Environmental Statement

Easterly Alternation Infrastructure Project

Volume I: Non-Technical Summary

Document Reference: 19309-XX-EC-XXX-000066

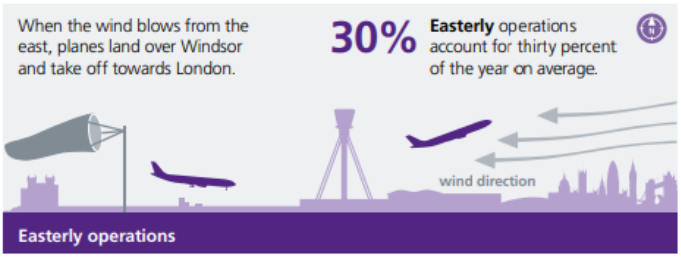
Heathrow

This is the Non-Technical Summary of the Environmental Statement that has been prepared to accompany a planning application by Heathrow Airport Limited (the 'Applicant'). This document describes the aims of the planning application, the Environmental Impact Assessment (EIA) process undertaken, and the key findings resulting from the assessment. A list of frequently asked questions and responses can also be found on Page 37.

Heathrow Airport

Heathrow Airport is located approximately 15 miles (24.1 km) to the west of central London, within the London Borough of Hillingdon (LBH). It is situated on approximately 1,227 hectares (ha) of land. The Airport simultaneously operates two parallel runways (the northern and southern runways), with arriving aircraft assigned to one runway and departing aircraft to the other.

The Airport operates either on 'easterly' or 'westerly' operations, depending on the wind conditions. Aircraft normally take off and land into the wind, with the prevailing winds at Heathrow Airport coming in from the west. Because operations are therefore dictated by climatic conditions the mode of operations varies. However, as a rule of thumb westerly operations occur for about 70% of the time, with easterly operations occurring for about 30%.



The Cranford Agreement

The Cranford Agreement was a Ministerial undertaking given in 1952 to use best endeavours to avoid using the northern runway at Heathrow Airport for departures in an easterly direction over Cranford.

After public consultation, the then Labour Government ended the Cranford Agreement in January 2009 with the aim of distributing noise more fairly around the Airport and provide predictable periods of respite to communities under flight paths during easterly operations.

During the day, the Airport currently alternates ('swaps') the use of the two runways when on westerly operations, to provide local communities with scheduled periods of respite. The present pattern means that one runway is used by landing aircraft from 06:00 until 15:00 and the other runway is used from 15:00 until after the last departure. This is known as runway alternation.

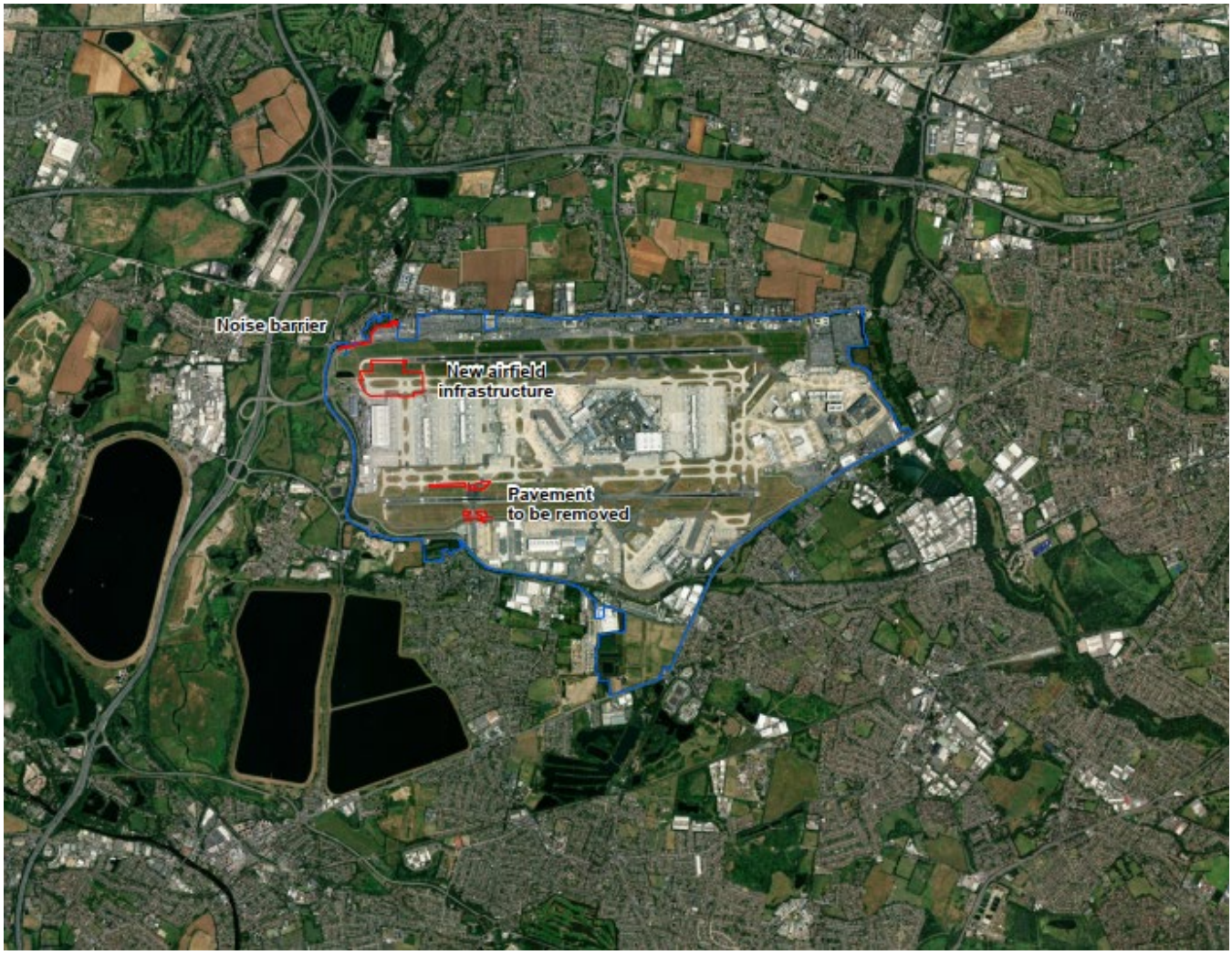
Runway alternation has not occurred routinely at the Airport during easterly operations. Therefore, the northern runway is typically not used for scheduled easterly departures (over the community of Cranford) and the southern runway is typically not used for arrivals from the west. During easterly operations, this means that most arriving aircraft land on the northern runway and most departures take off from the southern runway. This was originally due to the Cranford Agreement, which was established in the 1950s to prevent aircraft from taking off over Cranford (located to the east of the Airport) when Heathrow was on easterly operations. The Cranford Agreement ended in January 2009 (see inset for more information), however Heathrow Airport has

not yet implemented full runway alternation during easterly operations, as physical works are required to the airfield to allow the operational changes.

This planning application is seeking permission for the physical works to the airfield (known as the 'Proposed Development') to enable the implementation of full runway alternation during easterly operations. These works are restricted to a small area of the airfield and to the construction of a noise barrier near the village of Longford. The term 'Site' is used to describe the area in which construction activities will take place and is shown in **Inset 1**.

No change is proposed to other airport operations or to the number of flights that operate to and from Heathrow.

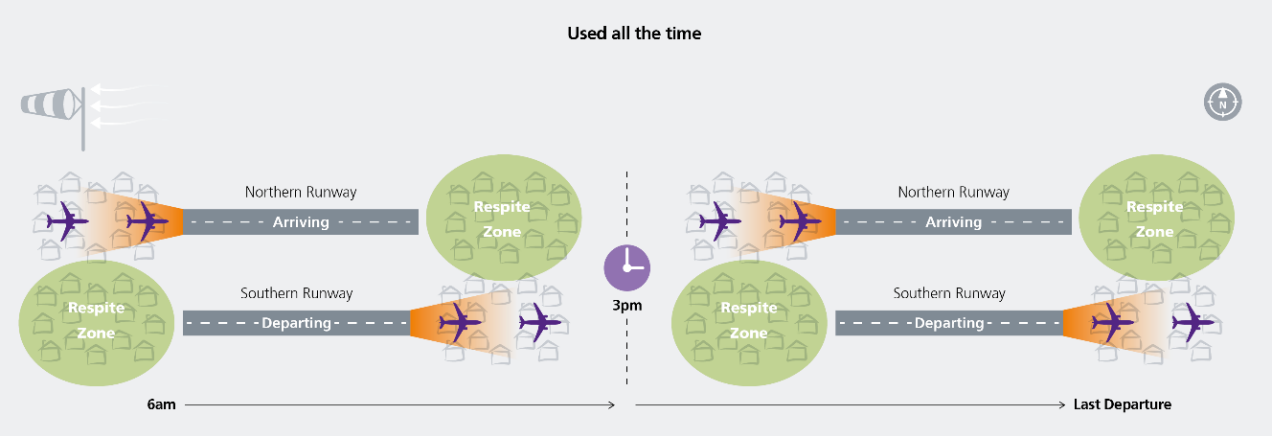
Inset 1: Aerial view of proposed changes to Heathrow Airport



Background to the Planning Application

A legacy of the Cranford Agreement is that the western end of the northern runway does not have the same extent of taxiways and holding areas as the other runway ends. The new infrastructure of the Proposed Development will provide the new runway access taxiways to enable regular and routine departures on the northern runway in an easterly direction (Runway 09L) with regular arrivals occurring on the southern runway (Runway 09R) from the west, when the wind is blowing from the east.

Inset 2: Direction of arrivals and departures on the northern and southern runways during easterly operations (existing)



The Proposed Development will allow the runways to alternate between departures and arrivals on easterly operations (as they do on westerly operations) and Heathrow will alternate at 15:00 each day so if, for instance, on easterly operations, the morning sees the southern runway being used for departures and the northern runway being used for arrivals, after 15:00 the northern runway will switch to being used for departures and the southern runway will then be used for arrivals. As with westerly alternation, the pattern will be swapped weekly (if easterly winds continued for a sustained period).

Inset 3: Direction of arrivals and departures on the northern and southern runways during easterly operations (proposed)

What is respite?

In the case of Heathrow Airport, 'respite' relates to a break from or a reduction in noise from aircraft overhead.

Why is it important?

Periods of respite are important for those communities surrounding the Airport to allow communities to have predictable periods of relief from aircraft noise.

These operational changes aim to distribute noise more equitably around the Airport, providing greater predictability and extending the benefits of runway alternation to all communities under the flight paths during easterly operations. Periods of 'respite' will be provided for all affected communities and the communities living west of the northern runway and east of the southern runway will experience respite from what has, for decades, been constant overflying when the Airport is on easterly operations.

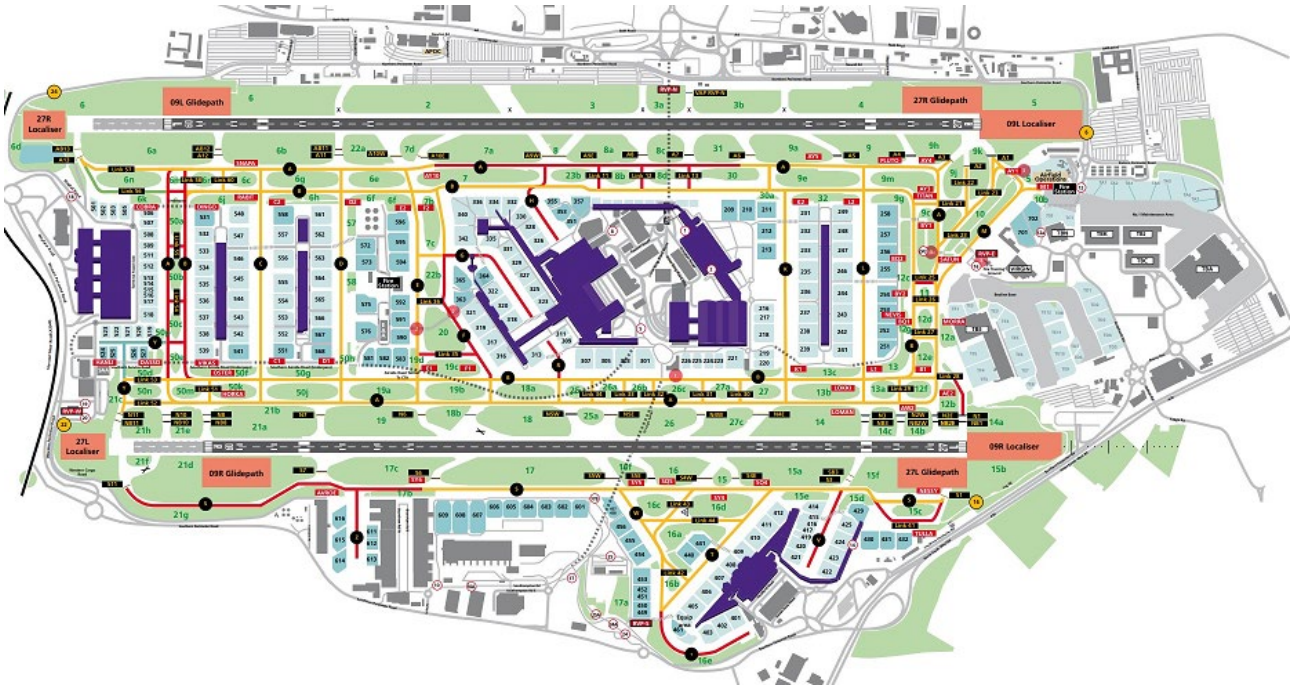
It should be noted that Heathrow previously submitted a very similar planning application to the London Borough of Hillingdon in 2013 (*41573/APP/2013/1288*) to construct an additional taxiway at the western end of the northern runway to enable full runway alternation on easterly operations. Planning permission was granted on appeal by the Secretary of State in February 2017. However, the development did not proceed given the need for Heathrow to address the implications of the Airports National Policy Statement, which was published in 2018. A review of the requirements for the infrastructure to enable runway alternation on easterly operations has determined that the location and layout of the physical infrastructure set out in the previous planning application is no longer optimal and a revised layout is now proposed.

Heathrow remains committed to providing predictable and meaningful respite for communities whilst on easterly operations and therefore is submitting this planning application for the Proposed Development.

The Airport and Surroundings

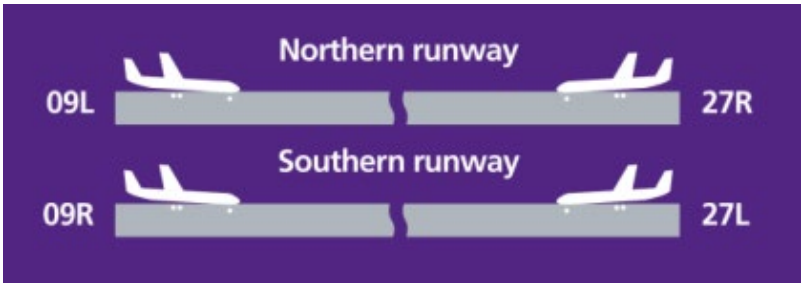
The Airport operates two parallel runways (northern and southern runways) with four operational terminals (Terminal 2, Terminal 3, Terminal 4 and Terminal 5). The existing infrastructure is comprised of the hardstanding runways, terminal buildings, taxiways, aprons, auxiliary buildings and airfield grassland. The airfield layout is outlined below:

Inset 4: Current Airfield Layout



The northern runway (known as 09L/27R) has a length of 3,902 metres and the southern runway (known as 09R/27L) has a length of 3,660 metres. Both runways are orientated east to west.

Inset 5: Heathrow Airport Runways



The Airport lies within the southern area of the London Borough of Hillingdon and also borders the London Borough of Hounslow to the east and south, the London Borough of Spelthorne to the south and southwest, and Slough Borough to the north-west.

Windsor & Maidenhead lies further to the west, with the town of Windsor lying approximately in line with the northern runway.

The Airport is broadly bounded to the north by the A4, to the west by the A3044, to the east by the A30 and to the south by the Duke of Northumberland's River. Approximately 600m from the western perimeter of the Airport lies the M25, which has a direct link to Terminal 5 and the Airport's perimeter road from Junction 14a. The M4 provides a direct link to the Airport's central terminal area and its perimeter road from Junction 4 via the 'M4 spur'.

The area surrounding the Airport is characterised by a mixture of hotels, office space, industrial, commercial and residential uses. There are several communities bordering Heathrow's perimeter including:

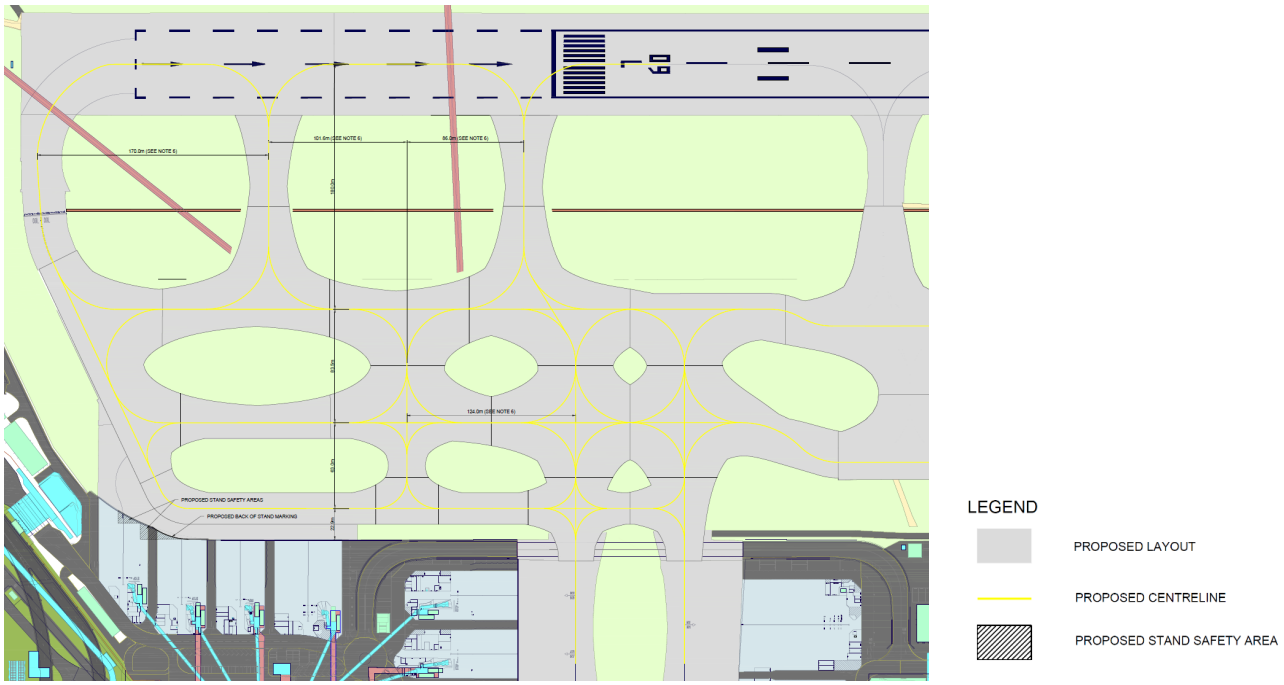
- To the north: Longford, Harmondsworth, Sipson, Harlington.
- To the east: Cranford and Hatton.
- To the south: West and East Bedfont, Stanwell and Stanwell Moor.
- To the west: Colnbrook, Poyle and Windsor.

Description of Proposed Development

To allow aircraft to use both runways when on easterly operations the physical works required include the following:

- **New airfield infrastructure** – The construction of a Runway Hold Area at the western end of the northern runway (09L). This includes the construction of two new Runway Access Taxiways on to the northern runway and realignment of links to tie into the taxiways (**Inset 6**). This will include the removal of sections of airfield pavement no longer required and grass areas reinstated. The new airfield infrastructure will allow departing aircraft to taxi to and enter the northern runway safely and smoothly, therefore improving efficiency and minimising delays and congestion during easterly operations.

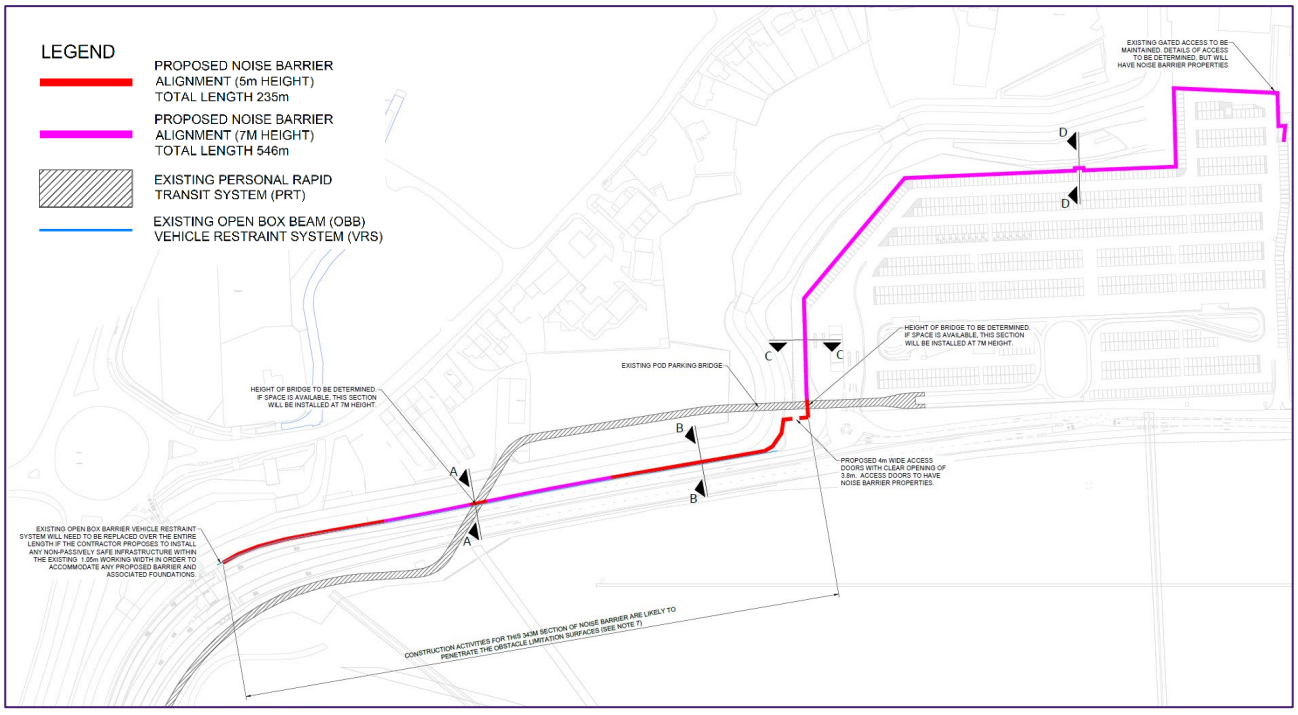
Inset 6: Extract Easterly Alternation Infrastructure Proposed 09L Runway Hold Area General Arrangement



- **Noise barrier** – The construction of a noise barrier (**Inset 7**) to the north of the Airport and south of the village of Longford which will be approximately 781m in length and range from five to seven metres in height. It will extend continuously north eastwards from the point at which the bridge linking Longford Roundabout meets Wright Way, to the north east corner of the Terminal 5 Pod car park. The noise barrier will be constructed of transparent materials (for example, Perspex or equivalent) for the top two to four metres section with the remaining three metres of bottom section being a non-transparent external wooden finish. The transparent materials will allow continued views from Longford.

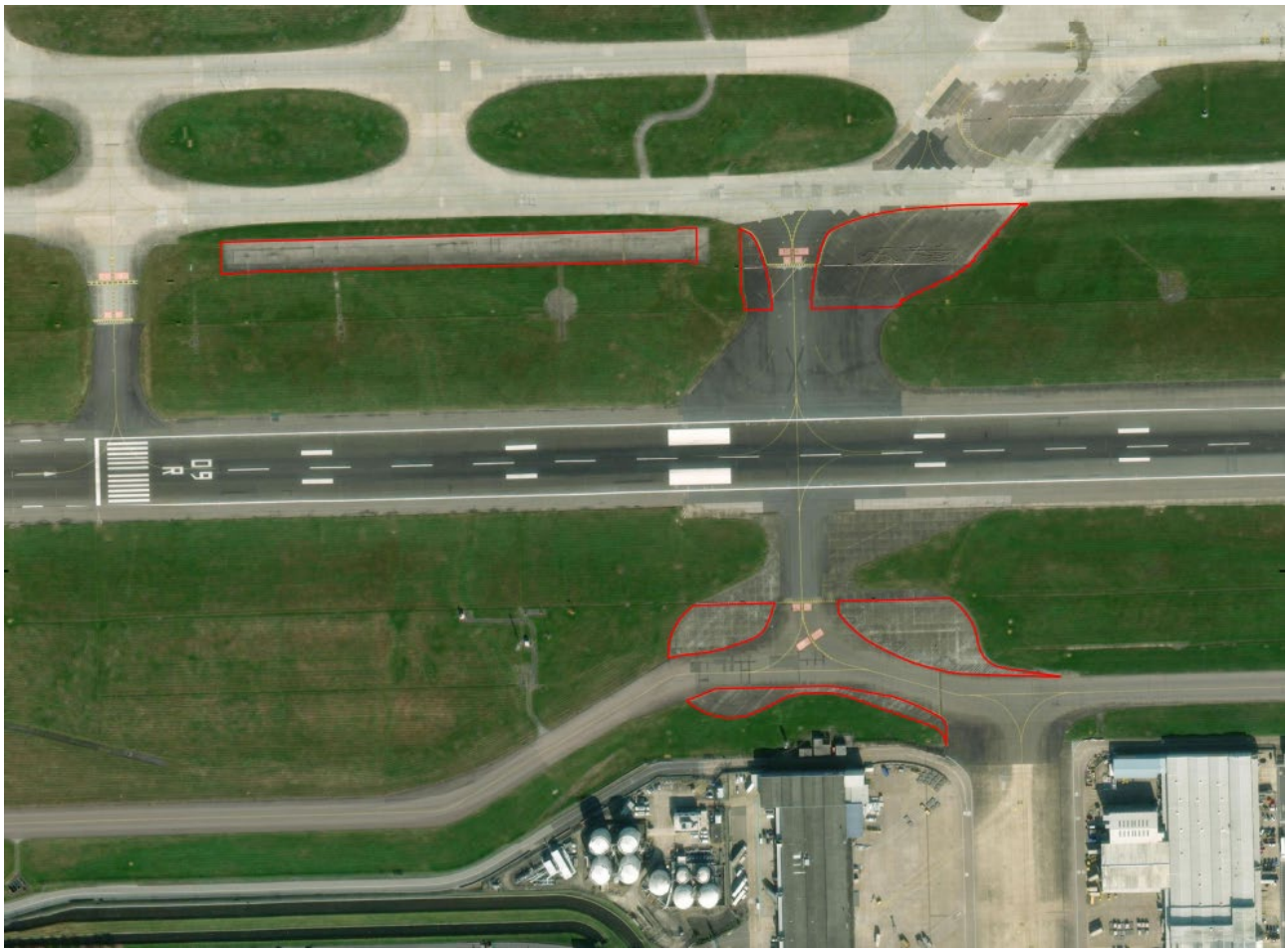
  The noise barrier, referred to in its entirety as the 'Longford Noise Barrier', will be constructed in two sections. The western section (Section 1) will be approximately 343m in length and will predominantly follow the alignment of an existing timber noise barrier that is situated between the Wright Way and the Duke of Northumberland River. The eastern section (Section 2) will be approximately 438m in length and will follow the alignment of the existing timber perimeter fence surrounding the Terminal 5 Pod car park up to the north eastern most corner of the car park.

Inset 7: Extract Easterly Alternation Heathrow proposed noise barrier general arrangement



- **Break out existing areas of redundant pavement** – For drainage purposes, the break out of existing areas of redundant pavement on the existing airfield (**Inset 8**) and their return to grassland will ensure that there is no net increase in impermeable surfacing across the Airport.

Inset 8 Redundant pavement to be removed



Construction

Construction is expected to start from mid to late 2025 with completion in mid to late 2027, this meaning works will take place over a 2-year programme.

During construction, it is important that safe Airport operations are maintained, and disruption is avoided. To help achieve this, most of the construction required for both the noise barrier and new airfield infrastructure will be undertaken during the night. Some construction including new airfield infrastructure and Section 2 of the noise barrier, approximately 30% of the construction programme, can be completed during the day. During construction of Section 1 of the noise barrier, there will be temporary closure of Wright Way at night for up to 8 weeks. The temporary closure will require vehicles to use an alternative route on the eastern section of Wright Way to reach the Heathrow Terminal 5 Pod Car Park.

Traffic generated by the Proposed Development during the construction phase will be managed by a Construction Traffic Management Plan produced by the Contractor. The use of heavy goods vehicles (HGVs) is expected to total 60 traffic movements per day on average across the construction phase and peak at approximately 120 movements per day when

What is a traffic movement?

A traffic movement relates to one lorry entering and then leaving the Site, and/or operating within the Airport boundaries.

works are being undertaken on the airfield. Construction traffic will be routed via the motorway, avoiding local villages.

Construction workforce numbers will vary depending on the stage of construction and certain activities. It is anticipated that the total daily workforce on the Proposed Development will not exceed 57 people.

A **Construction Environmental Management Plan** (CEMP) has been prepared and provided alongside the planning application. The CEMP has been prepared to set out the overarching principles of environmental management that shall be applied by the Contractor during the construction of the Proposed Development. The CEMP will be a live document which will be updated as an when there are changes to the project team or when additional information becomes available (for example, through detailed design, additional data supply or pre-construction surveys).

Operation

The first full year that full runway alternation on easterly operations will be implemented is expected to be 2028. An example of the proposed alternation of arrivals and departures on the northern and southern runways during easterly operations is provided in **Inset 3** (above). The infrastructure works and the subsequent implementation of full runway alternation during easterly operations will not generate any increase in aircraft air traffic movements, which will remain within the limit of 480,000 movements per year.

Further details on the Proposed Development are provided in **Chapter 3** of the Environmental Statement.

The Environmental Impact Assessment Process

Environmental Impact Assessment (EIA) is a process that collects and evaluates information about the environmental effects of a proposed development during both the construction and operational stages and determines whether these are likely to be significant compared with the existing and future environment (referred to as a 'baseline') without the Proposed Development. Significant effects can be beneficial or adverse. Where significant adverse effects are likely, there is an emphasis to reduce their level, through the implementation of appropriate environmental measures. The assessments reported in the Environmental Statement identify the embedded environmental measures proposed to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment.

The Environmental Statement has been prepared to present information from the EIA which informs LBH's decision-making on the planning application. The assessments have been undertaken in accordance with the requirements of the relevant legislation and policy. **Chapter 5** of the Environmental Statement provides further details on the EIA carried out for the Proposed Development.

EIA Definitions

In general terms, the EIA is undertaken against a baseline using significance criteria to inform decision-making identifying whether effects are '**Significant**' or '**Not Significant**'. Useful terms include:

Beneficial: Positive effects on the environment such as improvements in air quality.

Adverse: Negative effects on the environment such as pollution or damage to the environment.

Temporary: These effects are not permanent and typically are not long-term changes. Temporary effects occur while an activity is taking place and no longer occur once the activity stops.

Permanent: Changes in the environment that continue to exist even after a specific activity has ended.

Mitigation: Measures taken to avoid, minimize impact to or repair the environment following impact. These are often embedded and

Scope of the Assessment

Scoping is an early stage of the EIA process and allows the key environmental issues to be identified and taken forward for further assessment. Scoping helps contribute to an informative and proportionate Environmental Statement.

An EIA Scoping report was submitted to LBH in November 2023 and LBH issued a Scoping Opinion in February 2024. As part of the EIA Scoping process, it was agreed which environmental aspects require further assessment. The environmental aspects included within this Environmental Statement are:

- **Air Quality**;
- **Noise and Vibration**;
- **People and Communities**;
- **Public Health**;
- **Landscape and Visual Impact Assessment**;
- **Historic Environment**; and
- **Biodiversity**.

It should be noted that LBH's Scoping Opinion scoped out detailed assessment for both Historic Environment and Landscape and Visual Impact Assessment. However, following receipt of consultee responses, the Applicant has included these environmental aspects in the Environmental Statement for completeness.

LBH, in their Scoping Opinion, concluded that the following aspects should be scoped out from further environmental assessment. This is because the extent of the Proposed Development was not expected to result in likely significant effects for these environmental aspects. An example is traffic and transport which, based on the limited construction traffic which will be on the major road network (i.e. M4), and due to no additional road trips occurring during the operation of the Proposed Development, has no potential for likely significant effects to occur. The same applies to the following aspects:

- Land quality;
- Major accidents and disasters;
- Traffic and transport;
- Wake vortex strikes (a Wake Vortex Statement is provided alongside the Environmental Statement);
- Waste management;
- Greenhouse gas and climate change; and
- Hydrology and hydrogeology (a separate **Flood Risk Assessment** accompanies the planning application).

This assessment also considers whether any individudal effects of the Proposed Development have the potential to combine, resulting in a larger effect. This is referred to as a cumulative effect. The **Cumulative Effect Assessment** (CEA) covers two types of cumutlative effects:

- **Inter-project effects:** the potential for effects associated with the Proposed Development to interact or combine with the effects arising from other developments or projects; and
- **Intra-project effects:** the potential for interaction or combination of different environmental effects of the Proposed Development affecting the same receptor.

The **Environmental Statement** comprises:

- **Volume I: Non-Technical Summary (NTS)** – This document – which provides a standalone summary of the findings of the ES in non-technical language;
- **Volume II: Main Environmental Statement** – This presents the main body of the EIA, including the description of the Site and the Proposed Development; a review of reasonable alternatives; an outline of the EIA process; and the environmental assessment which is divided into a number of environmental aspect chapters;
- **Volume III: Appendices** – This provides a suite of appendices including maps and graphics (Figures), reports, surveys, and data which have informed the preparation of the environmental aspect chapters; and
- **Volume IV: Noise Figures** – This provides the full suite of Noise Figures in support of support the Noise assessment.

The Environmental Impact Assessment

Noise and Vibration

The noise and vibration assessment (**Chapter 7** of the Environmental Statement) considers the potential effects from noise and vibration generated during the construction of the infrastructure works, and aircraft 'air' noise and aircraft 'ground' noise during the operation of the Proposed Development.

The assessment considers noise sensitive receptors, which are residential properties, facilities such as schools and hospitals, and parks and open spaces. The assessment methodology has been developed based on relevant policy, guidance, literature review, and informed by precedent.

Noise exposure information has been determined through a combination of measurement and prediction in accordance with recognised technical standards. Importantly, forecasts of aircraft 'air' noise exposure, information have been generated by the UK Civil Aviation Authority (CAA) Environmental Research and Consultancy Department (ERCD) using the latest version of the UK Civil Aircraft Noise Model ANCON.

The assessment seeks to assess the impact of the Proposed Development in the context ending the Cranford Agreement, of redistributing noise more fairly around the Airport, extending the benefits of runway alternation to communities under the flight paths during periods of easterly operations and the associated effects.

Noise Definitions

Aircraft air noise: Noise from aircraft on the runway and in the landing and take-off cycle.

Aircraft ground noise: Noise from aircraft operating on the ground (i.e. whilst at stand, holding or traversing the airfield).

dB(A) Scale: 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. Noise levels in dB, like the basic decibel scale, measure proportions so that a 10 dB increase is approximately a doubling of loudness and a 10 dB decrease is approximately a halving of loudness. Judgement of loudness is subjective, and dependent on the characteristics of the sound, but the '10 dB increase is a doubling of loudness' rule is a useful general guide.

SOAEL: Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

LOAEL: Lowest Observed Adverse Effect Level: This is the level above which adverse effects on health and quality of life can be detected.

Section 61: A way for developers to notify and agree with the local authority how the noise impact of construction works can be limited. This agreement is sought in advance of the start date of the works and helps to manage noise impacts for local residents.

Existing and proposed mitigation measures are discussed in detail, including those specifically developed through the EIA process to address significant adverse noise impacts from 'easterly alternation'. The assessment quantifies and articulates the nature of the adverse and beneficial effects and the numbers of people eligible for noise insulation.

Construction

The first phase of construction works comprises the construction of the Longford Noise Barrier, which is conducted in two sequential phases, during the night and day respectively.

The main area that will be impacted by the construction of the Noise Barrier is Longford, particularly properties towards the south of Bath Road. During the construction of the first section of the noise barrier, the assessment identifies four residential receptors as being likely to experience **significant adverse effects**. The same receptors within Longford will be impacted by construction noise during the second section of the noise barrier construction. However, as this activity is planned to occur during the day, these receptors will be less sensitive and therefore the effects are considered **Not Significant**.

Importantly, many receptors in Longford are likely to already be insulated under legacy sound insulation schemes offered by the Airport. Likewise, many of these receptors are eligible for Heathrow's new Quieter Neighbourhood Scheme (QNS) which is already in the process of being rolled out in Longford. All properties considered likely to experience **significant adverse effects** during the construction of the barrier already qualify for noise insulation under the QNS.

Airfield infrastructure night-time works on the northern runway will also be temporary and the noise effects on the closest residential properties (in Longford) will be reduced by the Longford noise barrier, which will be constructed before airfield works occur. There are expected to be temporary significant adverse effects for two residential receptors and one non-residential receptor in Longford towards the east of the noise barrier along Bath Road and adjacent to Heathrow Terminal 5 Pod Car Park. The residential receptors are likely to have already been insulated under legacy sound insulation schemes offered by the Airport. The non-residential receptor, the Thistle Hotel, already incorporates noise mitigation measures to protect occupants from aircraft 'air' noise, which will likewise provide protection against the construction noise.

Additionally, there will be concurrent airfield infrastructure night-time works on the southern runway resulting in potential effects in Stanwell. These works will, however, be more limited in scope and duration. Compared to Longford, the works are located further away from receptors or otherwise benefit from noise attenuation provided by intervening buildings. Consequently, the assessment has determined that the effects are **Not Significant**.

It has been demonstrated that airfield infrastructure daytime works on the northern runway will not result in significant adverse effects on any residential or non-residential receptors because they are less sensitive to noise during the daytime.

To reduce noise as far as is possible, noise during construction will be managed through the **Construction Environmental Management Plan** (CEMP). A Section 61[1] process will identify and secure Best Practice Methods to minimise noise from the higher impact construction activities.

[1] *Control of Pollution Act 1974*. [Online] Available at: https://www.legislation.gov.uk/ukpga/1974/40/contents [Accessed 22 October 2024].

Operation

Aircraft 'Air' Noise

The Proposed Development is intended to facilitate the redistribution of noise more fairly around the Airport and extend the benefits of daytime runway alternation to communities affected during easterly operations. This will lead to a decrease in aircraft noise events for some areas and an increase for others when the Airport operates with aircraft landing and taking off to the east. These changes are forecast to be more pronounced during the daytime than at night as the Proposed Development mainly affects aircraft operations from 06:00.

The anticipated increases and decreases will vary in magnitude and occur at different levels of absolute noise exposure, both of which are considered in the noise assessment. Easterly alternation will result in predictable periods of aircraft noise respite, which is also considered in the assessment.

Redistribution of Aircraft Noise Events and Respite Provision

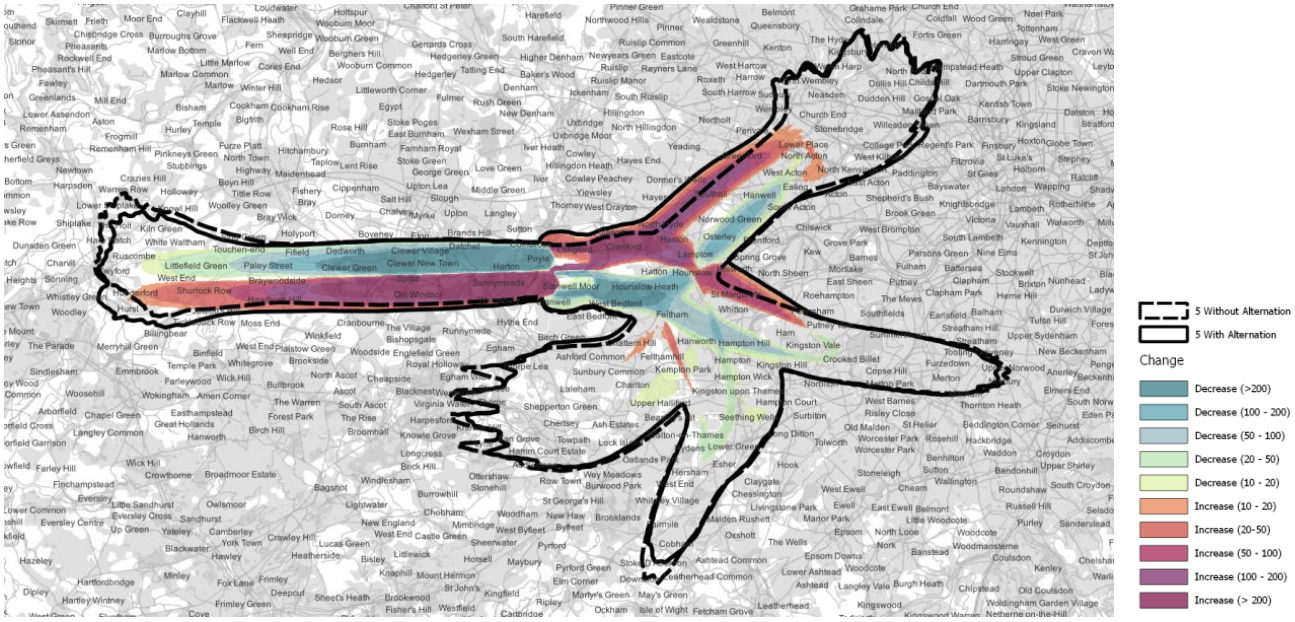
Two metrics are presented to articulate how the overall aims of the Proposed Development to redistribute noise and provide predictable respite during easterly operations, are achieved. Noise contour figures and tables are presented which show summer average daytime[2] and busy easterly day[3] N65 events[4] with and without the Proposed Development in 2028 respectively. Additionally, figures are provided which demonstrate where predictable respite will be available due to Easterly Alternation.

In respect of the numbers of maximum noise level events above 65 dB L_{ASmax} (N65), on a busy day there are over 600 arrivals and 600 departures at Heathrow Airport each day. The tabulated results for a busy easterly day show a significant reduction of 75,100 to 41,000, in the population experiencing an N65 rate of more than 400 per day. Proportionally, this is even more pronounced for communities experiencing rates of more than 500 and 600 per day. In other words, those communities which are currently most affected by aircraft noise events will see a reduction in the intensity of overflying as aircraft movements are shared more evenly around the Airport.

These results are primarily driven by a reduction in aircraft noise events over higher populated areas to the west of the Airport. As shown in **Inset 9**, areas such as Windsor, Clewer Green and Poyle will see a halving in the number of N65 events, from approximately 600 to 300 per busy easterly day. A commensurate increase in events is observed for communities located under easterly arrivals to the southern runway. Areas such as Sunnymeads and Old Windsor will observe an increase in N65 events to around 300 per busy easterly day. To the east of the Airport, under departure routes, communities such as Hounslow Heath, Feltham, Osterley, Norwood Green and Hanwell will all observe reductions in aircraft noise events with other communities such as Cranford, North Hyde, Heston and Southall all observing increases.

[2] 92-day summer period
[3] Single busiest day
[4] The number of aircraft events overflying a particular location above 65 dB L_{ASmax} measured between 07:00 and 23:00hrs.

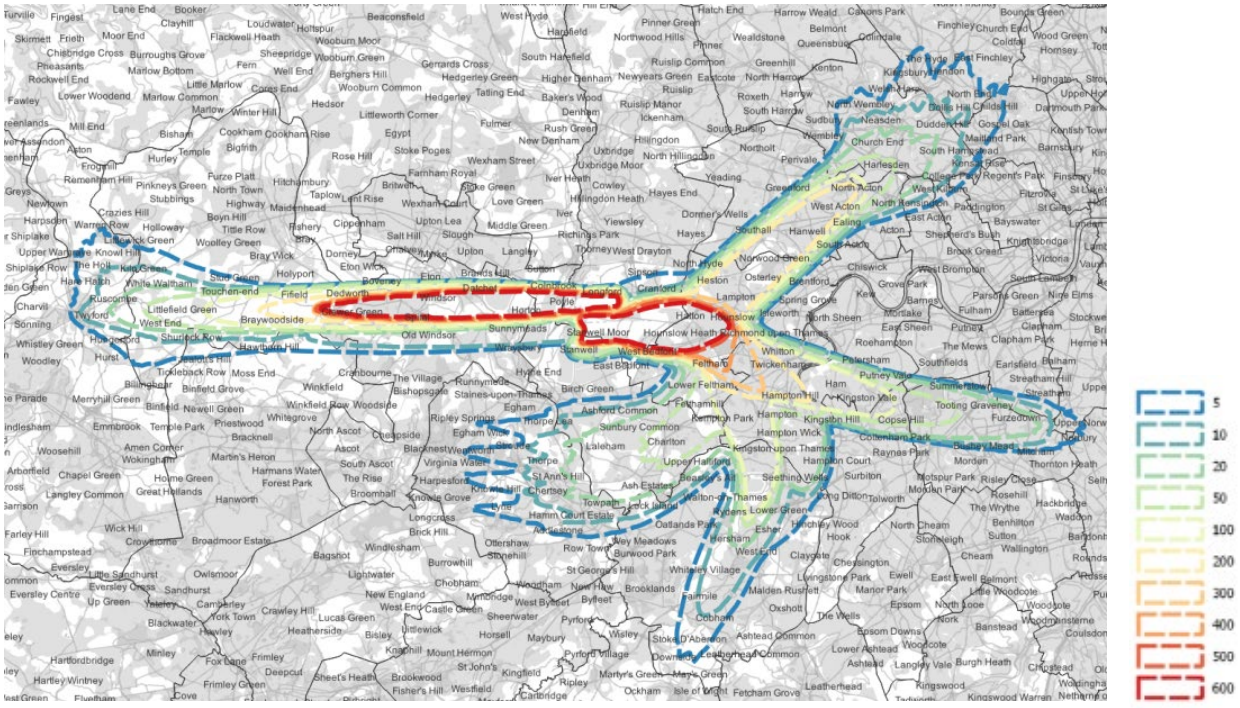
Inset 9: Difference in N65 rates for a busy easterly day with and without the Proposed Development



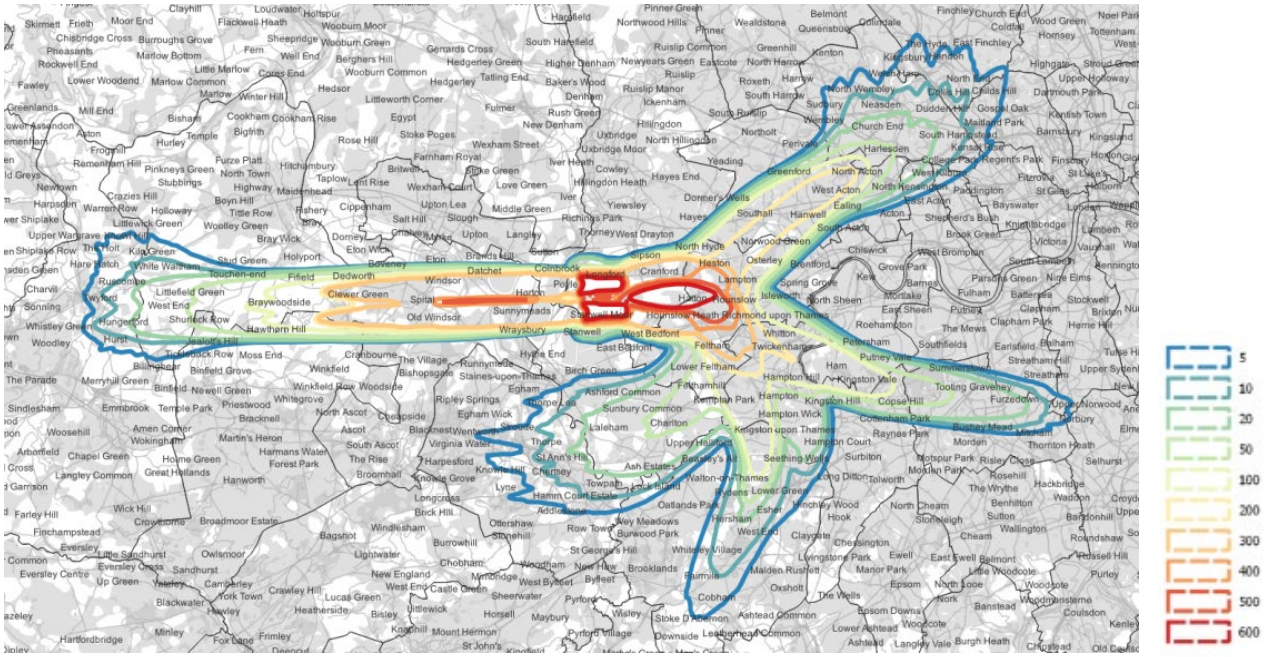
Overall, the redistribution of noise events resulting from the Proposed Development is best demonstrated by the enhanced symmetry of the N65 contours, as shown in **Inset 10**.

Inset 10: N65 contours for a busy easterly day with and without the Proposed Development

Without Development



With Development



Noise respite is also considered in terms of the communities that are forecast to experience planned predictable respite because of easterly alternation. It has long been considered that predictable respite can be viewed as being of benefit and is a helpful mitigation measure, a position which is supported in UK policy. The assessment demonstrates that easterly alternation enables planned respite to be provided to all communities affected by landing or arrival flightpaths.

Assessment in Accordance with the Noise Policy Statement for England and of Likely Significant Effects

The assessment has considered the adverse and beneficial noise effects in two ways which complement one another:

- Impacts on Health and Quality of Life under the Noise Policy Statement for England (NPSE); and
- Likely significant effects as required by the EIA Regulations 2017.

The former focuses on observed effect thresholds, namely the Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL). These thresholds define the point at which adverse effects on health and quality of life begin and where they become significant. For aviation noise, these thresholds are typically defined in terms of absolute levels of noise exposure, intended to reflect health and quality of life outcomes. Importantly, avoiding noise exposure above SOAEL forms a key purpose of eligibility under Heathrow's QNS sound insulation schemes. Heathrow's QNS scheme is designed so that residential receptors exposed to aircraft noise above the daytime and night-time SOAEL are eligible for a package of noise insulation measures funded up to a value of £34,000.

Consideration has also been given to other aircraft noise policy thresholds.

In terms of adverse effects on Health and Quality of Life, the effect of the Proposed Development during the day will be to:

- Reduce the overall number of people exposed above LOAEL by around 2,800;
- Reduce the number of people exposed to levels above 54 dB $L_{Aeq,16hr}$ ("the approximate onset of significant community annoyance") by 15,300;
- Reduce the overall number of people exposed between LOAEL and SOAEL by 3,900;
- Increase the overall number of people above SOAEL by around 1,100; and
- Increase the overall number of people exposed to levels above 69 dB $L_{Aeq,16hr}$ by around 500.

These results are similar in principle to the effects which the Government understood would arise from ending the Cranford Agreement. The Government judged that it was important to bring noise reduction to a larger number of people and to enable all communities to experience the benefit of respite, even though a smaller number of people would be significantly affected by the change in operations.

As can be seen in **Inset 11**, with the Proposed Development, communities such as Fifield and Water Oakley, along with locations within Hanwell, Feltham, Hampton Hill and Twickenham will be removed from the LOAEL. Areas including land to the west of Windsor Great Park, along with communities in North Hyde and parts of Twickenham will be brought into the LOAEL.

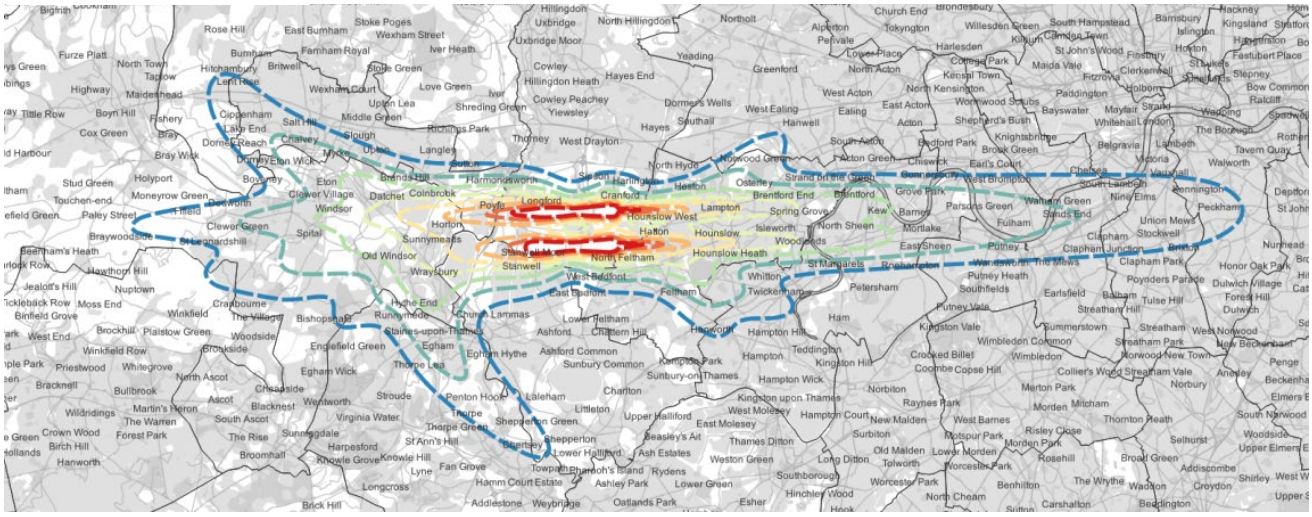
In the case of the SOAEL, changes in the locations exposed above this threshold are more subtle with residential dwellings in Wraysbury and Cranford being redistributed above and below SOAEL, along with various locations to the south-east of the Airport being removed altogether.

Approximately 425 dwellings will become exposed to air noise above the SOAEL due to the Proposed Development, that are not currently captured by Heathrow's existing QNS eligibility boundary. However, the eligibility boundary for the QNS schemes will be updated to reflect the forecast changes in noise exposure, meaning that these properties will become eligible for insulation.

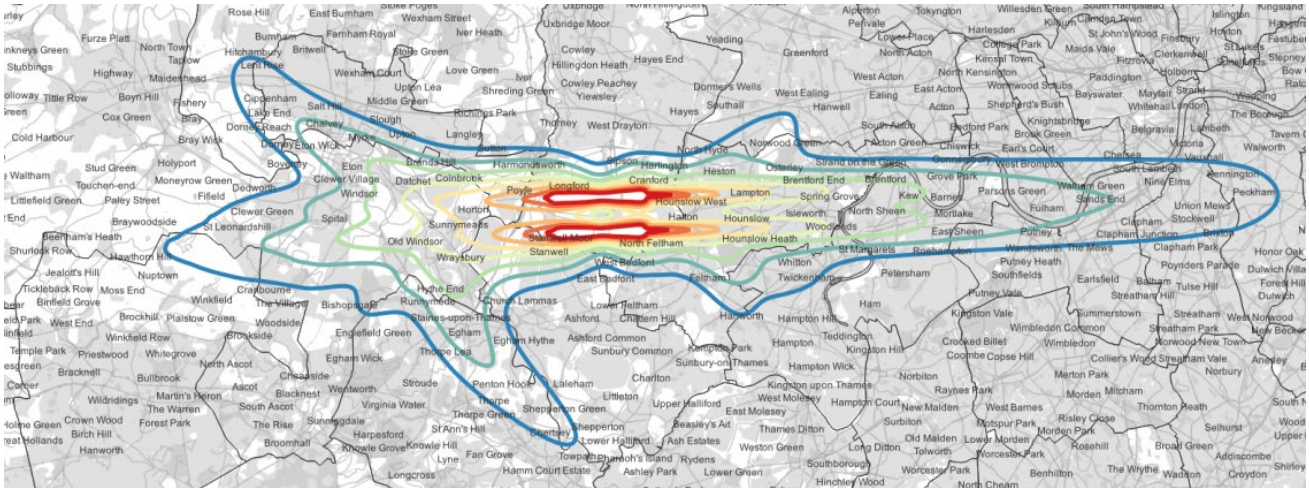
In the case of the 69 dB $L_{Aeq,16hr}$ contour, residential receptors in Poyle will be removed due to the Proposed Development, with certain receptors in Cranford and Stanwell Moor being introduced. All receptors that are forecast to be exposed to levels above 69 dB $L_{Aeq,16hr}$ in 2028 will already fall within eligibility for Heathrow's existing Home Relocation Assistance Scheme (HRAS).

Inset 11: Daytime summer average noise contours (standard modal split) with and without the Proposed Development

Without Development



With Development



In terms of adverse impacts on health and quality of life, the effect of the Proposed Development during the night will be to:

- Reduce the number of people exposed above LOAEL by around 7,900;
- Reduce the number of people exposed between LOAEL and SOAEL by 9,700; and
- Increase the number of people above SOAEL by around 1,700.

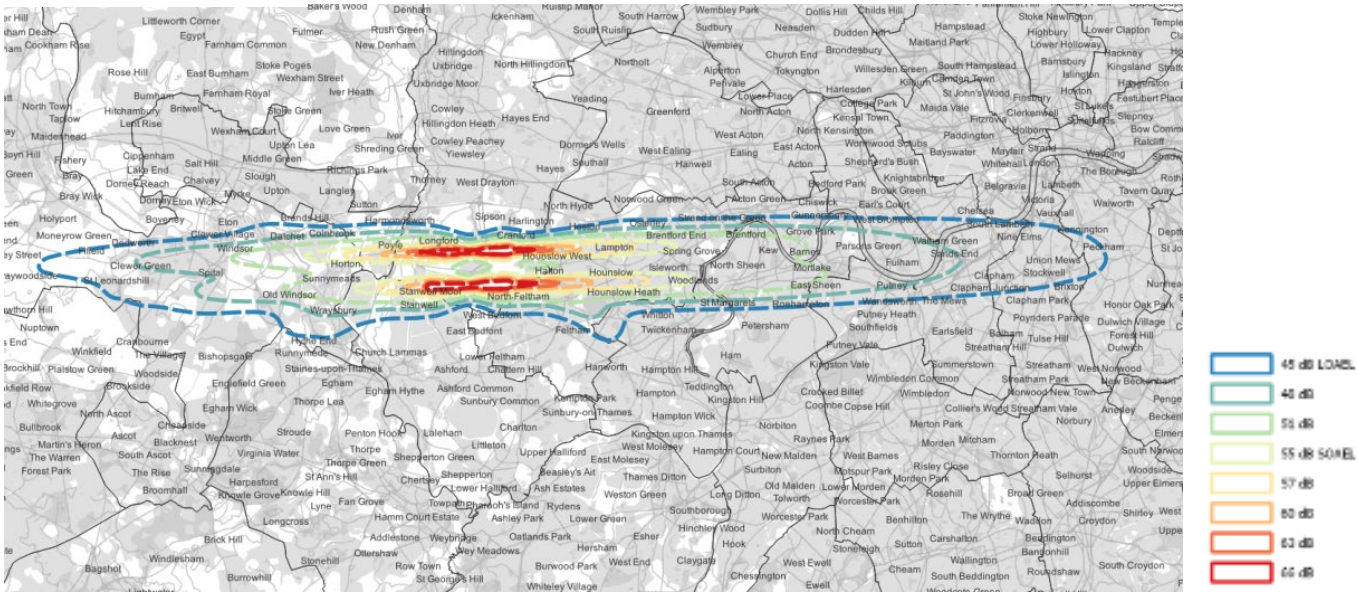
As can be seen in **Inset 12**, with the Proposed Development, communities to the west of the Airport such as Fifield, parts of Dedworth, and Clewer Village will be removed from the night-time LOAEL, along with locations in Whitton and Feltham. To the south-east of the Airport, residential receptors to the south of Old Windsor are brought into LOAEL along with areas in Harlington and Cranford to the north-east.

In the case of the night-time SOAEL, the main changes occur to the west of the Airport under aircraft final approaches. To the west of the Airport residential receptors in Wraysbury are brought into

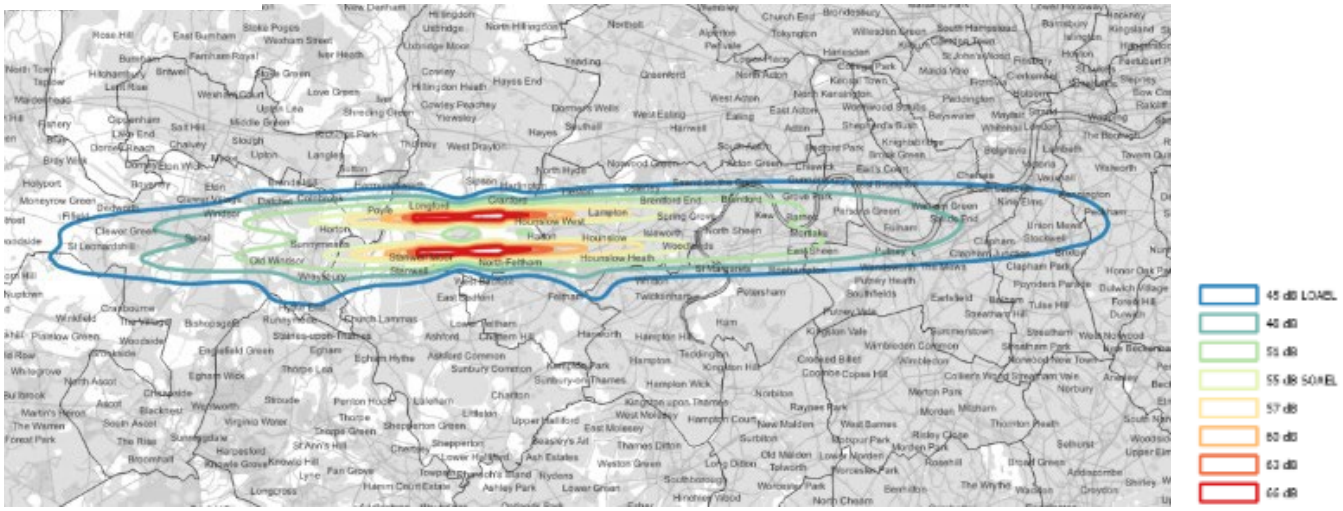
SOAEL. To the east of the of the Airport, the changes in SOAEL contour are modest, but the SOAEL expands slightly into Cranford. Importantly, in the case of night-time noise exposure, the forecast SOAEL contour is already captured by the existing QNS eligibility boundary. As with daytime noise exposure, the eligibility boundary for the QNS insulation scheme will also be updated to reflect forecast changes in the night-time SOAEL as a result of the Proposed Development.

Inset 12: Night-time summer average noise contours (standard modal split) with and without the Proposed Development

Without Development



With Development

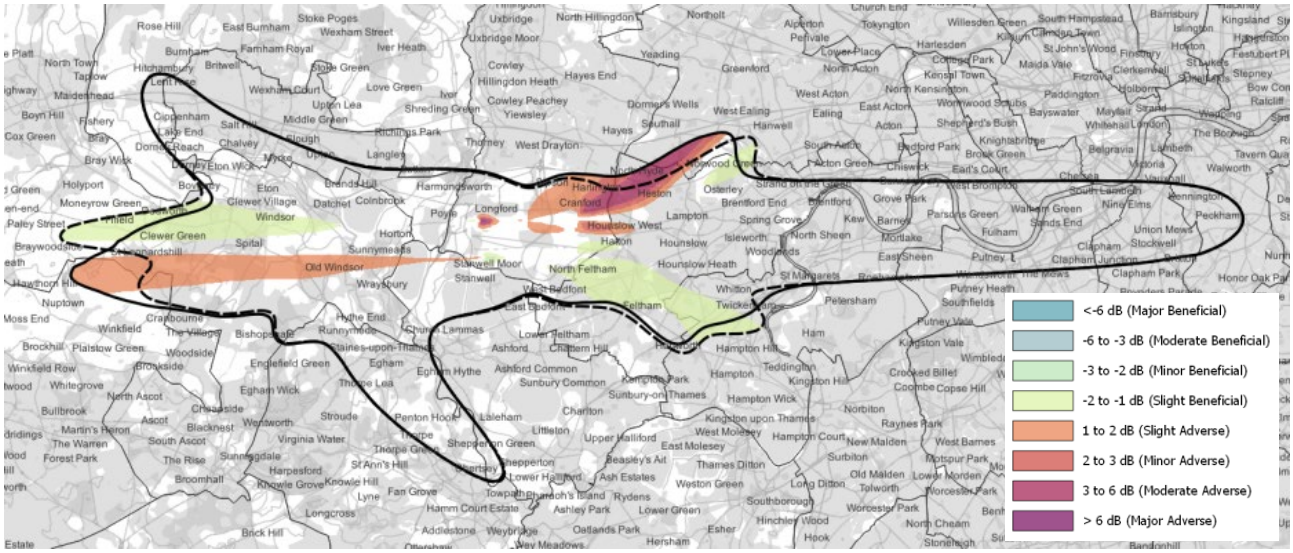


The assessment of likely significant effects focusses on the magnitude of noise change in the context of absolute noise exposure. It is generally accepted that receptors are more impacted by changes in noise at higher absolute levels of exposure than at lower levels of exposure. The criteria for the identification of likely significant effects reflects this.

Inset 13 presents changes in summer average daytime noise exposure due to the Proposed Development in 2028 alongside LOAEL contours with and without the Proposed Development. The overall effect is relatively limited but, locally, the changes are important.

Beneficial effects are shown to the west of the Airport in Windsor, Oakley Green, and Water Oakley. To the east of the Airport beneficial effects are observed in North Feltham and Hatton extending as far as Twickenham. Adverse effects are shown to the west of the Airport in Stanwell Moor, Wraysbury, and Old Windsor. To the east of the Airport adverse effects are observed in Cranford, Harlington, Heston, North Hyde, and Southall.

Inset 13: Difference in Daytime summer average noise contours (standard modal split) with and without the Proposed Development



In summary, the effects of the Proposed Development during the daytime are as follows:

- 62,200 people experience a beneficial change in average aircraft noise exposure of at least 1 dB;
- 39,600 people experience an adverse change in average aircraft noise exposure of at least 1 dB;
- No residential receptors experience reductions in average aircraft noise exposure of more than 2 dB;
- 7,300 people experience a ‘minor’ increase in average aircraft noise exposure of between 2 – 2.9 dB; and
- 15,400 people experience a ‘moderate’ increase in average aircraft noise exposure of between 3 – 5.9 dB.

These effects relate to a change in runway operations that will occur for around 10 – 14% of the time. In line with the adopted significance criteria, during the daytime period beneficial likely significant effects are identified for a population of approximately 300, with adverse likely significant effects identified for approximately 18,600 people. Importantly, the assessment demonstrates that

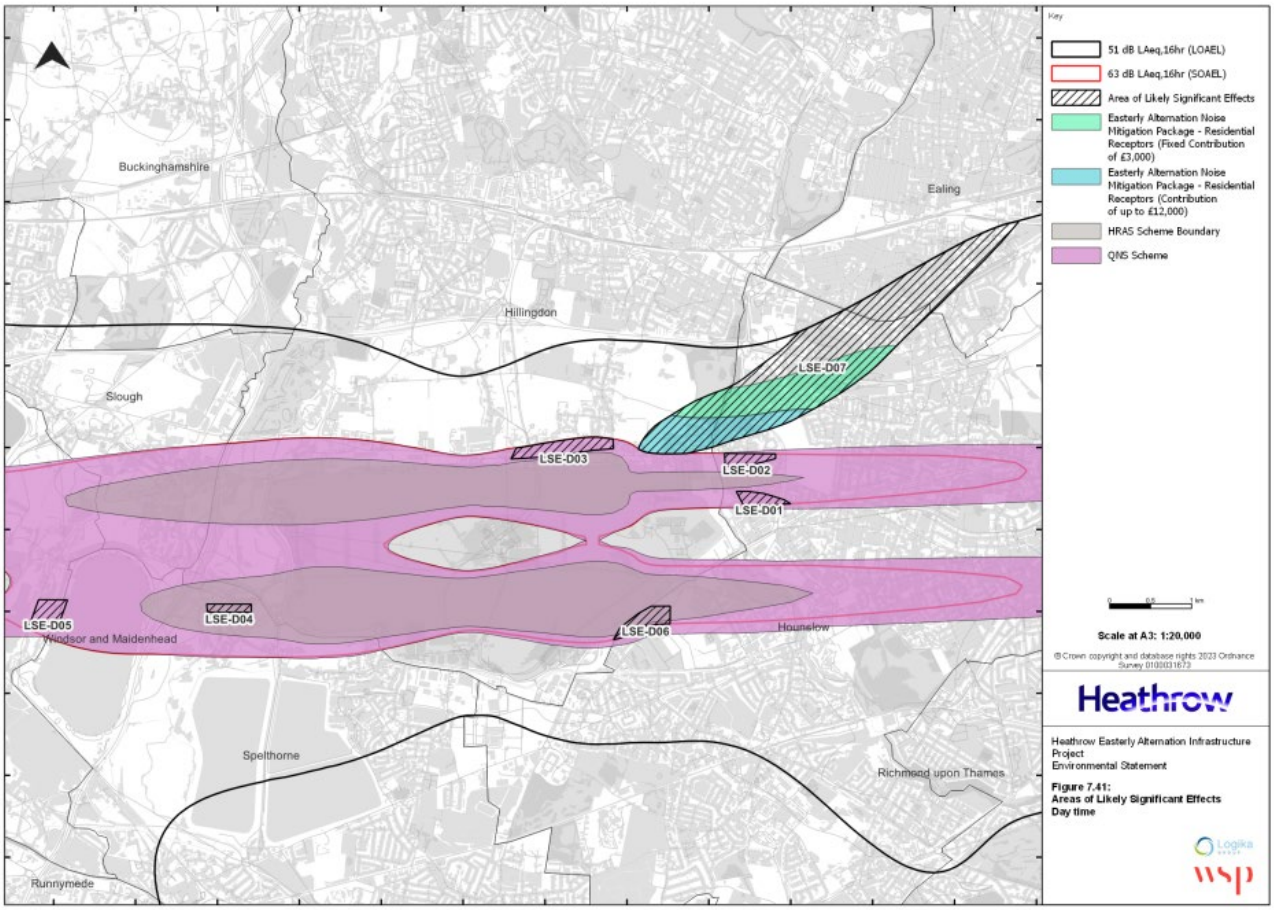
more receptors experience beneficial changes than adverse changes due to the Proposed Development, albeit at lower magnitudes of change.

Further detailed consideration has been given to six specific areas forecast to experience adverse effects and one area forecast to experience beneficial effects, as shown in **Inset 14**. For each of these areas, contextual factors are considered having regard to changes in aircraft noise events, eligibility to insulation and compensation schemes, and respite provision.

Through this analysis one distinct area (LSE-D07 – see **Inset 14**) has been forecast to experience adverse likely significant effects but at levels of exposure below the eligibility thresholds for Heathrow's Quieter Neighbourhood Scheme. This area can be considered newly affected by aircraft noise due to the Proposed Development with impacts occurring for 10 – 14% of the time.

Heathrow has therefore prepared a package of noise mitigation measures described as the 'Easterly Alternation Noise Mitigation Package'. This package provides financial contributions towards the cost of insulation for residential receptors, schools and colleges exposed to a level of 54 dB $L_{Aeq,16hr}$ and experiencing a 3 dB increase in noise exposure due to the Proposed Development. This package includes sound insulation measures for residential receptors, schools and colleges. A total of 3,400 people experiencing adverse likely significant effects within LSE-D07 are in dwellings that will be eligible for a financial contribution towards the cost of noise insulation under this scheme. Further details of this scheme can be found on **Page 24**.

Inset 14: Overview of Areas with identified daytime likely significant effects due to the Proposed Development in 2028

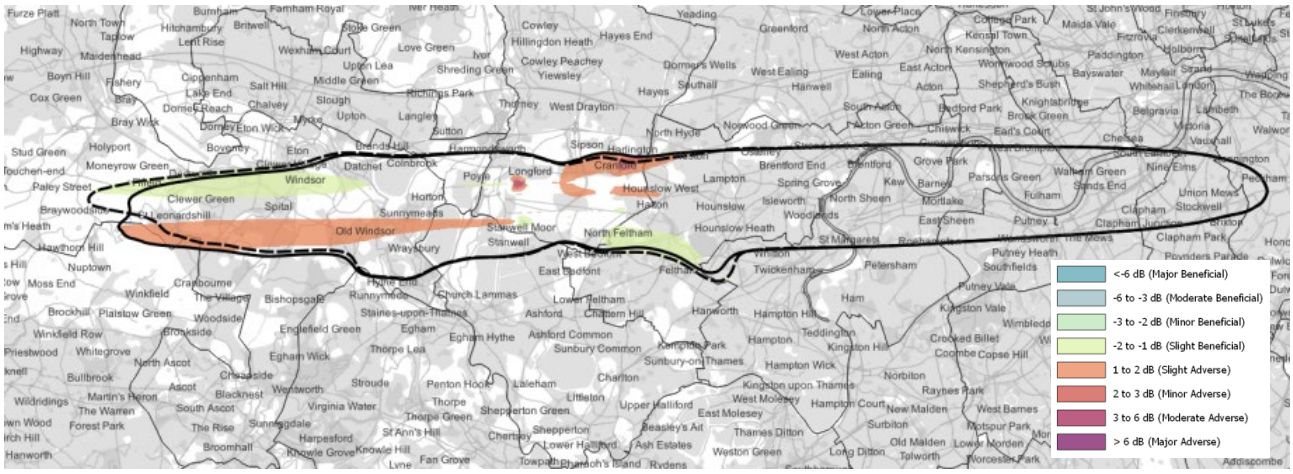


Inset 15 presents changes in summer average night-time noise exposure due to the Proposed Development in 2028 alongside LOAEL contours, with and without the Proposed Development.

At night the changes in noise exposure generally cover similar geographical areas but are less pronounced than the daytime in terms of the magnitude of change and spatial extents, due to the impact of the Proposed Development at night being limited.

Adverse likely significant effects have been identified at night for 400 people, with beneficial likely significant effects identified for around 200 people.

Inset 15: Difference in Night-time summer average noise contours (standard modal split) with and without the Proposed Development



In summary the following effects were identified:

- **Significant Adverse** – 3,100 residential properties within Hounslow, Cranford, Harlington, parts of Stanwell Moor and Wraysbury during the daytime and 300 residential properties at night-time due to a slight (1 dB) increase in noise exposure above SOAEL. These properties will benefit from both the Quieter Neighbourhood Scheme and predictable respite.
- **Significant Adverse** – A further 15,500 residential properties during daytime due to a moderate (3dB) increase in noise exposure above LOAEL but below SOAEL. The majority of these properties are located in an area newly affected by more regular aircraft air noise as a result of the Proposed Development which occurs for 10 – 14% of the time. The effect will be limited to easterly departures from the northern runway and planned predictable respite will be experienced. The properties most affected will benefit from the Easterly Alternation Noise Mitigation Package.
- **Adverse but not significant** – 21,000 residential properties in locations including parts of Stanwell Moor, Wraysbury and Old Windsor during daytime due to a slight (1 dB) increase in noise exposure above the LOAEL.
- **Significant beneficial** – 300 residential properties in Feltham during daytime and 300 residential receptors at night-time due to a slight (1 dB) reduction in noise exposure above SOAEL.
- **Beneficial but not significant** – 61,900 residential properties in locations including Oakley Green, Water Oakley, Windsor, North Feltham, Hatton during daytime and 28,700 residential properties in locations including Poyle, Windsor, Oakley Green, North Feltham at night-time due to a slight (1 dB) reduction in noise exposure above LOAEL.

Noise Mitigation Schemes

Quieter Neighbourhood Support:

Extended eligibility reflecting impacts due to the Proposed Development. This initiative is aimed at mitigating the effects of noise for communities surrounding the Airport, offering:

- funding of up to £34,000 for noise insulation in eligible homes surrounding the Airport (around 20,000 properties);
- noise insulation and ventilation in eligible schools; and
- eligible homeowners' financial assistance with the costs of moving away from areas experiencing high levels of airport noise.

Easterly Alternation Noise Mitigation Package:

Proposed voluntary initiative to address significant adverse noise impacts from 'easterly alternation', offering:

- A fixed contribution of £3,000 towards sound insulation of homes forecast to experience an increase in noise exposure in excess of 3dB, leaving them exposed to levels between 54 and 60 dB $L_{Aeq,16h}$;
- A contribution of up to £12,000 towards sound insulation of homes forecast to experience an increase in noise exposure in excess of 3dB, leaving them exposed to levels between 60 and 63 dB $L_{Aeq,16h}$;
- A bespoke package insulation and ventilation for schools and colleges forecast to experience an increase in noise exposure in excess of 3 dB, leaving them exposed to levels above 54 $dBL_{Aeq,16h}$; and
- Financial assistance of £10,000 receptors within 500m of the Runway 09L aircraft start of roll position in respect of the potential for noise induced vibration.

Consideration was also given to noise impacts on non-residential receptors including community and civic buildings as well as hotels and offices. Significant adverse effects were concluded for the following receptors:

- Holy Angels Anglican Church and St Christopher Roman Catholic Church;
- Khosla House – which will become eligible for sound insulation measures under Heathrow' Quieter Neighbourhood Scheme;
- The Cedars Primary School and Cranford Community College – which will become eligible for sound insulation measures under Heathrow's proposed new Easterly Alternation Noise Mitigation Package; and
- De Lacey Day Nursery, Wolf Fields Primary School, Sybil Elgar School, Clifton Primary School, and Havelock Primary School – which will not be eligible under any Heathrow noise insulation schemes. Whilst they will experience a change in noise, this will be at relatively low levels of noise which would not affect classroom teaching conditions.

Mirroring the assessment of residential receptors, the majority of adverse impacts for non-residential receptors are identified within Stanwell Moor, Wraysbury, and Old Windsor to the west of the Airport and Cranford, Harlington, Heston, North Hyde, and Southall to the east (LSE-D07). Beneficial effects are observed in Windsor, Oakley Green, Water Oakley to the west of the Airport and North Feltham and Hatton extending as far as Twickenham to the east.

For amenity of parks and open spaces, adverse **significant** effects are expected for 3 receptors (Avenue Park, Berkley Meadows, Cranford Park). For these parks and open spaces, which are adjacent to each other, the Easterly Alternation Noise Mitigation Package will make available £250,000 towards enhancing these parks with improvements to facilities and amenities which will be determined by the Council in consultation with local stakeholders. Adverse **not significant** effects are expected for 176 parks and open spaces, with another 30 parks and open spaces expected to experience beneficial effects albeit which are not significant, within the study area.

Aircraft 'Ground' Noise

No significant aircraft 'ground' noise effects have been identified for either residential and non-residential receptors. This has been achieved through the noise reduction afforded by the proposed Longford Noise Barrier which is specifically designed to mitigate against potential increases in noise exposure in Longford from ground operations. Importantly, some receptors in Longford experience a net beneficial effect, as a result of the noise barrier, because it is also effective in limiting effects from westerly operations.

Beneficial decreases in aircraft 'ground' noise exposure have also been identified in Stanwell and Stanwell Moor due to the reduced activity at the western end of the southern runway.

Noise Induced Vibration

Likely significant effects have been identified as a result of aircraft 'air' noise induced vibration for residential and non-residential receptors within 500m of the Runway 09L aircraft start of roll position. Experience suggests these are most likely to affect lightweight structures, such as conservatories. The area that will be impacted is Longford, comprising 160 residential properties and one nursery. These areas are already eligible for sound insulation under the Quieter Neighbourhood Support

schemes. Additionally, financial assistance will be offered to eligible receptors under the Easterly Alternation Noise Mitigation Package to allow for measures which will help mitigate noise-induced vibration.

Air Quality

The air quality assessment (**Chapter 6** of the Environmental Statement) considers the potential effects of the Proposed Development on local air quality and specifically its effect on sensitive receptors, including residential dwellings and non-residential facilities such as schools, hospitals and designated sites for the protection of nature. It considers effects during construction works and operation of the Proposed Development.

Relevant policy and guidance along with measured and modelled air quality levels are used to determine potential effects. Effects not described below were scoped out as not being significant.

Construction

The assessment considers the effects of construction traffic on air quality. Concentrations of nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$) from the peak number of construction traffic movements are calculated. The air quality effects of emissions from traffic generated by the construction phase of the Proposed Development will be negligible and not significant. This is because the number of additional traffic movements (see *Scope of the Assessment* section) resulting from the Proposed Development is low.

What is Nitrogen Dioxide (NO_2)?
NO_2 concentrations are a key indicator of air pollution. NO_2 mainly enters the air from the burning of fuels, such as emissions from aircraft and vehicle engines. NO_2 is associated with health and environmental effects.

What is Particulate Matter (PM_{10} and $PM_{2.5}$)?
PM_{10} and $PM_{2.5}$ (together referred to as PM) are particles of soot or dust which are small enough to remain suspended in the air and be breathed into the lungs. They are produced by burning fuel in aircraft or road vehicle engines, and also from brake and tyre wear. They are associated with health effects.

What are Air Quality Objectives?
Air Quality Objectives are specific targets set by the UK Government and regulatory bodies to maintain and improve air quality. Air Quality Objectives are designed to

Operation

The air quality assessment uses emissions analysis and dispersion modelling to calculate the ground-level concentrations of air pollutants in 2028 (the first full year in which the Proposed Development is planned to be operational). The pollutants included in the assessment of human health impacts are nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$). The pollutants included in the assessment of ecological effects are oxides of nitrogen (NOx) and nitrogen deposition.

The Proposed Development does not change the number of aircraft movements or the number of passengers using the Airport. Therefore, the quantity of air pollutants emitted into the air is virtually unchanged by the Proposed Development. However, the Proposed Development will change the places on the airfield where the emissions take place, and so some receptors will find themselves closer to sources of emissions, while other receptors will be further away. Most of the changes will be experienced in Longford, Stanwell and Stanwell Moor.

There will be no increase in aircraft movements and the assessment found that concentrations of all pollutants will remain well below the Air Quality Objectives, whether the Proposed Development happens or not. In general, air quality is improving and is expected to continue to improve in future. Changes in air quality due to the Proposed Development are small and not significant.

Emissions of NO_x are mainly due to aircraft engines, especially at high thrust settings such as during take-off. This means the increased number of take-offs starting at the western end of the northern runway (09L) will result in increased concentrations of NO_2 in the Longford area, but the corresponding reduced number of take-offs starting at the western end of the southern runway (09R) will result in reduced concentrations of NO_2 in the Stanwell and Stanwell Moor area. However, all these changes will be small.

For particulate matter (PM_{10} and $PM_{2.5}$),, the picture is reversed. Emissions of PM are mainly due to brake and tyre wear which occur during landings. This means the reduced number of landings on the northern runway (09L) will result in reduced concentrations of PM in the Longford area, but the corresponding increased number of landings on the southern runway (09R) will result in increased concentrations of PM in the Stanwell and Stanwell Moor area. Again, all these changes will be very small.

To summarise, overall, therefore, there will be a mix of beneficial and adverse effects. Longford will experience small increases in NO_2 but very small decreases in PM, while Stanwell and Stanwell Moor will experience small decreases in NO_2 but very small increases in PM. All of these changes are classified as 'negligible' using standard assessment criteria, except for four properties in Longford which will experience 'slight adverse' impacts in years when the wind direction means there are particularly large numbers of easterly operations over the course of the year. Still these effects are classified as being not signficant.

Furthermore, and again because changes in air quality are small, the likely effects of the Proposed Development on ecological receptors are within the criteria set out by the Environment Agency for being not significant.

In summary:

- Construction effects on human receptors due changes in NO_2, PM_{10} and $PM_{2.5}$ relating to traffic movements are **Not Significant**. This is because the number of additional traffic movements (see *Scope of the Assessment* section) resulting from the Proposed Development is low;
- Operational effects on human receptors relating to changes in concentrations of NO_2 will be slight adverse at four properties in Longford during years with a high proportion of easterly operations although this is **Not Significant**, and negligible at all other relevant receptors which is **Not Significant**. Operational effects on human receptors relating to changes in concentrations of PM_{10} and $PM_{2.5}$ will be negligible which is **not significant** at all relevant receptors;
- Operational effects on human receptors will be a mix of beneficial and adverse depending on location and pollutant, but very small in either case. The overall balance is very slightly beneficial with respect to NO_2 and very slightly adverse with respect to PM, but is nonetheless negligible in both cases, i.e. **Not Significant**; and
- Operational effects on ecological receptors relating to changes in nitrogen oxide (NO_x) concentrations and nitrogen deposition is negligible which is **Not Significant**.

People and Communities

The people and communities assessment (**Chapter 8** of the Environmental Statement), considers the potential effects of the Proposed Development upon people, communities, and other socio-economic factors during construction and during operation. This assessment considers the effects on the lives of people in the community through changes in environment and socio-economics, as identified in other environmental aspect chapters.

A number of categories are scoped into the assessment during the construction and operation phases, including business disruption, residential disruption, and community assets. Health effects are considered separately in **Chapter 9** of the Environmental Statement.

An Equality Statement has been produced as part of the planning application and is provided in **Appendix 8.1** of the Environmental Statement. The Equality Statement provides LBH with information in relation to the potential impact of the Proposed Development on people with Protected Characteristics, as defined by the Equality Act 2010.

Construction

During construction, the Proposed Development has the potential to impact businesses including the Thistle Hotel and Heathrow Terminal 5 Pod Car Park as a result of the temporary closure of Wright Way for up to 8 weeks. However, with the temporary diversion in place access will be maintained and the assessment concludes that effect of disruption to businesses will be **Not Significant**.

During construction, there is potential for effects on other businesses outside of the Airport's ownership boundary, residential receptors and community assets (such as Littlebrook Nursery) located near the noise barrier and airfield infrastructure works to the Northern Runway. However, effects are **Not Significant** due to the short-term duration and temporary nature of the proposed works.

Operation

During operation, with full runway alternation during easterly operations, there is potential for effects on businesses, residents, and the community due to changes in aircraft air movements. However, effects are **Not Significant** and limited to noise effects outlined in the *Noise and Vibration* section (above).

Public Health

The public health assessment (**Chapter 9** of the Environmental Statement) considered the effects of the Proposed Development arising from the change in the pattern of aircraft movements on the ground and in the air, during easterly operations. These changes may result in both beneficial and adverse effects on health outcomes in the local populations.

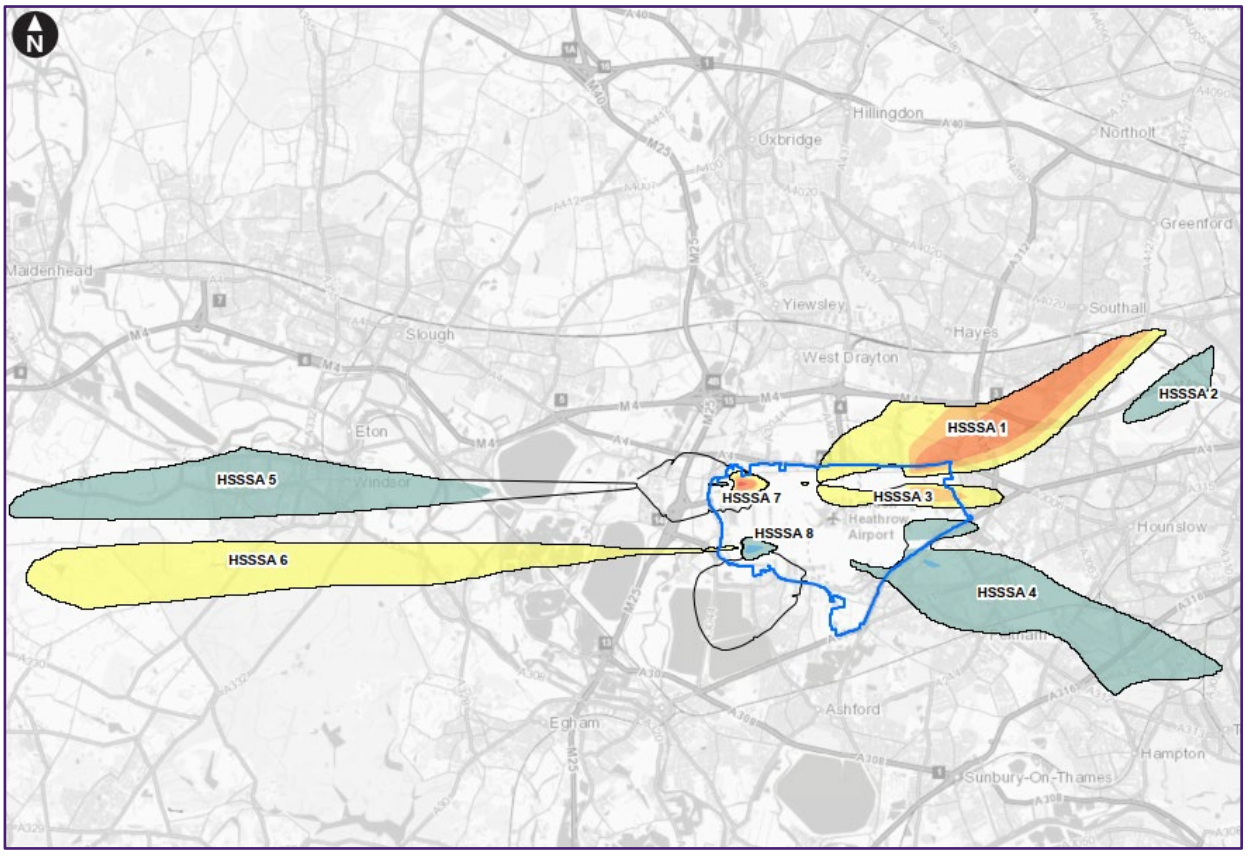
The potential effects of the Proposed Development due to noise, vibration, air quality, and visual effects on physical and mental health, community and recreational facilities (such as schools and residential properties) have been considered.

To support the assessment, health site-specific study areas (HSSSA) were identified based on effects reported for noise and easterly departure routes[5] (as illustrated in **Inset 16**):

Health Site-Specific Study Areas (HSSSAs)

- **HSSS1**: Departure Routes ULTIB and BPK, northeast towards Hounslow and Ealing.
- **HSSSA 2**: Departure Routes ULTIB and BPK, northeast towards Hounslow and Ealing.
- **HSSSA 3**: Departure Route DET, east towards Hounslow and Richmond upon Thames.
- **HSSSA 4**: Departure Route GASGU and MODMI, southeast towards Hounslow and Elmbridge.
- **HSSSA 5**: Arrival to northern runway, west from Windsor and Maidenhead and Slough.
- **HSSSA 6**: Arrival to southern runway, west from Windsor and Maidenhead and Spelthorne.
- **HSSSA 7**: Departure on northern runway west end, near Longford.
- **HSSSA 8**: Departure on southern runway west end, near Stanwell and Stanwell Moor.

Inset 16: Health site-specific study areas



[5] Operational data | Heathrow

Construction

Construction noise and vibration of the Proposed Development have the potential to affect the general population and vulnerable groups. Effects will be localised, predominantly to Longford, and will be temporary and short-term. The construction predominantly relates to the new Longford Noise Barrier, which once complete reduces noise for the Longford community, both during the remainder of construction and during operation. No significant public health effects are expected, including for vulnerable groups.

Construction noise arising from the Proposed Development has the potential to change the noise environment in community areas close to the works, such as streets, outdoor facilities and parks in Longford used for exercise, recreation or leisure. There is likely to be very limited change in the current health baseline of the population. This is due to the majority of construction works being undertaken at night when very few people would likely be using open spaces or undertaking physical activity. Therefore, no significant effects are anticipated.

Operation

Changes in air quality are likely to be minimal and there is likely to be very limited change in the health baseline of the general population. Therefore, no significant operational air quality effects on the health the general population and vulnerable groups are expected.

For operational noise from aircraft there are paired effects, as increased take-offs on the northern runway during easterly operations correspond directly to reduced take-offs on the southern runway. Similarly, increased arrivals on the southern runway under easterly operations correspond directly to reduced landings on the northern runway. Therefore, for each area experiencing an adverse effect there is a corresponding community that experiences a beneficial effect. The overall position is of the noise from aircraft being redistributed around the airport in a more equal way during easterly operations compared to if the Proposed Development did not occur.

Although operational noise may adversely affect the health of the local population within HSSSA 1, HSSSA 3, HSSSA 6 and HSSSA 7, for example, linked to stress, annoyance and sleep disturbance; all dwellings above the level at which there is potential for significant effects (the SOAEL) will be entitled to the Quieter Neighbourhood Scheme or Easterly Alternation Noise Mitigation Package as part of the Proposed Development. Reductions in operational noise will provide predictable respite in other communities, including HSSSA 2, HSSSA 4, HSSSA 5, HSSSSA 8. Overall, no significant public health effects due to operational noise are expected.

This includes consideration of beneficial and adverse effects to vulnerable sub-populations, who are acknowledged to be of high sensitivity. This reflects the high prevalence of deprivation in some areas and that some groups may have a low ability to adapt to change. Lower levels of economic activity, or poor health, may also mean some people spend more time within their homes and therefore experience greater exposure to local noise. Taking into account the changes in noise levels, and that these are only during the relatively short percentage of the time when the airport is under easterly operations, and the targeted use of noise insulation, no significant effect (beneficial or adverse) on public health is likely for vulnerable groups.

A number of parks and open spaces, notably Avenue Park, Berkley Meadows and Cranford Park are anticipated to experience a noise increase during easterly operations. The increased levels of noise has the potential to reduce the extent to which these areas are regularly used by residents for physical and recreational activities, albeit the parks will only be affected by the Proposed

Development for about 15% of the time. Compensation is proposed to provide enhancements to these public open spaces, giving alternative interest and facilities that would promote their use. Consequently, no significant public health effects linked to physical activity, open space, and recreation are expected for the general population or vulnerable groups.

Two community infrastructure buildings (Holy Angels Anglican Church and St Christopher Roman Catholic Church) are anticipated to experience an increase in noise. This could lead to reduced levels of wellbeing, social interaction and social support. However, the degree of change and the resulting level of noise is not expected to result in a widespread change in use of these buildings, so effects are not anticipated to be significant for public health.

A number of schools are located within the assessment area. High levels of noise in schools can be correlated with a delay in reading comprehension compared to those children not exposed to high levels of aircraft noise. Two schools (Cedars Primary school, Cranford Community College) could experience a significant increase levels of noise as a result of the Proposed Development, and a noise insultation scheme is proposed as part of the Proposed Development. Changes in noise at other schools are not considered to be on a scale that has the potential for significant public health effects.

In summary:

- Construction noise and vibration effects are expected to be **Not Significant** on the general and vulnerable population;
- Construction effects on physical activity, open space, and recreation are expected to be **Not Significant** on general and vulnerable population;
- Construction effects on community infrastructure is expected to be **Not Significant** on general and vulnerable population;
- Operational air quality effects are expected to be **Not Significant** on the general and vulnerable population;
- Operational noise and vibration effects are expected to be **Not Significant** on the general population and vulnerable population;
- Operation phase effects on physical activity, open space, and recreation are expected to be **Not Significant** on the general population and vulnerable populations;
- Operation phase effects on community infrastructure are expected to be **Not Significant** on the general and vulnerable population; and
- Operation phase effects on educational attainment are expected to range from **Not Significant** on the general and vulnerable population.

The conclusion of the public health assessment is that whilst there are a range of beneficial and adverse influences due to the Proposed Development, overall, the effect for public health is likely to be neutral. In the long-term, once there is normalisation of the experience of full runway alternation for all communities, predictable respite is likely to represent an improved position for health equity around the Airport.

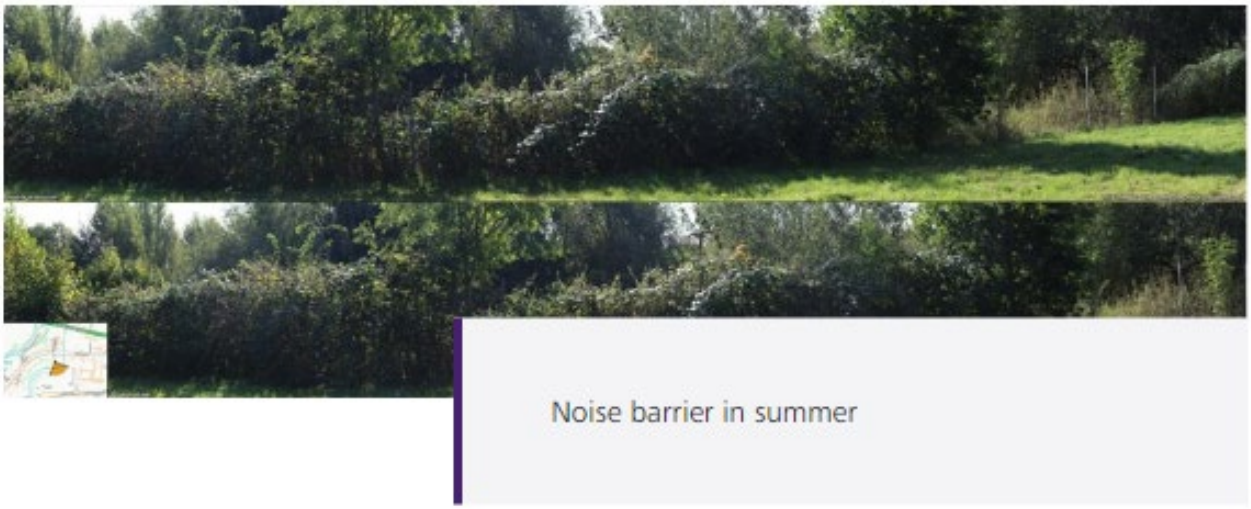
Landscape and Visual Impact Assessment

The landscape and visual impact assessment (LVIA) within **Chapter 10** of the Environmental Statement considers the potential effects of the Proposed Development on the existing landscape character of the Site and surroundings and people's experience of views in the area (e.g. local residents, users of local roads, etc.) during construction and operation.

The proposed noise barrier (see **Inset 17**) is the key component of the Proposed Development assessed in the LVIA. The new airfield infrastructure and pavement break out are located on the airfield at ground level and are not likely to result in significant effects on the existing landscape and visual amenity due to limited receptors and as they contained by existing Airport infrastructure.

The visual receptors that have been included in the LVIA are the village of Longford, transport routes (road users along Bath Road), recreational routes including Public Rights of Way and Bridleways, recreational and tourist destinations (Longford pocket park also known as the Peggy Bedford Biodiversity Site), and Harmondsworth Moor (within Colne Valley Regional Park).

Inset 17: Examples of the noise barrier in winter and summer



The LVIA identifies that, during the construction of the noise barrier, there is potential for changes to the local character of the landscape, however, these will be temporary, and not significant. Once the noise barrier is in operation, most of the landscape effects will be contained by vegetation and existing infrastructure, and therefore, not significant.

During the construction and operation phases, no significant adverse visual effects are expected on receptors in Longford as there will be limited visibility due to screening effects of existing vegetation, existing infrastructure, and undulating topography. For transport users of Bath Road, there will be transient views at oblique angles to the direct or travel.

In summary:

- Construction effects on landscape and visual receptors are **Not Significant**; and
- Operational effects on landscape and visual receptors are **Not Significant**.

Historic Environment

The historic environment assessment (**Chapter 11** of the Environmental Statement) considers the potential effects of the Proposed Development on built and buried heritage assets during construction and operation.

The assessment is informed by a desk-based study, which included a review of available heritage baseline data and data collected from previous investigations carried out at Heathrow Airport. To develop an understanding of the potential effects of the Proposed Development, the National Planning Policy Framework requires the significance of heritage assets to be considered, which is the value the asset holds to this and future generations.

The assessment finds that, during the construction of the new airfield infrastructure, there is potential for archaeological assets to be present, but these are likely to have been disturbed by previous work undertaken. As a result the area of the noise barrier is not expected to contain any surviving archaeological remains and therefore, no significant effects are anticipated.

During the operation of the noise barrier, there is potential for the setting of designated heritage assets within Longford to be disturbed, as the noise barrier will theoretically be visible from limited parts of Longford Village Conservation Area, and two listed buildings: Orchard Cottage (Grade II) and King's Bridge (Grade II). However, due to intervening vegetation and infrastructure, there will be no effect on these assets' historic character and or setting, and therefore, will be no effect on their heritage significance.

In summary:

- Construction effects on archaeological remains are **Not Significant**; and
- Operational effects on designated heritage assets are **Not Significant**.

Biodiversity

The biodiversity assessment (**Chapter 12** of the Environmental Statement) considers the potential effects of the Proposed Development on local biodiversity and ecological receptors during construction and operation.

Potential effects on biodiversity may occur during construction through changes to habitats, changes in noise, light, vibration, and movement levels due to construction activities and dust emissions from construction activities. During operation, changes in airspace operations have the potential to affect biodiversity. A geographical area was identified within which these environmental changes could affect biodiversity.

Habitats Regulations Assessment (HRA) documentation has also been provided in relation to the potential effects of the Proposed Development on nearby European designated sites in **Appendix 12.1: Report to Inform Appropriate Assessment** and **Appendix 12.2: HRA Screening Report**. The Report to Inform Appropriate Assessment provides LBH with the information necessary to enable compliance with duties under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended).

The Applicant has committed to Biodiversity Net Gain (BNG) of at least 10% which has been considered as part of the Proposed Development as it will ensure enhancement is to be provided which will deliver a net gain in biodiversity above the current baseline. A provisional BNG calculation has been produced which is provided as **Appendix 12.4: Biodiversity Net Gain Assessment**.

Ecological features were identified using the baseline data collected in the desk study and field surveys following guidance from the Chartered Institute of Ecology and Environmental Management. Legally protected species and ecological features that are important, as the effects upon them as a result of the Proposed Development could be significant, were included in the assessment (as presented below).

The assessment of effects identified whether the environmental changes have the potential to cause a significant effect to occur on identified biodiversity receptors against the baseline conditions. The future baseline is unlikely to be different from the current baseline, as land use and management around the Airport is anticipated to remain mostly the same.

The receptors that were taken forward for the further detailed assessment were:

- International statutory designated sites:
  - South West London Waterbodies Special Protection Area (SPA) and Ramsar Site.
- National statutory designated sites:
  - Wraysbury Reservoir Site of Special Scientific Interest (SSSI);
  - Staines Moor SSSI;
- Protected species
  - Reptiles (grass snake);
  - Birds;
  - Bats; and
  - Otters.

Construction

The assessment found that locations on Site and the areas immediately adjacent are suitable to support reptiles, birds, bats, and otters. There is the potential for the Proposed Development during construction to have effects on important habitats and the potential to injure, kill, disturb, and displace these species. However, measures have been embedded to avoid and minimise the effects on these species including pre-works checks for the presence of reptiles and nesting birds prior to vegetation clearance and the development of a Precautionary Working Method Statement for reptiles, bats, and otters. Construction will therefore result in no significant effects.

Operation

There is potential for the Proposed Development during operation to have effects on nearby statutory designated sites by causing changes in the air quality and noise baseline environments. After detailed assessment using modelling data and ecological information about these sites, it is considered that increases in air quality and noise emissions are unlikely to cause significant effects. This is due to limited changes in nitrogen deposition (see *Air Quality section*) at the identified designated sites and existing bird populations displaying high levels of tolerance to aircraft overflight.

In summary:

- Construction effects are **Not Significant** relating to:
  - a reduction in available habitat and resting or breeding sites;
  - killing or injury through the removal of resting sites;
  - increased noise, vibration, light and movement levels; and
  - increased dust emissions resulting in habitat degradation.
- Operational effects relating to changes in airspace operations are **Not Significant**.

Cumulative Effects

Chapter 13 of the Environmental Statement presents an assessment of the potential cumulative effects associated with the Proposed Development:

Intra-project effects

A three-step assessment was undertaken:

- **Step A** of the screening exercise was to identify where resources and/or receptors could be affected by more than one type of effect (usually where they are considered in more than one technical chapter or assessment).
- **Step B** of the assessment was to provide a summary of the inter-relationship effects that are considered within the technical chapters (**Chapter 6 - 12** of the Environmental Statement) to avoid duplication of assessments already undertaken.
- **Step C** of the assessment would then to assess the intra-project effects screened in at Step B.

At Step B, it was identified that the technical aspect assessments inherently considered all likely intra-project effects within the assessment and no further assessment was required.

Inter-project effects

As part of the inter-project effects assessment, consideration was given to the effects which could be created as a result of the Proposed Development cumulatively with other projects proposed within the Airport boundary and surroundings, where potential cumulative effects could occur. As such, 16 developments were screened in for further assessment due to the potential for changes in noise levels during operation only. It is concluded that there are **no significant cumulative effects** of the Proposed Development in-combination with other projects beyond those effects assessed within the Noise and Vibration assessment (*Noise and Vibration section* above).

Frequently Asked Questions

- **I thought the Cranford Agreement had already ended?**

  It has. The Cranford Agreement ended in January 2009. However, planning permission is required for physical works to the runway before the airport can operate full runway alternation when the wind is from the east. The Applicant made an application in 2014 to the London Borough of Hillingdon for the same project, this was granted planning permission from the Secretary of State in 2017. This permission has now expired.

- **Why are additional taxiways required on the northern runway if aircraft can already take-off over Cranford?** The additional taxiways and Hold Areas are required on the northern runway so that a full schedule of flights can be delivered. This requires additional taxiways for easy access to the runways and hold areas for aircraft to queue and for them to be placed in the right sequence.

- **Who decides whether the planning application is approved?**

  The application is being submitted to the local planning authority for a decision. The local planning authority in this case is the London Borough of Hillingdon. However, other local authorities and stakeholders will also be consulted during the consultation period.

- **Will this application result in additional aircraft movements at Heathrow?**

  No. Movements at Heathrow are capped at 480,000 Air Traffic Movements (ATMs).

- **How can I comment on the Environmental Statement?**

  Details of how to respond and by when can be found on the London Borough of Hillingdon's website and on Heathrow Airport's website here: https://www.heathrow.com/company/local-community/noise/operations/easterly-alternation.