

Environmental Information Consultation Document (EICD)

Chapter 8: Noise and vibration

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8. Noise and vibration

8.1 Introduction

- 8.1.1 As indicated in **Chapter 1: Setting the scene for consultation –environmental information**, ‘noise and vibration’ is an environmental aspect for which environmental information is presented for the 2026 Public Consultation.
- 8.1.2 This chapter is supported by figures from **Figure 8.1** to **Figure 8A.4** and a glossary of terms.
- 8.1.3 This chapter should be read in conjunction with **Chapter 2: Description of the project**, and is used to inform other chapters, including:
- **Chapter 5: Socio-economics and employment** – for the economic and employment consequences of any likely significant effects of noise or vibration on businesses.
 - **Chapter 6: Community** – for the combination of noise and other environmental likely significant effects on each community.
 - **Chapter 7: Recreation and amenity** – for an assessment of noise effects on recreation and amenity.
 - **Chapter 11: Health** – for the assessment of population health effects including preliminary in-combination health effects, which considers the noise-related effects on health and quality of life identified in this chapter.
 - **Chapter 12: Biodiversity** – for likely significant effects of noise on protected species.
 - **Chapter 14: Historic environment** – for the effect of noise on the settings of historic buildings and scheduled ancient monuments.
 - **Chapter 15: Landscape and visual** – for the contribution of noise to any change in the wider consideration of landscape and visual amenity (including, as relevant, tranquillity and effects on National Landscapes and National Parks).
 - **Chapter 19: Next steps and preparation of the Environmental Statement (ES)** – for a summary of the approach that will be undertaken to assess potentially significant in-combination or cumulative effects.
- 8.1.4 This chapter also refers to other key documents, including:
- **Draft Code of Construction Practice** – outlines the Code of Construction Practice (CoCP) which includes noise and vibration control measures and standards to be implemented throughout construction of the Project.
 - **Noise Insulation Policy** – provides an outline of the proposed noise insulation schemes that will be provided to address noise from aircraft movements in the air, and on the ground from road, rail and construction noise associated with the Project.

- **Environmentally Managed Growth Topic Paper** – outlines the draft principles for the Environmentally Managed Growth (EMG) framework proposed for the Project. The EMG framework will provide a transparent mechanism to responsibly manage and facilitate airport growth within environmental limits.
- **Future Runway Operations (FRO)** – this document outlines the reasons for the proposals, including how future use of runways would provide predictable periods of respite from aircraft noise and manage night flights, and how other operational measures would help reduce and mitigate noise impacts.

8.2 What do we mean by ‘noise and vibration’

- 8.2.1 Noise is generally defined as unwanted, unpleasant or disruptive sound. Noise can interfere with activities, affect health and detract from the character and enjoyment of places.
- 8.2.2 The primary sources of noise for the nearest areas surrounding the airport include aircraft taking off and landing (particularly to the east and west), as well as aircraft on the ground. Noise is also produced by transport to and from the existing airport by road or rail. Noise can also occur from the use of buildings and during airport construction and maintenance activities. At locations further away, aircraft overflight is the main source of noise from Heathrow.
- 8.2.3 Vibration in the context of this chapter refers to environmental vibration. Such vibration is usually defined as unwanted tremors or oscillations that can be experienced by people through the ground or through the air. Like noise, vibration can also interfere with activities and affect health and in extreme circumstances can lead to damage to buildings and structures.
- 8.2.4 Vibration in the vicinity of Heathrow mainly occurs as a result of transportation, such as rail, and can be produced by aircraft as they begin to take-off. Vibration can also be an issue during construction and maintenance activities.
- 8.2.5 Noise and vibration are controlled and managed in the context of government policy on sustainable development. Relevant legislation, policy and guidance establish intervention thresholds used to identify when effects on health and quality of life may occur and when mitigation or management measures may be required.

8.3 Why noise and vibration might change

Noise and vibration effects during construction

- 8.3.1 During construction of the Project, use of construction plant and construction vehicles travelling to and from construction worksites and support sites is likely to result in adverse noise and vibration effects.

Noise and vibration effects during operation

- 8.3.2 The operation of the Project will lead to increased airport activity with an increase in aircraft movements in the air and on the ground. The Project will result in changes to the locations that are exposed to aircraft noise and the extent to which they are exposed. At locations in the vicinity of Heathrow, such changes will occur due to the introduction and use of the Northwest Runway along with changes in the use of the existing runways and associated ground infrastructure. Further away from Heathrow, changes in aircraft noise may also occur due to changes to Heathrow's flightpaths.
- 8.3.3 The use of Heathrow's airspace, in particular the design and location of flightpaths, will have a major influence on the location and level of noise that may arise due to the Project. The Airports National Policy Statement (ANPS) [1] acknowledges that the assessment of aircraft noise for the Project should be undertaken using the developing indicative airspace design, and that this may involve the use of appropriate design parameters and scenarios based on indicative flightpaths. The use of indicative flightpaths allows the noise assessment of the Project to proceed without the need for the separate Airspace Change Process to be formally commenced or concluded. The airspace design will be developed by a new body created by the Department for Transport and the CAA; the UK Airspace Design Service (UKADS) which was established in May 2026. This work is subject to a separate consenting process (the Airspace Change Process) which is overseen by the Civil Aviation Authority (CAA). Further details are provided in **Chapter 3: Approach to environmental assessment** and the **FRO Document** with regard to airspace, UKADS, the CAA and the Project.
- 8.3.4 With an increase in people and goods travelling to and from the expanded airport, road traffic movements in surrounding areas will change, leading to changes in road traffic noise. Changes to the road network will also redistribute traffic, leading to changes in noise levels which may be beneficial for some and adverse for others. The Project may influence how people get to and from the airport, resulting in changes in noise from other modes of transport, such as rail.

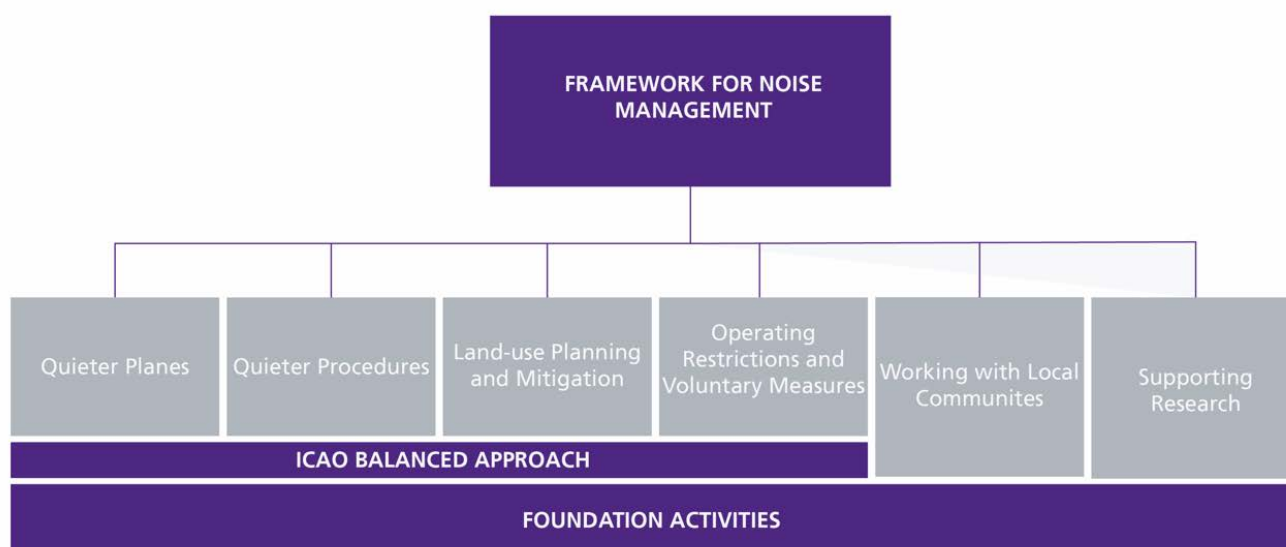
8.4 Noise and vibration measures

Current and ongoing noise and vibration measures

- 8.4.1 Minimising the impact of noise, as far as is reasonably practical to do so, is a priority for Heathrow. We have been at the forefront of efforts to tackle noise and as a result our noise footprint has shrunk considerably over the past few decades. For example, based on 2024 data, the 55 decibel (dB) L_{den} noise contour has reduced by over 39% since 2006, resulting in over 200,000 fewer people being exposed above this noise exposure level. However, noise remains an issue and we continue to make efforts to reduce the impact of noise.
- 8.4.2 Our Noise Action Plan 2024–28 (NAP) [2] is the latest in a series of long-established strategies that sets out how we currently manage our noise impacts, along with actions and initiatives for how noise will be further reduced.

- 8.4.3 Heathrow's noise strategy is built around the International Civil Aviation Organization (ICAO) Balanced Approach to Aircraft Noise Management [3]. The Balanced Approach is a process under which the range of available measures are considered in a consistent way with a view to addressing the noise problem at an airport in the most cost-effective way.
- 8.4.4 The Balanced Approach involves a sequential approach being taken to the consideration of noise management measures, namely:
1. Reduction at source (such as quieter aircraft)
 2. Land-use planning and management (such as noise insulation)
 3. Noise abatement operational procedures (such as optimising how aircraft are flown and the routes they follow to limit the noise impacts)
 4. Operating restrictions (such as preventing certain noisier types of aircraft from flying at certain times, or at any time), which are not applied as a first resort, but only after consideration of the other measures of the Balanced Approach.
- 8.4.5 The Balanced Approach is central to government aviation noise policy and is a process under law which must be followed when considering airport operating restrictions for noise reasons. The Balanced Approach is given legal effect in the UK through EU Regulation 598/2014, which is described later in this chapter. For more information on Heathrow's noise abatement objective, see the Environmentally Managed Growth Topic Paper, and for more information on how we have employed the Balanced Approach, see the FRO document.
- 8.4.6 Our current noise strategy comprises six pillars based on the ICAO Balanced Approach as shown in **Figure 8.1**. These include the 'Working with Local Communities' and 'Supporting Research' pillars which go beyond the ICAO Balanced Approach. We recognise the importance of community engagement and collaboration in identifying and understanding issues and working towards improvements, as well as supporting new insights through research. All pillars of our noise strategy are supported by Foundation Activities that are guided by actions set by the NAP. The Foundation Activities are detailed in the NAP and cover Compliance and Regulation ('Heathrow will comply with Department for Transport (DfT) night noise restrictions'), Monitoring and Reviewing ('Heathrow will review the NAP to ensure that it aligns with government policy and stated objectives') and Reporting and Learning ('Heathrow will internally audit its systems, processes and databases').

Figure 8.1: Heathrow’s framework for noise management and application of the ICAO Balanced Approach



- 8.4.7 In response to actions set by successive NAPs, we have successfully introduced a range of initiatives and measures to manage noise. This includes the development and introduction of its Quieter Neighbourhood Support (QNS) programme of noise insulation, development of quieter operating procedures and improvements in fleet technology. Today, Chapter 3 aircraft (the noisiest classification permitted currently) represent just 0.01% of the annual movements and Chapter 14 (currently the quietest ICAO classification) make up 86% of the annual movements operating at Heathrow.

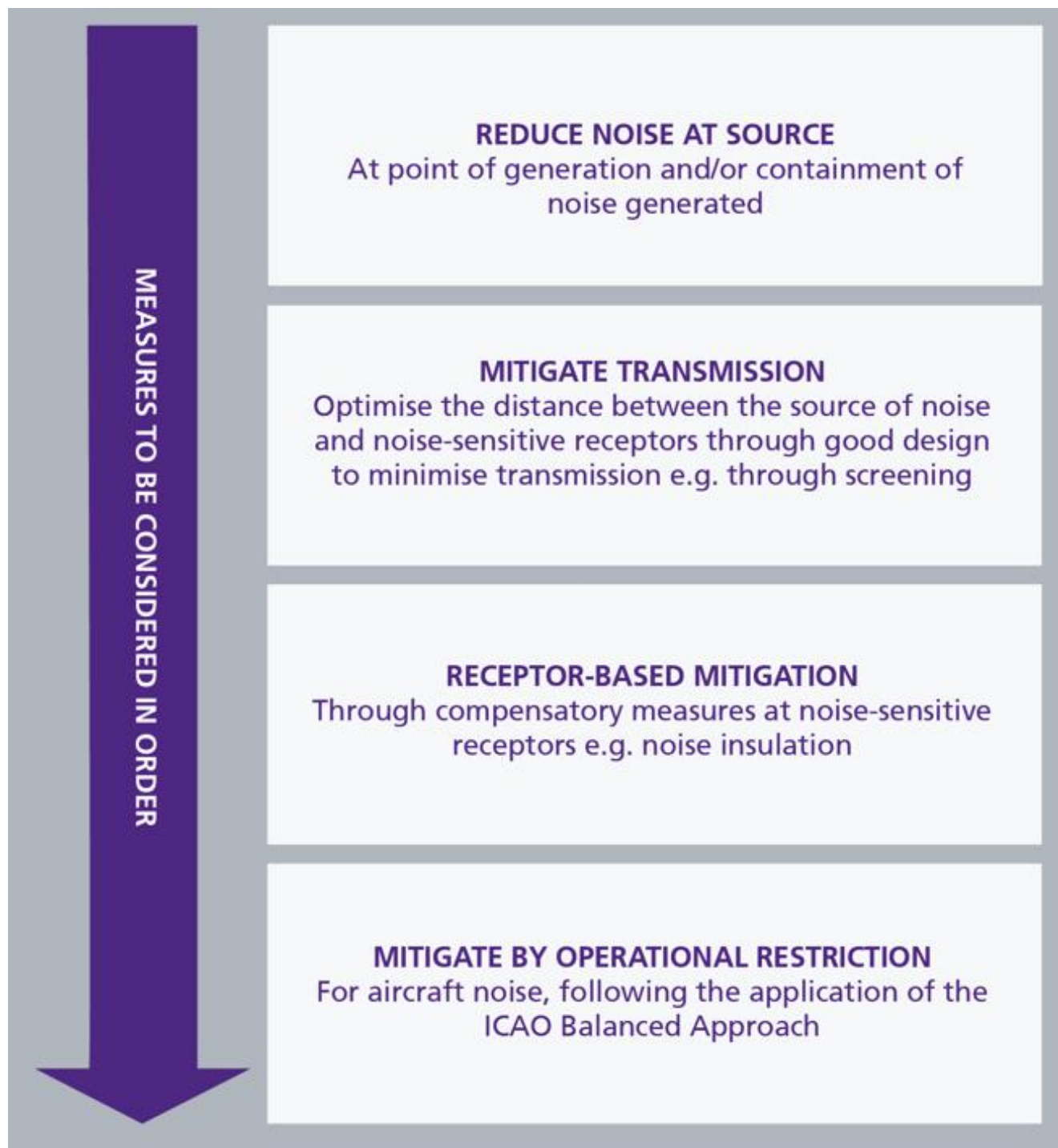
Project noise and vibration measures

- 8.4.8 The ANPS includes an expectation for Heathrow to explore all measures, initiatives and opportunities to mitigate the impact of construction and operational noise and vibration impacts from the Project. It is recognised that measures will need to be embedded and introduced to mitigate and minimise the noise and vibration effects of the Project on health and quality of life. The development of these measures will be informed by the noise assessment presented in this chapter, with measures introduced or developed as necessary in response to identified noise effects. These measures will be additional to and will build on those already in place as summarised in the NAP.
- 8.4.9 The ANPS requires the Project to incorporate noise measures and sets expectations on certain operational noise measures that must be brought forward by Heathrow to manage and limit the effects of aircraft noise. In line with the ANPS, these measures are the subject of this 2026 Public Consultation and have been developed following engagement with relevant stakeholders. Some of the key measures are:

- **Noise Envelope** – this is a component of our proposed Environmentally Managed Growth framework and is the primary measure for managing aircraft noise as the airport grows. The Noise Envelope is a framework that is being defined with engagement with local communities and relevant stakeholders. It will seek to manage and, where reasonably practicable, reduce aircraft noise while enabling the expanded airport to operate efficiently and to grow within the limits that will be defined as part of granting the DCO. The Noise Envelope is being designed around five yearly Noise Action Plans and five yearly reviews that will respond to future changes such as the approval of airspace change, enabling limits to be reduced where possible. The Noise Envelope will share the benefits of growth (including enhanced connectivity and economic opportunities), among communities, consumers and businesses.
- **Runway alternation** – a system where the runways in use for arrivals and departures are alternated according to a published schedule to give people living close to the ends of the runways a predictable break from aircraft noise, known as respite. The proposals and options for a runway alternation scheme for the Project are discussed in the FRO document.
- **Noise insulation scheme** – an expansive and comprehensive noise insulation programme for both homes and community buildings is proposed as part of the Project. Alongside other measures, this new scheme aims to mitigate and minimise the effects of the Project and will geographically extend eligibility beyond Heathrow's existing noise insulation schemes. Details of the noise insulation proposals can be found in the Noise Insulation Policy. The Noise Insulation Policy sets out the eligibility criteria, the package of measures and the phased delivery of the Project's noise insulation proposals. While the eligibility criteria for the noise insulation schemes are defined in the policy, the geographic extent of the new scheme will be dependent on airspace design. Where there is a potential that Community Areas may be eligible for the scheme, this is indicated in the assessment in this chapter.
- **Night flights** – Government noise policy recognises the additional health impacts of night flights and therefore expects the Project to include a ban on scheduled night flights for a nightly period of at least six and a half hours. Measures and controls to limit and reduce the impact of night flights, including proposals and options for a scheduled ban on night flights can be found in the FRO document.

8.4.10 We are exploring further noise and vibration measures as part of the Project in line with government noise policy, published guidance and best practice according to the environmental measures hierarchy as presented in **Figure 8.2**.

Figure 8.2: Noise and vibration environmental measures hierarchy



- 8.4.11 A material factor in determining the length and location of the Northwest Runway is to reduce aircraft noise so that aircraft are higher above areas of dense population as they approach the expanded airport. The Northwest Runway will also contain displaced aircraft landing points, known as 'displaced thresholds', which will further reduce aircraft noise by keeping aircraft higher as they approach the expanded airport. The phased introduction of displaced thresholds on Heathrow's existing runways is being considered as part of the Project which will further reduce noise impacts on the existing runways (see the FRO document).
- 8.4.12 We are committed to working with UKADS as a partner to identify and seek initiatives and measures that can mitigate aircraft noise through the airspace design process through quieter operating procedures. Such measures may include steeper descent approaches, continuous climb operations for departures and the consideration of additional departure routes as part of the airspace design. These measures could further reduce exposure to and the impact of aircraft noise.
- 8.4.13 For aircraft ground noise, measures such as providing electricity and air conditioning to aircraft when parked will help minimise noise impacts by reducing the use of aircraft engines on the ground. The Project will also include physical measures through landscaping and noise barriers to reduce noise effects caused by activities on the ground.
- 8.4.14 For road traffic noise, measures to reduce traffic noise impacts from new and/or realigned roads include low noise road surfacing. Further development of environmental measures for road traffic noise will be undertaken with further environmental assessment and will be reported within the Environmental Statement (ES). This will consider roadside noise barriers and very low noise surfacing where justified. Noise insulation will also be provided for road traffic noise in line with the Noise Insulation Policy.
- 8.4.15 For construction noise and vibration, details of how the construction process will be managed to minimise the effects of noise and vibration are included in the draft Code of Construction Practise (CoCP). This will include the use of best practicable means (BPM), for example, the selection of quieter working methods and quieter equipment. Specific measures secured by secondary consents (additional approvals that may still be needed alongside the DCO) will also be implemented to control the transmission of sound from the worksites and support sites, for example through use of local enclosures and screening of equipment, and/or perimeter solid hoarding, bunds or dedicated noise barriers. Noise insulation and, where necessary, temporary rehousing will also be provided for construction noise in line with the Noise Insulation Policy.
- 8.4.16 The draft CoCP also includes proposals for a bespoke approach for construction noise secondary consents.

8.5 Legislation, policy and guidance

- 8.5.1 In the UK, there is a wide range of legislation, policy and guidance in place to manage and control noise and vibration, a summary of which is provided relevant to

this chapter. All such relevant legislation, policy and guidance has been considered when carrying out this assessment.

- 8.5.2 The Government recently concluded its consultation on proposed amendments to the 2018 Airports National Policy Statement (ANPS) [1], to be known once amended as the Heathrow Expansion National Policy Statement (HENPS) [4]. The Government is now considering consultation feedback, alongside the outcome of parliamentary scrutiny once concluded, and subject to parliamentary approval of the Government's final form of the proposed amendments, is expected to publish the amended form of what will then be the HENPS by the end of 2026. In preparing our consultation materials, we have reviewed the proposed amendments to the ANPS and are continuing to consider the potential implications for our preferred scheme and accompanying assessments. Where relevant, the requirements of the ANPS are referenced in this document together with any potential changes arising from the proposed ANPS amendments, recognising that current policy in the ANPS remains the starting point for the consideration of Heathrow expansion until the amendments to the ANPS have been finalised and the amended version published as the HENPS. Once the ANPS has been amended and published as the HENPS, we will engage with relevant stakeholders on the policy amendments as part of our ongoing programme of pre-application engagement and also consider if targeted consultation is necessary.

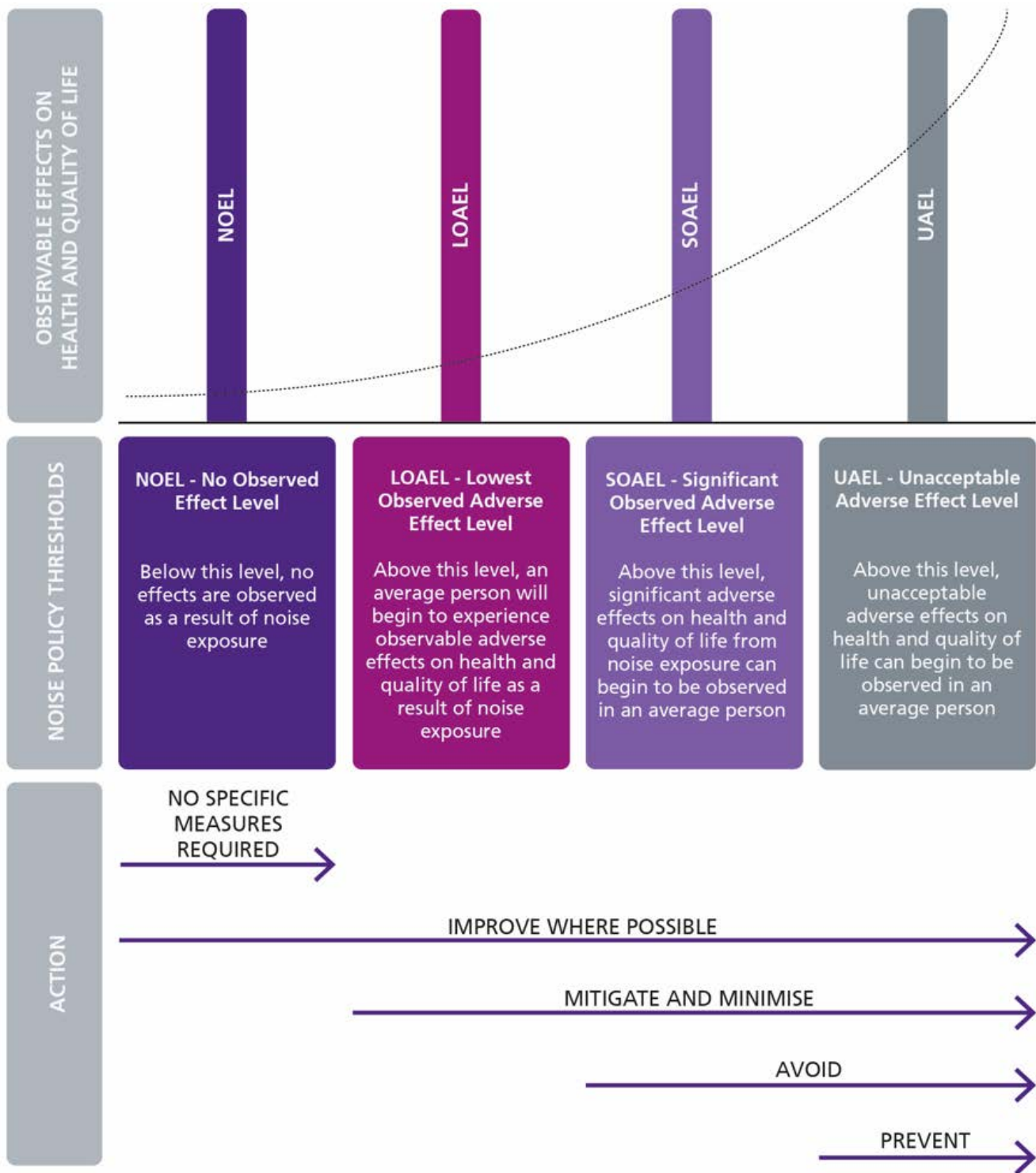
Policy

- 8.5.3 The Government's overarching noise policy is described in the Noise Policy Statement for England 2010 (NPSE) [5]. The NPSE recognises that noise is an inevitable consequence of a mature and vibrant society and therefore sets a policy vision to promote good health and quality of life through the effective management of noise within the context of the Government's policies on sustainable development. The policy applies to all forms of environmental noise.
- 8.5.4 The NPSE policy vision is supported by three policy aims, all within the context of sustainable development:
- **Aim 1:** Avoid significant adverse impacts on health and quality of life.
 - **Aim 2:** Mitigate and minimise adverse impacts on health and quality of life.
 - **Aim 3:** Where possible, contribute to the improvement of health and quality of life.
- 8.5.5 The NPSE aligns its aims to two thresholds of noise: the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL) as presented in **Figure 8.3**.
- 8.5.6 The LOAEL represents a threshold level of noise exposure above which adverse effects on health and quality of life become observed. The LOAEL therefore represents a level of noise exposure where noise becomes a primary issue (known as a 'material consideration') in decision making by the government with respect to planning applications. The second aim of the NPSE is that adverse effects from

noise on health and quality of life should be mitigated and minimised, though it notes that this does not mean that such adverse effects cannot occur. The SOAEL marks a level of noise exposure above which significant adverse effects on health and quality of life (sHQL) occur and the first aim of the NPSE is that these effects should be avoided.

- 8.5.7 The Planning Practice Guidance Noise (PPG-N) [6] introduces the Unacceptable Adverse Effect Level (UAEL). The PPG-N requires exposure above the UAEL to be prevented as effects above this level are deemed unacceptable if unmitigated.

Figure 8.3: Noise policy aims



- 8.5.8 The NPSE is cited throughout National Policy Statements (NPS), including the ANPS and the National Networks National Policy Statement (NNNPS) [7]. It is also cited in wider aviation policy, namely the Overarching Aviation Noise Policy Statement (OANPS) [8], the Aviation Policy Framework (APF) [9], and the Air Navigation Guidance 2026 (ANG) [10]. The aims are also widely reflected in planning policy through the National Planning Policy Framework (NPPF) [11].
- 8.5.9 The Government's national aviation noise policies recognise that the impact of aviation noise on health and quality of life must be mitigated as much as it is practical and realistic to do so. This means limiting and, where possible, reducing impacts.
- 8.5.10 These noise policies also define noise metrics and thresholds for where aircraft noise can result in an adverse impact on health and quality of life in line with the NPSE, and when specific measures and interventions are required. These noise thresholds have been used in the assessment for this chapter.
- 8.5.11 The policies, and particularly the OANPS, also recognise that the impact of aviation noise must be balanced against the economic and consumer benefits of aviation. To this end, government policy recognises that this balance can be achieved by applying the ICAO Balanced Approach [3]. The Balanced Approach complements government noise policy and follows the environmental measures hierarchy adopted by the Project.
- 8.5.12 With respect to aircraft noise, the ANPS states that the government will consider the acceptability of the proposed noise environmental measures having regard to the aims of the NPSE. It also sets an expectation that the aircraft noise impacts of the Project are limited to and, where possible, reduced compared to the impacts that occurred in 2013 as assessed by the Airports Commission. The draft HENPS introduces an updated requirement to limit and, where reasonably possible, reduce overall aircraft noise compared to 2024. As described above, current policy remains the starting point for the consideration of Heathrow expansion until the amendments to the ANPS have been finalised and the amended version published as the HENPS. This chapter therefore continues to report against a 2013 baseline. The Environmental Statement will aircraft noise against the relevant baseline as contained in the national policy at the time of the DCO Application.
- 8.5.13 The ANPS acknowledges that the assessment of aircraft noise for the Project should be undertaken using the developing indicative airspace design, and that this may involve the use of appropriate design parameters and scenarios based on indicative flightpaths. The use of indicative flightpaths allows for the noise assessment of the Project to proceed without the need for the separate Airspace Change Process to have formally commenced or concluded.
- 8.5.14 At the time of writing this chapter, the Government was consulting on changes to airspace policy as set out in the Air Navigation Guidance. The Air Navigation Guidance 2026 [26] was published in August 2026 which sets out the Government's key guidance on environmental objectives for airspace modernisation. The Planning Inspectorate acknowledge in their Scoping Opinion that any changes to policy and guidance, changes to noise policy thresholds and metrics, along with any publication of relevant research may require changes to how aircraft noise is assessed for the

Project. This includes changes in policy or assessment guidance arising from the publication of the Civil Aviation Authority's (CAA) Aviation Noise Attitudes Survey (ANAS) and Department for Transport's Aviation Night Noise Effects (ANNE) research studies. At the time of writing this chapter, initial outputs of the ANAS and ANNE studies have been published [12 and 13]. However, while the Government has acknowledged their publication in the draft HENPS, other publications accompanying the HENPS [4] note that aviation noise policy has yet to be reviewed in light of this newly published evidence. The draft HENPS and the Air Navigation Guidance 2026 hence maintain current policy on aviation noise assessment thresholds.

- 8.5.15 There are also regional and local policies that are relevant to the noise and vibration assessment and these have also been taken into account. Full details will be provided in the ES.

Legislation

- 8.5.16 Under the Civil Aviation Act 1982 [15] the government has powers to set noise controls at certain airports which it designates for noise management purposes, including Heathrow. Measures currently in place under this legislation include night flying restrictions and specific operating procedures that dictate how Heathrow operates today.
- 8.5.17 Regulation (EU) No. 598/2014 [16] ensures that the Balanced Approach is adopted in respect of aircraft noise management. This regulation sets out rules on the process to be followed for the introduction of noise-related operating restrictions. It requires the Secretary of State, as the competent authority, to ensure that the Balanced Approach is adopted in respect of aircraft noise management at an airport where a noise problem has been identified. To that end, the Secretary of State must ensure that a noise abatement objective for that airport is defined, the measures available to reduce the noise impact are identified, the likely cost-effectiveness of the noise mitigation measures is thoroughly evaluated, the measures are selected without detriment to safety taking into account public interest in air transport as regards the development of airports, and that stakeholders are consulted in a transparent way on the intended actions. It is made clear that noise mitigation measures taken in accordance with EU Regulation 598 must not be more restrictive than is necessary to achieve the environmental noise abatement objectives set for that airport.
- 8.5.18 EU Regulation 598/2014 requires the Secretary of State to ensure that the noise situation at designated airports is assessed on a regular basis. If the assessment indicates that new operating restrictions may be required to address a noise problem at an airport, the Secretary of State must ensure that, before operating restrictions are introduced:
- The contribution of each type of measure under the Balanced Approach is evaluated.

- Technical cooperation is established between the airport operator, aircraft operators and air navigation service providers to examine noise mitigation measures.
- The cost-effectiveness of any envisaged new operating restriction is assessed, taking into account the anticipated noise benefit of the measures, safety, capacity and any effects on the wider aviation network. The cost-effectiveness assessment should also take account of the health and safety of local residents, environmental sustainability (including interdependencies between noise and emissions) and effects on employment and the wider economy.
- Local residents (or their representatives) and relevant local authorities are consulted and technical information on noise mitigation measures is provided to them.
- The process of consultation with interested parties and industry stakeholders including airlines is organised in a timely and substantive manner, ensuring transparency as regards data and computation methodologies, and giving consultees at least three months to submit comments prior to the adoption of new operating restrictions. This Consultation forms part of our ongoing engagement in this regard.

8.5.19 Heathrow is a major airport under the Environmental Noise (England) Regulations 2006 [17]. These regulations require the routine preparation of noise contours and Noise Action Plans (NAPs). The 2024–2028 NAP is the latest plan to be prepared and approved under these regulations and is designed to manage noise issues and effects arising from aircraft noise at the airport. The NAP provides a comprehensive description of relevant policy, legislation and guidance that currently applies to Heathrow in relation to noise management. It also sets out all current noise measures, operational practices and Heathrow’s approach to noise management.

8.5.20 Construction noise and vibration is subject to controls available through the Control of Pollution Act 1974 [18]. This Act enables the control of noise and vibration disturbance from construction activities. The legislation provides local authorities with powers to impose requirements on how construction works are carried out to minimise noise and vibration impacts, and a process for obtaining prior consent for work on construction sites.

8.5.21 For road and railway noise, the Noise Insulation Regulations 1975 [19] and Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 [20] apply to projects implementing new or significant modifications to road and rail infrastructure respectively. These regulations set eligibility criteria for grants towards the installation of noise insulation subject to a level of change in road and railway noise arising from such projects.

Guidance

- 8.5.22 There is a wide range of guidance that covers the prediction and assessment of environmental noise and vibration. In particular, the ANPS requires that noise should be assessed using the principles of the relevant British Standards and other guidance. The assessment in this chapter has given due regard to relevant guidance, including but not limited to those from recognised bodies and professional institutions such as UK Government, the British Standards Institute, the Institute of Environmental Management and Assessment, the CAA and the World Health Organization (WHO). Full details will be provided in the ES.

8.6 Assessment summary

- 8.6.1 This section describes the approach to baseline data gathering and how the assessment reported in this chapter has been undertaken.

Baseline

- 8.6.2 The strategy for obtaining appropriate baseline information to inform the environmental assessments for the Project employs a three-round process:
- **Round 1: Data gathering (existing data)** – review existing datasets such as historic monitoring data and strategic modelling for areas surrounding Heathrow.
 - **Round 2: Computational modelling** – use baseline noise modelling to calculate noise levels from existing transportation sources in the areas surrounding Heathrow and consider how these could change over time.
 - **Round 3: Monitoring** – use targeted field surveys where possible to validate the noise models and provide detailed local characterisation for particularly sensitive areas.
- 8.6.3 The future baseline is not static and accounts for several anticipated changes in the without-Project (two-runway) scenario across the Project lifecycle. These include future aircraft technology and fleet mix changes, which account for natural fleet retirement and the transition to quieter new-generation aircraft (such as the Airbus 350 and Neos, and Boeing 787 and Maxes). The future baseline also incorporates a scenario in which airspace modernisation has been deployed in the two-runway operation, alongside associated surface access and road traffic noise changes driven by regional traffic growth forecasts, road network modifications and electric-vehicle transitions where relevant.

Assessment approach

- 8.6.4 The noise and vibration effects of the Project have been considered in the context of government noise and planning policy. This Chapter identifies receptors that may be exposed to levels of noise and vibration that give rise to a significant adverse effect on health and quality of life (sHQL) as a result of exposure above the Significant Observed Adverse Effect Level (SOAEL). Government guidance [6] notes that noise

above the SOAEL is present and disruptive and can cause a material change in behaviour, attitude or other physiological response. This could include avoiding certain activities during periods of intrusion or, where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Night-time noise above the SOAEL has the potential to result in sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Above the SOAEL, quality of life can be diminished due to a change in the acoustic character of the area. Where noted in the assessment, sHQLs above the SOAEL are avoided by environmental measures and fully funded noise insulation.

- 8.6.5 The assessment also identifies locations which may experience an unacceptable adverse effect (UAE) as a result of exposure above the Unacceptable Adverse Effect Level (UAEL). Government guidance notes that noise above the UAEL is present and very disruptive and can lead to extensive and regular changes in behaviour, attitude or other physiological response leading to psychological stress. This could include regular sleep deprivation/awakening, loss of appetite and significant, medically definable harm. UAELs due to the Project are prevented by environmental measures and fully funded noise insulation. If necessary, the Development Consent Order (DCO) can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects.
- 8.6.6 Exposure above the SOAEL and the UAEL are considered 'new' effects as a result of the Project if they occur due to an increase in noise of 1 decibel or greater.
- 8.6.7 As well as considering effects due to exposure to noise and vibration in the context of noise and planning policy, the assessment of noise and vibration has also considered whether the Project will give rise to 'likely significant effects' due to changes in noise and/or vibration. The assessment of likely significant effects (LSEs) is the approach undertaken in respect of the Environmental Impact Assessment (EIA) Regulations [21] (refer to **Chapter 3** for further details). This is consistent with the approach that will be undertaken in the Environmental Statement (ES) that will be prepared for the DCO application and is well established by precedent. This is a separate assessment concept to the exposure-based assessments considered by noise policy i.e. the NPSE which focuses on adverse effects on health and quality of life. LSEs consider both exposure to and changes in noise and/or vibration due to the Project along with additional factors such as the number of people that may experience changes.
- 8.6.8 In general, LSEs can be identified in situations where noise exposure is above the Lowest Observed Adverse Effect Level (LOAEL) and where changes in exposure noise and/or vibration due to the Project are considered significant. Government guidance notes that noise above the LOAEL is present and intrusive. Above the LOAEL, noise can be heard and can cause small changes in behaviour, attitude or other physiological response, such as turning up volume of television, speaking more loudly and, where there is no alternative ventilation, having to close windows for some of the time because of the noise. At night-time, there is also potential for some reported sleep disturbance. In general, exposure above the LOAEL affects the acoustic character of the area such that there is a small actual or perceived change

in the quality of life. An LSE therefore describes where the Project could result changes experienced by individuals or communities that may affect the character and enjoyment of an area and therefore could be perceived by people as causing a change in their quality of life.

- 8.6.9 LSEs can be either temporary or permanent. Temporary LSEs are more likely to occur due to construction activities as the noise and/or vibration impacts are finite. Permanent LSEs are more likely to arise from the operation of the Project.
- 8.6.10 LSEs can be either beneficial (BLSE) due to noise decrease, or adverse (ALSE) due to noise increase. LSEs have been considered for both residential and other noise sensitive non-residential receptors. At this stage, LSEs have been identified on a precautionary basis and will be confirmed in the ES.
- 8.6.11 Modelling has been undertaken to evaluate the effects of the Project on levels of noise and vibration. The approach to modelling is consistent both with the approach that will be undertaken in the ES and best practice. Where there are uncertainties due to the early status of development of proposals, worst-case assumptions have been adopted. It is anticipated that these worst-case assumptions will be refined to reasonable worst-case assumptions in the ES.
- 8.6.12 The construction modelling has forecast levels of noise and vibration from construction activities in the proximity of worksites, support sites and construction vehicle routes and latest available, indicative conveyor routes. The modelling has also considered impacts from rail transport that supports construction activities.
- 8.6.13 The construction noise and vibration assessment reported in this chapter is based on the anticipated most intensive construction activities for each construction area. The overarching construction approach and activities, including the Construction Support Sites and principal construction activities, are described in **Section 2.4 of Chapter 2: Description of the Project**. At this stage, the assessment does not account for noise reduction afforded by acoustic screening or the implementation of best practicable means (BPM). These measures will be further developed and then accounted for in the noise assessment work to be presented within the ES.
- 8.6.14 The operational modelling has considered noise from aircraft in the air and on the ground (referred to as 'air noise' and 'ground noise' respectively). The modelling has also considered operational noise from road vehicle journeys to and from the expanded airport. Operational effects associated with noise-induced vibration have been predicted.
- 8.6.15 The design of Heathrow's airspace and its flightpaths will have a major influence on where and how many people and places are exposed to aircraft noise. The Project will require the design of new flightpaths and may also require changes to Heathrow's existing flightpaths. We have worked with UKADS as a partner to identify initial parameters and scenarios that will be carried into their design work. At this stage, this engagement has been used to identify the areas where flightpaths may be designed or changed to facilitate the Project.

- 8.6.16 On this basis, a range of indicative flightpaths have been prepared to support the assessment of air noise. These assume that flightpaths could be located anywhere around Heathrow and assume no design constraints. The indicative flightpaths have also considered the use and number of routes potentially required to meet the minimum future operational capacity required by the ANPS, and different ways in which an expanded Heathrow could be connected to the wider aviation network. Indicative flightpaths have been modelled to identify locations which may be exposed to various levels of aircraft noise, and where certain levels of aircraft noise are likely to occur irrespective of where and how flightpaths are designed. This approach has allowed the air noise effects of the Project to be identified and to show where effects will be dependent on the design of flightpaths, as well as areas where effects may occur irrespective of flightpath design.
- 8.6.17 Between the Environmental Information Consultation Document (EICD) and the ES, we will continue to work with UKADS as a partner and the ES will be based on the latest available airspace design information at the time of undertaking the assessment.
- 8.6.18 The air noise assessment presented in this chapter has considered outcomes which may arise from our directional preference and runway alternation proposals which can be found in the FRO document. It has also been assumed that aircraft noise performance does not improve beyond that currently demonstrated by new-generation aircraft (such as the Airbus 350 and Neos, and Boeing 787 and Maxes) and is therefore a conservative assessment.
- 8.6.19 All assumptions and uncertainties associated with the air noise assessment will be refined as far as is reasonably practicable for the ES through engagement with relevant stakeholders such as UKADS and undertaking of technical studies.
- 8.6.20 To reflect the uncertainty and limitations in the indicative flightpath and runway operation assumptions at this stage, the assessment of noise and vibration presented in this chapter is described for two geographic reporting areas. These areas reflect the influence of aircraft noise impacts along with the presence and influence of other noise and vibration sources associated with the Project. These reporting areas are referred to as the 'Inner' and 'Outer' areas and are presented in **Figure 8A.1**.

Reporting approach – Inner Area

- 8.6.21 The Inner Area represents locations and communities closer to the airport where air noise is more likely to result in significant adverse effects on health and quality of life (shQL) in the context of government noise policy. Within the Inner Area aircraft noise effects are more likely to be a consequence of the physical and operational proposals of the Project (namely the location and configuration of the Northwest Runway forecast runway operations, aircraft movements and fleet mix) than the location of flightpaths. The Inner Area also covers locations where changes in noise and vibration due to other ground-based noise and vibration sources (such as construction, new and realigned roads and increased road traffic) associated with the Project are likely to occur. The noise and vibration effects of the Project within the

Inner Area are reported for each of the Community Areas presented in **Figure 8A.2:** . For each Community Area, sHQL in the context of government noise policy and LSE in the context of the EIA Regulations are reported.

Reporting approach – Outer Area

8.6.22 The Outer Area represents locations further from the Project where air noise is less likely to result in sHQL, in the context of government noise policy, as distance from the airport increases, but where LSE may occur due to aircraft air noise. No sHQLs or LSEs are expected from any sources other than for air noise in the Outer Area, as the noise and vibration effects of these sources are experienced closer to the airport. Air noise LSEs in the Outer Area are dependent on the design and location of flightpaths as well as the operational proposals of the Project. It is important to note that the Outer Area represents the maximum extents within which adverse noise effects could occur across a wide range of indicative flightpaths. This does not mean that adverse noise effects or LSEs will occur everywhere in the Outer Area. Between the EICD and ES, the assessment and extent of the Outer Area will be updated based on the latest airspace design information available and it is anticipated that the extent will reduce.

Reporting approach – assessment years

8.6.23 As indicated in **Chapter 3: The Approach to environmental assessment**, the Project will be delivered over around 25 years. Construction and operational activities will occur concurrently with existing airport operations, and then once infrastructure is completed new airport operations will commence.

8.6.24 For the purposes of this EICD assessment, data for the following years has been utilised in the noise and vibration assessment to indicate the adverse noise effects which may arise. These years have been selected to represent a reasonable worst case, and as such the findings and conclusions are precautionary:

- Construction:
 - while the nature of construction will vary in respect of intensity and geographical worksite location, **2033** represents the year which is anticipated to be the peak period of noise and vibration disruption due to the extent and location of activities.
- Aircraft (air and ground):
 - **2032** has been used for aircraft air noise modelling as this represents the earliest point in which ‘early growth’ to 505,000 Air Transport Movements (ATMs) is proposed.
 - **2036** has been used for aircraft air and ground noise as this represents the earliest possible first full year after runway opening in which the expanded airport is operating with 550,000 ATMs.
 - **2039** has been used for aircraft air and ground noise as this represents an interim year where the expanded airport continues to grow and is operating with 660,000 ATMs.

- **2055** has been used for aircraft air and ground noise as this represents the end state of expanded airport growth at 756,000 ATMs.
 - Road Traffic (including construction traffic):
 - **2033** represents the earliest year in which the majority of new and altered roads associated with the Project will be operational.
 - **2040** represents the earliest possible year post opening of Terminal 5 West X and the associated increase in road traffic.
 - **2050** represents the earliest possible year post opening of Terminal 2D and the associated increase in road traffic.
 - **2055** represents the end state of expanded airport growth and year with the highest forecast road traffic.
- 8.6.25 The assessment presented within this chapter is based upon the assumption that 2035 is the earliest possible date for runway opening. This reflected the Government's stated ambition at the time the assessment modelling commenced.
- 8.6.26 However, since commencing our assessment, it is now understood that the runway opening date is more likely to be in the late 2030s.
- 8.6.27 The timing and potential duration of effects will change with a later runway opening date; however, assessing the project against an earlier runway opening date is considered to capture the reasonable worst-case effects that can be predicted at this stage, particularly given the precautionary approach taken for the EICD.
- 8.6.28 The Environmental Statement to be submitted with the DCO application will present an assessment based upon our updated delivery programme. Additional or alternative assessment years will be used in the ES as necessary to identify all adverse noise effects for the Project.

8.7 Assessment results overview

- 8.7.1 The following sections provide an overview of the assessment results by noise source and assessment year. Each heading specifies whether the effects are reported against a single year or a range of years.

Construction noise and vibration

2030

- 8.7.2 The construction noise and vibration assessments have been undertaken based on the type and extent of construction activities to be undertaken in 2030 over what is anticipated to be the peak period of potential disruption based on quantity and location of activities. Construction activities assessed include those associated with clearing space for and construction of the Northwest Runway as well as expansion of the airfield and associated activities.

- 8.7.3 Construction activities, working areas and associated noise and vibration levels will change throughout the construction programme based on activities required to deliver the Project (see **Section 2.4 of Chapter 2**, including **Tables 2.8 and 2.9**). The construction activities associated with clearing space for, and the construction of, the Northwest Runway and associated support activities are expected to be the most intensive and widespread. These are therefore anticipated to result in the greatest impacts. Detailed construction proposals and noise and vibration measures will be agreed via secondary consents in line with best practice.
- 8.7.4 For construction noise, **temporary unacceptable adverse effects (UAEs) are avoided** during peak construction periods at residential receptors located close to active worksites in Bedfont, Brands Hill, Colnbrook, Cranford, Cranford Cross, Feltham North, Harlington, Harmondsworth, Horton, Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury. These effects are avoided by environmental measures (for example, the draft Code of Construction Practice (CoCP) incorporates best practicable means (BPM) noise measures, acoustic screening at construction site boundary and temporary re-housing where required – see the Noise Insulation Policy).
- 8.7.5 For construction noise, **temporary significant adverse effects on health and quality of life (shQLs) are avoided** at residential receptors located close to active worksites in Bedfont, Brands Hill, Colnbrook, Cranford, Cranford Cross, Feltham North, Harlington, Harmondsworth, Hayes, Horton, Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury. These effects are avoided by environmental measures (for example, the draft CoCP incorporates BPM noise measures, acoustic screening at construction site boundary and noise insulation where required – see the Noise Insulation Policy).
- 8.7.6 For construction noise, **temporary adverse likely significant effects (ALSEs) are predicted** at receptors located close to active worksites in Bedfont, Brands Hill, Colnbrook, Cranford, Cranford Cross, Feltham North, Harlington, Harmondsworth, Feltham West, Hayes, Heston, Horton, Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury. The embedded measures to mitigate and minimise these ALSEs are those in the draft CoCP, including BPM and acoustic screening at construction site boundary.
- 8.7.7 For construction vibration, **temporary shQLs are avoided** at receptors located close to the active worksites in Bedfont, Brands Hill, Colnbrook, Cranford, Harlington, Harmondsworth, Horton, Poyle, Sipson, Stanwell and Stanwell Moor. These effects are avoided by environmental measures (for example, the draft CoCP incorporates BPM vibration measures and avoiding or restricting the use of vibration generating plant where necessary).
- 8.7.8 For construction vibration, **temporary ALSEs are predicted** at Bedfont, Brands Hill, Colnbrook, Cranford, Harlington, Harmondsworth, Horton, Poyle, Sipson, Stanwell and Stanwell Moor. The embedded measures to mitigate and minimise these ALSEs are those in the draft CoCP, including use of BPM and selection of low vibration plant and construction methods as appropriate.

2036 to 2055

- 8.7.9 All construction works required to facilitate the opening and operation of the Northwest Runway are programmed to be completed by 2036. After 2036, the need for localised works remains, including those associated with limited sections of taxiway construction, construction of freight forwarding sites, and works to western terminals and associated developments. These activities are expected to be generally less intensive and less wide ranging in geographical extent compared to those prior to 2036. It is possible that adverse effects may be experienced at sensitive receptors in proximity to associated works, however, for most areas, any such effects are generally unlikely to be worse than those identified for the 2030 peak construction year, in terms of intensity and geographical extent.
- 8.7.10 The Environmental Statement (ES) will assess noise and vibration for a number of representative periods throughout the construction programme based on developed information on construction methodologies at the time of undertaking the assessment. The ES assessment will therefore build upon the Environmental Information Consultation Document (EICD) assessment and incorporate more detailed consideration for the temporal and geographical spread of potential construction noise and vibration effects.

Aircraft air noise

2032

- 8.7.11 Following granting of the Project, Air Transport Movements (ATMs) will increase through using Heathrow's existing infrastructure as a two-runway operation (referred to as 'early growth') and are forecast to reach 505,000 in 2032, by which time:
- **No new UAEs are predicted** due to early growth.
 - **No new shQLs are predicted** due to early growth.
 - **No new ALSEs are predicted** due to early growth.
- 8.7.12 During this time, we will continue to mitigate and minimise noise through environmental measures such as predictable respite through runway alternation. Ahead of this year Heathrow plans to have implemented easterly alternation which will provide predictable periods of respite for local communities when operating in an easterly direction.
- 8.7.13 The Noise Envelope will first come into effect during this period and will provide a framework for managing noise effects associated with early growth capacity (see the Environmentally Managed Growth Topic Paper).

2036 to 2055

- 8.7.14 From 2036, air noise will be redistributed as Heathrow moves from a two to a three-runway operation. This redistribution, along with when and how noise is experienced by communities, will be influenced by the runway alternation pattern and directional preference proposals as described in the Future Runway Operation (FRO)

document. The location and magnitude of noise impacts within the Inner Area will be predominantly determined by runway locations and their operations. Within the Inner Area the runway alternation pattern will provide mitigation by predictable respite from aircraft noise across parts of the Community Areas, particularly for those communities close to and aligned with the runway ends. In the Outer Area impacts will mostly be influenced by the design of flightpaths.

- 8.7.15 The design of the flightpaths (which is the responsibility of UKADS) will have a significant influence on the locations, communities and numbers of people in the Outer Area that could experience sHQLs and LSEs from air noise due to the Project.
- 8.7.16 Based on the indicative flightpaths considered at this stage, ALSEs or BLSEs during the day or the night could occur anywhere within the Outer Area (see **Figure 8A.1**). This does not mean that LSEs will occur everywhere within the Outer Area. It is anticipated that the extent of the Outer Area will reduce as the airspace design progresses through the separate Airspace Change Process being undertaken by UKADS.
- 8.7.17 Despite this uncertainty, ALSEs from the Project are foreseeable in some areas irrespective of how and where flightpaths are designed due to their proximity to the runway where airspace design is more certain. These areas are primarily to the north of the Northwest Runway and the areas where aircraft will need to be lined up to land, irrespective of the wider airspace design.
- 8.7.18 The areas where ALSEs are predicted irrespective of indicative flightpaths are presented in **Figure 8A.3** and include parts of the Community Areas of Datchet, Horton, Brands Hill, Colnbrook, Iver and Richings Park, Poyle, Harmondsworth, West Drayton, Sipson, Harlington, Hayes, Cranford Cross, Cranford and Heston.
- 8.7.19 The **ALSEs are mitigated and minimised** by the aircraft noise environmental measures and respite from runway alternation (see the FRO Document).
- 8.7.20 **Figure 8A.4** shows areas that are likely to experience sHQLs regardless of airspace design, and areas that may experience sHQLs depending on airspace design.
- 8.7.21 The Community Areas where new sHQLs due to the Project are considered likely to occur include areas of Datchet, Brands Hill, Colnbrook, Poyle, Harmondsworth, Sipson, Harlington, Cranford Cross, Cranford and Heston.
- 8.7.22 The Community Areas where sHQLs are likely to occur with or without the Project include areas of Horton, Stanwell Moor, Stanwell, Bedfont, Feltham North, Cranford, Hounslow (West and Heath) and Hounslow (Central and South).
- 8.7.23 The additional Community Areas that may experience new sHQLs but where these effects are dependent on airspace design include parts of Datchet, Iver and Richings Park, Stanwell Moor and Wraysbury.
- 8.7.24 **New and continuing sHQLs are avoided** by aircraft noise environmental measures and runway alternation (see the FRO Document) and the provision of fully funded noise insulation (see the Noise Insulation Policy).
- 8.7.25 Some receptors in Harmondsworth and Harlington could be exposed to new UAE from air noise due to the Project. In Harmondsworth this may occur at properties

within 150m of the airfield boundary. In Harlington, UAE may occur within 1500 metres of the extended runway centreline from the airfield boundary. These **UAEs are prevented** by aircraft noise environmental measures and runway alternation (see the FRO Document) and the provision of fully funded noise insulation (see the Noise Insulation Policy). If necessary, the Development Consent Order (DCO) can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects.

- 8.7.26 As part of the air noise assessment, the overarching impacts of the Project have been assessed across a wide range of indicative flightpaths. **Table 8.1** and **Table 8.2** present the range in the number of people that may be exposed to relevant aircraft noise policy assessment thresholds during daytime and night-time periods across the assessment years of 2036, 2039 and 2055. These ranges are presented against the 2013 policy baseline specified by the ANPS. As noted earlier in this chapter, the draft Heathrow Expansion National Policy (HENP) introduces an updated requirement to limit, and where reasonably possible, reduce overall aircraft noise compared to 2024. As noted earlier, current policy remains the starting point for the consideration of Heathrow expansion until the amendments to the ANPS have been finalised and the amended version published as the HENPS. This chapter therefore continues to report against a 2013 baseline.
- 8.7.27 The wide range of population noise exposure in **Table 8.1** and **Table 8.2** highlights the influence of the design of flightpaths and decisions on future operations on the number of people exposed to aircraft noise by the Project. Despite this wide range, subject to UKADS's airspace design and the incorporation of wider measures, the range includes scenarios where fewer people are exposed to aircraft noise than the policy baseline of 2013. This is demonstrated by the tables showing a reduction (negative percentage) in population exposure compared to 2013.
- 8.7.28 **Table 8.3** and **Table 8.4** present the range of ALSEs and BLSEs arising from the Project in 2036, 2039 and 2055 for daytime and night-time periods respectively. Again, the range of outcomes in these tables highlights the importance of UKADS airspace design and the incorporation of wider environmental measures on such outcomes. These tables demonstrate that the Project could result in both ALSEs and BLSEs indicating that while the Project is likely to lead to adverse air noise changes in some locations, it may lead to improvements in air noise in others. ALSEs are mitigated and minimised by air noise environmental measures (see the FRO Document), and the air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).
- 8.7.29 For the ES, indicative flightpaths will be updated to reflect the parameters and scenarios being considered by UKADS as part of their airspace design work. The assessment will be updated to reflect feedback and wider technical work on our Future Runway Operations Document and expanded to incorporate wider assessment factors described in the 2025 Scoping Addendum. The ES will therefore seek to present a narrower range of outcomes than what is possible at this time, which will be used to support the setting and proposing of limits as part of the Noise Envelope within the Environmentally Managed Growth Topic Paper.

8.7.30 It is important to note that during the period from 2036 to 2055, next-generation aircraft (meaning those that do not yet exist but will replace new-generation aircraft such as the Airbus 350 and Neos, and Boeing 787 and Maxes) will start to transition into the fleet with steadily increasing numbers. While there are early industry predictions on the noise performance of these next-generation aircraft, their noise performance cannot be known for certain at this stage. As noted in **Section 8.6**, the noise assessment in this chapter therefore assumes as a worst-case that next-generation aircraft will be no quieter than the aircraft they replace. This assumption will be refined and may be updated in the ES based on a Heathrow funded independent study and other industry studies that may become available. Importantly, the Noise Envelope will include a mechanism to respond to changes in aircraft technology as these become more certain and update noise limits where possible, allowing the benefits of future technology to be shared between the industry and local communities.

Table 8.1: Summary of daytime effects on people in terms of health and quality of life due to Project in 2036, 2039 and 2055 compared to 2013 policy baseline. Presented as a range across a wide range of indicative flightpaths.

TOTAL POPULATION WITHIN INNER AND OUTER AREA = APPROXIMATELY 5,577,500								
	Outcome	Number of people exposed (rounded to nearest 100)				% Change compared to 2013		
		Policy Baseline 2013	Project 2036	Project 2039	Project 2055	Project 2036	Project 2039	Project 2055
Increasing Noise Level <----- 1	People removed from exposure to adverse effect by the Project	-	24,000 to 176,200	10,800 to 157,600	14,100 to 139,900	-	-	-
	Lowest Observed Adverse Effect Level (LOAEL)							
	People exposed to adverse effect noise levels	1,206,300	914,200 to 1,655,400	954,400 to 1,786,900	1,025,900 to 2,033,600	-24% to 37%	-21% to 48%	-15% to 69%
	Of which, people exposed to noise levels above the onset of significant community annoyance (54 dB L _{Aeq} , 16hr)	616,100	433,400 to 969,600	483,400 to 1,112,200	520,200 to 1,252,600	-30% to 57%	-22% to 81%	-16% to 103%
	Significant Observed Adverse Effect Level (SOAEL)							
	People exposed to significant adverse effect noise levels ¹	67,100	37,500 to 59,800	46,000 to 74,200	53,300 to 87,500	-44% to -11%	-31% to 11%	-21% to 30%
	Unacceptable Adverse Effect Level (UAEL)							
	People exposed to unacceptable adverse effect level ²	800	100 to 1,800	100 to 2,000	400 to 2,500	-91% to 126%	-86% to 151%	-51% to 215%

1 – significant adverse effects avoided by environmental measures and fully funded noise insulation.

2 – unacceptable adverse effects (UAEs) prevented by environmental measures and fully funded noise insulation. If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects

Table 8.2: Summary of night-time effects on people in terms of health and quality of life due to Project in 2036, 2039 and 2055 compared to 2013 policy baseline. Presented as a range across a wide range of indicative flightpaths.

TOTAL POPULATION WITHIN INNER AND OUTER AREA = APPROXIMATELY 5,577,500								
	Outcome	Number of people exposed (rounded to nearest 100)				% Change compared to 2013		
		Policy Baseline 2013	Project 2036	Project 2039	Project 2055	Project 2036	Project 2039	Project 2055
Increasing Noise Level <-----	People removed from exposure to adverse effect by the Project	-	15,300 to 105,300	4,900 to 108,000	1,500 to 101,800	-	-	-
	Lowest Observed Adverse Effect Level (LOAEL)							
	People exposed to adverse effect noise levels	894,800	798,500 to 1,392,900	817,900 to 1,503,000	837,800 to 1,707,000	-11% to 56%	-9% to 68%	-6% to 91%
	Significant Observed Adverse Effect Level (SOAEL)							
	People exposed to significant adverse effect noise levels ¹	101,500	65,500 to 91,900	76,800 to 102,700	85,700 to 116,400	-35% to -9%	-24% to 1%	-16% to 15%
	Unacceptable Adverse Effect Level (UAEL)							
	People exposed to unacceptable adverse effect level ²	2,100	100 to 1,500	100 to 1,700	100 to 2,200	-97% to -28%	-96% to -19%	-93% to 4%

1 – significant adverse effects avoided by environmental measures and fully funded noise LSE.

2 – unacceptable adverse effects (UAEs) prevented by environmental measures and fully funded noise insulation. If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects

Table 8.3: Summary of daytime adverse and beneficial likely significant effects on people due to the Project in 2036, 2039 and 2055 compared to future two-runway scenario. Presented as a range across a wide range of indicative flightpaths.

TOTAL POPULATION WITHIN INNER AND OUTER AREA = APPROXIMATELY 5,577,500										
Effect on health and quality of life (for average person) due to noise level from Project – number of people (rounded to nearest 100)		Noise change caused by 3R Project compared to future 2R baseline								
		Project 2036			Project 2039			Project 2055		
		Beneficial Likely Significant Effect (noise decrease)	No Likely Significant Effect	Adverse Likely Significant Effect (noise increase)	Beneficial Likely Significant Effect (noise decrease)	No Likely Significant Effect	Adverse Likely Significant Effect (noise increase)	Beneficial Likely Significant Effect (noise decrease)	No Likely Significant Effect	Adverse Likely Significant Effect (noise increase)
Noise level after change caused by Project	No Adverse Effect	n/a	26,200 to 209,800	n/a	n/a	12,600 to 192,600	n/a	n/a	13,200 to 175,000	n/a
	Lowest Observed Adverse Effect Level (LOAEL)									
	Adverse Effect	90,100 to 376,400	288,300 to 423,700	373,100 to 1,331,500	33,700 to 297,500	320,400 to 610,200	442,600 to 1,751,300	13,600 to 195,200	229,000 to 601,300	519,000 to 2,052,100
	Significant Observed Adverse Effect Level (SOAEL)									
	Significant Adverse Effect ¹	6,800 to 19,800	13,000 to 38,000	14,000 to 42,200	1,100 to 17,600	26,200 to 39,800	22,800 to 49,900	200 to 11,900	32,200 to 63,400	26,500 to 59,300

TOTAL POPULATION WITHIN INNER AND OUTER AREA = APPROXIMATELY 5,577,500										
Unacceptable Adverse Effect Level (UAEL)										
Unacceptable Adverse Effect ²	0 to 300	<100 to 300	800 to 800	0 to 300	0 to 300	500 to 600	0 to 0	0 to 300	600 to 2,600	

1 – significant adverse effects avoided by environmental measures and fully funded noise insulation.

2 – unacceptable adverse effects (UAEs) prevented by environmental measures and fully funded noise insulation. If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects

Table 8.4 Summary of night-time adverse and beneficial likely significant effects on people due to the DCO in 2036, 2039 and 2055 compared to future two-runway scenario. Presented as a range across a wide range of indicative flightpaths.

TOTAL POPULATION WITHIN INNER AND OUTER AREA = APPROXIMATELY 5,577,500										
Effect on health and quality of life (for average person) due to noise level from Project – number of people (rounded to nearest 100)		Noise change caused by 3R Project compared to future 2R baseline								
		Project 2036			Project 2039			Project 2055		
		Beneficial Likely Significant Effect (noise decrease)	No Likely Significant Effect	Adverse Likely Significant Effect (noise increase)	Beneficial Likely Significant Effect (noise decrease)	No Likely Significant Effect	Adverse Likely Significant Effect (noise increase)	Beneficial Likely Significant Effect (noise decrease)	No Likely Significant Effect	Adverse Likely Significant Effect (noise increase)
Noise level after change caused by Project	No Adverse Effect	n/a	16,700 to 119,200	n/a	n/a	5,300 to 128,800	n/a	n/a	1,700 to 123,200	n/a
	Lowest Observed Adverse Effect Level (LOAEL)									
	Adverse Effect	126,700 to 310,900	198,400 to 408,100	360,500 to 1,298,700	1,000 to 261,500	279,600 to 597,200	391,000 to 1,482,300	0 to 180,100	135,200 to 568,000	470,100 to 1,952,100
	Significant Observed Adverse Effect Level (SOAEL)									
	Significant Adverse Effect ¹	21,100 to 30,400	9,400 to 48,200	22,000 to 68,200	0 to 42,200	40,900 to 69,300	32,000 to 76,000	0 to 17,100	60,000 to 90,300	40,100 to 105,700

TOTAL POPULATION WITHIN INNER AND OUTER AREA = APPROXIMATELY 5,577,500										
	Unacceptable Adverse Effect Level (UAEL)									
	Unacceptable Adverse Effect2	0 to 300	0 to 300	700 to 800	0 to 0	0 to 300	500 to 800	0 to 0	0 to 300	600 to 900

- 1 – significant adverse effects avoided by environmental measures and fully funded noise insulation.
- 2 – unacceptable adverse effects (UAEs) prevented by environmental measures and fully funded noise insulation. If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects

Aircraft ground noise

2036 to 2055

- 8.7.31 From 2036, aircraft ground operations will be redistributed with aircraft moving to and from the Northwest Runway and around the airfield on new and altered taxiways. New stands will come into operation through new and expanded Terminal infrastructure. Aircraft will also begin to hold at the ends of the Northwest Runway.
- 8.7.32 The location and magnitude of ground noise impacts will be predominantly associated with aircraft taxiing, runway holding and activity at stands within the expanded airfield. Ground noise impacts are expected to increase and SHQLs and ALSEs from the Project are foreseeable at locations in the vicinity of the expanded airfield boundary in parts of communities such as Poyle, Harmondsworth, Colnbrook, Harlington, Stanwell Moor, Sipson, and Bedfont.
- 8.7.33 **SHQLs are avoided** through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES. These could include the use of Fixed Electrical Ground Power (FEGP) and Pre-conditioned Air (PCA) at stand in place of noisier Auxiliary Power Units (APUs).
- 8.7.34 **ALSEs are mitigated and minimised** through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise

- 8.7.35 In 2033, the majority of new and altered roads associated with the Project will be operational. This assessment year therefore accounts for noise change that will be felt by receptors close to these roads and the surrounding road network, as the roads become operational and traffic in the area is re-routed.
- 8.7.36 In terms of total traffic flows on the road network, the 2055 assessment year represents the operational year with the highest forecast vehicle volumes. The road traffic noise reporting in this chapter therefore focusses on the 2033 and 2055 assessment years as these represent a reasonable worst-case in terms of road traffic noise effects, based on the data available at this stage. A qualitative assessment has been undertaken for the interim years of 2040 and 2050. The new and altered roads are summarised in **Chapter 2, Table 2.2**.

2033

- 8.7.37 Road traffic noise effects are predicted to be greatest in 2033, when new and altered roads open. These routes will carry a combination of airport-related traffic, general traffic and construction traffic, resulting in the highest potential effects at nearby receptors. The 2033 assessment therefore represents the combined operational and construction road traffic noise scenario.
- 8.7.38 During 2033, ALSE and BLSE from changes in road traffic noise are anticipated across many of the Community Areas due to the re-routing of roads and/or changing

traffic patterns on the existing road network. ALSE are likely to occur at receptors close to the new or altered roads in parts of communities such as Colnbrook, Harmondsworth, Harlington, Longford, Poyle, Sipson, Stanwell and Stanwell Moor. ALSE are also likely to occur at receptors close to existing roads where traffic levels are predicted to increase as a result of the Project in parts of communities such as Bedfont, Cranford and Cranford Cross. These effects will be most noticeable when new and altered roads open and traffic patterns change.

- 8.7.39 **UAEs are prevented and sHQLs are avoided** from new and altered roads through the provision of noise insulation in accordance with the Noise Insulation Policy. Road traffic noise effects from new and altered roads will be further mitigated by measures such as low noise surfacing and noise barriers, with the final mitigation strategy to be confirmed in the ES in line with the environmental measures hierarchy outlined in **Figure 8.2**.
- 8.7.40 While most road traffic noise effects are forecast to occur in communities within the Inner Area, there remains the potential for effects at receptors beyond this Area. Further assessment work will be undertaken at the ES stage to determine whether effects are likely to occur at these receptors and, where necessary, these will be reported accordingly.

2040 and 2050

- 8.7.41 During the 2040 and 2050 interim years, total traffic flows on the road network are predicted to increase relative to 2033, driven by background traffic growth and rising airport passenger demand. Construction traffic associated with the Project will remain present, albeit at lower levels than in 2033. A quantitative assessment of interim assessment years will be undertaken for the ES.

2055

- 8.7.42 During 2055, ALSEs and BLSEs from road traffic noise changes are anticipated across many Community Areas due to the re-routing of roads and/or changing traffic patterns on the existing road network. ALSEs are likely to occur at receptors close to new and altered roads in the communities of Colnbrook, Harmondsworth, Hillingdon, Longford, Poyle, Sipson, Stanwell and Stanwell Moor. ALSEs are also likely to occur at receptors close to existing roads where traffic levels will increase as a result of the Project in the communities of Bedfont, Cranford and Cranford Cross.
- 8.7.43 Noise from car parks and the passenger rapid transit route have been assessed at a high-level only at this stage and will be investigated further for the ES.

Construction rail noise and vibration

- 8.7.44 There is the potential for ALSE and sHQL from railway noise and vibration due to the increase in the number of freight trains operating on the existing Colnbrook Branch line to accommodate the construction of the Project. The proposed construction railhead and associated modifications to the Colnbrook Branch Line are described in **Chapter 2, Table 2.6**. At this stage a high-level qualitative assessment has been

undertaken to inform this conclusion, and a more detailed assessment will be undertaken for the ES. This will include consideration of environmental measures if required.

Noise-induced vibration

2036 to 2055

- 8.7.45 The introduction of the Northwest Runway will create a new source of low-frequency, high-energy airborne acoustic energy during aircraft start-of-roll (SOR) departure procedures. Lightweight noise-sensitive properties situated within 500m of SOR locations have potential to be exposed to these higher levels of low-frequency noise, which may in turn induce perceptible vibration within exposed properties.
- 8.7.46 The operational effect has the potential to cause ALSEs and a risk of sHQLs at lightweight properties closest to the runway ends, where SOR occurrences are most common. This includes the communities of Harlington, Harmondsworth, Poyle and Sipson.
- 8.7.47 A more detailed assessment of noise-induced vibration will be undertaken in the ES and we will review whether environmental measures could be introduced to mitigate and minimise the effects.

8.8 Assessment results by Community Area

- 8.8.1 This section presents the assessment results for each Community Area (see **Figure 8A.2**) and identifies the location of noise and vibration sensitive receptors which may experience a likely sHQL due to the Project. The assessment also identifies adverse likely significant effects (ALSEs) and beneficial likely significant effects (BLSEs) arising from changes in noise and vibration.
- 8.8.2 The noise and vibration sensitive receptors considered include both residential buildings (where people live) and noise sensitive non-residential buildings. For the non-residential noise sensitive receptors, specific attention is given to community facilities. These include schools (inclusive of primary, secondary, colleges and nurseries), places of worship, hospitals and other healthcare facilities. Likely significant effects (LSEs) are identified for these receptors on a precautionary basis and the effects will be confirmed in the ES. There is also the potential for LSEs to occur at other non-residential receptors such as auditoria, concert halls, theatres, sound recording and broadcast studios, cinemas, museums, hotels, community halls and noise sensitive offices. Effects on these non-residential receptors will be assessed in the ES.
- 8.8.3 Within each Community Area, the potential noise and vibration effects are reported for the following noise and vibration sources:
 - Construction noise and vibration
 - Aircraft air noise

- Aircraft ground noise
- Road traffic noise (construction and operation)
- Railway noise and vibration
- Noise-induced vibration

8.8.4 Where a source or assessment year is not reported, no adverse noise effects have been predicted at this stage.
The following key is reproduced in each Community Area section in this chapter for reference:

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Bedfont

8.8.5 The Northwest Runway will be located approximately 3,400 metres to the north-west of the Bedfont Community Area boundary, whereas the existing southern runway is located approximately 300 metres from the nearest parts of the Community Area. Bedfont currently has flights overhead in parts of the Community Area. Noise from aircraft movements and noise from the existing airport can be heard, in addition to noise from the A315 Staines Road, A30 Great South West Road and the Waterloo to Reading Line.

8.8.6 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of Construction Support Sites (CSS) and associated infrastructure.

- Noise from construction traffic, including materials and workforce movements on the existing road network.
- Aircraft noise from increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runways, and operations at stands.
- Noise from changes in road traffic on existing roads.

Construction noise (2030)

- 8.8.7 **Temporary UAs are prevented** at residential properties closest to CSS09 and other construction works sites in this locality (daytime, evening and night-time) by environmental measures (e.g. the draft Code of Construction Practice (CoCP) including best practicable means (BPM), acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.8 **Temporary sHQLs are avoided** at residential properties closest to CSS09 and other construction works sites in this locality (daytime, evening and night-time) by environmental measures (e.g. the draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.9 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS09, thermal store construction and other construction works sites in this locality for daytime works. Effects also extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include Marjory Kinnon School, Bedfont Primary School, Hatton Medical Practice and Pentelow Practice (daytime, evening), and Airport Baptist Revival Church (daytime, evening and night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.10 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise associated with the proposed freight forwarding sites, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Construction vibration (2030)

- 8.8.11 **Temporary sHQLs are avoided** at residential properties closest to CSS09, thermal store construction and other construction works sites in this locality (daytime, evening and night-time) by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (such as non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.12 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS09, thermal store construction and other construction works sites in this locality (daytime, evening and night-time). Affected non-residential receptors include Pentelow Practice. The embedded environmental measures to

mitigate and minimise these ALSEs are those in the draft CoCP including using non-vibratory (dead weight) rollers where practicable.

- 8.8.13 After 2036 there may continue to be temporary sHQLs and ALSEs from construction vibration associated with the proposed freight forwarding sites, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

- 8.8.14 **sHQLs are avoided** at residential properties broadly to the north of Hatton Road Allotments through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.15 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. A potential ALSE has been identified at Airport Baptist Revival Church. Further non-residential facilities could also incur ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.16 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.17 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of Fixed Electrical Ground Power (FEGP) and Pre-conditioned Air (PCA) at stand in place of noisier Auxiliary Power Units (APUs).
- 8.8.18 **ALSEs may occur** at residential properties closest to the airfield boundary. Potential ALSEs have been identified at non-residential receptors including Airport Baptist Revival Church, Bethany Free Church, St Mary's Church, St Mary's Church Hall and Bedfont Primary School. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.19 In 2033, Bedfont will be affected by traffic rerouting associated with the operation of the Project's new and altered roads, as well as temporary increases in construction traffic on the road network.
- 8.8.20 **sHQLs are predicted** at residential properties close to Stanwell Road and Hatton Road due to increased traffic flows on Stanwell Road and Hatton Road. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQL will be considered.

- 8.8.21 **ALSEs are predicted** for residential receptors in the northern and north-eastern areas of Bedfont, and at non-residential receptors including St Mary's Church. These adverse effects are associated with increased traffic flows on the Southern Perimeter Road, A30 and Hatton Road. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.
- 8.8.22 **Temporary ALSEs** are predicted at receptors on the A30 due to construction vehicles using this route. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the effect will be considered.

Road traffic noise (2055)

- 8.8.23 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.24 **UAE are predicted** at residential properties close to the A30 due to an increase in traffic flows on this road and the Southern Perimeter Road. This effect will be confirmed in the ES and, if necessary, environmental measures to prevent the UAE will be considered.
- 8.8.25 **sHQLs are predicted** at residential properties close to Stanwell Road, Hatton Road and the A30 due to an increase in traffic flows on these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQL will be considered.
- 8.8.26 The **ALSEs** predicted for 2033 persist and no additional ALSEs are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Brands Hill

8.8.27 The Northwest Runway will be located approximately 1,200 metres to the east of the nearest areas of the Brands Hill Community Area boundary off A4 London Road. Although Brands Hill does not currently have flights overhead, except for the southern-most section of the Community Area, noise from aircraft movements may be heard across the Community Area, in addition to noise from the M4 motorway and A4 London Road.

8.8.28 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runways, and operations at stands.
- Noise from changes in road traffic on existing roads.

Construction noise (2030)

8.8.29 **Temporary UAEs are prevented** at residential properties closest to road construction works, CSS01, haul routes (daytime, evening and night-time) and CSS13 (evening and night-time) by environmental measures (e.g. the draft CoCP

including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

- 8.8.30 **Temporary sHQLs are avoided** at residential properties closest to road construction works, CSS01, CSS13 and haul routes (daytime, evening and night-time) by environmental measures (e.g. the draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.31 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to roads construction works, CSS01, CSS13 and haul routes for daytime works. Effects extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include Bright World Nurseries (daytime, evening). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.32 **No LSEs** have been identified after 2036 as the remaining construction works will be located at greater distances compared to works assessed for 2030.

Construction vibration (2030)

- 8.8.33 **Temporary sHQLs are avoided** at residential properties closest to CSS13 by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.34 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to roads construction works, CSS01, CSS13 and haul routes for daytime works. Effects extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include Bright World Nurseries. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of low-vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.35 **No LSEs** have been identified after 2036 as the remaining construction works will be located at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

- 8.8.36 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.37 **ALSEs may occur** at residential properties throughout the Community Area, irrespective of airspace design. A potential ALSE has been identified at Bright World Nursery. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.38 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.39 **ALSEs may occur** at residential properties closest to the airfield boundary. These effects are mitigated and minimised through ground noise environmental measures including airfield perimeter noise barriers and, for eligible properties, noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.

Road traffic noise (2033)

- 8.8.40 In 2033 Brands Hill will be affected by the re-routing of traffic caused by the Project's new and altered roads becoming operational.
- 8.8.41 **UAE are prevented** at residential properties close to the A4 with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.42 **shQLs are avoided** at residential properties close to the A4 with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.43 **ALSEs are predicted** for residential and non-residential receptors across the Community Area due to increased traffic flows on the A4 and local road network. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSEs will be considered.

Road traffic noise (2055)

- 8.8.44 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.45 **UAEs are prevented** at residential properties close to the A4 with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.46 **shQLs are avoided** at residential properties close to the A4 with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.47 **shQLs are predicted** at residential properties close to Sutton Lane due to an increase in traffic flows on that road. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the shQLs will be considered.
- 8.8.48 The **ALSEs** predicted for 2033 persist and no additional ALSE are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Colnbrook

8.8.49 The Northwest Runway will be located to the east of the A4 Colnbrook By-Pass. To make space for the runway, the A4 Colnbrook By-Pass will be diverted. Colnbrook does not currently have flights overhead, but noise from aircraft movements can be heard in the village, in addition to noise from the M4 motorway and A4 Colnbrook By-Pass.

8.8.50 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
- The noise from construction traffic, including materials and workforce movements on the existing road network.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runways, and operations at stands.
- Change in road traffic on existing and realigned roads.

Construction Noise (2030)

8.8.51 **Temporary UAEs are prevented** at residential properties closest to CSS01, A3044 Poyle Bypass construction, haul routes (daytime, evening and night-time) and CSS02 (night-time) by environmental measures (e.g. the draft CoCP including BPM,

acoustic screening at construction site boundary and temporary re-housing where required).

- 8.8.52 **Temporary sHQLs are avoided** at residential properties closest to CSS01, A3044 Poyle Bypass construction, CSS02, and haul routes (daytime, evening and night-time) by environmental measures (e.g. the draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.53 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS01, CSS02, A3044 Poyle Bypass construction, and haul routes for daytime works. Effects also extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include Colnbrook C of E Primary School and Vicarage Way Children's Centre (daytime, evening), and St. Thomas' Parish Church (daytime, evening, night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.54 **No LSEs** have been identified after 2036 as the remaining construction works will be located at greater distances compared to works assessed for 2030.

Construction vibration (2030)

- 8.8.55 **Temporary sHQL are avoided** at residential properties closest to CSS01 and CSS02 (daytime, evening and night-time) by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.56 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS01, CSS02, A3044 Poyle Bypass construction, and haul routes for daytime works. Affected non-residential receptors include Colnbrook C of E Primary School. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including using non-vibratory (dead weight) rollers where practicable.
- 8.8.57 **No LSEs** have been identified after 2036 as the remaining construction works will be located at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

- 8.8.58 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.59 **ALSEs may occur** at residential properties throughout the Community Area, irrespective of airspace design. Potential ALSEs have been identified at Colnbrook Church of England Primary School, Vicarage Way Children's Centre and St Thomas Parish Church. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.60 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.61 **shQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.62 **ALSEs may occur** at residential properties close to the airfield boundary. Potential ALSEs have been identified at non-residential receptors including Vicarage Way Children's Centre. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.63 In 2033 Colnbrook will be affected by the realigned A4 and re-routing of traffic caused by the Project's new and altered roads becoming operational. There will also be temporary effects due to construction vehicles associated with the Project using the road network.
- 8.8.64 **shQLs are avoided** at residential properties close to the realigned A4 on Kings Park and Mill Street with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.65 **ALSEs are predicted** for residential and non-residential receptors in the South of Colnbrook including Vicarage Way Children's Centre, Colnbrook Church of England Primary School and St Thomas Parish Church due to the realigned A4 and increased traffic on local roads. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

- 8.8.66 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.67 **shQLs are avoided** at residential properties close to High Street with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.68 The **ALSEs** predicted for 2033 persist and no additional ALSE are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Cranford Cross

8.8.69 The Northwest Runway will be located approximately 1,600 metres to the west of the Cranford Cross Community Area boundary. Cranford Cross currently has flights overhead in some parts of the Community Area, and noise from aircraft movements can be heard, in addition to noise from the A4 Bath Road and A30 Great South West Road.

8.8.70 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- Noise from changes in road traffic on roads.

Construction noise (2030)

8.8.71 **Temporary UAEs are prevented** at residential properties closest to CSS08 (night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

- 8.8.72 **Temporary sHQLs are avoided** at residential properties closest to CSS08 (evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.73 **Temporary ALSEs are predicted** at residential properties closest to CSS08 for daytime works. Effects extend further across the majority of the Community Area for evening and night-time work. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.74 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

- 8.8.75 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.76 **ALSEs may occur** at residential properties throughout the Community Area, irrespective of airspace design. A potential ALSE has been identified at St Dunstan's (Cranford Park). These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.77 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.78 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.79 **ALSEs** may occur at residential properties closest to the airfield boundary. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.80 In 2033 Cranford Cross will be affected by the re-routing of traffic caused by the Project's new and altered roads becoming operational.
- 8.8.81 **ALSEs are predicted** for residential and non-residential receptors close to Bath Road and Cranford Lane due to increases in traffic flows on the local road network. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

- 8.8.82 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.83 The **ALSEs** predicted for 2033 persist and no additional ALSEs are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Cranford

- 8.8.84 The Northwest Runway will be located approximately 3,200m to the west of the Cranford Community Area boundary. Cranford currently has flights overhead in some parts of the Community Area, and noise from the existing airport can be heard, in addition to noise from the A4 Bath Road, A30 Great South West Road and A312 The Parkway.
- 8.8.85 Likely changes in noise and vibration are therefore expected due to:
- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
 - Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
 - Noise from changes in road traffic on existing roads.

Construction noise (2030)

- 8.8.86 **Temporary UAE are prevented** at residential properties closest to CSS08 (night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.87 **Temporary sHQL are avoided** at residential properties closest to CSS08 and CSS47 (evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.88 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS08 for daytime works and CSS08 and CSS47 for evening and night-time works. Effects extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include Cranford Primary School (daytime, evening) and Heathrow Jamia Masjid (night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.89 After 2036, there may continue to be temporary sHQLs and ALSEs from construction noise associated with the proposed freight forwarding sites, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Construction vibration (2030)

- 8.8.90 **Temporary sHQL are avoided** at residential properties closest to highways works sites (daytime only) by environmental measures in the draft CoCP including BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.91 **Temporary ALSEs are predicted** at residential properties closest to CSS08 for daytime works, and CSS08 and CSS47 for evening and night-time works. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of BPM and low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.92 After 2036 there may continue to be temporary sHQLs and ALSEs from the construction vibration associated with the proposed freight forwarding sites, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

- 8.8.93 **sHQLs are avoided** at residential properties broadly north and south of the Meadows Estate through aircraft noise environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).

- 8.8.94 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs have been identified at Cranford Medical Centre, Khosla House, Lullabies Day Nursery, Cranford Community College, The Cedars Primary School, Masjid us Sunnah, Heathrow Jamia Masjid and St Christopher Roman Catholic Church. Further non-residential facilities could also incur ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.95 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Road traffic noise (2033)

- 8.8.96 In 2033 Cranford will be affected by the re-routing of traffic caused by the Project's new and altered roads becoming operational.
- 8.8.97 **sHQLs are predicted** at residential properties close to Bath Road due to an increase in traffic flows on this road. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQL will be considered.
- 8.8.98 **ALSEs are predicted** for residential and non-residential receptors across the Community Area due to increases in traffic flows on the local road network. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

- 8.8.99 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.100 **UAE are predicted** at residential properties close to the A312 due to an increase in traffic flows on this road. This effect will be confirmed in the ES and, if necessary, environmental measures to prevent the UAE will be considered.
- 8.8.101 **sHQLs are predicted** at residential properties close to the A312 and Bath Road due to an increase in traffic flows on these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQLs will be considered.
- 8.8.102 The **ALSEs** predicted for 2033 persist. Additional ALSEs are predicted for residential and non-residential receptors in the vicinity of Cranford Lane.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Datchet

- 8.8.103 The Northwest Runway will be located approximately 2,700m to the east of the Datchet Community Area boundary, whereas the existing north and south runways are located approximately 4,700m to the east of the Community Area. Datchet currently has flights overhead in many parts of the Community Area, and noise from the existing airport can be heard, in addition to noise from the M4 Motorway.
- 8.8.104 Likely changes in noise and vibration are therefore expected due to aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.

Air noise (2036 to 2055)

- 8.8.105 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.106 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs have been identified at Churchmead School, Datchet Baptist Church, Datchet Cemetery Chapel, Eton End School, St Marys School and St Marys Church. Further non-residential facilities could also incur ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.107 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Feltham North

8.8.108 The Northwest Runway will be located approximately 4,100m to the north-west of the Feltham North Community Area boundary, whereas the existing south runway is located approximately 1,300m to the west of the Community Area. Feltham North currently has flights overhead in some parts of the Community Area, and noise from the existing airport can be heard, in addition to noise from the A244 Hounslow Road and A312 Harlington Road West.

8.8.109 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
- Aircraft noise from increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.

Construction noise (2030)

8.8.110 **Temporary UAEs are prevented** at residential properties closest to the relocated Immigration Removal Centre (IRC) during the daytime, evening and night-time by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

- 8.8.111 **Temporary sHQLs are avoided** at residential properties closest to construction works sites in this locality (daytime, evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.112 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to construction works sites in this locality for daytime works. Effects extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include Rivers Academy West London (daytime, evening). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.113 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise associated with the proposed freight forwarding sites, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate, and where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

- 8.8.114 **sHQLs are avoided** at residential properties broadly to the north of Duke of Northumberland's River through aircraft noise environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.115 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.116 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.117 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.118 **ALSEs may occur** at residential properties closest to the airfield boundary. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Harlington

8.8.119 The Northwest Runway will be located to the west of the M4 Heathrow Airport Spur Road. To make space for the runway, sections of the A408 Sipson Road will be diverted. Harlington does not currently have flights overhead, but noise from the existing airport can be heard in the village, in addition to noise from the M4 motorway and A4 Bath Road.

8.8.120 Likely changes in noise and vibration are therefore expected due to:

- the construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure.
- the noise from construction traffic, including materials and workforce movements on the existing road network.
- aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- noise from changes in road traffic on existing and realigned roads.
- aircraft noise-induced vibration from low-frequency noise associated with aircraft start-of-roll on the runway.

Construction noise (2030)

- 8.8.121 **Temporary UAEs are prevented** at residential properties closest to roads construction works (day) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.122 **Temporary sHQLs are avoided** at residential properties closest to roads construction works (daytime), and earthworks (night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.123 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to roads construction works for daytime works and due to earthworks during the evening and night-time. Effects extend further across the majority of the Community Area for evening and night-time work. Affected non-residential receptors include William Byrd Primary Academy, Littlebrook Nursery, St Peters and St Pauls Church and Heathrow Medical Centre (day), Sant Nirankari Bhawan Centre for Oneness (daytime, evening, night-time) and Harlington Hospice Lansdowne House (evening, night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.124 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Construction vibration (2030)

- 8.8.125 **Temporary sHQLs are avoided** at residential properties closest to earthworks (daytime, evening and night-time) by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.126 **Temporary ALSEs are predicted** at residential properties closest to roads construction works for daytime works and due to earthworks during the evening and night-time. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of BPM and low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.127 After 2036 there may continue to be temporary sHQLs and ALSEs, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

- 8.8.128 **UAEs are prevented** at residential properties within 1,500m of the extended runway centreline from the extended airfield boundary through environmental measures (see

FRO Document) and fully funded noise insulation (see the Noise Insulation Policy). If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects.

- 8.8.129 **shQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.130 **ALSEs may occur** at residential properties throughout the Community Area, irrespective of airspace design. Potential ALSEs have been identified at Lansdowne House, Heathrow Medical Centre, Glendale House Surgery, William Byrd Primary School, Littlebrook Nursery, Harlington Baptist Church and Harlington Baptist Church Hall, St Peters and St Pauls Church, St Peters and St Pauls Church Hall and Sant Nirankari Bhawan. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.131 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.132 **shQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.133 **ALSEs may occur** at residential properties closest to the airfield boundary. Potential ALSEs have been identified at non-residential receptors including Littlebrook Nursery. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.134 In 2033, Harlington will be affected by the new M4 spur and re-routing of traffic caused by the Project's new and altered roads becoming operational.
- 8.8.135 **shQLs are avoided** at residential properties close to the new M4 spur with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.136 **ALSEs are predicted** for residential and non-residential receptors across Harlington, including Littlebrook Nursery due to the new M4 spur and increases in traffic flows on local roads. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered. **BLSEs** are predicted at residential receptors on Sipson Lane due to reduced traffic on this road.

Road traffic noise (2055)

- 8.8.137 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

8.8.138 **sHQLs are avoided** at residential properties close to the new M4 spur with the implementation of the Noise Insulation Policy applied to new and realigned roads.

8.8.139 The **ALSEs** and **BLSEs** predicted for 2033 persist and no additional ALSEs/BLSEs are likely in 2055.

Noise-induced vibration (2036 to 2055)

8.8.140 There will be the potential **ALSE** and **sHQL** from noise-induced vibration at lightweight noise sensitive properties located within 500 metres of the take-off start-of-roll locations due to their proximity to high-energy, low-frequency take off noise.

8.8.141 A more detailed assessment of noise-induced vibration will be undertaken in the ES and we will review whether environmental measures could be introduced to mitigate and minimise the effects.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Harmondsworth

8.8.142 The Northwest Runway will be located to the south of the High Street. To make space for the runway, the A4 Bath Road will be diverted. Harmondsworth does not currently have flights overhead, but noise from the existing airport can be heard in the village, in addition to noise from the M4 motorway and A4 Bath Road.

8.8.143 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure.

- The noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands;
- Noise from changes in road traffic on existing and realigned roads.
- Aircraft noise-induced vibration from low-frequency noise associated with aircraft start-of-roll on the runway.

Construction noise (2030)

- 8.8.144 **Temporary UAEs are prevented** at residential properties closest to stockpiling, noise bund construction, earthworks, borrow pit works and CSS18 operation (daytime, evening and night-time), and roads construction and drainage works (day only) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.145 **Temporary shQLs are avoided** at residential properties closest to stockpiling, noise bund construction, earthworks, borrow pit works and CSS18 operation (daytime, evening and night-time), and roads construction and drainage works (day only) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.146 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to stockpiling, noise bund construction, earthworks, borrow pit works, CSS18 operation, roads construction (day only) and drainage works (day only) during the daytime, evening and night-time. Effects extend further across the majority of the community for evening and night-time work. Affected non-residential receptors include Landon School (daytime, evening), Harmondsworth Baptist Church and St. Mary's (C of E) Church (daytime, evening, night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.147 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Construction vibration (2030)

- 8.8.148 **Potential temporary shQLs are avoided** at residential properties closest to earthworks (daytime, evening and night-time) by environmental measures (e.g. draft CoCP including use of BPM and using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.149 **Temporary ALSEs** are predicted at residential properties and non-residential receptors closest to stockpiling, noise bund construction, earthworks, borrow pit works, CSS18 operation, roads construction (day only) and drainage works (day only) during the daytime, evening and night-time. Affected non-residential receptors

include Landon School and Harmondsworth Baptist Church. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of BPM and low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.

8.8.150 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

8.8.151 **UAEs are prevented** at residential properties closest to the airfield boundary (within approximately 150m) through environmental measures (see FRO Document) and fully funded noise insulation (see the Noise Insulation Policy). If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects.

8.8.152 **shQLs are avoided** at residential properties broadly in the southern half of the Community Area through aircraft noise environmental measures and fully funded noise insulation.

8.8.153 **ALSEs may occur** at residential properties throughout the Community Area, irrespective of airspace design. Potential ALSEs have been identified at Landon School, Harmondsworth Baptist Church, and St Marys C of E Church. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.154 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

8.8.155 **shQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.

8.8.156 **ALSEs may occur** at residential properties closest to the airfield boundary. Potential ALSEs have been identified at non-residential receptors including Landon School, Harmondsworth Baptist Church and St Mary's Church of England. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

8.8.157 In 2033 Harmondsworth will be affected by the realigned A4 and re-routing of traffic caused by the Project's new and altered roads becoming operational.

8.8.158 **ALSEs are predicted** for residential receptors close to the re-aligned A4 due to noise from this road. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

BLSEs are predicted at receptors on Holloway Lane and Hatch Lane due to a reduction in vehicle numbers on these roads.

Road traffic noise (2055)

8.8.159 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

8.8.160 The **ALSEs** and **BLSEs** predicted for 2033 persist and no additional ALSEs/BLSEs are likely in 2055.

Noise-induced vibration (2036 to 2055)

8.8.161 There will be the potential for **ALSEs** and **sHQLs** from noise-induced vibration at lightweight noise sensitive properties located within 500 metres of the take-off start-of-roll locations due to their proximity to high-energy, low-frequency take off noise.

8.8.162 A more detailed assessment of noise-induced vibration will be undertaken in the ES and we will review whether environmental measures could be introduced to mitigate and minimise the effects.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Feltham West

8.8.163 The Northwest Runway will be located approximately 4,700 metres to the north-west of the Feltham West Community Area boundary, whereas the existing southern runway is located approximately 1,600 metres from the nearest parts of the

Community Area. Feltham West does not currently have flights overhead, though noise from the existing airport can be heard, in addition to noise from the A244 High Street, B377 Ashford Road and the Waterloo to Reading Line.

8.8.164 Likely changes in noise and vibration are therefore expected due to:

- the construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure.
- aircraft noise from increased aircraft activity associated with the Project.

Construction noise (2030)

8.8.165 **Temporary ALSEs are predicted** at residential properties closest to construction works sites in this locality for daytime works. Effects extend further across the majority of the Community Area for evening and night-time work. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.166 After 2036 there may continue to be temporary ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and minimise potential effects.

Air noise (2036 to 2055)

8.8.167 **ALSEs** may occur at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures (see FRO Document) and, for eligible properties, noise insulation (see the Noise Insulation Policy).

8.8.168 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Hayes

8.8.169 The Northwest Runway will be located approximately 1,100 metres to the south-west of the Hayes Community Area boundary. To make space for the runway, A3044 Holloway Lane to the south-west of the Community Area will be diverted. Hayes does not currently have flights overhead, but noise from the existing airport may be audible in the background in the Community Area, in addition to noise from the M4 motorway, A408 Stockley Road to the west and the Heathrow Link Line to the north.

8.8.170 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Noise from changes in road traffic on existing roads.

Construction noise (2030)

8.8.171 **Temporary sHQLs are avoided** at a small number of residential properties closest to CSS18 and stockpiling activities (night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

8.8.172 **Temporary ALSEs are predicted** at residential properties closest to CSS18 and stockpiling activities during the night-time, and at non-residential receptors during the

daytime. Affected non-residential receptors include Pinkwell Primary School (daytime). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.173 After 2036 there may continue to be temporary shQLs and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate, and where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

8.8.174 **ALSEs** may occur across the Community Area, including Harlington School, Cranford Park Academy and St Dunstons Church Hall. Further non-residential facilities could also result in ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures (see FRO Document) and, for eligible properties, noise insulation (see the Noise Insulation Policy).

8.8.175 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Road traffic noise (2033)

8.8.176 In 2033 Hayes will be affected by the re-routing of traffic caused by the Project's new and altered roads becoming operational.

8.8.177 **shQLs are predicted** at residential properties close to Carnarvon Drive and Pinkwell Lane due to increases in traffic flows on these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the shQLs will be considered.

8.8.178 **ALSEs are predicted** for residential and non-residential receptors close to Carnarvon Drive and Pinkwell Lane, including Pinkwell Primary School, due to increased traffic flows on these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSEs will be considered.

Road traffic noise (2055)

8.8.179 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

8.8.180 The ALSEs predicted for 2033 persist and no additional ALSEs are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Heston

8.8.181 The Northwest Runway will be located approximately 3,800 metres to the west of the Heston Community Area boundary. Heston currently has flights overhead in many parts of the Community Area, and noise from the existing airport can be heard, in addition to noise from the M4 Motorway, A4 Great West Road and A437 The Parkway.

8.8.182 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Noise from changes in road traffic on existing roads.

Construction noise (2030)

8.8.183 **Temporary ALSEs are predicted** at residential properties closest to CSS08 and CSS47 during the night-time. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.184 After 2036, **temporary sHQLs and ALSEs are avoided** at residential properties closest to the proposed freight forwarding sites by environmental measures (e.g.

draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

Air noise (2036 to 2055)

8.8.185 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).

8.8.186 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs have been identified at Heston Health Centre, Springwell Infant And Nursery School, Westbrook Primary School, High Oaks Secondary, Heston Primary School, Lampton Children's Centre, Lampton School, The Rosary Catholic Primary School, Berkeley Academy, Tarbiyyah School, Heston Community School, Dame Sue John Sixth Form College Lampton School Academy, Coat of Many Colours Nursery Hounslow, First Steps Playgroup Limited, Nursery On The Green Day Nursery, Edison Primary School, Alexandra Montessori, Springwell Junior School, Little Munchkins Montessori, Norwood Green Junior School, Norwood Green Infant and Nursery School, Laxmi Narayan Hindu Temple, St Mary and Pope Kyrillos VI Coptic Orthodox Church, Heston Methodist Church, Saint Leonards Church, Saint Leonards Church Hall and Seventh Day Adventist Church. Further non-residential facilities could also result in ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.187 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

Road traffic noise (2033)

8.8.188 In 2033 Heston will be affected by the re-routing of traffic caused by the Project's new and altered roads becoming operational.

8.8.189 **sHQLs are predicted** at residential properties close to Brabazon Road, Alcock Road and Westbrook Road due to increases in traffic flows on these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQLs will be considered.

8.8.190 **ALSEs are predicted** for a small number of residential and non-residential receptors, including Westbrook Primary School due to increased traffic flows on the local road network. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

8.8.191 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

- 8.8.192 **sHQLs are predicted** at residential properties close to Brabazon Road, Cranford Lane and Bleriot Road due to increases in traffic flows on these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQL will be considered.
- 8.8.193 The ALSEs predicted for 2033 persist. There may be additional ALSEs at a small number of residential and non-residential receptors due to increased traffic flows on the local road network.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Horton

- 8.8.194 The Northwest Runway will be located approximately 1,200 metres to the north-east of the nearest areas of the Horton Community Area boundary. Most of Horton currently experiences flights overhead, and noise from the existing airport may be heard in the village, in addition to noise from the M4 motorway and Datchet Road.
- 8.8.195 Likely changes in noise and vibration are therefore expected due to:
- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
 - Noise from construction traffic, including materials and workforce movements on the existing road network.
 - Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.

Construction noise (2030)

- 8.8.196 **Temporary UAE** are prevented at residential properties closest to Kingsmead Quarry (daytime, evening and night-time) and other construction works sites in this locality (evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.197 **Temporary sHQL are avoided** at residential properties closest to Kingsmead Quarry and other construction works sites in this locality (daytime, evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.198 **Temporary ALSEs are predicted** at residential properties closest to Kingsmead Quarry and other works sites in this locality during the daytime, evening and night-time. Effects also extend across the majority of the Community Area. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.199 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Construction vibration (2030)

- 8.8.200 **Temporary sHQL are avoided** at residential properties closest to Kingsmead Quarry and other construction works sites in this locality (daytime, evening and night-time) by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.201 **Temporary ALSEs** are predicted at residential properties closest to Kingsmead Quarry and other works sites in this locality. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.202 **No LSEs** are identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

- 8.8.203 **sHQLs are avoided** at residential properties throughout the Community Area (with the location of effects depending on the airspace design) through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.204 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. These effects are mitigated and

minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.205 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

Road traffic noise (2033)

8.8.206 In 2033 there will be temporary effects due to construction vehicles associated with the Project using the road network.

8.8.207 **Temporary sHQLs are predicted** at residential properties close to Stanwell Road due to construction vehicles using this road. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQLs will be considered.

8.8.208 **Temporary ALSEs are predicted** for residential and non-residential receptors, close to Stanwell Road due to construction vehicles using this road. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Hounslow Central and South

8.8.209 The Northwest Runway will be located approximately 6,800 metres to the west of the Hounslow Central and South Community Area boundary, whereas the existing north and south runways are located approximately 4,600 metres to the west of the Community Area.

8.8.210 Hounslow Central and South currently has flights overhead in many areas of the community, and noise from the existing airport can be heard, in addition to noise from the A315 Staines Road, the Hounslow Loop Line and the Piccadilly Line. Likely changes in noise and vibration are therefore expected due to aircraft noise from increased aircraft activity associated with the Project.

Air noise (2036 to 2055)

8.8.211 **shQLs are avoided** at residential properties broadly between Hounslow Avenue Allotments and Pears Rd, and north of Hounslow East Station through aircraft noise environmental measures (see the FRO) and fully funded noise insulation (see the Noise Insulation Policy).

8.8.212 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. A potential ALSE has been identified at RCCG Dominion Parish for All Nations. Further non-residential facilities could also incur ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.213 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

shQL significant adverse effect on health and quality of life due to new very high noise exposure. shQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where shQL may occur for aircraft noise.

Hounslow West and Heath

8.8.214 The Northwest Runway will be located approximately 5,000 metres to the west of the Hounslow West and Heath Community Area boundary, whereas the existing south

runway is located approximately 2,400 metres to the west of the Community Area. Hounslow West and Heath currently have flights overhead in many areas of the community, and noise from the existing airport can be heard, in addition to noise from the A315 Staines Road, A3006 Bath Road, A3063 Wellington Road South and Waterloo to Reading Railway Line.

8.8.215 Likely changes in noise and vibration are therefore expected due to aircraft noise from increased aircraft activity associated with the Project.

Air noise (2036 to 2055)

8.8.216 **sHQLs are avoided** at residential properties broadly to the north of Hounslow Heath through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).

8.8.217 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may also occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.218 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Iver and Richings Park

8.8.219 The Northwest Runway will be located approximately 700 metres south of the Iver and Richings Park Community Area boundary and 1600 metres to the south of Richings Way. To make space for the runway, the M25 will be diverted to the south of the Community Area. Iver and Richings Park does not currently have flights overhead, but noise from the existing airport may be audible in the background in the Community Area, in addition to noise from the M4 and M25 motorways and the Great Western Main Line.

8.8.220 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure, operation of conveyors and use of internal haul roads.
- Noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- Noise from construction rail traffic, including the movement of bulk materials and construction freight on the existing rail network.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.

Construction noise (2030)

- 8.8.221 **Temporary UAE** are prevented at residential properties closest to BP04, flood attenuation sites, haul and conveyor routes (daytime, evening and night-time), and CSS13 (night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.222 **Temporary sHQL are avoided** at residential properties closest to BP04, flood attenuation sites, haul and conveyor routes (daytime, evening and night-time) and CSS13 (evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.223 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to BP04, flood attenuation sites, CSS13 and haul and conveyor routes (daytime and evening). Effects also extend further across the majority of the Community Area for night-time works. Affected non-residential receptors include St. Leonard's Church and St. Andrew's United Reformed Church (daytime, evening, night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.224 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Construction rail traffic noise

- 8.8.225 There is the potential for **ALSEs** and **sHQLs** from railway noise due to the increase in the number of freight trains operating on the existing Colnbrook Branch line to accommodate the construction of the Project. At this stage a high-level qualitative assessment has been undertaken to inform this conclusion, and a more detailed assessment will be undertaken for the ES. This will include consideration of environmental measures if required.

Air noise (2036 to 2055)

- 8.8.226 **sHQLs are avoided** at residential properties in the south-west section of the Community Area (depending on airspace design) through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.227 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.228 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

8.8.229 **ALSEs may occur** at residential properties closest to the airfield boundary. These effects are mitigated and minimised through ground noise environmental measures including airfield perimeter noise barriers and, for eligible properties, noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.

Road traffic noise (2033)

8.8.230 In 2033 construction traffic is predicted to use some roads in Iver and Richings which may cause temporary effects.

8.8.231 **Temporary SHQLs are predicted** at residential properties close to Thorney Lane North, Richings Way, Thorney Mill Road and Old Slade Lane due to construction vehicles using these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the SHQL will be considered.

8.8.232 **Temporary ALSEs are predicted** for residential and non-residential receptors close to Thorney Lane North, Richings Way, Thorney Mill Road and Old Slade Lane due to construction vehicles using these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Longford

8.8.233 The Northwest Runway will be located within Longford. To make space for the runway, the A4 Bath Road will be diverted, and several new internal routes at Heathrow will be constructed within Longford. Some areas within Longford currently have flights overhead, and noise from the existing airport can be heard across the Community Area, in addition to noise from the M25 motorway, A3113 Airport Way/Southern Perimeter Road and Stanwell Moor Road.

8.8.234 Likely changes in noise and vibration are therefore expected due to:

- The construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
- The noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.

Construction noise (2030)

8.8.235 **Temporary UAEs are prevented** at residential properties by appropriate phasing and timing of the construction programme.

8.8.236 **Temporary sHQLs are avoided** at residential properties by appropriate phasing and timing of the construction programme.

Construction vibration (2030)

8.8.237 **Temporary sHQLs are avoided** at residential properties by appropriate phasing and timing of the construction programme.

Road traffic noise (2033)

8.8.238 In 2033 Longford will be affected by the re-routing of traffic caused by the Project's new and altered roads becoming operational. There will also be temporary effects due to construction vehicles associated with the Project using the road network.

8.8.239 **ALSEs** are predicted for residential receptors at the south of Longford close to the A30 due to increased traffic flows on the local road network. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Poyle

8.8.240 The Northwest Runway will be located to the north of the A4 Colnbrook Bypass. To make space for the runway, this Bypass will be diverted, along with new connections to Bath Road and Horton Road. Poyle currently experiences overflights, and noise from the existing airport can be heard in the village, in addition to noise from the M25 motorway and A4 Colnbrook Bypass.

8.8.241 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure and use of internal haul roads.
- Noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- Noise from changes in road traffic on existing and realigned roads.
- Aircraft noise-induced vibration from low-frequency noise associated with aircraft start-of-roll on the runway.

Construction noise (2030)

8.8.242 **Temporary UAEs are prevented** at residential properties closest to CSS02, CSS12, M25 works, A3044 Poyle Bypass works, and haul routes (daytime, evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

8.8.243 **Temporary sHQLs are avoided** at residential properties closest to CSS02, CSS12, road construction works, and haul routes (daytime, evening and night-time) by mitigation and compensation measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

8.8.244 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS02, CSS12, road construction works, and haul routes (daytime evening and night-time. Effects also extend across the majority of the Community Area. Affected non-residential receptors include Pippins School (daytime, evening). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.245 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Construction vibration (2030)

8.8.246 **Temporary sHQLs are avoided** at residential properties by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.

8.8.247 **Temporary ALSEs are predicted** at residential properties closest to CSS02, CSS12, road construction works and haul routes. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of

BPM and low vibration working methods (e.g. non-vibratory rollers or non-impact piling) where practicable. This will be confirmed in the ES.

- 8.8.248 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

- 8.8.249 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.250 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. A potential **ALSE** has been identified at Pippins School. Further non-residential facilities could also incur ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

Ground noise (2036 to 2055)

- 8.8.251 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.252 **ALSEs may occur** at residential properties closest to the airfield boundary. Potential ALSEs have been identified at non-residential receptors including Pippins School. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.253 In 2033 Poyle will be affected by the realigned M25, other new roads and re-routing of traffic caused by the Project's new and altered roads becoming operational. There will also be temporary effects due to construction vehicles associated with the Project using the road network.
- 8.8.254 **sHQLs are avoided** at residential properties in Poyle with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.255 **ALSEs are predicted** for residential and non-residential receptors across Poyle, including Pippins School due to the realigned M25 and other new roads. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.
- 8.8.256 **Temporary ALSE** are predicted for residential and non-residential receptors close to Horton Road which will be used by construction vehicles. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

- 8.8.257 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.258 **UAEs are avoided** at residential properties close to Poyle Road with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.259 **sHQLs are avoided** at residential properties in Poyle with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.260 The **ALSEs** predicted for 2033 persist and no additional ALSE are likely in 2055.

Noise-induced vibration (2036 to 2055)

- 8.8.261 There will be potential **ALSE** and **sHQL** from noise-induced vibration at lightweight noise sensitive properties located within 500 metres of the take-off start-of-roll locations due to their proximity to high-energy, low-frequency take off noise.
- 8.8.262 A more detailed assessment of noise-induced vibration will be undertaken in the ES and we will review whether environmental measures could be introduced to mitigate and minimise the effects.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Sipson

- 8.8.263 The Northwest Runway will be located west of Sipson Road. To make space for the runway, sections of the A408 Sipson Road will be diverted along with A3044

Holloway Lane. Sipson does not currently have flights overhead, but noise from the existing airport may be audible in the background in the Community Area, in addition to noise from the M4 motorway, Heathrow Airport Spur Road to the east, A4 Bath Road to the south and A408 Sipson Road through the Community Area.

8.8.264 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure, and use of internal haul roads.
- Noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- Noise from changes in road traffic on existing and realigned roads.
- Aircraft noise-induced vibration from low-frequency noise associated with aircraft start-of-roll on the runway.

Construction noise (2030)

8.8.265 **Temporary UAEs are prevented** at residential properties closest to CSS18, earthworks, noise bund construction works, and haul routes (daytime, evening and night-time), and new sludge main, road construction works, and drainage works (daytime) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

8.8.266 **Temporary sHQLs are avoided** at residential properties closest to CSS18, earthworks, noise bund construction works, and haul routes (daytime, evening and night-time), and new sludge main, road construction works and drainage works (daytime) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

8.8.267 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS18, earthworks, noise bund construction works, and haul routes (daytime, evening and night-time), and new sludge main, road construction and drainage works (daytime). Effects also extend across the majority of the Community Area. Affected non-residential receptors include Heathrow Primary School and Lady Nafisa Secondary School for Girls (daytime, evening). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.268 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Construction vibration (2030)

- 8.8.269 **Potential temporary sHQL are avoided** at residential properties closest to earthworks (daytime, evening and night-time) by environmental measures (e.g. **draft CoCP** including BPM and using low vibration methods (e.g. non-vibratory rollers) where practicable). This will be confirmed in the ES.
- 8.8.270 **Temporary ALSEs** are predicted at residential properties and non-residential receptors closest to CSS18, earthworks, noise bund construction works, and haul routes (daytime, evening and night-time), and new sludge main, road construction and drainage works (daytime). Affected non-residential receptors include Heathrow Primary School. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of low vibration working methods where practicable. This will be confirmed in the ES.
- 8.8.271 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

- 8.8.272 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.273 **ALSEs may occur** at residential properties throughout the Community Area, irrespective of airspace design. Potential ALSEs have been identified at Lady Nafisa School and Heathrow Primary School. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.274 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.275 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.276 **ALSEs may occur** at residential properties closest to the airfield boundary. Potential ALSEs have also been identified at non-residential receptors including Heathrow Primary School. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.277 In 2033 Sipson will be affected by the realigned M4 spur and re-routing of traffic caused by the Project's new and altered roads becoming operational.

- 8.8.278 **shQLs are avoided** at residential properties close to the M4 spur with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.279 **ALSEs are predicted** for residential and non-residential receptors, including Heathrow Primary School, due to the new M4 spur. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered. **BLSEs are predicted** at receptors on Sipson Road due to the reduction in traffic on this road.

Road traffic noise (2055)

- 8.8.280 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.
- 8.8.281 The **ALSEs** and **BLSEs** predicted for 2033 persist and no additional ALSEs/BLSEs are likely in 2055.

Noise-induced vibration (2036 to 2055)

- 8.8.282 There will be potential **ALSE** and **shQL** from noise-induced vibration at lightweight noise sensitive properties located within 500 metres of the take-off start-of-roll locations due to their proximity to high-energy, low-frequency take off noise.
- 8.8.283 A more detailed assessment of noise-induced vibration will be undertaken in the ES and we will review whether environmental measures could be introduced to mitigate and minimise the effects.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Stanwell

8.8.284 The Northwest Runway will be located approximately 2,800m to the north of the Stanwell Community Area boundary, whereas the existing southern runway is located approximately 340m north from the nearest parts of the community. Stanwell is not currently overflown, though noise from the existing airport can be heard in addition to noise from the A30 London Road and B378 Town Lane/Stanwell Road.

8.8.285 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure, and use of internal haul roads.
- Noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Aircraft noise from increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- Noise from changes in road traffic on existing and realigned roads;

Construction noise (2030)

8.8.286 **Temporary UAE are prevented** at residential properties closest to CSS10, haul routes and other construction works sites in the locality (daytime, evening and night-time), and road construction works, rivers diversions (daytime) by environmental

measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

8.8.287 **Temporary sHQLs are avoided** at residential properties closest to CSS10, haul routes and other construction works sites in the locality (daytime, evening and night-time), and road construction works, rivers diversion works (daytime) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

8.8.288 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to CSS10, haul routes and other construction works sites in the locality for daytime, evening and night-time works, and road construction works, rivers diversion works (daytime only). Effects also extend further across the Community Area during the evening and night-time. Affected non-residential receptors include Stanwell Fields C of E Primary School, Town Farm Primary School and Nursery, and Stanwell Congregational Church (daytime), St. Mary's Church (daytime, evening) and Ashford Hospital (night-time). The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.289 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Construction vibration (2030)

8.8.290 **Potential temporary sHQLs are avoided** at residential properties closest to construction works sites by environmental measures (e.g. draft CoCP including BPM and using low vibration working methods (e.g. non-vibratory rollers) where practicable). This will be confirmed in the ES.

8.8.291 **Temporary ALSEs are predicted** at residential properties closest to CSS10, haul routes and other construction works sites in the locality for daytime, evening and night-time works, and at road construction sites, rivers diversion sites (daytime only). No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the **draft CoCP** including use of low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.

8.8.292 After 2036 there may continue to be temporary sHQLs and ALSEs from construction vibration associated with the proposed multistorey parking, though effects will be no worse than identified for 2030.

Air noise (2036 to 2055)

8.8.293 **sHQLs are avoided** at residential properties in the northernmost area of the Community Area, broadly north of Stanwell Recreation Ground through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).

8.8.294 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.

8.8.295 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

8.8.296 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.

8.8.297 **ALSEs** may occur at residential properties closest to the airfield boundary. Potential ALSEs have also been identified at non-residential receptors including Stanwell Cemetery Chapel. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

8.8.298 In 2033 Stanwell will be affected by the realigned Southern Perimeter Road and re-routing of traffic caused by the Project's new and altered roads becoming operational. There will also be temporary effects due to construction vehicles associated with the Project using the road network.

8.8.299 **sHQLs are predicted** at residential properties along Salcombe Road due to increases in traffic flows on this road. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the sHQL will be considered.

8.8.300 **sHQLs are avoided** at residential properties close to the realigned Southern Perimeter Road with the implementation of the Noise Insulation Policy applied to new and realigned roads.

8.8.301 **ALSEs are predicted** for residential and non-residential receptors in the north of Stanwell, including St Marys Church of England Primary School due to the realigned Southern Perimeter Road and increases in traffic on the road network. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered. ALSEs are also predicted at receptors along Salcombe Road due to increases in traffic flow on this road.

Road traffic noise (2055)

8.8.302 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

- 8.8.303 **UAE are predicted** at residential properties close to Bedfont Road and High Street due to increased traffic flows along these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to prevent the UAE will be considered.
- 8.8.304 **UAE are prevented** at residential properties close to the realigned Southern Perimeter Road with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.305 **shQLs are predicted** at residential properties close to Bedfont Road and High Street due to increased traffic flows along these roads. This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the shQL will be considered.
- 8.8.306 **shQLs are avoided** at residential properties close to the realigned Southern Perimeter Road with the implementation of the **Noise Insulation Policy** applied to new and realigned roads.
- 8.8.307 The **ALSEs** predicted for 2033 persist and no additional ALSEs are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

shQL significant adverse effect on health and quality of life due to new very high noise exposure. shQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where shQL may occur for aircraft noise.

Stanwell Moor

- 8.8.308 The Northwest Runway will be located approximately 1,800m to the north of the Stanwell Moor Community Area boundary, whereas the existing southern runway is located approximately 580m east from the nearest parts of the Community Area. To make space for the Project, sections of the M25 will be diverted along with the A3113 Airport Way and Horton Road. Stanwell Moor currently experiences overflights from

the existing airport, and noise from the existing airport can be heard in addition to noise from the M25 Motorway, Stanwell Moor Road and the Staines Bypass.

8.8.309 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS and associated infrastructure, and use of internal haul roads.
- Noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Aircraft noise from increased aircraft activity associated with the Project.
- Ground noise from airfield operations, including aircraft ground movements to and from the runway and operations at stands.
- Noise from changes in road traffic on existing and realigned roads.

Construction noise (2030)

8.8.310 **Temporary UAEs are prevented** at residential properties closest to CSS10, CSS11, haul routes and other construction works sites in the locality (daytime, evening and night-time), and road construction works (daytime) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).

8.8.311 **Temporary sHQLs are avoided** at residential properties closest to CSS10, CSS11, haul routes, and other construction works sites in the locality (daytime, evening and night-time), and road construction works (daytime) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

8.8.312 **Temporary ALSEs are predicted** at residential properties closest to CSS10, CSS11, haul routes and other construction works sites in the locality for daytime, evening and night-time works, and road construction works during the daytime. Effects also extend further across the Community Area during the evening and night-time. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.

8.8.313 After 2036 there may continue to be temporary sHQLs and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate, and where necessary, avoid potential adverse effects.

Construction vibration (2030)

8.8.314 **Temporary sHQL are avoided** at residential properties closest to CSS10 and CSS11 by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.

- 8.8.315 **Temporary ALSEs are predicted** at residential properties closest to CSS10, CSS11, haul routes and other construction works sites in the locality for daytime, evening and night-time works, and road construction works during the daytime. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including use of BPM and low vibration working methods (e.g. non-vibratory rollers) where practicable. This will be confirmed in the ES.
- 8.8.316 After 2036 there may continue to be temporary sHQLs and ALSEs from construction vibration, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Air noise (2036 to 2055)

- 8.8.317 **sHQLs are avoided** at residential properties throughout the Community Area through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.318 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.319 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see the Environmentally Managed Growth Topic Paper).

Ground noise (2036 to 2055)

- 8.8.320 **sHQLs are avoided** at residential properties closest to the airfield boundary through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.
- 8.8.321 **ALSEs may occur** at residential properties closest to the airfield boundary. These effects are mitigated and minimised through ground noise environmental measures and, for eligible properties, noise insulation.

Road traffic noise (2033)

- 8.8.322 In 2033 Stanwell Moor will be affected by the realigned Southern Perimeter Road and re-routing of traffic caused by the Project's new and altered roads becoming operational.
- 8.8.323 **sHQLs are avoided** at residential properties in the north of Stanwell Moor with the implementation of the Noise Insulation Policy applied to new and realigned roads.
- 8.8.324 **ALSEs are predicted** for residential and non-residential receptors due to the realigned Southern Perimeter Road and increases in traffic on the road network. This

effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

8.8.325 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

8.8.326 **sHQLs are avoided** at residential properties in the north of Stanwell Moor with the implementation of the Noise Insulation Policy applied to new and realigned roads.

8.8.327 The **ALSEs** predicted for 2033 persist and no additional ALSEs are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

West Drayton

8.8.328 The Northwest Runway will be located approximately 800m to the south of the M4, which runs along the southern boundary of the West Drayton Community Area. To make space for the runway, the M25 will be diverted to the southwest of the Community Area, in addition to the A408 Sipson Road and A3044 Holloway Lane to the south of the Community Area. West Drayton does not currently have flights overhead, but noise from the existing airport may be audible within in the Community Area, in addition to noise from the M4 and M25 motorways, Stockley Road to the east and the Great Western Main Line to the north.

8.8.329 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, associated infrastructure, use of internal haul roads and operation of conveyors.
- Noise from construction traffic, including materials and workforce movements on the existing and temporary road networks.
- Noise and vibration from construction rail traffic, including the movement of bulk materials and construction freight on the existing rail network.
- Aircraft noise from Northwest Runway infrastructure and increased aircraft activity associated with the Project.
- Noise from changes in road traffic on existing and realigned roads.

Construction noise (2030)

- 8.8.330 **Temporary UAEs are prevented** at residential properties closest to stockpiling undertaken to the east of Harmondsworth and to the north of Holloway Lane, as well as to haul and conveyor routes (evening and night-time) and to flood attenuation works (night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).
- 8.8.331 **Temporary sHQLs are avoided** at residential properties closest to stockpiling undertaken to the east of Harmondsworth and to the north of Holloway Lane, as well as to haul and conveyor routes (daytime, evening and night-time), and to flood attenuation works (evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).
- 8.8.332 **Temporary ALSEs are predicted** at residential properties and non-residential receptors closest to stockpiling undertaken to the east of Harmondsworth and to the north of Holloway Lane, as well as to flood attenuation works and to haul and conveyor routes (daytime, evening and night-time). Effects also extend further across the Community Area during the evening and night-time. Affected non-residential receptors include St. Martin's C of E Primary School, Cherry Lane Primary School, Cherry Lane Nursery, Laurel Lane Primary School, Cherry Lane Children's Centre, and Once Upon a Time Day Nursery (daytime, evening), St. Catherine's Church (evening) and St. Martin's Church (daytime). The embedded environmental measures to mitigate and minimise these ALSEs are those in the **draft CoCP** including BPM and site boundary acoustic screening.
- 8.8.333 After 2036 there may continue to be temporary sHQL and ALSEs from construction noise, though effects are not expected to be worse than identified for 2030. This will be assessed further within the ES and will include measures to mitigate and, where necessary, avoid potential adverse effects.

Construction rail traffic noise and vibration

8.8.334 There is the potential for **ALSEs** and **shQLs** from railway noise and vibration due to the increase in the number of freight trains operating on the existing Colnbrook Branch line to accommodate the construction of the Project. At this stage a high-level qualitative assessment has been undertaken to inform this conclusion and a more detailed assessment will be undertaken for the ES. This will include consideration of environmental measures if required.

Air noise (2036 to 2055)

8.8.335 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs have been identified at Cherry Lane Children's Centre, Cherry Lane Junior School and Buttercup Nursery. Further non-residential facilities could also incur ALSE, subject to the airspace design. These effects are mitigated and minimised through aircraft noise environmental measures (see the FRO Document) and, for eligible properties, noise insulation (see the Noise Insulation Policy).

Ground noise (2036 to 2055)

8.8.336 **ALSEs may occur** at residential properties closest to the airfield boundary. These effects are mitigated and minimised through ground noise environmental measures including airfield perimeter noise barriers and, for eligible properties, noise insulation (see the **Noise Insulation Policy**) alongside further measures to be confirmed in the ES such as the use of FEGP and PCA at stand in place of noisier APUs.

Road traffic noise (2033)

8.8.337 In 2033 West Drayton will be affected by the realigned A408 and re-routing of traffic caused by the Project's new and altered roads becoming operational.

8.8.338 **shQLs are avoided** at residential properties close to the A408 with the implementation of the Noise Insulation Policy applied to new and realigned roads.

8.8.339 **ALSEs are predicted** for residential and non-residential receptors at the south of West Drayton due to increases in traffic on the road network and the realigned A408. This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the ALSE will be considered.

Road traffic noise (2055)

8.8.340 2055 represents the end state of airport growth where all new and altered roads are operational and there is no construction traffic associated with the Project using the road network.

8.8.341 **shQLs are avoided** at residential properties close to the A408 with the implementation of the Noise Insulation Policy applied to new and realigned roads.

8.8.342 The **ALSEs** predicted for 2033 persist and no additional ALSEs are likely in 2055.

UAE unacceptable adverse effect on health and quality of life due to new unacceptable noise exposure. UAEs are prevented by environmental measures and fully funded noise insulation or temporary rehousing (for construction) where noted.

sHQL significant adverse effect on health and quality of life due to new very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.

ALSE adverse likely significant effect due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.

BLSE beneficial likely significant effect due to noise decrease that would benefit the acoustic character of the area and may be perceived as an improvement in quality of life.

Figure 8A.2 shows the Community Area boundaries used for reporting.

Figure 8A.3 shows areas where ALSE are foreseeable for aircraft air noise irrespective of indicative flightpaths.

Figure 8A.4 shows areas where sHQL may occur for aircraft noise.

Wraysbury

8.8.343 The Northwest Runway will be located approximately 3,500m to the northeast of the Wraysbury Community Area boundary, whereas the existing south runway is located approximately 3,500m to the east of the Community Area. Wraysbury currently has flights overhead in many parts of the Community Area, and noise from the existing airport can be heard, in addition to noise from the B376 Welley Road.

8.8.344 Likely changes in noise and vibration are therefore expected due to:

- Construction works required to facilitate the Northwest Runway, realigned roads, preparation and operation of CSS, and associated infrastructure.
- Aircraft noise from increased aircraft activity associated with the Project.

Construction noise (2030)

8.8.345 **Temporary UAEs are prevented** at residential properties closest to Kingsmead quarry site (evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary rehousing where required).

8.8.346 **Temporary sHQLs are avoided** at residential properties closest to Kingsmead quarry site (daytime, evening and night-time) by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).

- 8.8.347 **Temporary ALSEs are predicted** at residential properties closest to Kingsmead quarry site. Effects also extend further across the Community Area during the evening and night-time. No temporary ALSEs have been identified at non-residential receptors. The embedded environmental measures to mitigate and minimise these ALSEs are those in the draft CoCP including BPM and site boundary acoustic screening.
- 8.8.348 **No LSEs** have been identified after 2036 as the remaining construction works will be at greater distances compared to works assessed for 2030.

Air noise (2036 to 2055)

- 8.8.349 **sHQLs are avoided** at residential properties throughout the Community Area (depending on airspace design) through aircraft noise environmental measures (see the FRO Document) and fully funded noise insulation (see the Noise Insulation Policy).
- 8.8.350 **ALSEs may occur** at residential properties throughout the Community Area, with the location of effects depending on the airspace design. Potential ALSEs may also occur at non-residential receptors subject to airspace design. These effects are mitigated and minimised through aircraft noise environmental measures and, for eligible properties, noise insulation.
- 8.8.351 Aircraft air noise effects will be limited and, where possible, reduced by the Noise Envelope (see Environmentally Managed Growth Topic Paper).

8.9 Summary of likely significant noise and vibration effects

8.9.1 The following table provides a precautionary assessment of noise and vibration effects based on the current stage of design development, available technical information and current indicative flightpaths assumptions.

Noise and vibration source	Likely effects (on a precautionary basis, to be confirmed in the ES)	Community Areas affected
Construction noise	Temporary unacceptable adverse effects (UAEs) on health and quality of life prevented by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and temporary re-housing where required).	Bedfont, Brands Hill, Colnbrook, Cranford Cross, Cranford, Feltham North, Harlington, Harmondsworth, Horton, Iver and Richings Park, Longford, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury.
	Temporary significant effects on health and quality of life (shQLs) avoided by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary and noise insulation where required).	Bedfont, Brands Hill, Colnbrook, Cranford Cross, Cranford, Feltham North, Harlington, Harmondsworth, Hayes, Horton, Iver and Richings Park, Longford, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury.
	Temporary adverse likely significant effects (ALSEs) mitigated and minimised by environmental measures (e.g. draft CoCP including BPM, acoustic screening at construction site boundary).	Bedfont, Brands Hill, Colnbrook, Cranford Cross, Cranford, Feltham North, Harlington, Harmondsworth, Feltham West, Hayes, Heston, Horton, Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury.
Construction vibration	Temporary significant effects on health and quality of life (shQLs) avoided by environmental measures in the draft CoCP including use of BPM. This includes	Bedfont, Brands Hill, Colnbrook, Cranford, Harlington, Harmondsworth, Horton,

Noise and vibration source	Likely effects (on a precautionary basis, to be confirmed in the ES)	Community Areas affected
Aircraft air noise	using low vibration working methods (e.g. non-vibratory rollers) where practicable.	Longford, Poyle, Sipson, Stanwell and Stanwell Moor.
	Temporary adverse likely significant effects (ALSEs) mitigated and minimised by environmental measures in the draft CoCP including use of BPM. This includes using low vibration working methods (e.g. non-vibratory rollers) where practicable.	Bedfont, Brands Hill, Colnbrook, Cranford, Harlington, Harmondsworth, Horton, Poyle, Sipson, Stanwell and Stanwell Moor.
	Unacceptable adverse effects (UAEs) on health and quality of life are prevented through environmental measures (see the Future Runway Operations Document) and fully funded noise insulation (see the Noise Insulation Policy). If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects.	Harlington and Harmondsworth
	Significant effects on health and quality of life (sHQLs) are avoided through aircraft noise environmental measures (see the Future Runway Operations Document) and fully funded noise insulation (see the Noise Insulation Policy).	Bedfont, Brands Hill, Colnbrook, Cranford Cross, Cranford, Datchet, Feltham North, Harlington, Harmondsworth, Heston, Horton, Hounslow (Central and South), Hounslow (West and Heath), Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor and Wraysbury.
	Adverse likely significant effects (ALSEs) are mitigated and minimised through aircraft noise environmental measures (see the Future Runway Operations Document) and, for eligible properties, noise insulation (see the Noise Insulation Policy).	Outer Area (specific areas dependent on airspace design), Bedfont, Brands Hill, Colnbrook, Cranford Cross, Cranford, Datchet, Feltham North, Harlington, Harmondsworth, Feltham West, Hayes, Heston, Horton, Hounslow (Central and South) Hounslow (West and Heath), Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor, West Drayton and Wraysbury.

Noise and vibration source	Likely effects (on a precautionary basis, to be confirmed in the ES)	Community Areas affected
	Beneficial likely significant effects (BLSEs).	Outer Area (specific areas dependent on airspace design)
Aircraft ground noise	Significant effects on health and quality of life (shQLs) are avoided through ground noise environmental measures including airfield perimeter noise barriers and fully funded noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of Fixed Electrical Ground Power (FEGP) and Pre-conditioned Air (PCA) at stand in place of noisier Auxiliary Power Units (APUs).	Bedfont, Colnbrook, Cranford Cross, Feltham North, Harlington, Harmondsworth, Poyle, Sipson, Stanwell and Stanwell Moor.
	Adverse likely significant effects (ALSEs) are mitigated and minimised through ground noise environmental measures including airfield perimeter noise barriers and, for eligible properties, noise insulation (see the Noise Insulation Policy) alongside further measures to be confirmed in the ES such as the use of Fixed Electrical Ground Power (FEGP) and Pre-conditioned Air (PCA) at stand in place of noisier Auxiliary Power Units (APUs).	Bedfont, Brands Hill, Colnbrook, Cranford Cross, Feltham North, Harlington, Harmondsworth, Iver and Richings Park, Poyle, Sipson, Stanwell, Stanwell Moor and West Drayton.
Road traffic (from construction vehicles)	Temporary significant effects on health and quality of life (shQLs). This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the effect will be considered.	Horton, and Iver and Richings Park.
	Temporary adverse likely significant effects (ALSEs). This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the effect will be considered.	Bedfont, Colnbrook, Horton, Iver and Richings Park, and Poyle.
Road traffic noise (from new and realigned roads)	Unacceptable adverse effects (UAEs) on health and quality of life prevented through fully funded noise insulation (see the Noise Insulation Policy). If necessary, the DCO can include powers which may assist with carrying out noise insulation works to prevent unacceptable effects.	Brands Hill and Colnbrook.
	Significant effects on health and quality of life (shQLs) are avoided through fully funded noise insulation (see the Noise Insulation Policy).	Brands Hill, Colnbrook, Harlington, Poyle, Sipson, Stanwell, Stanwell Moor and West Drayton.
	Adverse likely significant effects (ALSEs). This effect will be confirmed in the ES and, if necessary,	Colnbrook, Harlington, Harmondsworth, Poyle,

Noise and vibration source	Likely effects (on a precautionary basis, to be confirmed in the ES)	Community Areas affected
	environmental measures to mitigate and minimise the effect will be considered.	Sipson, Stanwell, Stanwell Moor and West Drayton.
Road traffic noise (from increased traffic on existing roads)	Unacceptable adverse effects (UAEs) on health and quality of life. This effect will be confirmed in the ES and, if necessary, environmental measures to prevent the likely significant effect will be considered.	Bedfont.
	Significant effects on health and quality of life (sHQLs). This effect will be confirmed in the ES and, if necessary, environmental measures to avoid the significant effect will be considered.	Bedfont, Brands Hill, Cranford, Hayes, Heston and Stanwell.
	Adverse likely significant effects (ALSEs). This effect will be confirmed in the ES and, if necessary, environmental measures to mitigate and minimise the effect will be considered.	Bedfont, Brands Hill, Colnbrook, Cranford Cross, Cranford, Harlington, Hayes, Heston, Longford, Stanwell, Stanwell Moor and West Drayton.
	Beneficial likely significant effects (BLSEs).	Harlington, Harmondsworth and Sipson.
Construction rail noise and vibration	There is the potential for significant effects on health and quality of life (sHQLs) and adverse likely significant effects (ALSEs) from railway noise and vibration due to the increase in the number of freight trains operating on the existing Colnbrook Branch line to accommodate the construction of the Project. At this stage a high-level qualitative assessment has been undertaken to inform this conclusion, and a more detailed assessment will be undertaken for the ES. This will include consideration of environmental measures if required.	Iver and Richings Park, and Poyle.
Noise-induced vibration	There is the potential for significant effects on health and quality of life (sHQLs) and adverse likely significant effects (ALSEs) from noise-induced vibration in lightweight structures. A more detailed assessment of noise-induced vibration will be undertaken in the ES and Heathrow will review whether environmental measures could be introduced to mitigate and minimise the effects.	Harlington, Harmondsworth, Harlington, Poyle and Sipson.

8.10 Next steps and preparation of the Environmental Statement

- 8.10.1 This chapter provides a precautionary assessment of noise and vibration effects based on the current stage of design development, available technical information and current indicative flightpaths assumptions. As the Project continues to develop, we will use feedback received through the 2026 Public Consultation, ongoing technical studies and stakeholder engagement to refine the assessment of noise and vibration effects and the resulting proposed environmental measures.
- 8.10.2 Further technical engagement will be undertaken with key stakeholders including Local Planning Authorities, National Highways, the UK Health Security Agency, Department for Transport (DfT), UK Airspace Design Service (UKADS), the Civil Aviation Authority (CAA) and the Noise Expert Review Group (NERG).
- 8.10.3 The NERG is an independent review and challenge body that provides expert scrutiny of the assessment and management of noise, vibration and associated health effects for the Project. While NERG is funded by us, it will operate independently and will be responsible for providing impartial advice on technical noise and health matters.
- 8.10.4 The Environmental Statement (ES) will build upon the assessment presented in this chapter and will incorporate the latest available information on construction proposals, airport operations, surface access arrangements and the latest available airspace design information. In particular, we will continue to work in partnership with UKADS and other relevant stakeholders to refine the assessment of aircraft noise using indicative flightpaths, and based on the most up-to-date airspace design information available at the time of assessment. The ES will also consider any relevant changes in legislation, policy, guidance, emerging research and studies.
- 8.10.5 Further assessment work will be undertaken to reduce uncertainties, refine reasonable worst-case assumptions and develop the package of environmental measures. This will include continued development of the Noise Envelope, Noise Insulation Policy and Future Runway Operations proposals, and construction noise and vibration controls. The ES will confirm the noise policy significant effects on health and quality of life (sHQLs) and EIA likely significant effects (LSEs) of the Project, identify any remaining significant adverse effects and set out the measures proposed to prevent, avoid, mitigate or minimise those effects.

8.11 Glossary of terms

Term/Acronym	Definition
Absolute noise level	The total level of sound measured at a specific location and time, expressed in decibels (dB) including all noise sources present (natural and man-made).
Adverse Likely Significant Effect (ALSE)	Adverse likely significant effect (LSE) due to noise increase that that would affect the acoustic character of the area and may be perceived as a change in quality of life. ALSEs are mitigated and minimised by environmental measures where noted.
Air noise	Noise associated with aircraft flying to and from the airport. Air noise includes take off as the aircraft accelerates along the runway (i.e. from the 'start of roll' on the runway) and landing as aircraft slow down on the runway (including use of reverse thrust braking).
Aircraft ground noise	Noise generated by aircraft and airport activities while on the ground, such as taxiing, engine testing and aircraft using Auxiliary Power Units (APUs).
Airports Commission	An independent commission established by the UK Government in 2012 to assess the need for additional airport capacity in the United Kingdom and to recommend to the government on how this need could be met in the short, medium and long term. In carrying out its role, the Airports Commission published an Interim Report in 2013 and a Final Report in 2015, thereby completing its work.
Airspace	The invisible infrastructure in the sky which helps aircraft operate safely. This includes the flightpaths that aircraft use when taking off and landing, as well as holding patterns used by aircraft when waiting to land.
Airspace Change Process	The five-stage process an airspace change sponsor follows to submit an airspace change to the CAA for a decision, as outlined in CAP1616 [#]
Airspace design	The process by which airspace change sponsors develop their proposals for amending the UK's airspace structure.
Ambient noise level	The prevailing level of ambient noise i.e. everyday continuous sounds present in an environment, at a given time, generally excluding atypical or short-term disturbances.
APU	Auxiliary Power Unit.
ATM	Air Transport Movement.
A-weighting	A dB(A) weighting that approximates the characteristics of human hearing.

Term/Acronym	Definition
Beneficial Likely Significant Effect (BLSE)	Beneficial likely significant effect (LSE) due to noise decrease that would affect the acoustic character of the area and may be perceived as an improvement in quality of life.
BPM	Best Practicable Means. Defined in Section 72 of the Control of Pollution Act 1974 [18] and Section 79 of the Environmental Protection Act 1990 [23] as those measures which are “reasonably practicable having regard (among other things) to local conditions and circumstances, to the current state of technical knowledge and to financial implications”. These will be applied during construction works to minimise noise and vibration on nearby noise sensitive receptors.
Civil Aviation Authority (CAA)	The statutory body which oversees and regulates all aspects of civil aviation in the UK.
Code of Construction Practice (CoCP)	Sets out the standards and procedures to which developers and contractors must adhere when undertaking construction of major projects. This will assist with managing the environmental impacts and will identify the main responsibilities and requirements of developers and contractors in construction of their projects.
Community Area	A series of geographic areas defined for the purposes of reporting effects in this chapter.
Construction plant	All machinery, equipment and tools required to undertake demolition and construction works, such as excavators and cranes.
Consultation	A process by which regulatory authorities, statutory and non-statutory bodies are approached for information and opinions regarding a development proposal.
Continuous climb operations	Aircraft operating procedures that allow departing aircrafts to climb continuously, to the greatest extent possible. They are designed to reduce fuel consumption and noise compared to other conventional climbs.
Construction Support Site (CSS)	A temporary site used to accommodate construction activities, including compounds, storage, plant, welfare facilities and access routes. Each CSS is identified by its number (i.e. CSS01).
DCO Project	The development that is subject to the DCO application, as described in Chapter 2: Description of the DCO Project .
Decibel (dB)	Units describing absolute sound level or changes of sound level. Expressed as dB(A) when relating to the A-weighted scale.

Term/Acronym	Definition
Development Consent Order (DCO)	The means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008. [#]
Directional preference	To maximise lift for take-off and slow down arriving aircraft, arriving and departing aircraft typically fly into the wind. At present, if the wind direction is from the west, one runway is used for aircraft departing towards the west and the other is used for aircraft arriving from the east. If the wind direction is from the east, then the reverse applies. When winds are light (below five knots – about six miles per hour) aircraft can potentially take off or land in either direction. Currently we operate with a ‘westerly preference’, explained below, when winds meet this criterion. The wind naturally favours westerly operations about half the time and easterly operations about 30% of the time. During the remaining 20% of the time, when winds are light and either direction could potentially be used, the airport operates in a westerly direction (westerly preference). This means that, overall, aircraft use the westerly direction about 70% of the time and the easterly direction about 30% of the time. The direction of operations and whether aircraft are arriving or departing over certain communities directly influences respite and frequency of overflight. Being able to manage this more proactively and take advantage of the lighter winds will deliver greater opportunities for noise mitigation.
Easterly alternation	Heathrow’s Easterly Alternation Infrastructure Planning Application is designed to allow full runway alternation when the airport operates in an easterly direction, in the same way that Heathrow already alternates runways during westerly operations.
Environmental Impact Assessment (EIA)	The process of assessing the total environmental impact of a development project.
Environmental measures	Specific mitigation, management, compensation or enhancement actions secured through consent, requirements or other controls. They are used to avoid, reduce, remedy, offset or monitor adverse environmental effects.
Environmental Statement (ES)	The information submitted to an examining authority in support of an EIA.

Term/Acronym	Definition
Environmentally Managed Growth Topic Paper	A document outlining the draft principles for the EMG framework proposed for the Project.
Fixed Electrical Ground Power (FEGP)	A system that provides electrical power to parked aircraft when their engines are turned off. FEGP is installed on most stands at Heathrow, using electricity provided by the National Grid.
Fleet mix	The composition and proportion of aircraft types operating at the airport.
Flightpath	The planned route followed by aircraft during departure or arrival.
Foundation Activities	Actions set out in the latest Heathrow Noise Action Plan 2024-2028 that underpin the airport noise management strategy, serving as the foundation of Heathrow's sustainable business practices.
Future baseline	The situation in future years without the DCO Project.
Future Runway Operations (FRO)	A document outlining the reasons for the expansion proposals, including how future use of runways would provide predictable periods of respite from aircraft noise and manage night flights; and how other operational measures would help reduce and mitigate noise impacts.
Ground Noise Management Plan (GNMP)	Sets out how Heathrow manages and reduces noise generated by ground operations such as aircraft taxiing, engine testing, parked aircraft and airport vehicles. The GNMP identifies noise sources, monitoring requirements, and mitigation measures to minimise the impact on nearby communities.
Growth	The increase in airport activities over time in terms of passenger numbers and aircraft movements.
International Civil Aviation Organisation (ICAO)	The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations that manages the administration and governance of the Convention on International Civil Aviation (Chicago Convention). ICAO manages aircraft noise by setting international certification standards and limits for aircraft noise emissions. ICAO also sets and publishes policies and procedures intended to improve the level of protections from aircraft noise.
ICAO Balanced Approach	ICAO's main policy on aircraft noise. This consists of identifying the noise problem at a specific airport and analysing various measures available to reduce noise which can be classified into four principal elements: reduction of noise at source, land-use planning and management, noise abatement operating procedures and operating restrictions. The goal is to address noise problems on an individual airport basis and to identify the

Term/Acronym	Definition
	noise-related measures that achieve maximum environmental benefit most cost-effectively using objective and measurable criteria [3].
Indicative airspace design	The Airports National Policy Statement (ANPS) [1] acknowledges that the assessment of aircraft noise for the DCO Project should be undertaken using this developing indicative airspace design, and that this may involve the use of appropriate design parameters and scenarios based on indicative flightpaths. The use of indicative flightpaths allows for the noise assessment of the DCO Project to proceed without the need for the separate Airspace Change Proposal process to have formally commenced or concluded.
Inner Area	Locations and communities closer to the airport where air noise is more likely to result in significant adverse effects on health and quality of life (sHQL) in the context of government noise policy. Within the Inner Area, aircraft noise effects are more likely to be a consequence of the physical and operational proposals of the DCO Project (namely the location and configuration of the Northwest Runway, forecast runway operations, aircraft movements and fleet mix) than the location of flightpaths. The Inner Area also covers locations where changes in noise and vibration due to other ground-based noise and vibration sources associated with the DCO Project are likely to occur.
IRC	Immigration Removal Centre.
L_{Aeq}	Equivalent continuous sound level. The measure used to describe the average sound level experienced over a period of time (usually 16hr for day and 8hr for night) resulting in a single decibel value. L _{eq} is expressed as L _{Aeq} when it refers to the A-weighted scale.
L_{Aeq,16h}	The equivalent continuous sound level between 07:00 and 23:00
L_{den}	The day, evening and night sound level. L _{den} is a logarithmic composite of the L _{day} , L _{evening} , and L _{night} levels but with 5 dB(A) being added to the L _{evening} value and 10 dB(A) being added to the L _{night} value.
Likely Significant Effect (LSE)	A change in noise and/or vibration experienced by individuals or communities which may affect the character and/or enjoyment of an area.
Lowest Observable Adverse Effect Level (LOAEL)	The threshold level above which adverse effects on health and quality of life from noise can be detected.

Term/Acronym	Definition
Mitigation measures	Measures intended to avoid, reduce and, where possible, remedy significant adverse environmental effects.
NATS	The UK's en route air navigation service provider which also provides services at many UK airports.
Noise	Noise is generally defined as unwanted, unpleasant or disruptive sound. Noise can interfere with activities, affect health, and detract from the character and enjoyment of places.
Noise abatement objective	Having identified a noise problem at an airport, the purpose of a noise abatement objective is to act as the enabling statement that provides the focus for any necessary noise measures. A noise abatement objective can be used to set the level of ambition for a noise management regime [#].
Noise Action Plan (NAP)	A plan prepared every five years under the Environmental Noise (England) Regulations 2006 (as amended) to manage environmental noise and its effects.
Noise contour	Map contour line indicating noise exposure in dB for the area that it encloses.
Noise Envelope	A framework which provides a process and controls to mitigate and reduce the effects of aircraft noise within legally binding and enforceable limits, while enabling growth in terms of passenger numbers and aircraft movements.
Noise insulation	Measures to reduce the transmission of external noise into a building by improving the sound insulation performance of the building elements such as windows, roofs and doors.
Noise Insulation Policy	Provides an outline of the proposed noise insulation schemes that will be provided to address noise from aircraft movements in the air and on the ground, and from road, rail and construction noise associated with the DCO Project.
Noise Preferential Routes (NPR)	Noise Preferential Routes set the overall framework within which the flightpaths at several airports, including Heathrow, Gatwick and Stansted, were originally designed to mitigate noise impacts.
Noise problem	A concept whereby a noise problem at an airport is identified and various measures available to reduce noise associated with the noise problem are analysed following the principles of the ICAO Balanced Approach.
Noise sensitive receptor	Noise sensitive receptors are specific locations or developments identified as likely to be adversely affected by aircraft operations noise. The sensitivity of individual receptors varies depending on their use and the level of noise exposure experienced.

Term/Acronym	Definition
Outer Area	Locations further from the DCO Project where air noise is less likely to result in significant adverse effect on health and quality of life (sHQL) in the context of government noise policy as distance from the airport increases, but where Likely Significant Effects (LSEs) may occur due to aircraft air noise.
Overflight	A metric defined to capture whether an individual perceives that an aircraft is overflying them. Defined in CAP1498 [#].
PCA	Pre-Conditioned Air.
Quieter Neighbourhood Support (QNS)	The QNS is part of a new package of noise insulation, vortex protection and home relocation support that aims to have a positive impact on the communities around the airport, and exists to improve the wellbeing of those in the areas most affected by noise. It delivers on the commitments made in the latest Noise Action Plan (NAP), that sets out a range of improvements to reduce the impact of noise.
Relief	This is when multiple routes are designed and operated far enough apart to offer a perceptible reduction in noise for communities. Runway alternation is one form of relief, but multiple flightpaths could also be operated at the same time but with alternating patterns of operation.
Respite	A planned and predictable period of relief from aircraft noise that benefits people living near the ends of airport runways.
Runway alternation	A system where the runways in use for arrivals and departures are alternated according to a published schedule to give people living close to the ends of the runways predictable periods of relief from aircraft noise, known as respite.
Significant adverse effect on Health and Quality of Life (sHQL)	Significant adverse effect on health and quality of life due to very high noise exposure. sHQLs are avoided by environmental measures and fully funded noise insulation where noted.
Significant Observable Adverse Effect Level (SOAEL)	The threshold level above which significant adverse effects on health and quality of life (sHQLs) from noise occur.
Steeper descent approaches	Aircraft operating procedures in which an aircraft approach angle is higher than standard. By maintaining a steeper descent, aircraft remain higher above the ground for longer and spend less time at lower altitudes, reducing noise exposure for communities beneath the flightpath.
UK Airspace Design Service (UKADS)	The airspace design at Heathrow will be developed by a new body created by the Department for Transport and the CAA, namely the UK Airspace Design Service (UKADS) which was established in May 2026.

Term/Acronym	Definition
Unacceptable Adverse Effect Level (UAEL)	The threshold level above which adverse effects on health and quality of life may not be able to be mitigated.
Vibration	Vibration is defined as a repetitive oscillatory motion. Vibration can be transmitted to the human body through its supporting surfaces: the feet of a standing person, the buttocks, back and feet of a seated person or the supporting area of a recumbent person. In most situations, entry into the human body will be through the supporting ground or through the supporting floors of a building. Vibration is often complex, containing many frequencies, occurring in many directions and changing over time. There are many factors that influence human response to vibration. Physical factors include vibration magnitude, vibration frequency, vibration axis, duration, point of entry into the human body and posture of the human body. Other factors include the exposed person's experience, expectation, arousal and activity. Experience shows that disturbance or annoyance from vibration in residential situations is likely to arise when the magnitude of vibration is only slightly in excess of the threshold of perception.
World Health Organization (WHO)	A specialist agency of the United Nations that is concerned with international public health.

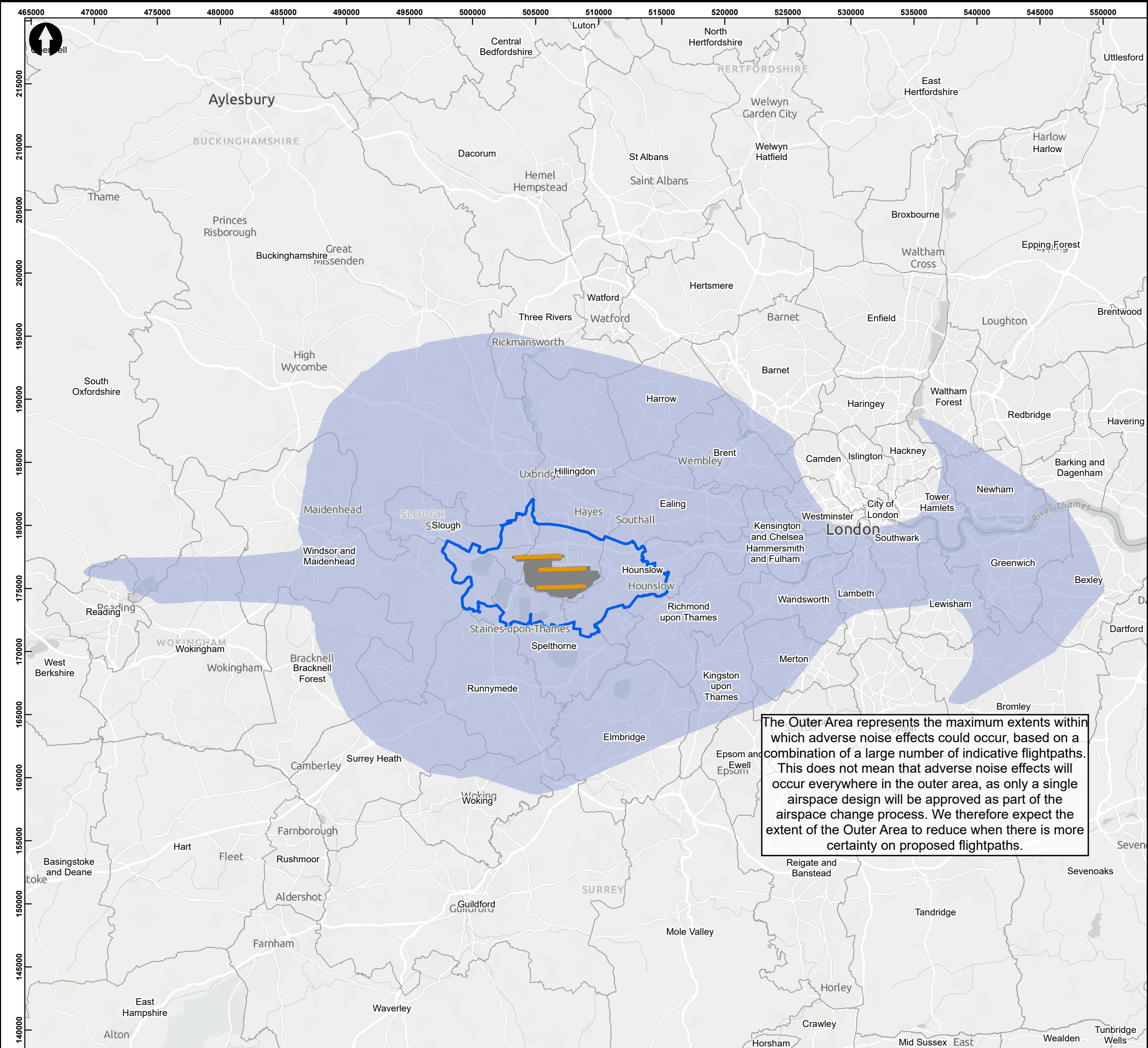
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Appendix 8A Figures

Figure 8A.1: Inner and Outer Areas for noise assessment reporting



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Service Layer Credits: Light Gray: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS

Runways

3rd Runway Infrastructure Extent

Local Authority Districts

Outer Area

Inner Area

0 1,500 3,000 6,000 9,000 12,000 15,000 18,000 Metres

Scale 1:300,000

Colchester

Oxford

Swindon

Reading

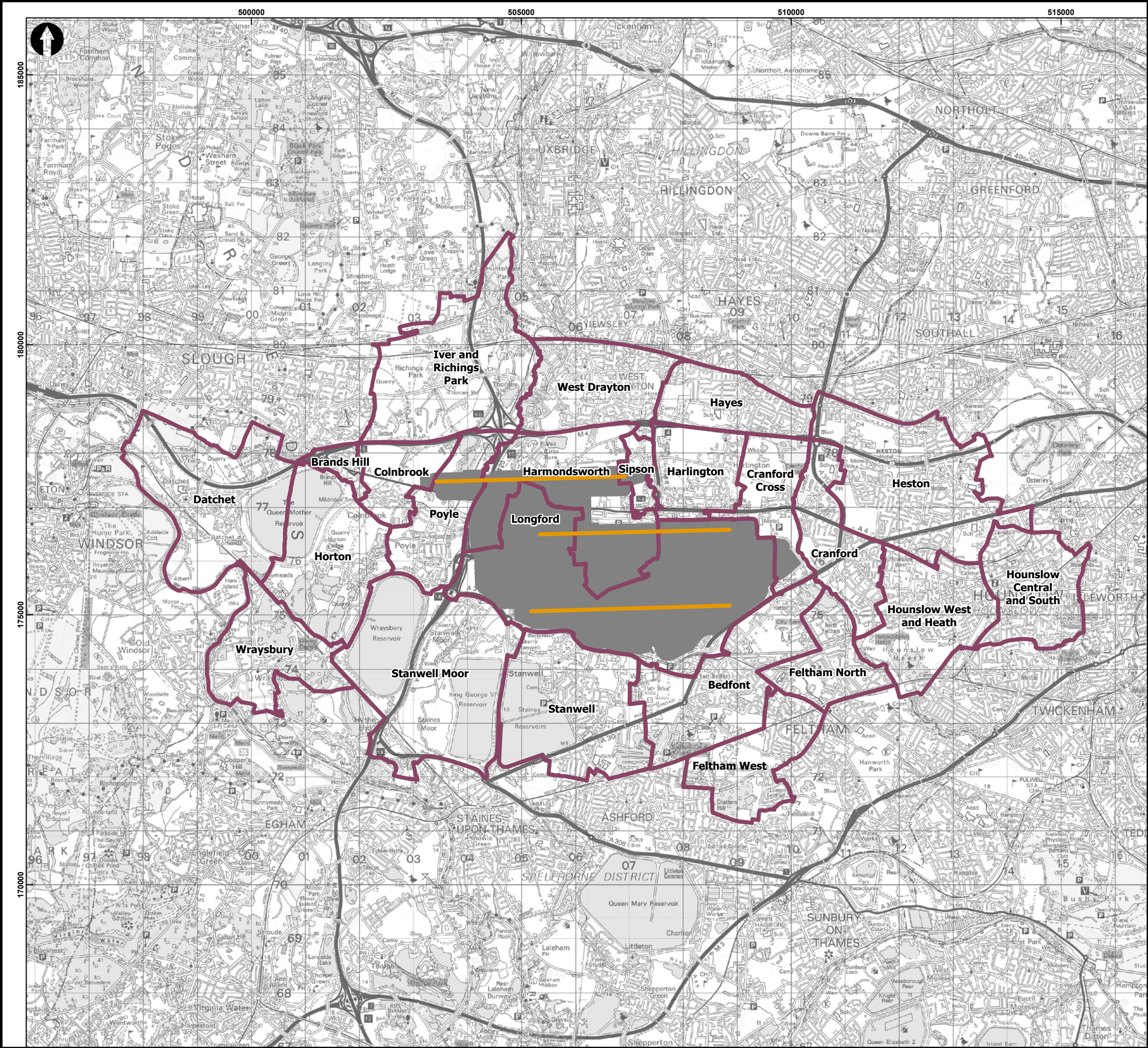
London

Southend-on-Sea

Heathrow

© Heathrow Airport Limited				Scale 1:300,000	
Project Name Heathrow Expansion Project				Heathrow Project No. 3R000	
Title Figure 8A.1: Inner and Outer Areas for noise assessment reporting					
Company WSP	Drawn By LT	Chk/Approved CS	Drawn Date 06/07/2026	Status FINAL	
Location-Level-Sub Series/System-Identifier 3R000-XX-GA-XXX-100005					Version 1.0

Figure 8A.2: Community Areas for noise assessment reporting



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Runways

3rd Runway Infrastructure Extent

Community Areas

035070014002100280035004200

Metres

Scale 1:70,000

Heathrow

© Heathrow Airport Limited

Scale 1:70,000

Project Name
Heathrow Expansion Project

Heathrow Project No.
3R000

Title

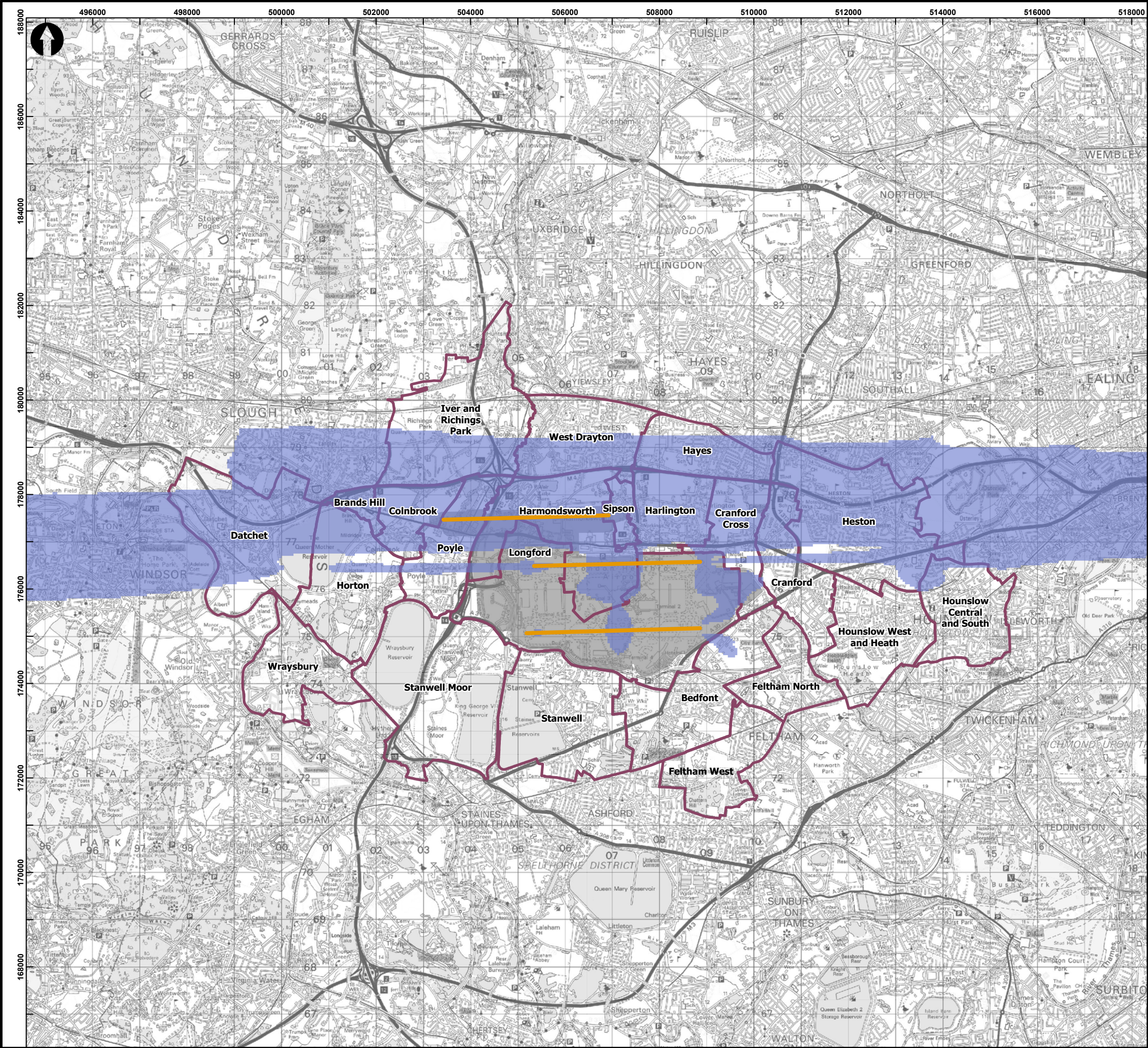
Figure 8A.2: Community Areas for noise assessment reporting

Company WSP	Drawn By LT	Chk/Approved CS	Drawn Date 06/07/2026	Status FINAL
Location-Level-Sub Series/System-Identifier 3R000-XX-GA-XXX-100006				Version 1.0

Source file: EH-WSP-EICR-027

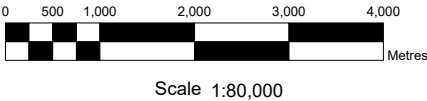
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Figure 8A.3: Areas where adverse likely significant noise effects are foreseeable irrespective of indicative flightpaths without additional mitigation



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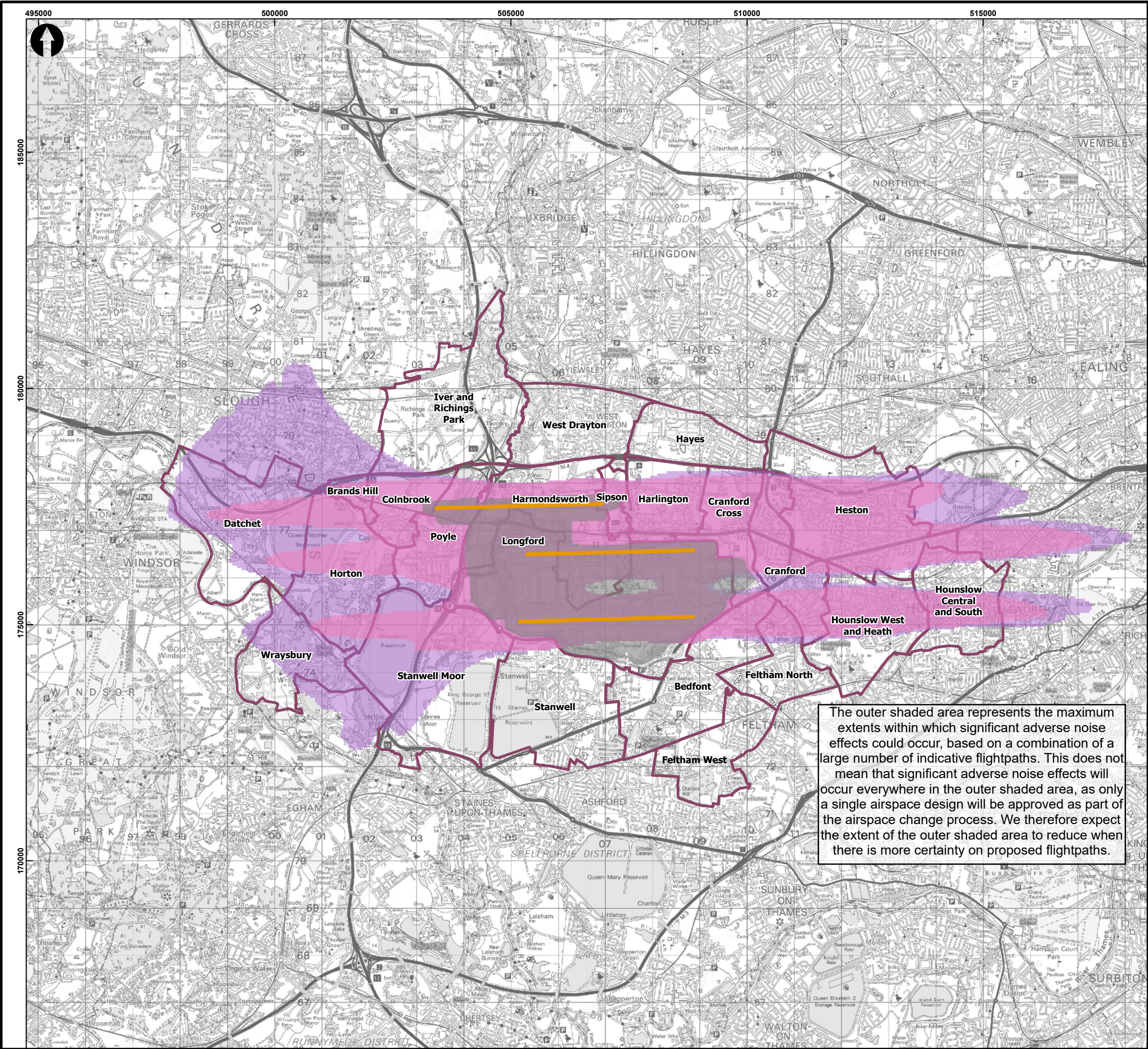
- Runways
- 3rd Runway Infrastructure Extent
- Areas where adverse likely significant noise effects (ALSE) are foreseeable irrespective of indicative flightpaths
- Community Areas



Heathrow

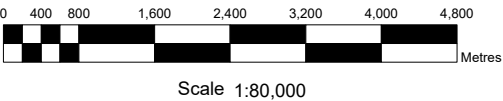
© Heathrow Airport Limited				Scale 1:80,000
Project Name Heathrow Expansion Project				Heathrow Project No. 3R000
Title Figure 8A.3: Areas where adverse likely significant noise effects are foreseeable irrespective of indicative flightpaths without additional mitigation				
Company WSP	Drawn By LT	Chk/Approved CS	Drawn Date 06/07/2026	Status FINAL
Location-Level-Sub Series/System-Identifier 3R000-XX-GA-XXX-100007				Version 1.0

Figure 8A.4: Areas where significant effects on health and quality of life may occur without additional mitigation



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- Runways
- 3rd Runway Infrastructure Extent
- Area likely to experience significant adverse effect on health and quality of life
- Area which may experience significant adverse effect on health and quality of life depending on indicative flightpaths
- Community Areas



Heathrow

© Heathrow Airport Limited	Scale 1:80,000
Project Name Heathrow Expansion Project	Heathrow Project No. 3R000
Title	

Figure 8.A4: Areas where significant effects on health and quality of life may occur without additional mitigation

Company WSP	Drawn By LT	Chk/Approved CS	Drawn Date 06/07/2026	Status FINAL
Location-Level-Sub Series/System-Identifier 3R000-XX-GA-XXX-100008				Version 1.0