evidence. '

Paragraph 3.19 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 averaged manner and that the value of the LAeq 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 seek to explain how locations under flight paths are affected by aircraft 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.'

The APF also sets out guidance on the need for noise insulation and compensation arising from aviation and this is set out at paragraphs 3.36 - 3.41. The relevant extracts are provided below.

Paragraph 3.36 states 'The Government continues to expect airport operators to offer households exposed to levels of noise of 69 dB LAeq,16h or more, assistance with the costs of moving.'

Paragraph 3.37 states 'The Government also expects airport operators to offer acoustic insulation to noise-sensitive buildings, such as schools and hospitals, exposed to levels of noise of 63 dB LAeq,16h or more. Where acoustic insulation cannot provide an appropriate or cost-effective solution, alternative mitigation measures should be offered.'

Paragraph 3.38 states 'If no such schemes already exist, airport operators should consider financial assistance towards acoustic insulation for households. Where compensation schemes have been in place for many years and there are few properties still eligible for compensation, airport operators should review their schemes to ensure they remain reasonable and proportionate.'

Paragraph 3.39 states 'Where airport operators are considering developments which result in an increase in noise, they should review their compensation schemes to ensure that they offer appropriate compensation to those potentially affected. As a minimum, the Government would expect airport operators to offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3dB or more which leaves them exposed to levels of noise of 63 dB LAeq,16h or more. '

Paragraph 3.40 states 'Any potential proposals for new nationally significant airport development projects following any Government decision on future recommendation(s) from the Airports Commission would need to consider tailored compensation schemes where appropriate, which would be subject to separate consultation.'

Paragraph 3.41 states 'Airports may wish to use alternative criteria or have additional schemes based on night noise where night flights are an issue. Airport consultative

committees should be involved in reviewing schemes and invited to give views on the criteria to be used. '

When the APF is read as a complete document it is quite clear that the 16 hour LAeq is not on its own an appropriate measure of the impacts of aircraft noise, and people exposed to the noise levels set out within this recommendation could experience significant adverse effects. The APF is also quite clear that alternative criteria should be considered by airport operators in developing noise mitigation schemes and that schemes should be updated to when considering development which would increase noise. It should also be noted the APF policy document only sets out **minimum** national guidelines for mitigation schemes; planning applications for developments have to undertake a local assessment of impacts having regard to the full development plan. The fact that national minimum standards are set out does not mean these are applicable or appropriate to all aviation developments in all areas and this should be determined and assessed at a local level.

The London Plan (July 2011) sets out the strategic planning policy for the region, it is an adopted part of the statutory development plan and is a significant material consideration in the determination of this application. The plan addresses decision making on matters of aviation and noise at policies 6.6 and 7.15 and relevant extracts of these policies are provided below.

Policy 6.6, Part B states:

'The Mayor:

- a) Strongly opposes any further expansion at Heathrow involving an increase in the number of aircraft movements there, due to the adverse noise and air quality impacts already being experienced by residents and others in the vicinity of Heathrow and its environs*
- b) Supports improvements of the facilities for passengers at Heathrow and other London airports in ways other than increasing the number of aircraft movements, particularly to optimise efficiency and sustainability, enhance the user experience, and to ensure the availability of viable and attractive public transport options to access them. '*

Policy 6.6 part C states:

'The aviation industry should meet its full environmental and external costs. Airport operators should increase the share of access journeys by passengers and staff made by sustainable means, minimize the impacts of airport servicing and onward freight transport, and take full account of environmental impacts when making decisions on patterns of aircraft operation.'

Policy 6.6 part D states:

'Development proposals affecting airport operations or patterns of air traffic (particularly those involving increases in the number of aircraft movements) should:

- a) Give a high priority to sustainability and take full account of environmental impacts (particularly noise and air quality)*
- b) Promote access to airports by travellers and staff by sustainable means, particularly by public transport.'*

Policy 7.15 relates to reducing noise and enhancing soundscapes and states:

'A *The transport, spatial and design policies of this plan will be implemented in order to reduce noise and support the objectives of the Mayor's Ambient Noise Strategy.*

Planning decisions

B *Development proposals should seek to reduce noise by:*

- (a) *minimising the existing and potential adverse impacts of noise on, from, within, or in the vicinity of, development proposals*
- (b) *separating new noise sensitive development from major noise sources wherever practicable through the use of distance, screening, or internal layout in preference to sole reliance on sound insulation*
- (c) *promoting new technologies and improved practices to reduce noise at source.'*

It is important to note that the requirement of adopted regional planning policy is to reduce both existing and potential adverse noise impacts from, within or in the vicinity of development proposals. Ergo to comply with this policy a noise generating development proposal must reduce noise. Any development proposal where mitigation measures would maintain the status quo or worsen adverse noise impacts would be contrary to this policy requirement.

The Hillingdon Local Plan Part 1 - Strategic Policies forms part of the adopted development plan and as such is an important material consideration. The plan includes both strategic objectives and policies. Decisions on planning applications are expected to contribute towards and be compliant with both.

There are two strategic objectives relevant to the noise aspects of this development, which are set out at SO10 and SO23. The relevant objectives are provided below.

Strategic Objective SO10 is to 'Improve and protect air and water quality, reduce adverse impacts from noise including the safeguarding of quiet areas and reduce the impacts of contaminated land.'

Strategic Objective SO23 is to: Develop and implement a strategy for the Heathrow Opportunity Area, in order to ensure that local people benefit from economic and employment growth and social and environmental improvements including reductions in noise and poor air quality.

The Local Plan also sets out two policies relevant to consideration of noise within this application at EM8 and E3. Relevant extracts are provided below.

Policy EM8 - Noise states 'The Council will investigate Hillingdon's target areas identified in the Defra Noise Action Plans, promote the maximum possible reduction in noise levels and will minimise the number of people potentially affected. The Council will seek to identify and protect Quiet Areas in accordance with government policy on sustainable development and other Local Plan policies. The Council will seek to ensure that noise sensitive development and noise generating development are only permitted if noise impacts can be adequately controlled and mitigated.'

It is indicated that the Council will implement policy EM8 by, among other things, 'Setting high standards for reducing land, water, air and noise pollution and resisting amenity and environmental impacts that affect how we enjoy the environment in which we live and work...'

Policy E3: Strategy for Heathrow Opportunity Area states 'The Council will prepare a Local Development Document (LDD) for the Heathrow area to achieve the future growth set out in Table 5.3, in consultation with the GLA and London Borough of Hounslow. This LDD will help manage development and protect land within the Heathrow Airport boundaries for airport-related activities. It will seek to ensure that local people benefit from sustainable economic growth located both within the Airport boundaries and in the Perimeter areas. The LDD will also set requirements for climate change mitigation and adaptation through a low carbon emission strategy and measures to improve local air quality.'

The primary objectives of these objectives and policies could be summarised as to achieve the maximum possible reduction in noise levels and minimise the number of people potentially affected.

The Hillingdon Local Plan Part 2 sets out policies relevant to noise at Policies OE1 and OE3, relevant extracts from the policies are provided below.

Policy OE1 indicates 'Planning permission will not normally be granted for uses and associated structures which are, or are likely to become, detrimental to the character or amenities of surrounding properties or the area generally, because of: ...

(iv) Noise and vibration or the emission of dust, smell or other pollutants...'

Policy OE3 states '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.'

Supplementary Planning Documents and Guidance

Further detailed guidance in respect of noise is contained within the London Borough of Hillingdon's adopted Noise SPD.

In addition the above policies and legislation it should also be noted that there are various legislative and planning requirements for the achievement of certain noise standards within new developments, there are also strategic planning policies which seek to ensure the delivery of certain types of development, such as housing, to meet the needs of the communities and general population.

The proposed development has the potential to increase noise levels across a significant area. This could have significant impacts on other strategic planning issues for example by reducing the number of sites suitable for the delivery of key development types or significantly increasing the build cost of new developments in the affected areas.

As the area of impact spans numerous administrative boundaries with differing policies it would be difficult to quantify this impact, however the potential impact of noise arising from this development on the delivery of other strategic objectives is a material consideration which needs to be taken into account in considering the impacts of this development.

7.2.2 Noise - How it is measured and generally assessed:

The assessment of noise is a technical exercise and this report has been informed by the views of professional officers who specialise in this area. In reporting these matters it will be necessary to make reference to a significant number of different figures and measurements. Accordingly, this section of the report will provide some basic background information into how noise is measured and assessed so as to inform consideration of this matter.

Noise is defined as unwanted sound, a more precise definition might be: noise is an audible sound that causes disturbance, impairment or health damage.

The ratio between the quietest audible sound and the loudest tolerable sound is a million to one in terms of the change in sound pressure. The scale used to express the sound pressure level is the decibel (dB) scale. Most sound pressure levels encountered lie in the range 0 to 140 dB. An important characteristic of human hearing is its relative insensitivity to low frequency and very high frequency sound. A system of weighting curves for sound level meters, denoted A, B and C was developed to take account of this. For environmental and occupational purposes noise is almost exclusively measured and assessed using indices based on the dB scale. Noise levels in dB, like the basic decibel scale, measure proportions so that a 10 dB increase is approximately a doubling of loudness.

The basic dB scale can only measure the instantaneous level of sound, and where the level of sound fluctuates up and down, as it normally does in the environment, the dB level also fluctuates. When it is necessary to measure a fluctuating noise environment by means of single number, an index known as equivalent continuous sound level, or LAeq, is employed (or Leq).

Lden is the 24-hr Leq calculated for an annual period, but with a 5 dB weighting for evening and a 10 dB weighting for night. European Directive 2002/49/EC requires EU Member States to produce noise maps using the Lden noise metric.

For the purposes of this application the source of noise can be grouped into categories namely air sourced noise, ground noise and construction sourced noise:

Air noise is defined as all noise caused by departing and arriving aircraft between start-of-roll (SOR) and completion of the landing run, including the use of reverse thrust where relevant. Ground noise is defined as all noise emitted from airside sources that contribute materially to noise levels heard outside the airport, including aircraft up to start-of-roll and after completion of the ground run on landing, i.e. including taxiing to the runway, queuing and holding prior to the SOR, and taxiing from the runway via taxiways to their stand locations. Construction noise is defined as noise from construction activities occurring at the airport

7.2.3 Noise - The Applicant's Assessment of Noise Impacts

The applicant's assessment of noise impacts are contained within Chapter 6 of the submitted ES. The assessment can effectively be divided into consideration of 4 matters, these being the impact of noise on residential properties, healthcare facilities, community facilities & places of worship, and schools. The applicant's conclusions in each regard are discussed in turn below.

Residential Properties

The applicant has defined measurements for assessing the impact of noise on residential properties. These are described in the application as the Primary Assessment Daytime

(Community Annoyance), Secondary Assessment Daytime (Community Annoyance), and Night-time (Sleep Disturbance). These are discussed in turn below.

Primary Assessment Daytime (Community Impact)

The applicants main focus in assessing residential impact is on the LAeq 16 hour index, the Local Authorities view on the appropriateness of this measure are discussed elsewhere in the report, however the applicants conclusions in respect of this measure can be summarised in a number of points set out below:

- The scheme would have a significant adverse affect on 6 properties in Longford village during the night time periods at the construction phase of the acoustic barrier.
- 70 residential dwellings would be subject to adverse ground noise impact of at least 3dB LAeq 16 hour and a sum exposure of more than 57dB LAeq 16 hour and is categorised as significant by applicant. These dwellings would not be entitled to sound insulation mitigation measures or home relocation packages.
- There would be a small decrease in ground noise of up to 2dB LAeq 16 hour for residents in Stanwell and Stanwell Moor. No figure is placed on the number of dwellings/residents that would benefit in these two villages.
- That noise around the airport would be geographically redistributed with decreases on Windsor, Datchet, Colnbrook and Poyle with increases in Cranford, Old Windsor and Stanwell Moor.
- That the number people in their homes exposed to 57dB LAeq 16 hour air noise would reduce by 10,500 from the ending of the Cranford Agreement.
- That 2,350 more people would be exposed to 60dB LAeq 16 hour air noise traffic contour.
- That 5,050 more people would be exposed to 63dB LAeq 16 hour air noise traffic contour.
- That 1,000 more people would be exposed to 66dB LAeq 16 hour air noise traffic contour.
- That 50 less people would be exposed to 69dB LAeq 16 hour air noise traffic contour.
- That 200 more people would be exposed to 72 dB LAeq 16 hour air noise traffic contour.

The measure of significance which has been used by the applicant for determining significant effects is of an increase of greater than 3dB at noise contour greater or equal to 57 dB.

Taking data from table 6.12 and its associated paragraphs within the ES the outcomes of applying the applicants' methodology and measures of significant can be derived. Having regard to these it can be said that no population would gain significant beneficial effects from the practical ending of the Cranford Agreement. In contrast by the applicant's own measure of 4,450 residents would suffer 'significant adverse effects';

Of those suffering significant adverse affects 1,000 people would experience an increase in noise of between 5dB and 6dB; 2,000 between 4dB and 5dB; and 1,400 between 3dB and 4dB.

Secondary Assessment Daytime (Community Annoyance)

The applicants' secondary assessment uses the alternative measure of significance, the Lden air noise contours. The measure of significance used by the applicant for determining significant effect is a change of greater than 3dB where the magnitude of noise is greater than or equal to 55dB.

Taking figures from Table G.6 within the ES Appendix it can be said that, based on the applicants' criteria:

- 2,400 more people will be adversely effected at the 55dB;
- 4,650 favourably effected at 60dB;
- 4,400 negatively effected at 65dB;
- 600 adversely effected at 70dB; and
- 350 people adversely effected at equal or greater than 75dB.

Taking figures from Table G.7 of the ES Appendix, it can be said that, based on the applicants' criteria that 800 people would be subject to significant adverse impact by an increase of least 5dB, 1,800 subject to a significant adverse impact by an increase between 4dB and 5dB, and 10,250 subject to a significant adverse impact by equal and greater than 3dB but less than 4dB.

The applicant states that a greater number of properties would observe beneficial effects than adverse effects. However, by the applicants own measure of significance no properties would be subject to a benefit of any significance, whereas 12,850 properties would be subject to significant adverse impacts.

From Table G.9 of the ES Appendix it can be seen that with respect of ground noise and using the Lden measure 120 people would be significantly effected by the applicant's own measure of 'significance' and no residents subject to significant positively effects.

Night-time (Sleep Disturbance)

In respect of assessing Night-time noise impacts, in particular with respect to sleep disturbance the applicant has used the L_{night} measure, and the applicants measure of significance is a \pm change of greater than or equal to 3dB in L_{night} where SEL is greater than or equal to 90 dB and L_{night} is greater than or equal to 45 dB.

This assessment indicates with regard to detrimental impacts that:

- 2,300 residents would be taken into the 45dB L night to 49dB noise contour as a result of the development;
- 300 residents would be taken into the 50dB L night contour;
- 450 residents would be taken into the into the 55dB L night contour; and
- 50 residents would be taken into the 60dB L night contour.

In terms of beneficial impacts a group of residents numbering 3,900 would be taken out of the 45dB L night.

The applicant concludes that the development would not have any significant adverse impact on night time air noise for residential dwellings given these adverse impact are not significant as no residents would experience an in increase at night of 3dB or more.

Residential Impacts - Mitigation

The applicant already has in place an existing scheme relating to noise mitigation and compensation, further details of which are provided under the relevant section of this report and a slightly enhanced scheme is proposed as part of this proposal. The enhanced scheme includes:

- Free noise assessment to determine statement of need.
- 100% contribution towards insulation/ventilation costs based on statement of need.

The eligibility criteria are those properties subject to 63dBA Leq contour and a 3dBA increase in noise exposure. 4,400 properties are subject to significant adverse impacts under the applicants own Primary Assessment Daytime (Community Annoyance); and 12,850 are subject to significant adverse impacts under the applicants own Secondary Assessment Daytime (Community Annoyance). Under the applicants Night-time (Sleep Disturbance) assessment no properties would suffer significant adverse effect (although the Local Planning Authority disagrees with this view as discussed later in this report).

Despite the very large number of properties which would be subjected to significant adverse impacts, even under the applicants own assessments, only 175 households newly exposed to 69 LAeq,16hour dB would be offered home relocation assistance and a further 350 households newly exposed to 63 LAeq,16hour dB and a noise increase of 3dB or greater will be eligible for residential acoustic insulation under the proposed mitigation scheme.

Healthcare Facilities

The noise chapter of the ES and its appendix also addresses noise impacts on healthcare facilities. For ease the paragraphs below are quoted directly from the statement, however underlining has been added to provide emphasis on key points considered of significant by the Local Planning Authority.

Paragraph 6.8.59 states 'For healthcare facilities [the Environmental Statement] takes a 55 dB LAeq, 1hr daytime and a 50 dB LAeq night-time as threshold for significant effects.'

Paragraph 6.8.60 states

"Based on calculations made at healthcare facilities, the assessment has identified five facilities which are expected to receive noise exposure greater than 50 dB LAeq, 16h (55 dB LAeq, 1h) and experience an increase of 3 dB as a result of full runway alternation during easterly operations. It is therefore concluded that these facilities would be exposed to significant effects during daytime periods. However, none of these fall within the 57dBA contour."

Page G13 of the Noise Supplementary Information Appendix G states 'In accordance with the APF and with reference to the Extended Community Buildings Mitigation Scheme, none of the above healthcare facilities are eligible under the scheme as none of the facilities are exposed to a level of 63 dB LAeq, 16h or above. Further analysis has shown that none of these receptors fall within the 57 dB LAeq, 16h contour.

The Department of Health Specialist services, Health Technical Memorandum 08-01: Acoustics (HTM 08-01 Acoustics) contains a table of criteria for noise intrusion from external sources in completed new buildings.

HTM 08-01 Acoustics is a standard for new healthcare facilities. For single bed wards the standard is 35 dB LAeq 1h night, 45 dB LAFmax night and 40 dB LAeq, 1h, daytime. It can be concluded that indoor aircraft noise levels up to 40 dB LAeq are not significant by day. For multi-bed wards the recommendation is 5 dB higher by day. For lecture theatres, meeting rooms, board rooms, seminar rooms and classrooms a criterion of 35 dB LAeq 1h day is recommended.

All of the criteria offered by HTM 08-01 are indoor levels. There is uncertainty about the sound reduction from outside to inside dependent on building design and window condition.

With natural ventilation and partially open windows the outside-to-inside difference would be at least 15 dB. It is unlikely that healthcare facilities would have open windows, and the effect of closing windows is a noise reduction of the order of 10 dB giving an outside-to-inside difference of about 25 dB.

Based upon this guidance, it can be concluded that no further consideration needs be given to healthcare facilities where the outdoor noise levels are not above 55 dB LAeq T during the day, and 50 dB LAeq, T and 70 dB LAFmax at night. The value of T for healthcare facilities is 1 hour.'

The Environmental Statement fails to provide definitive evidence that the scheme would not result in demonstrable adverse impact to use of local health facilities; the information provided on the appropriate metric to assess 'significant adverse impact' appears at best inconsistent. The applicant's default reliance on the 57dB LAeq, 16h hour as the onset of annoyance (drawing justification for this approach on paragraph 3.17 of the Aviation Policy Framework) is unsatisfactory. Furthermore failing to undertake LAeq 1 hour time using a methodology that has not been subject to rigorous independent justification is unacceptable.

Healthcare Facilities - Mitigation

Based on the information provided no healthcare facilities would benefit from any mitigation. There is obviously concern over the lack of mitigation.

Community Facilities and Places of Worship

The Environmental Statement indicates at table 6.19 that as a result of the scheme 3 facilities/places of worship would benefit by being removed from the 57dB LAeq 16h hour contour. However, 3 would be taken into 60dB LAeq, 16h hour contour and a further 1 into 60dB LAeq, 16h hour contour.

By the applicants' measure of significant impact, no facilities would significantly benefit as the decrease is less than 3dB. In contrast 3 facilities would suffer significant adverse impacts as the exposure would be at least 57dB LAeq, 16h hour AND an increase of 3dB.

Community Facilities and Places of Worship - Mitigation

The ES indicates that none of the community facilities and places of worship that are 'significantly adversely' impacted will be eligible to mitigation measures proposed by the applicant as "the buildings are exposed to air noise levels of less than 63 dB LAeq, 16 hour. There is obviously concern over the lack of mitigation.

Educational establishments

In respect of impacts on educational establishments the applicant states an understanding of short term noise levels is required in order to assess noise impacts upon educational establishments. Four noise monitoring terminals located around the airport have been utilised to assist in providing this understanding. These are located at Hounslow Heath, Chinchilla Drive, Cavalry Barracks and Sparrow Farm. HAL's analysis shows that there is no clear correlation between LAeq, 16hr and the LAeq, 30min or LAeq, 1hr noise levels.'

The Non-Technical Summary of the Environmental Statement produced by the applicant is silent upon the impact upon schools other than to state 'the assessment identifies significant air noise effects at 15 education establishmentthese facilities would not be eligible under

the airport current mitigation schemes as they would not fall within the relevant noise contour"

The full Environmental Statement and relevant Appendix G provide only limited additional information to support the applicant's conclusion as to the likely impact upon schools of the scheme. It states the applicant's noise significance criteria for schools as "consideration of noise events above an outdoor 70 dB L_{Amax} AND ≥ 3 dB change in L_{Aeq}, T where Outdoor L_{Aeq}, T ≥ 50 dB.

The Environment Statement then concludes in regard to this impact upon schools at paragraph 6.8.54 that: 'whilst full runway alternation to easterlies would result in short term noise levels above the 50 dB L_{Aeq} 30min... the threshold of significance criteria above the 50 dB L_{Aeq} 30min could also arise from existing airport operations and other ambient noise sources that are not related to the airport. Only one of these education establishments is exposed to levels of 57dB L_{Aeq} 16hour or more.'

At paragraph 6.8.544 of the ES then states that '15 education establishments have been identified with significant increases in air noise of at least 3 dB L_{Aeq}, maximum noise levels above the 70 dB L_{Amax} threshold due to departures from Runway 09L and likely occurrences of short-term noise levels above 50 dB L_{Aeq}, 30min. Only one of these education establishments is exposed to levels of 57 dB L_{Aeq}, 16h or more.'

In relation to the levels quoted for L_AF_{max} within the ES it is custom and practice for aircraft noise modelling to produce L_{max} values as L_{max} "slow". However, when considering schools design, L_{max} fast is the appropriate measure, not L_{max} 'slow'.

The ES has also produced contours in the alternative metric of significance known as L_{den}, which is the metric of choice within the European Union, and also single mode L_{Aeq},8h contours. However the applicant has not used these to determine significant effects but has instead been used them to provide additional understanding of noise exposure during single mode operations.

The 55 L_{den} contour is regarded as the level at which significant annoyance occurs within the exposed population. Based upon noise contour maps of the existing departures arrangement and those following the practical ending of the Cranford Agreement (Map 33068-Lon183a and Map 33068-Lon182a) the following table of results have been produced.

This shows that 7 schools in the London Borough of Hounslow would suffer an increase of noise of +3dB or greater based upon single mode L_{Aeq}, 8h contours. Cranford Community College would suffer an increase of 9dB. Cranford Primary School would be at a level of greater than 72 dB(A).

School	Noise exposure dB(A) due to revocation of the Cranford Agreement based on Figure 4	Increase in noise dB(A) due to revocation of the Cranford Agreement
Beavers School	69-72	+3
Berkeley Primary School	66-69	+6
Cranford Primary	Greater than 72	+6
Cranford Community College	63-66	+9

St Marks Catholic School	63-66	+6
Heathland School	63-66	+3
Ceadars Primary	66-69	+6
Figures above based upon single mode LAeq, 8h contours		

Schools - Mitigation

The ES states that none of the schools that are 'significantly adversely' impacted will be eligible to mitigation measures proposed by the applicant as "the buildings are exposed to air noise levels of less than 63 dB LAeq, 16 hour. There is obviously concern over the lack of mitigation.

7.2.4 Noise - The Local Planning Authority's Assessment of Noise Impacts

The first thing to note is that in reaching the following conclusions the local planning authority has drawn upon the data sets provided by the applicant in the Environmental Statement. Accordingly there is no dispute about the source of the data used in the Council arriving at its conclusions.

The central differences between the conclusions drawn by the applicant and those of the Council relate to the following key issues:

1. Approximate Onset of Significant Community Annoyance - The choice and use of only a single noise metric to assess the significance of noise impact upon residents outside night time flight hours, namely 57dB LAeq 16 hour.
2. Measure of Significance - The appropriateness of the measure at which a change in adverse noise impact is adjudged to be significant, namely the applicant using a minimum increase of +3dB as the sole measure of significant change AND an equal or above (\geq) 57dB LAeq 16 hour in the applicant's assessment.
3. Points (1) and (2) above lead to a further divergence between the council and the applicant as to the appropriate level of mitigation measures for residents adversely impacted which in turn leads to a conclusion the mitigation measures accompanying the application are inadequate and insufficient.
4. An appropriateness of both the analyses and methodology adopted to assess the significance of the scheme upon schools

These issues are discussed in detail below.

Issue 1: Approximate Onset of Significant Community Annoyance

In relation to this issue it is noted that paragraph 3.15 of the Aviation Policy Framework (AVP) states '57dB LAeq 16 hour contour as the average level of daytime aircraft noise marking the approximate onset of significant community annoyance. '

Notwithstanding this, the APF goes on to state in paragraph 3.19 that the:

"The Government recognises that people do not experience noise in an averaged manner and the value of the LAeq 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 seek to explain how locations under light paths are affected by aircraft noise. Instead the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in

different localities. The objective should be to ensure a better understanding of noise impacts and to inform the development of targeted noise mitigation measures."

A significant material consideration in the context of this application is the Inspector's conclusions to the Terminal 5 public inquiry in respect of noise. Extracts of particular importance are provided below. Emphasis provided by formatting has been added by officers, not the Inspector.

The Inspector's conclusions at paragraph 34.4.42 states:

'The measure of the noise climate used by the Government to test the success of its policy is the LAeq 16hour index. This was the subject of severe criticism much of which I consider to be well-founded. It does not reflect the operation of runway alternation which is a key feature of Heathrow nor does it give any indication of the number of times activities are interrupted by passing aircraft. More significantly I believe that it fails to give adequate weight to the number of aircraft movements. Many local residents are unconvinced by the Government's argument that the noise climate has improved. They believe that it has become worse over the last 5-10 years and this appears to be a reflection of the substantial increase in movements over that period. '

The Inspector's conclusions at paragraph 34.4.43 states:

'Even the Department recognised the deficiencies of the LAeq system. They also accepted that it is difficult to establish the true relationship between the noise of individual events and their number and that it would have been useful if further social surveys had been carried out). The survey on which the use of the LAeq 16hour is based was carried out in 1982 and the relationship between the LAeq and community annoyance was statistically weak even at that time. Since then the number of aircraft movements at Heathrow have increased from some 220,000 a year to over 440,000. Moreover people's perceptions of and willingness to tolerate noise may well have changed. Whilst I have doubts as to the continued validity of the LAeq as the sole index of the noise climate, I accept that it is a useful indication'

The Local Planning Authority therefore rejects the use of LAeq metric as the sole metric to assess changes in aircraft noise. Using the alternative metric of Lden, which is the metric of choice within the European Union, the 55 Lden contour is regarded as the level at which significant annoyance occurs amongst exposed populations.

The European Environment Agency "*Good practice guide on noise exposure and potential health effects*", was produced as a technical report note to assist policy makers and competent authorities in understanding and fulfilling the action planning requirements of Directive 2002/49/EC, makes clear statements in regard to Noise Quality Targets.

On page 13 the guide states "In conclusion, from the broad overview of the limit values in a large number of countries, and from the scientific evidence, as well as from some more political organisations, there seems to be a consensus that Lden around 50 dB (or the equivalent level in other units) would represent a good noise quality.'

Further at paragraph 6.1.4 it makes absolutely clear that '55 dB delimits the area where the noise is considered to be a problem.'

The Local Planning Authority shares the view that 55Lden contour should be used to define the area for assessing where community harm to residential populations occurs in respect of Heathrow and this application.

It is also considered that the noise assessment should also reflect the actual noise experienced by residents and use LAeq,1hr and LAMax for both ground and air noise.

These assessments should be undertaken, and utilised to form the primary assessment of noise impacts, as required by the Local Planning Authority. Notwithstanding its long recognised and significant shortcomings, this would not preclude the use 57dB LAeq 16 hour as an additional measure to ensure historical comparisons can be undertaken in accordance with the APF.

Issue 2: Measure of Significance

The applicant has determined that significant noise effects occur for those people subjected to 3dB increased in noise level about the 57db LAeq16 baseline. The applicant's position on significance is laid out in paragraphs 6.7.4 - 6.7.10 of the Environmental Statement. Paragraph 6.7.7 states the following:

- *"If two different noise environments differ by 1 dB on the LAeq,16 index there is approximately a 20% probability that a social survey would show no change in annoyance.*
- *If two different noise environments differ by 2 dB on the LAeq,16 index there is approximately a 16% probability that a social survey would show no change in annoyance.*
- *If two different noise environments differ by 3dB on the on the LAeq,16 index there is approximately 12% probability that a social survey would show no change in annoyance."*

The applicant has focussed on the probability of no change to which is slightly misleading particular since the reverse is so compelling. If there is a 20% probability of no change in annoyance at a 1dB rise this means that there is an 80% chance of change. The ES is effectively stating that there is an 80% probability that people would show an increase in annoyance from noise at a 1dB increase. This increases to 84% at 2dB, and 88% at 3dB. Noise from Heathrow Airport impacts on hundreds of thousands of people which means even a small percentage increase affects thousands.

The use of the 3dB rise for determining significance is further undermined by the baseline from which the change is measured. The ES already acknowledges that 57dB laeq16 is the onset of significant noise disturbance which is supported by the Aviation Policy Framework. The applicant is therefore stating that significant effects are only triggered at a doubling of noise (3dB increase) above a level already considered to be significant.

The ES acknowledges that 243,350 people were exposed to the level at which significant noise disturbance starts. The ES accepts that there would be an 80% probability of people becoming more annoyed by a 1dB increase. It therefore is inappropriate for the applicant to reach the conclusion that significant effects from the proposals are triggered at 3dB higher than the level at which significant annoyance materialises.

Issue 3: Mitigation Measures Inadequate in Form and Extent

The Aviation Policy Framework in paragraph 3.39 states:

"where airport operators are considering developments which result in an increase in noise, they should review their compensation schemes to ensure that they offer appropriate compensation to those potentially affected. As a minimum, the Government would expect airport operators to offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3dB or more which leaves them exposed to levels of noise of 63dB LAeq, 16h or more"

The above is a minimum standard. It is entirely within Heathrow's remit to provide mitigation at a lower level. The London City Airport provides mitigation to all residential properties falling within the equal to or greater than 57dB, LAeq,16h.

50 residential dwellings will experience a noise increase of between 2 and 3 dB where noise levels are greater than or equal to 57 dB LAeq,16h under primary assessment with full easterly runway alternation and are considered to have significant adverse effect but these properties will not be provided with sound insulation mitigation measures. This is not considered acceptable.

Table 6.12 of the Environmental Statement records that by the criteria of significance adopted by the applicant (namely +3dB above 57 dB LAeq 16 hour) that 4,450 people residing in 1,700 properties would suffer "Significant Adverse Effects" with the practical ending of Cranford Agreement. The applicant is providing no mitigation schemes to help these residents, the exception being 175 dwellings that would experience as result of the changes a 69 dB LAeq 16 hr impact, that would be offered home relocation assistance and that there would be 350 dwellings that would fall into 63dB LAeq 16 hour AND experience a 3 dB increase who would be offered noise insulation measures (albeit restricted to the bedrooms of the properties).

It must be recognised that adopting the +1dB significance at 57dB 16 hour, some 18,550 people will suffer within 7,050 dwellings. No mitigation is proposed for these residents, which is unacceptable.

Officers are of the view that any domestic premises, community building, educational establishment or religious establishments that suffer an increase of 1dB and are within the 55 LDEN noise contour, should be offered mitigation measures which includes an offer of free noise insulation.

Using the alternative metric of Lden and using figures from Table G7 in the Environmental Statement, and the Council's measure for significance (+1dB), some 40,500 people and 15,000 properties would suffer significant effects. These people should be given satisfactory noise mitigation measures. None are proposed.

Issue 4: Methodology Adopted To Assess the Significance of the Scheme on School and its Resultant Adverse Impact

A robust and sound assessment for schools is required and this needs to compare the current highest noise levels against the highest noise levels experienced by the school should the Cranford Agreement be practically terminated. The accepted metric for this

standard in respect to educational establishments is set as the worst LAeq, 30 minute period in a school day.

The applicant has failed to produce LAeq,30 minute noise figures for the school instead it has produced derived figures rather than noise metrics "for the purposes of the assessment LAeq, 30minute" and assumed this to be "to be 5.5 dB higher than LAeq,16h".

The applicant has treated this as a 'conservative' estimate assessment approach. The applicant has failed to adequately justify this assertion or demonstrate how its approach is consistent with a precautionary approach to the likely noise impact of the scheme.

The applicant, following a request by Hillingdon Council and Hounslow Council, has produced an 8 hour single mode aircraft noise contour, with the schools effected to the east of the airport marked on both with current baseline (with Cranford Agreement) and without (following the practical ending of Cranford Agreement).

These noise contour maps highlight that Cranford Primacy School is most adversely effected school with 72 dB (A) AND a 9 dB (A) increase if aircraft are allowed to take off to the east from the northern runway. Cranford Community College would be subject to between 63- 66 dB (A) AND a 9 dB (A) increase. In total, 7 schools within Hounslow would suffer an increase of noise of +3dB or greater.

The 8 hour single contour mode noise maps have been used by Hounslow Council to produce LAeq,30 minute estimates. These figures are estimates of the highest LAeq,30 minute and therefore are estimates. The fact these are estimates is acknowledged is a shortcoming.

However based on the justification provided by Hounslow Council to support the methodology for deriving these figures the estimated figures appears broadly sound and indeed would tend to be an underestimate of the true LAeq,30 minute maximum figure for the relevant schools.

Other shortcomings with the applicant's Environmental Statement in respect to impact on schools included are use of Lmax "slow" when Lmax "fast" is the applicable measure. Lmax fast values are generally 5dB greater than Lmax slow.

Acoustic Performance Standards for the Priority Schools Building Programme Version 1.7 June 2013 sets the minimum standard for acoustics within schools for refurbishments, extensions and rebuilds and deploys the LAeq,30 maximum with an internal ambient upper level limit of 30 minute LAeq of 35dB for new builds and 40 dB upper limit for conversions and refurbishments of existing buildings.

A number of the schools adversely impacted are subject to a rolling programme of refurbishments and new extensions. Therefore these standards apply and are material to the application. The Environmental Statement [paragraph 6.8.56] concludes no schools are eligible to subject to the relevant mitigation scheme. The lack of mitigation is clearly unacceptable.

Based on the

- information supplied in the Environmental Statement,
- additional information provided by the applicant that has been subject to a further Regulation 22 consultation
- the failure to provide Lmax fast values

- the failure to mitigate schools against ambient internal noise level of greater than 40dB LAeq,30 minute (worst 30 minutes) as a result of the of the application (i.e. practically permitting departures to the east off the northern runway)
- and in light of current and on-going school build improvement schemes for the adversely effected schools

It is considered the impact upon the school most acutely impacted is wholly unacceptable.

Impact from Ground Noise

The main change in ground noise that would arise from the scheme is an increase of ground noise in the Longford area arising from aircraft waiting in a new holding area (that would be formed at the western end of the northern runway) before aircraft proceed to depart easterly from the northern runway.

By the applicant's measure of significance of at least LAeq 57 dB AND at equal or greater than 3 dB 60 dwellings (estimated 200 population) would experience "significantly adverse" effect. A further 100 dwellings would experience an equal or greater but less than 3dB change. The Environmental Statement records no dwellings or population would experience a beneficial change either 'significant' or otherwise (i.e. greater than 1dB decrease) as the redistribution of ground noise away from the southern runway is adjacent to land that holds no dwellings. As none of the adversely effected dwellings that experience a 3dB increase fall within 63dB no mitigation (domestic noise insulation) measures are proposed by the applicant from ground noise.

Impact from Combined Ground and Air Noise

The raising of the height of the Longford acoustic barrier is intended to address the combined impact of ground and air noise i.e. ground noise and start of roll noise. Based on further information provided by the applicant it is evident the acoustic barrier will only help provide meaningful noise mitigation to dwellings located within 300 metres of the barrier during aircraft taxing with the greatest mitigation afforded to dwellings within 150 metres of the wall.

The Environmental Statement recognises in Longford there maybe significant noise induced vibration effects at properties with lightweight structures during start of roll. No mitigation measures are proposed for noise induced vibration (because identification of the properties liable to be effected is not easy). The applicant does not preclude future effects being assessed and possible mitigation package being offered.

Runway Alternation - Respite

Runway alternation allows arrivals to be scheduled on one runway with departures occurring on the other until a set time in the day (i.e. 1500hrs) when the arrivals switch to the alternative runway. Currently this only occurs during westerly operation. Runway alternation is scheduled in advance so that communities who live under the final approaches and early stages of take off gain respite from overflying aircraft.

Currently during easterly operations, departures always occur from the southern runway with arrivals occurring on the northern runway. This means there is no scheduled respite from planes flying over communities in Windsor or from final approaches such as Hatton.

Full runway alternation (i.e. the ability to alternate the runways during both easterly and westerly periods of operation) according to a published schedule can provide communities who live under final approaches and the initial stages of departures with scheduled periods of respite from aircraft overflying.

This is termed 'reflective alternation' with the designated runway for westerly arrivals will become the designated runway for easterly departures and vice versa for any given day. This reflective alternation provides the benefit for communities, particularly those closest to the runway ends to predict with much greater certainty the periods when they will be overflowed or not. The applicant's extensive social survey research, undertaken over some years, provides strong evidence people living immediately beneath flight paths value this predictable respite.

The existing lack of easterly runway alternation means that any scheduled relief potentially provided by the current westerly alternation pattern can be compromised by unpredictable changeover to easterly operations required by prevailing weather conditions. This results in some communities being overflowed when they may have expected not to be and others experiencing periods of unexpected relief from overflights.

The Environmental Statement estimates 60,000 people would benefit from scheduled respite for 8 hours at a time during morning and afternoon periods, were the scheme implemented, providing respite on easterly approaches where presently there is none to residents of the following wards in Windsor - Castle, Clewer North & South, Park, Trinity and the villages of Datchet, Colnbrook

7.2.5 Noise - The Local Planning Authority's Conclusions

Over 250,000 people currently experience noise 57dB LAeq, 16hr. The Environment Statement records 17,400 people will experience increased noise effects as result of the scheme. While the ES states that no one would experience a significant benefit (i.e. 3db decrease in noise levels), some 4,450 people would suffer significant adverse effects.

The applicant proposes that mitigation will only be triggered as a result of the application for those suffering a 6dB increase. In other words mitigation will only benefit those who get an additional 3 dB increase above the level at which they are considered to have significant adverse effects.

Use of the LAeq, 16 hour metric as the sole metric to assess community annoyance to residents and community establishments for daytime flights is considered inadequate.

The local planning authority acknowledge that the applicant provided Lden as an alternative metric within the Environmental Statement, however the applicant fails to use this analysis/means of assessment for the purpose of providing future mitigation in respect of the scheme and therefore it is considered the inclusion of the Lden analysis in the Environment Statement is largely meaningless.

Consistent with the Department of Transport commissioned study, The Attitudes to Noise from Aviation Sources in England (ANASE), the local planning authority consider LAeq 16 hour is not an appropriate singular measure of annoyance.

A metric that better reflects residents attitudes to noise at different times of the day should be adopted and to this end Lden should be used plus LAeq 1 hour metric and Lmax to more accurately reflect how noise is experienced by residents.

It is worth noting that the ANASE study was commissioned in wake of the Inspector's conclusion to the T5 Terminal appeal, where he made clear the use of the LAeq 16, hour metric in isolation was an inadequate measure of community annoyance to residents going forward in respect to aviation development.

The local planning authority acknowledge the Aviation Policy Framework (APF) sets 57dB LAeq, 16hr as the onset of significant levels of community annoyance and at minimum acoustic insulation to residential properties should be provided to those who experience an increase in noise of 3dB or more and exposed to levels of noise of 63 dB LAeq, 16h or more.

However, set within the Aviation Policy Framework document the LAeq 16, hour metric is subject to several caveats. The applicant's assessment fails to give due weight to these caveats. Furthermore the proposed mitigation scheme fails to be consistent with the words of Colin Matthews within "A Quieter Heathrow (May 2013) that "at Heathrow, we are at the forefront of international efforts to tackle aircraft noise".

Consistent with the European Environment Agency "Good practice guide on noise exposure and potential health effects" Hillingdon as the local planning authority consider Lden 55 dB delimits the area where the noise is considered to be a problem and consider +1dB changes at equal to or greater than 55 db Lden as a significantly adverse impact.

The scheme would result in significant adverse noise impact on residential populations and to users of community facilities. The noise metric used in the application and the Environmental Statement fails to acknowledge this adverse impact adequately or to offer adequate or sufficient mitigation measures to residents (to address/offset the resultant negative impact). As such the scheme is considered unacceptable and contrary to the Local Plan and NPPF.

There is an increasing body of evidence that in regard to the impacts of noise on health, including three studies that were published in October 2013. The first two were directly related to the impacts of aircraft noise and the third was an overview of the impacts of environmental noise on health which included aircraft noise. These are summarised below:

- Aircraft noise and cardiovascular disease near London Heathrow Airport, Hansell et al, BMJ 8th October 2013. The study area comprised 12 London boroughs and nine districts west of London exposed to aircraft noise related to Heathrow airport. The conclusion of the study suggested that high levels of aircraft noise are associated with an increased risk of stroke, coronary heart disease and cardiovascular disease. It suggested that:
"Further work to understand better the possible health effects of aircraft noise is needed, including studies clarifying the relative importance of night time compared with daytime noise". "Policy decisions need to take account of potential health related concerns including possible effects of environmental noise on cardiovascular health".
- Residential exposure to aircraft noise and hospital admissions for cardiovascular diseases: multi-airport retrospective study, Correia et al, BMJ 8th October 2013. This US study assessed 6 million older people residing near 89 airports across the US. The conclusions were that there was a statistically significant association between aircraft noise and a higher relative risk of hospital admission for cardiovascular disease in older American people living near airports.
- Auditory and non-auditory effects of noise on health, Basner, Babisch et al, Lancet 30th October 2013. This paper includes the non-auditory health effects which are

recognised as being associated with exposure to aircraft noise. These include community annoyance response, increases in cardiovascular disease, impacts on cognitive performance in children and sleep disturbance. The World Health Organisation (WHO) definition of health effects of night noise levels are quoted which defines 40-55dB $L_{Aeq, night, outside}$ as adverse health effects observed among the exposed population with vulnerable groups more severely affected and above 55dB $L_{Aeq, night, outside}$ considered as increasingly dangerous for public health. The paper concludes that there is a need to regulate and reduce environmental noise exposure (ideally at source) and to enforce exposure limits to mitigate negative health consequences of chronic exposure to environmental noise.

In terms of noise impacts on schools, it is not considered that the scheme provides a robust noise assessment. The inadequacies in the assessment would tend to underestimate impacts. In the absence of information to show that the operation of easterly departures from the northern runway could be undertaken while meeting internal ambient noise standards in schools the noise impact upon schools is considered unacceptable.

Should this scheme be approved, mitigations measures (noise insulation) would need to be implemented (via planning obligations) to ensure no school (currently meeting an internal ambient upper level noise limit of 40 dB) is subjected to excessive noise. The cost of mitigation measures should be met by the applicant.

In respect to Cranford Primary School where there is evidence there is no prospect that mitigation measures can achieve the required level of attenuation, in the event that the application was to be approved, restrictions must be placed on the use of the northern runway during term time so that noise levels exceedences are not experienced by the school and in the long term the applicant should fund the relocation of the school to a site where noise levels are acceptable.

In terms of the impact on schools, the scheme is considered unacceptable and contrary to the Local Plan and NPPF.

7.3 AIR QUALITY

7.3.1 AIR QUALITY - The Policy Context

At the national level, paragraph 124 National Planning Policy Framework states:

'Development proposals should be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas (AQMAs)).'

At the regional level the London Plan deals with air quality in policy 7.14 Improving Air Quality, Section B, subsection (c) which states:

"the need to minimise exposure to existing poor air quality and aim for development proposals to be "air quality neutral and not lead to further deterioration". (London Plan, GLA)

At the local level the Local Plan Part 1, Policy EM8, LB Hillingdon states

"Development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors."

The change in implementing full runway alternation during easterly operations, from an air quality perspective, is described as producing changes in the spatial distribution of emissions around the airport. Whilst it is accepted that the implementation of the Project does not increase the number of flights in and out of the airport it is the re-distribution of where the emissions are emitted which is the cause of the air quality concerns.

It should be noted that this is a change in operation which is also not directly in the control of the airport as it is also dependent on wind direction. A year with more easterly winds will produce the need for more flights departing from the northern runway, assuming a 50:50 runway alternation split.

The airport location is within the AQMA declared by Hillingdon for exceedences of the annual mean NO₂ limit value. The monitoring data for the surrounding air quality monitoring stations is detailed in the report and in general, confirms that, in regards to annual mean nitrogen dioxide levels close to the airport, the concentrations in residential areas to the west of the airport are lower than the air quality limits, increasing to above the EU limit value moving towards residential areas to the north east of the airport.

The air quality assessment has referred to the monitoring data around the airport up to and including 2012. A forecast, using an air quality model has been undertaken to project a baseline to 2015, chosen to represent the first full year of implementation of full runway alternation. The baseline for the operation of the airport has been based upon an east/west split of 28.3%/71.7% to correspond with the meteorological data from the emissions inventory year of 2008/09. As noted above, the east/west split is not within the airport operators control and will vary with wind direction from year to year.

The air quality impacts arising from the ending of the Cranford Agreement was assessed as part of the 'Adding Capacity at Heathrow' studies which concluded that loss of the Cranford Agreement would:

“affect the distribution of NO₂ concentrations around the western end of the airport by up to 13% at some receptors and by up to 5% at the eastern end of the airport”. (para 3.141, Adding Capacity at Heathrow Consultation Document)

The ES submitted by the applicant states there will be no material change in the overall total emissions (although Table 7.11 indicates an increase of 7.9 tonnes of NO_x with the scheme place). The increase arising from the ground level aircraft emissions, including from taxi-out, hold, take-off roll and landing roll activities.

For PM₁₀ the increase is 0.1 tonne with the scheme in place, the increase coming from the ground level emissions associated with taxi-out.

The main effect of relevance to LB Hillingdon is described by the applicant as increasing the aircraft NO_x contribution in Longford to the north-west of the airport, this in turn increases the NO₂ concentrations in this residential area.

Air quality modelling of the area to the north east of the airport, was undertaken as part of the Adding Capacity at Heathrow consultation (Air Quality Studies for Heathrow, CERC for DfT, 2007). The air quality modelling this suggested increases at receptor points to the north east as well as to the north west of the airport. The ES does not indicate any such impacts to the north east. Clarity was sought on this issue and the HAL Technical Note (19th September 2013) states that the difference is due to the use of a more detailed refined

emissions inventory, as prepared for 2008/09, than that used originally for PSDH (original baseline year 2002). The refinement has led to an approximate decrease of 23% ground-based NO_x emissions. This is accepted as a feasible explanation by the Council's Air Quality officer.

The Longford area currently experiences levels of air quality close to or above the EU limit value. The highest levels are concentrated in the area closest to the airport boundary and in receptors closest to the main road network. The impact of the development increases the pollution levels across the Longford area by 0.4ug/m³ to 1.5ug/m³ dependent on the proximity to the airport boundary.

The consequence of this impact is to cause exceedences of the air quality limit value in certain areas which were previously compliant, and, worsen the exceedences in areas currently over the limit value.

The main receptors impacted by the implementation of the operational change are those located closest to the airport boundary in the south-west of Longford. The ES states there will new exceedences of the air quality limit value for annual mean nitrogen dioxide at seven residential locations rising to twelve new exceedences under worse case scenario in regard to road traffic emissions.

To clarify, these are relevant receptors where compliance has been achieved prior to the proposed implementation of the development now proposed. There is also a worsening of the pollution levels at receptors which are already exceeding the limit value.

From the data provided, the overall impact of the proposed development is to bring thirty nine residential receptors within the classification of APEC B (London Councils Air Pollution Criteria), where although refusal on grounds of air quality may not necessarily be sought, appropriate mitigation measures must be considered.

HAL were requested to provide the sensitivity test data as referred to in the Project ES in regard to the effects of using a different meteorological year and of using a worse-case roads emissions approach. The HAL Technical Note (19th September 2013) demonstrates that modelled concentrations are sensitive to scenario changes (such as the weather).

Modelling shows that depending on weather the receptor point closest to the airport gets an increase of 2.3ug/m³, as opposed to 1.5 ug/m³. This sensitivity test demonstrates the importance of wind direction in regard to spatial change in both the distribution of emissions and also the influence this has on the operational runway use.

The sensitivity tests show that small changes can cause a greater number of both new exceedences and worsening of impacts at receptors already in exceedence, throughout the Longford study area.

The HAL report suggests the use of this worse case scenario as not realistic. Officers are of the view that dismissing the worst case scenario needs to be treated with caution.

Measures to minimise impacts during construction are proposed, and could be conditioned if approval is recommended.

Other proposed potential options to mitigate changes in local air quality are limited to operational practices and reference made to the HAL Air Quality Action Plan. No further

operational measures have been identified as part of the assessment in terms of addressing the air quality impacts.

This is not considered adequate, it is worth noting that the Environment Agency stated they expected to see the developments' impact fully addressed.

The approach taken in the application to mitigation is considered inadequate. The emissions of concern in regard to the air quality impacts emanate from ground level aircraft emissions including taxi-out, hold, take-off roll and landing roll. Emissions from aircraft are not directly in the control of the airport operator. Aircraft engine emission standards are governed by various regulations. While HAL have introduced a NO_x charge as part of its landing charges to encourage airlines to operate planes with lower emissions, this is very different from ensuring emissions are not excessive. With lifetimes of aircraft generally between 30 and 40 years, the introduction of cleaner aircraft is a long-term solution. This will not deliver compliance with the EU directive in any short timescale.

As demonstrated by the sensitivity testing, another compounding factor in relation to control of emissions from this particular source is the influence of the weather. This not only impacts on where emissions are dispersed, it also influences the number of departures that will occur on the northern runway in any given year.

The redistribution of emissions around the airport, which show beneficial changes in one community but adverse in another community does not mean that the acceptable conclusion is that there is no problem. The proposal actually brings receptors from compliance into non-compliance and worsens the current levels already above the limit value.

7.3.2 AIR QUALITY - Conclusion

The conclusion within the ES is that the overall effect of the Project on local air quality is not significant. Officers do not support this finding.

The practical implementation of the Government policy to end the Cranford Agreement would lead to an operational change which would cause exceedences of the European Union limit value at receptors which were previously compliant and would worsen the concentrations in areas currently non-compliant ie above the EU limit value.

This conclusion is supported by evaluation of the two sensitivity tests. The results of these tests have demonstrated how issues, out of the control of the airport operator, such as changes in yearly meteorological data and the speed of the penetration of cleaner vehicles on the fleet accessing surrounding road networks, can cause a further deterioration in the air quality in the residential areas in Longford.

The Air Quality Directive is clear that limit values should be "attained within a given period and not to be exceeded when attained". (Article 2) There are no mitigation measures identified to specifically address the exceedences at the relevant receptors caused by the change in operation. There is no supporting evidence to show that the non-compliance period will be short lived and hence meet the Air Quality Directive definition of limit value as "to be attained within a given period and not to be exceeded once attained".

This change in operational practice is not supported due to the resulting air quality impacts. In the event that the scheme is approved, then planning conditions and obligations would be required to fully mitigate the impacts and protect the residential areas of Longford.

The scheme would cause deterioration in local air quality, it does not sustain compliance with EU limit values and there are no specific mitigation measures to minimise the exposure of the nearby impacted communities. Objection is raised to the scheme in this regard.

7.4 ARCHAEOLOGY/HERITAGE

7.4.1 Impacts from works

The National Planning Policy Framework (NPPF) requires at paragraph 128 that '...Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.'

It further requires at paragraph 129 that 'Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage an account of the available evidence and any necessary expertise.' And at paragraph 132 that 'When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation.'

Significantly at paragraph 132 the NPPF indicates that 'As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification.' However, in line with all other aspects of the NPPF it is required that any harm to heritage assets be balanced against any potential public benefits of the scheme.

The London Plan (July 2011) within 7.18 (Heritage Assets and Archaeology) also requires that heritage assets be protected. These national and regional Policies are echoed by Policy HE1 of the Local Plan Part 1, which seeks to conserve historic landscape of the Borough, including archaeological remains, and Policy BE1, BE3 and BE4 of the Local Plan Part 2 - Saved Policies UDP which seek to protect and record archaeological remains and ensure that new development within or on the fringes of Conservation Areas serve to preserve and enhance those features which contribute to their character and amenity.

All areas of the application site lie within an Archaeological Priority Zone as designated within the Local Plan Part 1. The proposed works to the noise barrier are also located on the fringe of the Longford Village Conservation Area.

The applicants assessment of the impact of the development on heritage assets is set out at Chapter 8 (Cultural Heritage and Archaeology) and Chapter 9 (Landscape and Visual) of the submitted ES are considered relevant to this consideration.

Chapter 8 considers the impact of the development on Heritage Assets. The assessment indicates the applicants view that the proposed noise barrier will not have any significant effects on the setting of the Longford Conservation Area, this conclusion is primarily reached because:

The heritage significance of the Conservation Area is deemed to be derived from the focus of its historic core which looks inwards towards the Bath Road. The contribution of the historic and communal values of that setting to the significance of the Conservation Area diminish towards its southern boundary (particularly due to the presence of the existing noise barrier and existing airport infrastructure).

The chapter goes on to consider the heritage impact in two regards, Construction Effects (e.g. those arising from the construction works themselves) and operational Effects (e.g. assessing the impact of the change in operational arrangements which will arise from the development).

The ES concludes that the main receptor in relation to construction impacts would be archaeological remains, with the importance of the receptor being low and the risk being non-significant. The main issue in respect of operational changes would be the aural setting of the heritage asset, the ES concludes that the importance of the receptor is high but the risk is non-significant.

The physical works to the taxiways are located within the main area of the airport, to the south of the northern runway and effectively consist of the creation of hardstanding and sub-surface works associated with this.

It is not considered that this aspect of the works would be visible from Longford Conservation Area, and they will be visually similar to the predominant character of this area of the airport. Accordingly, this aspect of the works will not have any adverse impacts on the character of the Conservation Area.

Notwithstanding the lack of impact of the Taxiways on Longford Conservation Area, the works are located within an Archaeological Priority Zone. The English Heritage - Greater London Archaeology Advisory Service (GLAAS) have advised that Heathrow lies in an area of demonstrably high potential for prehistoric and Roman archaeology due to the presence of Neolithic ritual monuments, extensive Bronze Age field systems and settlements and later prehistoric and Roman settlement and that the proposed taxiway works are therefore located within a well documented archaeological landscape of at least regional significance and that a strong argument could be made that elements of the landscape are of national significance.

GLAAS are of the view that development should only be permitted if appropriate archaeological investigations are secured prior to their commencement. The applicants has submitted arguments against such a condition indicating the following points:

- where archaeological features are present it is likely they will have incurred physical damage from the historic development of Heathrow Airport, and this damage will have diminished their significance and be of a low value; and
- Siting concerns regarding the feasibility of undertaking archaeological works within an operational airport.

The applicant's position is not supported by GLAAS, who consider it to be ill informed. They advise that actual evidence would be needed to show that no remains exist (e.g. because of heavy physical works). There is no evidence that this is the case and the proposed taxiways encompass significant areas of land.

It is noted that the applicant themselves acknowledge that in 'normal' circumstances recording would be justified and the Local Planning Authority is mindful that archaeological remains are a finite and valuable resource. Once damaged or removed such remains are gone forever, and it is considered that any such damage would be both significant and contrary to adopted planning policy. Accordingly, the Local Planning Authority does not consider there are any circumstances in which such remains should be knowingly put at risk without proper investigations and agrees fully with GLAAS in this respect.

In relation to the feasibility of undertaking works at an operational airport. In effect this relates to logistical concerns regarding the undertaking of works; however it is unclear exactly what these concerns are. Such works would obviously need to be scheduled in a manner which would not be detrimental to the operation of the airport, and having due regard to health and safety matters. However, GLAAS have advised that archaeological investigation can be successfully pursued under artificial light in many circumstances and there are not considered to be any significant differences between archaeological investigations and other physical development at the airport (such as the construction of the taxiways themselves) which would preclude such works from being successfully pursued.

The grant of planning permission without securing necessary archaeological investigations would clearly be contrary to adopted planning policy and unacceptable. However, while it is unfortunate the applicant and Local Planning Authority are at odds on this matter, it is clear that such works are necessary and could be secured by way of an appropriate condition were permission to be granted. Accordingly, subject to such a condition being imposed this issue would not represent grounds for refusal in this case.

The noise barrier is located in close proximity to the Longford Conservation Area, as such the impact of works associated with the raising in height and enlargement of the noise barrier on the character and appearance of the Conservation Area should be considered.

The noise barrier will be located in the region of 50m from the Conservation area boundary at its closest point and, having regard to the information within the visual assessment submitted as part of the ES and site visits, it is apparent that the proposed structure will be visible within views from the Conservation Area (principally between existing buildings).

The proposal therefore seeks to mitigate the harm of the structure on the Conservation Area, through the use of a transparent component to the upper structure. The visual assessment indicates that the transparent component could successfully minimise visual impact of the structure on views from within the Conservation area, although the success of this measure would depend upon: the specification of the materials for the structure, the maintenance regime and proposals for soft landscaping in key locations (which may be within or outside the application site). These matters are of particular importance as some transparent materials can weather poorly or discolour over time and this could significantly alter the appearance of the structure when viewed from the Conservation Area.

While, there is insufficient detail within the application in these respects these are clearly matters which could be addressed by way of conditions or (in relation to potential off site landscaping) a legal agreement, subject to these the proposal would not be considered to have a harmful impact on the appearance of the Conservation Area.

7.4.2 Impacts from operations

In relation to this particular application it is also necessary to consider the potential operational impacts of the development on the Heritage Assets within areas of increased over flying (5 scheduled ancient monuments, 70 Statutorily Listed Buildings, 6 Registered Parks and Gardens, and 13 Conservation Areas). This impact would consist of potential increases in the number of aircraft flying over these areas and an increase in noise.

The most notable and significant impact would be on the heritage assets closest to the airport, where aircraft are at much lower levels with the most impacted area being the Longford Conservation Area and other heritage assets within the Longford Area.

In this respect, it is important to consider the existing baseline situation, and matters which currently contribute to the significance of these heritage assets. The aural environment of the area is already severely compromised by the way of ground and aircraft noise arising from the operation of the airport and views of planes taking off and landing from the heritage assets within the area. Having regard to this situation, it is not considered that an air of tranquillity or quite is something that currently contributes to the significance of the heritage assets.

The significance is instead derived principally from the character and built form of the Conservation Area and other heritage assets; accordingly it is not considered that the additional operations would have an unacceptable impact on the significance of these heritage assets when considered against the existing situation. It should be noted that this consideration relates to heritage impacts alone and is separate to other considerations relation to the operations which are addressed elsewhere in this report.

7.5 AIRPORT SAFEGUARDING

No safeguarding objections are raised.

7.6 CHARACTER AND APPEARANCE AND GREEN BELT

The Council's Local Plan Part 2 policy BE 13 states that development will not be permitted if its appearance fails to harmonise with features of the area which the local planning authority considers it desirable to retain or enhance.

The application proposes an acoustic screen which would be between 4 and 5 m in height, over a considerable length. The appearance of the screen is of concern given the height and overall scale of the fence, particularly considering its setting next to the river.

It is acknowledged that there is an existing fence already in this location; however the existing fence is only around 3m in height. The proposal extends the height of the fence to around 5m in height, and it is considered that proposed acoustic screen by virtue of this additional height and the overall size would represent an incongruous and visually dominant form of development and would harm the character and appearance of the wider area.

The proposal would therefore be contrary to policies BE13 and BE19 of the Hillingdon Local Plan: Part Two Saved UDP Policies (November 2012).

The area of land where the acoustic fence is to be erected is also designated Green Belt land. The applicant has failed to demonstrate that 'very special circumstances' exist to justify the erection of a 5m sound barrier in this location.

The general size and length of the fence is significantly greater than the fence that it would replace. The development would significantly increase the built up appearance of the site and would impact adversely upon the open setting of the Green Belt and injure the visual amenities of the site.

Further to this the application is not supported by officers as the proposed physical works will facilitate altered aircraft movements which will result in unacceptable noise and air quality impacts and on this basis and for the reasons set out above, 'very special circumstances' have simply not been demonstrated.

The proposal would therefore be contrary to policies OL1, OL4, BE13 and BE19 of the Hillingdon Local Plan: Part Two Saved UDP Policies (November 2012) and to Policy EM2 of the Hillingdon Local Plan Part One- Strategic Policies (November 2012), Policy 7.16 of the London Plan (2011) and paragraph 79 and 89 of the National Planning Policy Framework.

7.7 IMPACT ON NEIGHBOURS

The main impacts on the amenity of neighbouring properties would be in respect of noise and air quality arising from the operational changes which would be facilitated by the development. These impacts are discussed at length in sections 7.2.1 and 7.2.2 of this report with the conclusion being that the development would have unacceptable impacts.

In terms of assessing the physical works associated with the development, the main issues relate to whether the works would have any unacceptable impacts on neighbouring occupiers by way of dominance, loss of light or loss of privacy when assessed against Policies BE20, BE21 and BE24 of the Local Plan Part 2 - Saved Policies UDP.

In relation to Policies BE20 and BE24 the guidance set out within the Hillingdon Design and Accessibility Statement indicates that there should be a separation of 15m between residential properties and building which are two or more storeys in height in order to avoid over dominance.

The works to the taxiways would relate to the creating of new hardstanding and the breaking up of existing hardstanding. The works are located well within the airport boundary and over 80m from the nearest residential property, they would also be separated from these properties by the proposed noise barrier, accordingly it is not considered that the alterations to the taxiways would have any unacceptable impacts on amenity when considered against these policies.

The closest residential property to the proposed noise barrier would be circa around 27m from the noise barrier and the rear elevation of the nearest dwelling approximately 50m from the noise barrier. The noise barrier would be 5m high in this location which is similar to the height of a two storey property. It is proposed that the the upper 2m of the noise barrier being completed in a transparent material.

The separation distance is sufficient to ensure that there is no unacceptable loss of light to the residential properties or their gardens. The fact that the upper 2m of the noise barrier are proposed to be transparent would also, subject to appropriate maintenance, serve to further reduce the impact of the structure with regard to both light and dominance. Accordingly, the development would comply with Policies BE20 and BE24 of the Development Plan.

Neither the taxiways nor the noise barrier would result in the creation of any development which would result in loss of privacy and accordingly the development would not be contrary to Policy BE24.

7.7 HIGHWAYS AND TRAFFIC IMPACT

7.7.1 HIGHWAYS - policy context

Policies 6.1 and 6.3 of the London Plan set out regional policy in respect of highways and traffic impacts. The policies generally seek to ensure developments only occur where there

is adequate capacity to accommodate them and to maximise the use of sustainable modes of transport.

Policy 6.6 - Aviation of the London Plan indicates sets out specific requirements in relation to aviation related development and indicates that '... Development proposals affecting airport operations or patterns of air traffic (particularly those involving increases in the number of aircraft movements) should:

- a give a high priority to sustainability and take full account of environmental impacts (particularly noise and air quality)*
- b. promote access to airports by travellers and staff by sustainable means, particularly by public transport.'*

The Local Plan Part 1 set out the strategic local policy for transport issues relating to Heathrow at Policy T4 that:

'Recognising the economic importance of the airport to the borough this Hillingdon Local

Plan: Part 1-Strategic Policies will support the sustainable operation of Heathrow within its present boundaries and growth in the Heathrow Opportunity Area by facilitating improvements to public transport and cycle links, enhancing the public transport interchange to provide the opportunity for a modal shift from the use of private cars and from short haul air to sustainable transport modes and providing transport infrastructure to accommodate economic and housing growth whilst improving environmental conditions, for example noise and local air quality for local communities.'

The Local Plan Part Two sets out at Policies AM2 and AM7 that new developments are assessed having regard to transport capacity and should not have unacceptable impacts on the operation of the existing highways network or have any detrimental impacts in terms of pedestrian or highway safety.

7.7.2 HIGHWAYS - assessment

Neither the alterations to the taxiways or the proposed noise barrier would have any physical impacts on public highways, roads or pedestrian ways. Accordingly, the physical works are not considered to result in any detrimental impacts to the operation or safety of the highway network.

The operational impacts which would arise from the development would essentially equate to the redistribution of existing aircraft utilising the existing runways and associated alterations to the flight paths of these aircraft. The proposals would not increase the capacity of the airport above the existing authorised capacity of 480,000 air transport movements and a terminal capacity of 80mppa. Accordingly, it is not considered that the proposed operational changes would impact on the number of vehicle trips associated with the operation of the airport or have any associated impacts on the highway network.

7.8 SUSTAINABLE DRAINAGE

The application site is located within flood zone 1 as defined on the Environment Agencies flood maps, which means it is an area not considered to be at risk of flooding. However, planning policy still requires that the development is designed in a manner so as to deal with surface water as close to source as possible and not increase run off rates.

The proposals consist of the creation of additional areas of hardstanding to form the new taxiways, but also consist of the breaking up and removal of a slightly larger area of hard standing and its replacement with grassed areas. Overall, the proposals would create 12,238 sq.m of new hardstanding, but would remove 12,564 sq.m of hardstanding and replace this with grass.

The proposal would therefore create new grass areas which would enable drainage by infiltration into the ground, of an adequate size that the development overall would not increase surface water run off from the site above the existing situation. Having regard to the specific type and scope of the development works, this is considered to be an appropriate approach to sustainable drainage which would ensure the development did not increase the risk of flooding elsewhere in accordance national, regional and local planning policy.

7.8 ECOLOGY/HABITATS

7.8.1 ECOLOGY/HABITATS - Policy context

The National Planning Policy Framework at paragraph 109 sets out that: ' The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'

Paragraph 118 indicates that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity.

The London Plan at Policy 7.28 seeks the restoration of the Blue Ribbon Network and indicates that, development proposals should restore and enhance the Blue Ribbon Network by increasing habitat value; development which reduces biodiversity should be refused.

Policy 7.19 seeks to ensure the protection and enhancement of habitat and biodiversity and indicates that wherever possible; make a positive contribution to the protection, enhancement, creation and management of biodiversity.

The Local Plan Part 1 sets out at Policy EM3 that The Council will continue to promote and contribute to the positive enhancement of the strategic river and canal corridors and the associated wildlife and habitats through the Biodiversity Action Plan and the Thames River Basin Management Plan, and developer contributions where appropriate.

The Council will work with the Environment Agency and other interested bodies to continue to enhance the local character, visual amenity, ecology, transportation, leisure opportunities and sustainable access to rivers and canals. The Council will collaborate with adjacent local authorities to ensure that Hillingdon's River and canal corridors complement and link with cross boundary corridors.

Policy EM7 seeks the provision of biodiversity improvements from all development, where feasible and the protection and enhancement of populations of protected and priority species as well as their habitats.

The Local Plan Part 2 at Policies EC2 and EC5 seek to promote nature conservation, ensure developments do not harm protected species and to ensure developments protect and provide enhancements with regard to ecology and habitat.

The part of the Duke of Northumberland River that is adjacent to the proposed location of the noise barrier was diverted as part of the Terminal 5 development. It is slow flowing and partly canalized with concrete banks and is therefore not a designated Nature Conservation Site. However, it supports both marginal and aquatic vegetation and lies within the area of The River Colne Corridor of the Blue Ribbon Network, which is defined to be of a corridor of sub-regional importance within the Local Plan Part 1. Notwithstanding the lack of a formal designation the watercourse in terms of nature conservation, it is still part of the wider Blue Ribbon Network and still has potential ecological and habitat value.

7.8.2 ECOLOGY/HABITATS - Applicant's assessment

Chapter 10 of the submitted ES addresses matters relating to Ecology, it assesses potential impacts on those areas that will be directly affected by construction of the new infrastructure, including the area of land required for the noise barrier; and the land surrounding the areas of new infrastructure to a radius of 1000m (1km).

In relation to impacts on areas directly affected by construction the report concludes that protected or priority species could occur in the area of land between the T5 Business car park and the Duke of Northumberland River. This includes those birds which inhabit riverine environments, or scrub and grassland habitats. Furthermore the area that is to be specifically affected by the construction of the noise barrier has the potential to support grass snake (and also common toad) which are known to occur within the local vicinity, although there are no records of the species actually occurring within the area of survey itself. However, none of the trees that are to be affected by the construction of the noise barrier were considered to have the potential to support roosting bats although it is possible that bats use the area for foraging.

As a result of this conclusion the project includes a number of proposals to mitigate and enhance ecology including, compliance with all relevant legislation relating to pollution and protected species during construction works, the use of species rich grassland in the areas around the noise barrier and watercourse, the installation of 10 bat boxes and the installation of a kingfisher nesting box.

In relation to wider sites, the report considers the operational impacts of the development including noise and air quality on ecology and habitat within 1km of the site. The assessment indicates that there would be no adverse impacts on the ecology or habitat value of designated sites within 1km of the development.

Overall, the report concludes that, subject to appropriate measures as set out within the project, the impact of the development would not be significant with regard to both impacts in the immediate vicinity of the noise barrier and within 1km of the works.

7.8.3 ECOLOGY/HABITATS - Local Planning Authority Assessment

The works to the taxiways are located within the main operational area of the airport, which has no intrinsic value with regard to ecology or nature conservation. Accordingly, these aspects of the works are not considered to be of concern with respect to the aforementioned policy context.

The proposed noise barrier, which follows the length of an existing 3m barrier but will be increased in height to 5m, would run along the south western edge of the Duke of Northumberland River, accordingly the proposed changes to the noise barrier could have potential impacts on ecology and warrant further consideration. That said the baseline; situation which does involve an existing noise barrier in this location needs to be taken into consideration.

The proposed barrier would follow largely the same footprint as the existing barrier, however would be raised in height to 5m with the upper section being transparent.

It is noted that Natural England do not consider any aspect of the proposal poses any likely or significant risk to feature of the natural environment which they deal with and the Environment Agency have welcomed the fact that the upper 2 m of the noise barrier would be completed in transparent material. A feature which they consider would assist with light availability and minimise the impacts of shading on the watercourse.

The Council's Sustainability Officer notes that due to the considerable length and height of the barrier, the upper section has been detailed as having a transparent finish. This is necessary as it will both assist in mitigating the visual impact of the structure and ensuring light can reach the adjoining watercourse.

While necessary, there is the potential for the transparent portion of the barrier to generate problems for birds, which are unable to differentiate between the clear sky and transparent structure. However, this could be dealt with in a number of ways ranging from the application of decals of birds of prey to the use of natural vegetation which would in effect deter birds and/or ensure that the physical structure is visible to birds.

The Council's preferred solution would be the use of appropriate natural vegetation, which would soften the appearance of the barrier and address the issue of bird strike. The provision of soft landscape of appropriate species could also serve to enhance the ecological value of the watercourse in this location. The ES indicates that appropriate construction techniques would be utilised to ensure compliance with legislation in relation to pollution and protected species and also includes improvement measures including the use of species rich grass mix, the installation of bat boxes and the installation of a kingfisher nesting box. Subject to these matters being secured by way of appropriate conditions it is considered that the construction of the noise barrier would not have adverse ecological impacts and would provide appropriate ecological enhancement in accordance with adopted planning policy.

In relation to the applicants assessment of the impacts on other sites within 1km of the development, it is noted that no surrounding Boroughs, Natural England, or the Environment Agency have raised any concerns with regard to the impact of the development on biodiversity or ecology in the surrounding area. Accordingly, the Local Planning Authority has no reason to disagree with the findings of the applicants ES in this regard. However, this conclusion is without prejudice to the Local Authorities assessment of noise and air quality impacts on human health which is addressed elsewhere within this report.

Overall, it is considered that the development would comply with adopted planning policy in relation to ecological impacts.

7.10 LAND QUALITY/CONTAMINATION

7.10.1 LAND QUALITY/CONTAMINATION Policy context

The NPPF provides an overview of the contaminated land regime in England and requires consideration for development on land affected by contamination. Local Planning Authorities must be satisfied that planning permission can be granted on land use grounds taking full account of environmental impacts. Paragraph 121 states: "After remediation under planning, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990." It also states that: "Adequate site investigation information, prepared by a competent person, is presented."

The London Plan at Policy 5.21 requires that appropriate measures are taken to ensure that development on previously contaminated land does not activate or spread contamination.

Policy 7.20 requires that development proposals be resisted where they have significant adverse impact on sites with existing or proposed European or national designations. Locally important geological sites (LIGS) and regionally important geological sites (RIGS) should be given the level of protection commensurate with their importance.

Policy 5.14 seeks to ensure that developments protect and improve water quality.

The Hillingdon Local Plan: Part 1 – Strategic Policies (Adopted November 2012) required under Policy EM8 that proposals for development on contaminated land provide mitigation strategies that reduce the impacts on surrounding land uses. Major development proposals will be expected to demonstrate a sustainable approach to remediation that includes techniques to reduce the need to landfill. The Council will also seek to safeguard and improve ground water quality and surface including Principal Aquifers, and Source Protection Zones.

The Hillingdon Local Plan: Part 2 Policy OL22 requires proposals relating to damaged, derelict and otherwise degraded land to be accompanied by an assessment of its current condition and of any adverse effects on adjacent land. Such an assessment should also indicate, as far as is practicable, measures that would negate or contain the causes of the land's unsatisfactory condition of the land.

Policy OE11 states that planning permission will not be granted for proposals which involve an increase in the use by the public of contaminated land which is to remain untreated.

Further detailed guidance is provided with the Council's Land Contamination - Supplementary Planning Guidance which was adopted in January 2004.

7.10.2 LAND QUALITY/CONTAMINATION - Applicant's assessment

The applicant's ES at Chapter 11 provides a detailed assessment of matter relating to land quality and contamination including, consideration of Topography, Geology, Hydrogeology, Hydrology, existing potential contaminants and potential receptors.

The applicant's assessment indicates that ground investigations have been undertaken and the soil analysis results did not return levels of contamination which would present a significant risk to receptors and that excavation works will extend to depths where groundwater is encountered.

The assessment also indicates the development would include further specific measures such as the choice of materials to appropriate standards and the implementation of procedures which cover the identification and remediation of unexpected contamination during the design and construction process.

The assessment concludes that the development will have no potentially significant effects have been identified associated.

7.10.3 LAND QUALITY/CONTAMINATION - Local Planning Authority Assessment

The applicants ES includes a thorough assessment of ground conditions informed by appropriate surveys and investigations. It is considered that subject to appropriate conditions to ensure the mitigation measures identified in the ES were implemented the development would appropriately address land and water quality issues in accordance with adopted planning policy.

7.11 HEALTH EQUALITIES IMPACT

There are concerns that the proposal would result in adverse health impacts due to noise and air quality. The application is accompanied by an analysis of health impacts, and as such the application was referred to the Director of Public Health for comment.

The Director of Public Health noted that there would result in an increase in flights over Cranford, and as such residents of Cranford can expect, for almost a third of the year, to experience aircraft departures at night - which they currently do not experience.

There is also concern that the applicant has been 'selective' in the way in which they appear to have sought to gather evidence to inform their Health Impact Assessment. The focus of the HIA and EIA was the relationship between noise and health for (a) annoyance, (b) sleep disturbance and (c) cognitive performance. This approach is not considered adequate because, for example, health impacts relating to elevated Blood Pressure can still be experienced even if the aircraft noise doesn't wake the affected person.

In summary, the application submissions would tend to underestimate health impacts. No mention is made of noise events (ie. noise louder than 35 decibels) such as aircraft travelling overhead and their impact on an individual's blood pressure (Note: People with high blood pressure -Hypertension, have an increased risk of developing heart disease, stroke, kidney disease and dementia).

As is discussed in section 7.3 of this report, in addition to noise impacts there are also concerns over adverse impacts to health which would arise due to any deterioration in air quality, which would result from aircraft movements facilitated by the proposal, and objection to the scheme is raised in this regard.

7.12 EQUALITIES IMPACT ASSESSMENT

Officers have considered the demography of residents living in areas which could be affected by the proposals (namely noise and air quality impacts). Various factors have been taken into account including age, sex, disability, religion or belief, sexual orientation, gender assignment, marriage or civil partnership, community cohesion, pregnancy or maternity, community safety, race and ethnicity.

An assessment was then made of this information and data with regards the application and local residents. Consideration was also made of the various consultation responses, as well as relevant legislation including the Equality Act 2010.

It is clear that there will be both positive and negative changes experienced by different populations depending on where they are located. However, the analysis did not identify that there would be, or likely to be, an impact on any certain groups.

7.13 CUMULATIVE IMPACT ASSESSMENT

Concern is raised that the proposal when considered in conjunction with other proposals would result in unacceptable cumulative impacts which have not been taken into account.

The Airports Commission was set up to recommend options for maintaining the UK's status as an international hub for aviation. To assist the Commission in developing short term and medium term measures, Heathrow Airport Limited (HAL) presented a number of measures related to the operation of Heathrow. These included:

1. Redesigning the airspace local to Heathrow and the London Terminal Manoeuvring Area.
2. Introducing runway alternation when the airport is operating with aircraft landing or taking off heading east.
3. Introducing measures assessed during the recent Operational Freedoms trial.
4. Putting an end to the routine use of both runways for arrivals between 06.00 and 07.00.
5. Changing the policy of concentrating aircraft on only a few flight paths to one using a greater number of routes in a pattern that provides predictable periods of respite from aircraft flying overhead.
6. Reassessing the policy of 'first come, first served'.
7. Ending the policy of westerly preference.

These measures could all be implemented within the current air traffic movement cap of 480,000 and importantly would not require any new infrastructure or physical changes to the airport. As a consequence none of these measures would require a planning application to be introduced and therefore would not trigger the need for a planning application.

The Airports Commission accepted the HAL submission and in turn has included these operational changes within their recommendations to the Department for Transport.

It is therefore important to understand the cumulative impacts that could arise if the current application were approved and implemented along side the various measures set out by the Airports Commission.

On submission of the application HAL advised the Council that they did not consider there was a need to undertake a cumulative assessment of 'Ending the Cranford Agreement' with the other operational changes put forward to the Airports Commission.

The Council's Sustainability Officer does not consider it acceptable that the Environmental Statement does not consider cumulative impacts. Determining cumulative assessments with other developments is complex. EU guidance on EIA suggests that cumulative impacts should be considered in the context of existing and future planned activities.

Further clarity about how to assess cumulative impacts was provided by the Infrastructure Planning Commission (IPC) following two significant Judicial Review decisions on the

implementation of EIA. These decisions, Rochdale ex parte Milne (1999) and Rochdale ex parte Tew (2000) are collectively known as the Rochdale Envelope. The advice by the IPC issued in guidance called 'Using the Rochdale Envelope' in 2011 states:

'In assessing cumulative impacts, other major development should be identified through consultation with the local planning authorities and other relevant authorities on the basis of those that are:

- Under construction*
- Permitted application(s), but not yet implemented*
- Submitted application(s) not yet determined*
- Projects on the IPC's Programme of Projects*
- Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited*
- Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward'*

The other proposed operational changes do not require planning permission (accordingly, there would be no secondary detailed level of assessment). This heightens the concern of the Council that if this proposed application were approved, there could be considerable unassessed cumulative impacts with a range of other measures.

The Airports Commission has now made final Interim Recommendations to the DfT for changes to operations at Heathrow. As a consequence, it is reasonable to expect the proposed development to come forward alongside the recommendations of the Airports Commission. The Council is concerned that some of these operations alone would have significant environmental effects, i.e. more night flights and ending westerly preferences.

The Council considers that there would be considerable combined effects between the proposed development and the other operational changes. Furthermore, the Council is concerned that there is no adequate assessment framework for ensuring the impacts on residents are properly considered.

7.14 FINANCIAL COMPENSATION & MITIGATION MEASURES

The applicant concludes 175 households newly exposed to 69 LAeq,16hour dB should be offered home relocation assistance and a further 350 households newly exposed to 63 LAeq,16hour dB and a noise increase of 3dB or greater will be eligible for residential acoustic insulation with the cost met by HAL.

Heathrow's current noise mitigation schemes covers both day and night time disturbance. The mitigation measures for both night and day time schemes are limited to a 50% financial contribution for replacement double glazing to bedrooms or free secondary glazing to bedroom plus free ventilation and loft insulation. The eligibility is restricted to the 18-hour 1994 69dB LAeq noise contour for day time and 90dBA SEL arrival footprint of a B744 aircraft. 8,000 homes are eligible to the night time scheme and 41,000 to the night time scheme.

Heathrow are also currently piloting a mitigation scheme that covers some but not all the 8000 homes eligible for the day time mitigation scheme and this provides for a free noise assessment to determine a statement of need, provision of free secondary glazing or 100%,

50% 25% financial contribution towards double glazing costs, dependent on noise exposure levels.

Table 6.31 of the applicants ES indicates the mitigation offer proposed by the applicant and the number of buildings of each type which would be eligible. A copy of this table is provided below for information.

Type	Scheme	Property Type	Policy Reference	Eligible Buildings	Eligibility Criteria	Offer	Eligible Buildings
Insulation	Enhanced Residential Scheme	Residential	APF Paragraph 3.39	Households	63dBA Leq contour AND a 3dBA increase in noise exposure.	Free noise assessment to determine statement of need. 100% contribution towards insulation/ventilation costs based on statement of need.	175
	Extended Community Buildings Scheme	Community	APF Paragraph 3.37	Schools, colleges, registered nurseries, hospitals, hospices, community halls and libraries.	63dBA Leq contour AND a 3dBA increase in noise exposure.	As per current Community Buildings Scheme.	0
Compensation	Enhanced Home Relocation Assistance	Residential	APF Paragraph 3.36	Households	69dBA Leq contour.	As per existing Home Relocation Assistance scheme.	350

The adequacy of these proposals is discussed within the Noise section of this report.

The ES indicates that the only air quality mitigation will include measures to reduce the impacts of dust arising from the construction activities.

No mitigation in relation to the operational impacts of the development on air quality are proposed.

The adequacy of these proposals is discussed within the Air Quality section of this report.

7.15 COMMENTS ON PUBLIC CONSULTATION

Concerns raised related primarily to noise and air quality, and associated impacts on health and well being. These matters as well as concerns in relation to the inadequacy of mitigation measures and unsightly appearance of the noise barrier are addressed in the the body of the report and reflected in the reasons for refusal.

It is noted that some submissions indicated support for the proposal, principally where the author felt they would benefit from a reduction in noise. Whilst the benefits are acknowledged, it should also be recognised that over 4000 people will experience significant adverse effects.

The key concern is that the Council considers the methodology used by the applicant to measure noise impacts to be fundamentally wrong and that the ES misrepresents the significant effects (i.e. far more than 4000 people are likely to suffer adverse impacts). Furthermore, the Council cannot accept noise level increases to those already at risk from

significant disturbance without mitigation (and adequate and sufficient mitigation is not proposed).

So whilst it is recognised that there will be benefits, the Council must give appropriate protection to those who will be adversely affected.

Concerns were also raised in relation to the impact of proposals on heritage assets, which have been considered by English Heritage. The English Heritage acknowledges the concern, however does not suggest that impacts would be so severe as to warrant refusal of the scheme for this reason.

7.16 PLANNING OBLIGATIONS

It is clear that the proposal would have significant detrimental impacts with regard to both Noise and Air Quality. The only potential way to mitigate these off-site impacts would be through the use of a robust and comprehensive legal agreement ensuring off-site and operational mitigation measures and/or compensation, which is not proposed as part of the scheme.

There is also no agreement with regard to the exact nature of extent of appropriate means of mitigation (including the threshold for its provision), there is no appropriate legal agreement in place. In this absence of this the proposal fails to address the issues raised elsewhere in this report.

8. OBSERVATIONS OF BOROUGH SOLICITOR

General

Members must determine planning applications having due regard to the provisions of the development plan so far as material to the application, any local finance considerations so far as material to the application, and to any other material considerations (including regional and national policy and guidance). Members must also determine applications in accordance with all relevant primary and secondary legislation.

Material considerations are those which are relevant to regulating the development and use of land in the public interest. The considerations must fairly and reasonably relate to the application concerned.

Members should also ensure that their involvement in the determination of planning applications adheres to the Members Code of Conduct as adopted by Full Council and also the guidance contained in "Probity in Planning, 2009".

Planning Conditions

Members may decide to grant planning consent subject to conditions. Planning consent should not be refused where planning conditions can overcome a reason for refusal. Planning conditions should only be imposed where Members are satisfied that imposing the conditions are necessary, relevant to planning, relevant to the development to be permitted, enforceable, precise and reasonable in all other respects. Where conditions are imposed, the Council is required to provide full reasons for imposing those conditions.

Planning Obligations

Members must be satisfied that any planning obligations to be secured by way of an agreement or undertaking pursuant to Section 106 of the Town and Country Planning Act 1990 are necessary to make the development acceptable in planning terms. The obligations

must be directly related to the development and fairly and reasonably related to the scale and kind to the development (Regulation 122 of Community Infrastructure Levy 2010).

Equalities and Human Rights

Section 149 of the Equalities Act 2010, requires the Council, in considering planning applications to have “due regard” to the need to eliminate discrimination, advance equality of opportunities and foster good relations between people who have different “protected characteristics”. The “protected characteristics” are age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation.

The requirement to have “due regard” to the above goals means that members should consider whether persons with particular “protected characteristics” would be affected by a proposal when compared to persons who do not share that protected characteristic. Where equalities issues arise, members should weigh up the equalities impact of the proposals against the other material considerations relating to the planning application. Equalities impacts are not necessarily decisive, but the objective of advancing equalities must be taken into account in weighing up the merits of an application. The weight to be given to any equalities issues is a matter for the decision maker to determine in all of the circumstances.” Members should also consider whether a planning decision would affect human rights, in particular the right to a fair hearing, the right to respect for private and family life, the protection of property and the prohibition of discrimination. Any decision must be proportionate and achieve a fair balance between private interests and the public interest.

9. CONCLUSION

The application seeks permission for physical works to the portions of land forming part of the runways (and areas between the runways) at Heathrow Airport. Additionally an acoustic fence is also proposed on land adjacent to the airport.

The Local Planning Authority recognises the important part that aviation plays in maintaining London’s world city status, however the environmental impacts of changes in airport operations must be very carefully assessed in planning terms, particularly in relation to noise and air quality.

The submitted planning material tries to identify and assess the environmental implications of the proposals, and suggests ways by which compensation could be offered or mitigation introduced. It also makes references to modern planes now bring quieter. However, the submitted technical material is considered inadequate.

Officers do not consider that the application properly assesses noise impacts from aircraft operations facilitated by the development impacting on residential amenity, nor on educational establishments (local schools), nor are adequate sufficient mitigation measures proposed to reduce noise impacts. This is considered to be a serious issue given the recent studies that suggest that high levels of aircraft noise are associated with health risks including stroke, coronary heart disease and cardio vascular disease.

It is also considered that aircraft operations facilitated by the development would result in a significant and unacceptable worsening of local air quality, to the detriment of the health of the local population. No specific or adequate mitigation measures are proposed as part of the application to address this concern.

The Environmental Statement does not comply with the Environmental Impact Assessment Regulations, and nor does it adequately consider cumulative impacts, and objection is raised to the proposal in this regard.

Refusal is recommended.

10. REFERENCE DOCUMENTS:

The Hillingdon Local Plan: Part 1- Strategic Policies (8th November 21012)

Hillingdon Local Plan: Part 2 - Saved UDP Policies (November 2012)

London Plan 2011

National Planning Policy Framework (NPPF)

London Council's Air Quality and Planning Guidance produced by The London Air Pollution Planning and the Local Environment (APPLE working group), revised version January 2007

Attitudes to Noise from Aviation Sources in England (ANASE) published by Dept of Transport (2 November 2007)

2M Submission To Airports Commission. May 2013 [The 2m Group consists of London Boroughs of: Brent, Camden, Ealing, Hammersmith and Fulham, Haringay, Hillingdon, Hounslow, Islington, Kensington and Chelsea, Kingston, Lambeth, Lewisham, Merton, Richmond, Southwark, Sutton and Wandsworth

London Borough of Hounslow Aviation Policy, Adopted February 2006

CAA Operational Freedoms Report CAA 1117 (2013)

Acoustic Performance Standards for the Priority Schools Building Programme Version 1.7 June 2013" issued by the Department for Education and Schools

Good Practice Guide on Noise exposure and Potential health Effects - Technical Report No 11/2010, European Environment Agency (2010)

Noise Insulation Regulations 1975 (Amended 1988)

Hypertension and Exposure to Noise near Airports', Environmental Health Perspectives, March 2008; 116(3): 329-33

Airports Commission: Long-term hub capacity options, Heathrow Airport Limited response (17th July 2013)

Airports Commission Discussion Paper 04: Airport Operational Models Heathrow Airport Limited response (11 July 2013)

Proposals for making the best use of existing capacity in the short and medium terms Heathrow Airport Limited (17th May 2013)

Annex J - London Heathrow Operational Freedoms Trial: Effect on Noise, Civil Aviation authority (21 August 2012)

Noise Policy Statement for England, March 2010

Residential Exposure To Aircraft Noise And Hospital Admissions For Cardiovascular Diseases: Multi-airport Retrospective Study, authors Correia, Peters, Levy, Melly and Dominici - published in British Medical Journal 8 October 2013

Residential Exposure To Aircraft Noise And Hospital Admissions For Cardiovascular Diseases: Multi-airport Retrospective Study, authors Correia, Peters, Levy, Melly and Dominici published in British Medical Journal 8 October 2013)

Increased Prevalence Of Hypertension In A Population Exposed To Aircraft Noise Rosenlund, Berglind, Pershagen, Jarup, Bluhm, published on Occup Environ Med 2001;58:769-73.

Aircraft Noise, Air Pollution, and Mortality From Myocardial Infarction, Huss A, Spoerri A, Egger M, Roosli M. published in *Epidemiology* 2010;21:829-36.

Exposure-response Relationship Of The Association Between Aircraft Noise And The Risk Of Hypertension, Babisch W, Kamp I. published by *Noise Health* 2009;11:161-8.

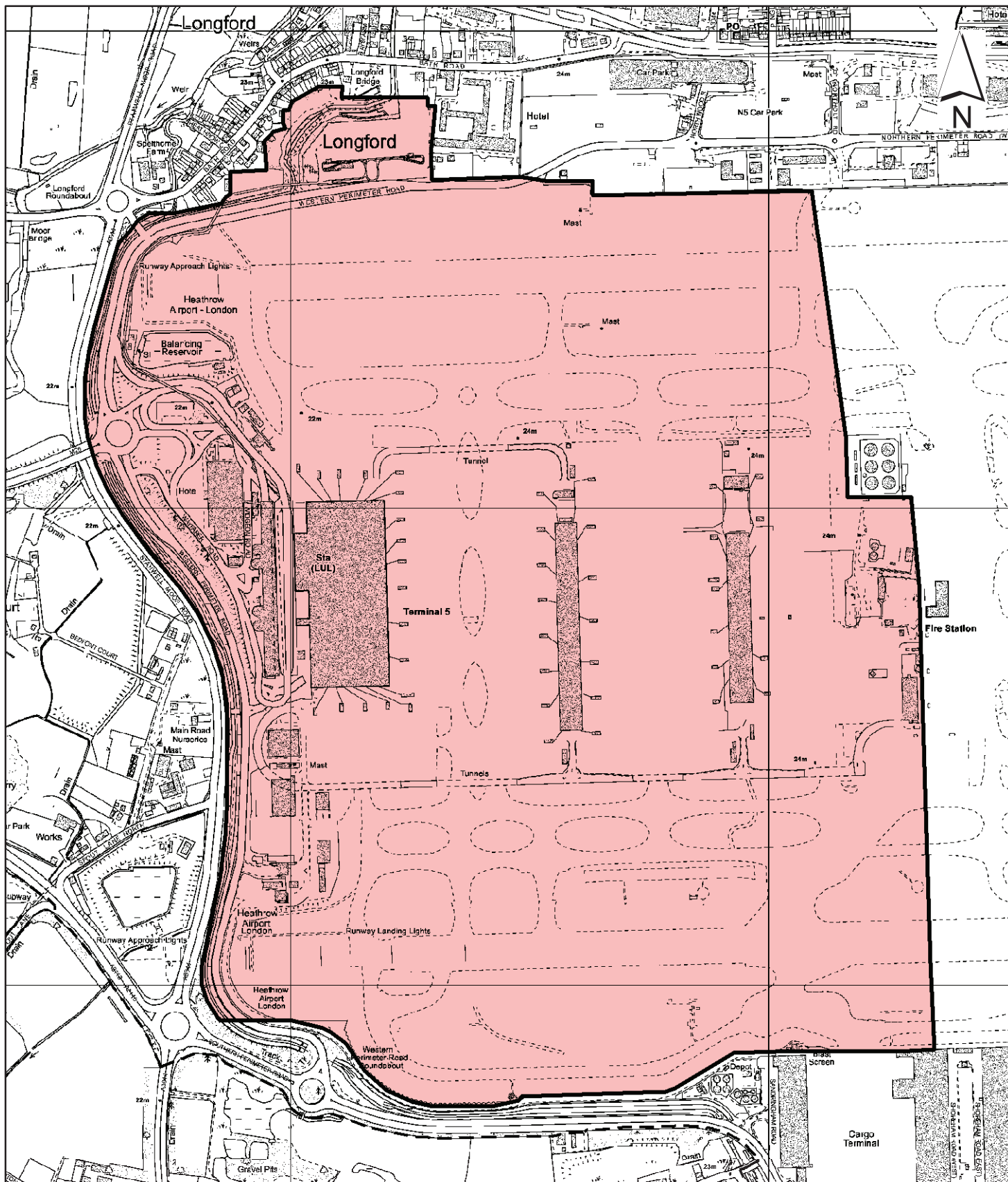
Aircraft Noise and Incidence of Hypertension, Eriksson, Rosenlund, Pershagen, Hilding, Ostenson, Bluhm published in *Epidemiology* 2007;18:716-21.

Appendix A - Drawings and supporting Document Schedule

10000 00 GA XXX 000143 V 3.0
10000-XX-GA-XXX-000142 Ver 4.0
Fig 2.1 (Current Airfield Layout)
10000-XX-GA-100-000142 Ver. 4.0
10000-XX-GA-100-000145 Ver. 2
10000-XX-GA-100-000148 Ver 1.0
10000-XX-GA-100-000149 Ver. 1.0
10000-XX-GA-100-000150 Ver 1.0
10000-XX-GA-100-000151 Ver 1.0
10000-XX-GA-100-000153 Ver. 2.0
10000-XX-GA-100-000191 Ver. 1.0
10000-XX-GA-100-000192 Ver 1.0
10000-XX-GA-100-000193 Ver 1.0
10000-XX-GA-SE-000001 Ver 1.0
33068-Lon180a Fig 1
33068-Lon181a Fig 2
33068-Lon182a Fig 3
33068-Lon183a Fig 4
33068-Lon185 Fig 1
33068-Lon186 Fig 2
33068-Lon187 Fig 3
33068-Lon188 Fig 4
- Technical Note 2 on Air Quality - a response, dated 3 December 2013
- Technical Note 1 on Noise - a response, dated 3 December 2013
- Environmental Statement Main Report, Figures, Appendices A-Y
- Planning Statement v 4.1
- HAL Noise Barrier for Longford Village - Construction Methodology and Key Dates report Rev. 02
- Health and Equalities Impact Assessment, May 2013
- Applicant written letter of response of 18 September 2013 to London Borough of Hillingdon (LBH) further to LBH letter seeking clarification of 16 August 2013
- HAL - Technical Note - Clarification of Information within the Environmental Statement dated 19th September 2013
- NOTE Operational freedoms and planning application to enable full easterly Alternation received 2 October 2013
Erratum Notes (January 2014)
Revisions to Chapter 6 of the ES: 6. Air & Ground Noise (January 2014)
Key to School ID Number Given on Noise Figures (January 2014)
Fig 4 - New to 69 dB LAeq-Longford (January 2014)
Fig 2 - Air noise - New to 69 dB LAeq-Cranford (January 2014)
Fig 1 - Air noise 63 + 3 dB LAeq (January 2014)

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Fig 6.6 through to 6.9 and Fig 30 through to 33 (January 2014)
Fig G.9 through to Fig G.11, Fig G.16 through to Fig G.34 (January 2014)
Fig 6.1 through to 6.37 and Fig G.9 through to G.42 (January 2014)



Notes



Site boundary

For identification purposes only.

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Site Address

**Northern Runway
Heathrow Airport**

Planning Application Ref:

41573/APP/2013/1288

Planning Committee

Major Application

Scale

1:11,000

Date

January 2014

**LONDON BOROUGH
OF HILLINGDON
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