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AECOM

Health Impact Analysis (HIA) for the draft Heathrow Expansion National Policy Statement

Department for Transport

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1. Introduction

1.1. Aims of this report

- 1.1.1. The Department for Transport (DfT) has commissioned AECOM to prepare a suite of documents, including a Health Impact Analysis (HIA), to support the preparation and designation of the Heathrow Expansion National Policy Statement (NPS).
- 1.1.2. The HIA has been commissioned alongside an Appraisal of Sustainability (AoS) required under the Planning Act 2008, a Habitats Regulations Assessment (HRA) required under the Conservation of Habitats and Species Regulations 2017, and an Equalities Impact Assessment (EqIA). A comparable HIA was also undertaken for the current Airports NPS.
- 1.1.3. An HIA provides a systematic analysis of how a plan, policy or proposal may impact health across the population, including vulnerable groups. The findings support decision-makers by providing an evidence-based understanding of potential health impacts.
- 1.1.4. An HIA was previously produced by WSP to support the production of the adopted 2018 Airports NPS¹, and this updated HIA builds upon the evidence and findings of that report to reflect the draft Heathrow Expansion NPS. This updated HIA reflects new evidence on potential environmental, social and economic impacts, policy developments and commitments, developments in the aviation sector, and further work on measures to manage or mitigate potential impacts on communities and the environment.
- 1.1.5. This HIA sets out the scope and approach to the analysis, alongside the key evidence and contextual information on which it is based, before analysing the health effects of the draft Heathrow Expansion NPS. It has been prepared in line with current industry guidance and best practice.

1.2. Background: the Heathrow Expansion NPS

- 1.2.1. Airports play an important role in local and national economies by supporting employment, attracting businesses, and enabling the movement of people and goods. They also support quality of life by enabling leisure travel and social connectivity. However, there are also various negative environmental effects

¹ Department for Transport (2018) Health impact analysis for the proposed Airports National Policy Statement. Available at: <https://www.gov.uk/government/publications/health-impact-analysis-for-the-proposed-airports-national-policy-statement> [Accessed: 28/01/26].

associated with aviation which have consequences for human health and wellbeing².

- 1.2.2. National Policy Statements (NPS) are designated under the Planning Act 2008 to provide guidance for decision-makers on the application of Government policy when determining Development Consent for Nationally Significant Infrastructure Projects (NSIPs). The Airports NPS, designated in 2018, provides a policy framework for additional airport capacity in the South East of England.
- 1.2.3. The 2018 Airports NPS sets out the Government's position that additional capacity is best met by a Northwest Runway at Heathrow Airport. It also outlines the requirements for Development Consent, including for associated development such as terminals, surface access and other infrastructure.
- 1.2.4. In January 2025, the Government confirmed support for a third runway at Heathrow Airport and invited proposals to be brought forward by Summer 2025. In October 2025, the Secretary of State for Transport announced the launch of the Airports NPS review, and in November, the Secretary of State for Transport announced that the Northwest Runway scheme promoted by Heathrow Airport Limited (HAL), hereafter referred to as 'the scheme informing the Heathrow Expansion NPS', would inform the Airports NPS review.
- 1.2.5. The UK Government has set aspirations to make a decision on development consent for expanding Heathrow by 2029 and to enable an operational third runway to be delivered by 2035.

1.3. Structure of this report

- 1.3.1. This HIA is structured as follows:
 - Chapter 3: Legislation, Policy, and Strategy Review;
 - Chapter 4: Health Impact Analysis Approach;
 - Chapter 5: Analysis of Health Effects;
 - Chapter 6: Cumulative and In-Combination Effects; and
 - Chapter 7: Conclusion.
- 1.3.2. This HIA is supported by Appendix A which sets out the community profile.

² Airports Commission (2015). *'Airports Commission: Final Report'*.

2. Legislation, Policy and Strategy Review

2.1. Introduction

- 2.1.1. This chapter reviews the legislation which forms the framework and context for the HIAAn. It also reviews relevant policy and strategy documents to identify the objectives of policy makers and service providers at the national, regional and local level, and the health-related issues and priorities which these objectives respond to, thus informing the approach to and content of HIAAn.

2.2. Legislation

- 2.2.1. There is no statutory requirement for HIAAn or Health Impact Assessment (HIA). However, the following legislation provides relevant context for this HIAAn.

Health and Social Care Act 2012 (as amended by Health and Care Act 2022)

- 2.2.2. The Health and Social Care Act 2012³ embedded public health duties within local authorities which remain in force. It introduced a requirement for local authorities to lead on Joint Strategic Needs Assessments (JSNAs) and Joint Health and Wellbeing Strategies (JHWSs) through Health and Wellbeing Boards established by the Act, thus linking health evidence and strategy to broader local decision-making frameworks, including spatial planning. The Health and Care Act 2022⁴ created Integrated Care Systems (ICSs) to promote greater collaboration between the NHS, local authorities, and other partners in improving health outcomes and addressing wider determinants of health.

Equality Act 2010

- 2.2.3. The Equality Act 2010⁵ protects people from discrimination in the workplace and wider society, requiring equal treatment in access to employment and private and public services. The Act is relevant to the HIAAn as it establishes the framework for considering effects on protected characteristic groups which may experience disproportionate health impacts from developments. An EqIA is being prepared alongside the HIAAn to accompany the AoS. The EqIA assesses impacts on 'priority groups', defined as those with protected characteristics as per the

³ UK Parliament (2012). Health and Social Care Act 2012. Available at: [Health and Social Care Act 2012](#) [Accessed: 29/01/26].

⁴ UK Parliament (2022) Health and Care Act 2022. Available at: [Health and Care Act 2022](#) [Accessed: 29/01/26].

⁵ UK Parliament (2010). Equality Act 2010. Available at: [Equality Act 2010](#) [Accessed: 27/01/26].

Equality Act 2010. These priority groups help to inform the identification of vulnerable groups within the HIA.

Planning Act 2008

- 2.2.4. The Planning Act 2008⁶ established the consenting system for large-scale infrastructure projects and introduced NPSs as the main policy framework for deciding those projects. The Planning Act 2008 requires an AoS to be undertaken before an NPS is designated to assess its environmental, social and economic effects and support sustainable development. The AoS being undertaken for the draft Heathrow Expansion NPS will therefore inform, and be informed by, the HIA, as both are concerned with the potential impacts of the scheme informing the Heathrow Expansion NPS on human health and wellbeing.

Local Government and Public Involvement in Health Act 2007

- 2.2.5. The Local Government and Public Involvement in Health Act 2007⁷ strengthened the role of local authorities in improving population health and wellbeing and promoted partnership working and public involvement in decision-making. It also supported the use of evidence on local health needs and inequalities, including through JSNAs and JHWSs, and informed the later development of joint priorities and action through Health and Wellbeing Boards.
- 2.2.6. The Act created statutory health-related functions for local authorities relating to the scrutiny of NHS services and patient and public involvement. These statutory functions underpin later reforms introduced through the Health and Social Care Act (as above), ensuring that health evidence, priorities, and partnership working are embedded within local decision-making.

The Environmental Assessment of Plans and Programmes Regulations 2004

- 2.2.7. The Environmental Assessment of Plans and Programmes Regulations 2004⁸ transpose the Strategic Environmental Assessment (SEA) Directive (2001/42/EC) into UK law. The Regulations require an environmental assessment to be undertaken where a plan or programme is likely to have significant environmental effects. The assessment must consider, where relevant, a range of environmental topics such as air quality, biodiversity, human health, soil, water, climatic factors, cultural heritage, and landscape.

⁶ UK Parliament (2008). Planning Act 2008. Available at: [Planning Act 2008](#) [Accessed: 27/01/26].

⁷ UK Government (2007) Local Government and Public Involvement in Health Act 2007. Available at: <https://www.legislation.gov.uk/ukpga/2007/28/contents> [Accessed: 10/02/26].

⁸ UK Government (2004) The Environmental Assessment of Plans and Programmes Regulations 2004. Available at: <https://www.legislation.gov.uk/uksi/2004/1633/contents> [Accessed: 10/02/26].

- 2.2.8. Although the Regulations do not mandate a standalone HIA, they require that human health is assessed as part of the wider appraisal process.

2.3. National

National Planning Policy Framework (2024)

- 2.3.1. The National Planning Policy Framework (NPPF)⁹, updated in December 2024, emphasises sustainable development and the role of planning in supporting healthy communities and reducing inequalities, including the economic, social, and environmental dimensions of sustainable development.
- 2.3.2. The following sections of the NPPF are of particular relevance to the HIA:
- **Paragraph 96:** *'Planning policies and decisions should aim to achieve healthy, inclusive and safe places which: [...] c) enable and support healthy lives, through both promoting good health and preventing ill-health, especially where this would address identified local health and well-being needs and reduce health inequalities between the most and least deprived communities'*;
 - **Paragraph 198:** *'Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life'; and*
 - **Paragraph 223:** *'Planning policies should: [...] (f) set out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on [...] human health, taking into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality'.*

Planning Practice Guidance for Healthy and safe communities (2022)

- 2.3.3. The NPPF is supported by a series of guidance in the form of the Planning Practice Guidance (PPG)¹⁰. The PPG for Healthy and safe communities¹¹ outlines the role of planning in promoting healthy communities. It sets out that the design and use of both the built and natural environments, including the provision

⁹ Ministry of Housing, Communities & Local Government (20254). National Planning Policy Framework. Available at: National Planning Policy Framework [Accessed: 27/01/26].

¹⁰ Ministry of Housing, Communities and Local Government (2024) Planning practice guidance. Available at: <https://www.gov.uk/government/collections/planning-practice-guidance> [Accessed: 10/02/26].

¹¹ Ministry of Housing, Communities and Local Government (2022) Guidance: Healthy and safe communities. Available at: <https://www.gov.uk/guidance/health-and-wellbeing> [Accessed: 10/02/26].

of green infrastructure, are key determinants of health and wellbeing. Paragraph 001 of the guidance states:

'Planning and health need to be considered together in two ways: in terms of creating environments that support and encourage healthy lifestyles, and in terms of identifying and securing the facilities needed for primary, secondary and tertiary care, and the wider health and care system (taking into account the changing needs of the population).'

2.3.4. Paragraph 005 of the guidance further notes that:

'It is helpful if the Director of Public Health is consulted on any planning applications (including at the pre-application stage) that are likely to have a significant impact on the health and wellbeing of the local population or particular groups within it. This would allow them to work together on any necessary mitigation measures. A health impact assessment is a useful tool to use where there are expected to be significant impacts.

Information gathered from this engagement will assist local planning authorities in considering whether the identified impact(s) could be addressed through planning conditions or obligations'.

Flightpath to the future: a strategic framework for the aviation sector (2022)

2.3.5. Flightpath to the Future (2022)¹² is the UK Government's strategic framework for the aviation sector, including recovery from COVID-19, sustainable growth, and economic and social outcomes. The strategy aims to balance economic growth, environmental responsibility, and social inclusion to ensure aviation contributes to the UK's prosperity while meeting health, climate, and equality commitments.

2.3.6. The following objectives are of relevance to this HIA:

- **Objective 4** 'Put the sector on course to achieve Jet Zero' – sets out the role of the aviation industry in climate emissions and identifies commitments to tackling climate change and delivering net zero emissions by 2050. It recognises the local detrimental impacts of air quality emissions and noise from aviation;
- **Objective 5** 'Capture the potential of new technology and its uses' – outlines airspace modernisation initiatives and technological improvements aim to deliver health and wellbeing benefits to communities near airports;
- **Objective 6** 'Unlock local benefits and level up' – identifies the role of aviation in boosting regional economies and supporting local employment through improved connectivity; and

¹² Department for Transport (2022). Flightpath to the Future. Available at: [Flightpath to the future](#) [Accessed: 01/05/26].

- **Objective 7** ‘Unleash the potential of the next generation of aviation professionals’ – focuses on creating growth, jobs, and inward investment into communities through building talent pipelines, enhancing inclusion in career paths and supporting diversity through training and upskilling initiatives.

Jet Zero: Strategy for Net Zero by Aviation by 2050 (2022)

- 2.3.7. The Jet Zero Strategy (2022)¹³ set out the UK Government’s plan for achieving net zero aviation by 2050, balancing environmental goals with economic growth. Policies of relevance to the HIA include those promoting employment growth in the aviation industry and reducing greenhouse gas emissions.

2.4. Regional

The London Plan (2021)

- 2.4.1. The London Plan¹⁴ was adopted with amendments in March 2021. The Plan includes strategic and planning policies to encourage equal life chances and recognises the inequalities existing within Greater London. This Plan aims to influence how major infrastructure projects address social, economic and environmental considerations, including health:
- **Employment, education and skills:** prioritises inclusive economic growth and education and skills development, requiring major projects to support local employment opportunities, training and apprenticeships, especially for underrepresented groups;
 - **Health and wellbeing:** focuses on reducing adverse health impacts and health inequalities, considering the wider determinants of health and a systematic approach to improving mental and physical health. It seeks to improve air quality, noise reduction and green infrastructure; and
 - **Equality and inclusion:** requires developments to address the needs of people with protected characteristics.
- 2.4.2. Policy T8 ‘Aviation’ acknowledges airports as drivers of growth and highlights the need to protect public health, particularly for communities near airports, by addressing noise, air pollution, and associated health risks.

2.5. Local

- 2.5.1. The policy and strategy documents of the London Borough (LB) of Hillingdon (where Heathrow Airport is located), along with those of nearby local authorities

¹³ Department for Transport (2022). Jet Zero Strategy: delivering net zero aviation by 2050. Available at: [Jet Zero strategy: delivering net zero aviation by 2050 - GOV.UK](#)

¹⁴ Mayor of London (2021) The London Plan: The spatial development strategy for Greater London. Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf [Accessed: 19/01/26].

(set out in paragraph 4.4.6) of potential relevance to health and wellbeing effects, have been reviewed as part of the HIA. These documents include:

- Local Plans;
- Joint Health and Wellbeing Strategies (JHWS), Joint Strategic Needs Assessment (JSNA), integrated care board plans; and
- Economic Development Strategies.

2.5.2. The local policy and strategy documents highlight the substantial economic benefits which Heathrow Airport generates for the local area, while also emphasising the urgent need to address environmental issues such as poor air quality, noise pollution and transport congestion which currently adversely affect the health of local communities.

London Borough of Hillingdon

2.5.3. Hillingdon Council is currently reviewing its existing Local Plan. The current Local Plan¹⁵ sets out the following policies relevant to health:

- Policy E7: Raising Skills;
- Policy H2: Affordable Housing;
- Policy EM1: Climate Change Adaptation and Mitigation;
- Policy EM4: Open Space and Informal Recreation;
- Policy EM5: Sport and Leisure;
- Policy EM8: Land, Water, Air and Noise;
- Policy T1: Accessible Local Destinations;
- Policy T4: Heathrow Airport;
- Policy CI1: Community Infrastructure Provision; and
- Policy CI2: Leisure and Recreation.

2.5.4. This HIA has included a review of other relevant documents including:

- Joint Health and Wellbeing Strategy 2022-2025¹⁶; and
- Joint Strategic Needs Assessment 2022¹⁷.

¹⁵ Hillingdon Borough Council (2012) Local Plan: Part 1 Strategic Policies. Available at: <https://pre.hillingdon.gov.uk/downloads/file/2206/local-plan-part-1-strategic-policies> [Accessed: March 2026].

¹⁶ London Borough of Hillingdon (2022) Joint Health and Wellbeing Strategy 2022-2025. Available at: https://www.hillingdon.gov.uk/media/7917/Joint-Health-and-Wellbeing-Strategy/pdf/dbHealth_and_wellbeing_strategy_2022-2025_WEB.pdf?m=1639499231780 [Accessed: 16/03/26].

¹⁷ London Borough of Hillingdon (ongoing) Joint Strategic Needs Assessment 2022. Available at: <https://pre.hillingdon.gov.uk/downloads/file/745/full-jsna-report> [Accessed: 16/03/26].

London Borough of Ealing

2.5.5. Ealing Council is in the process of preparing a new Local Plan. The current Development Core Strategy¹⁸ was adopted in 2012 and sets out the following policies relevant to health:

- Policy 5.2: Protect and enhance Metropolitan Open Land;
- Policy 5.5: Promoting parks, local green space and addressing deficiency;
- Policy 5.6: Outdoor sports and active recreation;
- Policy 6.1: Physical infrastructure; and
- Policy 6.2: Social infrastructure.

2.5.6. This HIA has included a review of other relevant documents including:

- Together in Ealing: Health and Wellbeing Strategy 2023-28¹⁹;
- Ealing's Joint Strategic Needs Assessment²⁰; and
- Ealing's Plan for Good Jobs: Towards an Inclusive Economy²¹.

London Borough of Hounslow

2.5.7. Hounslow Council is currently reviewing its existing Local Plan. The current Local Plan²² sets out the following policies relevant to health:

- Policy GB2: Open space;
- Policy GB9: Play space, outdoor sports facilities and burial space;
- Policy CI1: Providing and protecting community facilities;
- Policy CI2: Education and school places;
- Policy CI3: Health facilities and healthy places;
- Policy EQ4: Air quality;
- Policy EQ4: Noise;
- Policy EC1: Strategic transport connections;

¹⁸ Ealing Council (2012) Development core strategy DPD. Available at:

https://www.ealing.gov.uk/info/201166/development_core_strategy_dpd [Accessed: March 2026].

¹⁹ Ealing Health and Wellbeing Board (2023) Together in Ealing: Health and Wellbeing Strategy 2023-2028.

Available at: https://www.ealing.gov.uk/download/downloads/id/18933/health_and_wellbeing_strategy.pdf [Accessed: 16/03/26].

²⁰ Ealing Council (ongoing) Ealing's Joint Strategic Needs Assessment. Available at:

https://www.ealing.gov.uk/info/201072/strategies_plans_and_policies/1963/ealings_joint_strategic_needs_assessment [Accessed: 16/03/26].

²¹ Ealing Council (2021) Ealing's Plan for Good Jobs: Towards an Inclusive Economy. Available at:

https://www.ealing.gov.uk/info/201281/council_priorities/2865/creating_good_jobs/1 [Accessed: March 2026].

²² London Borough of Hounslow (2015) Hounslow Local Plan 2015 to 2030. Available at:

<https://www.hounslow.gov.uk/local-plan/local-plan-1> [Accessed: March 2026].

- Policy EC2: Developing a sustainable local transport networks; and
- Policy EC3: Heathrow Airport.

2.5.8. This HIA has included a review of other relevant documents including:

- Hounslow Joint Health and Wellbeing Strategy 2023-2026²³;
- JSNA²⁴; and
- Hounslow: Prosperity and Place²⁵.

Slough

2.5.9. Slough Borough Council is currently preparing a new Local Plan. The current Local Development Plan²⁶ was adopted in 2008 and sets out the following policies relevant to health:

- Core Policy 2: Green Belt and open spaces;
- Core Policy 4: Type of housing;
- Core Policy 5: Employment;
- Core Policy 6: Retail, leisure and community facilities;
- Core Policy 7: Transport;
- Core Policy 8: Sustainability and the environment;
- Core Policy 10: Transport;
- Core Policy 11: Social cohesiveness; and
- Core Policy 12: Community safety.

2.5.10. This HIA has included a review of other relevant documents including:

- Slough Wellbeing Strategy 2021-2026²⁷;
- JSNA²⁸; and

²³ Hounslow Borough Council (2023) Hounslow Joint Health and Wellbeing Strategy 2023-2026. Available at: <https://www.hounslow.gov.uk/downloads/file/11356/health-and-wellbeing-strategy-2023-2026> [Accessed: 16/03/26].

²⁴ London Borough of Hounslow (ongoing) Joint strategic needs assessment. Available at: <https://www.hounslow.gov.uk/joint-strategic-needs-assessment> [Accessed: 16/03/26].

²⁵ London Borough of Hounslow (2023) Hounslow: Prosperity and Place. Available at: <https://www.hounslow.gov.uk/regeneration> [Accessed: March 2026].

²⁶ Slough Borough Council (2006) Slough Local Development Framework Core Strategy 2006-2026. Available at: <https://www.slough.gov.uk/downloads/file/2273/development-plan-core-strategy-2006-2026> [Accessed: March 2026].

²⁷ Slough Wellbeing Board (2021) Slough Wellbeing Strategy 2021-2026. Available at: <https://democracy.slough.gov.uk/documents/s83415/1+Appendix+D+-+Slough+Wellbeing+Strategy+-+2021-2026+1.pdf> [Accessed: 16/03/26].

²⁸ Slough Borough Council (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.slough.gov.uk/joint-strategic-needs-assessment> [Accessed: 16/03/26].

- Slough Inclusive Growth Strategy 2020-25²⁹.

Spelthorne

2.5.11. Spelthorne Borough Council is currently preparing a new Local Plan. The current development plan³⁰ was adopted in 2009 and sets out the following policies relevant to health:

- Policy HO3: Affordable Housing;
- Policy HO4: Housing size and type;
- Policy EM1: Employment development;
- Strategic Policy SP5: Meeting Community Needs;
- Policy CO1: Providing Community Facilities;
- Strategic Policy SP6: Maintaining and Improving the Environment;
- Policy EN3: Air Quality;
- Policy EN4: Provision of open space and sport and recreation facilities;
- Policy EN11: Development and noise;
- Policy EN12: Noise from Heathrow Airport;
- Strategic Policy SP7: Climate Change and transport; and
- Policy CC2: Sustainable travel.

2.5.12. This HIA has included a review of other relevant documents including³¹:

- Health and Wellbeing Strategy 2022-2027³²;
- Surrey Health and Well-Being Strategy³³;
- JSNA³⁴;

²⁹ Slough Borough Council (2025) Slough Inclusive Growth Strategy. Available at: <https://www.slough.gov.uk/strategies-plans-policies/inclusive-growth-strategy> [Accessed: March 2026].

³⁰ Spelthorne Borough Council (2009) Development Plan 2009. Available at: <https://www.spelthorne.gov.uk/page/1003/development-plan-2009> [Accessed: March 2026].

³¹ Note: Spelthorne Borough Council is located within Surrey County Council, currently under a two-tier system of governance.

³² Spelthorne Borough Council (2022) Health and Wellbeing Strategy 2022-2027. Available at: https://www.spelthorne.gov.uk/sites/default/files/migration/media/15700/Spelthorne-Health-and-Wellbeing-Strategy-2022-2027/pdf/Health_and_Wellbeing_Strategy_2022_-_2027.pdf [Accessed: 16/03/26].

³³ Surrey County Council (2022) Surrey Health and Well-Being Strategy – update 2022. Available at: <https://www.healthysurrey.org.uk/about/strategy/surrey-health-and-well-being-strategy-update-2022> [Accessed: 16/03/26].

³⁴ Surrey County Council (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.surreyi.gov.uk/jsna/> [Accessed: 16/03/26].

- Spelthorne Economic Prosperity Strategy 2023-2028³⁵; and
- Surrey's Economic Growth Strategy 2025-2035³⁶.

Buckinghamshire

- 2.5.13. Buckinghamshire Council is currently preparing a Local Plan. As Buckinghamshire is a newly formed unitary authority, there are no current Local Plans for the local authority.
- 2.5.14. South Bucks District Council adopted a Core Strategy³⁷ in 2011 which sets out the following district-wide policies relevant to health which still apply to relevant areas:
- Core Policy 2: Housing Type and Size;
 - Core Policy 3: Affordable Housing;
 - Core Policy 5: Open Space, Sport and Recreation;
 - Core Policy 7: Accessibility and Transport;
 - Core Policy 9: Natural Environment;
 - Core Policy 10: Employment; and
 - Core Policy 13: Environmental and Resource Management.
- 2.5.15. This HIA has included a review of other relevant documents including:
- Buckinghamshire Joint Local Health and Wellbeing Strategy 2035³⁸; and
 - JSNA³⁹.

³⁵ Spelthorne Borough Council (2023) Economic Prosperity Strategy 2023-2028. Available at: https://www.spelthorne.gov.uk/sites/default/files/migration/media/25700/Spelthorne-Economic-Strategy-2023-2028/pdf/ECONOMIC_PROSPERITY_STRATEGY-v8.pdf [Accessed: March 2026].

³⁶ Surrey County Council (2025) Surrey's Economic Growth Strategy 2023-2035. Available at: <https://www.businesssurrey.co.uk/wp-content/uploads/2025/03/FINAL-SCC-Growth-Strategy-March-25.pdf> [Accessed: 16/03/26].

³⁷ South Bucks District Council (2011) Core Strategy: Development Plan Document. Available at: https://media.buckinghamshire.gov.uk/documents/South_Bucks_Core_Strategy_-_Adopted_February_2011_bb48FA7.pdf [Accessed: 01/05/26].

³⁸ Buckinghamshire Council (2026) Buckinghamshire Joint Local Health and Wellbeing Strategy – 2035. Available at: https://media.buckinghamshire.gov.uk/documents/Joint_Health_and_Wellbeing_Strategy_2035.pdf [Accessed: 16/03/26].

³⁹ Buckinghamshire Council (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.buckinghamshire.gov.uk/health-wellbeing-and-sports/joint-strategic-needs-assessment/> [Accessed: 16/03/26].

Elmbridge

2.5.16. Elmbridge Borough Council is currently preparing a new Local Plan. The current Elmbridge Core Strategy⁴⁰ sets out the following borough-wide policies relevant to health:

- CS14 – Green Infrastructure;
- CS16 – Social and Community Infrastructure;
- CS21 – Affordable Housing; and
- CS25 – Travel and Accessibility.

2.5.17. This HIA has included a review of other relevant documents including⁴¹:

- Surrey Health and Well-Being Strategy⁴²;
- JSNA⁴³; and
- Surrey's Economic Growth Strategy 2025-2035⁴⁴.

London Borough of Richmond upon Thames

2.5.18. The Local Plan⁴⁵ was adopted by Richmond upon Thames Council in 2025 and sets out the following policies relevant to health:

- Policy 3: Tackling the Climate Emergency;
- Policy 4: Minimising Greenhouse Gas Emissions and Promoting Energy Efficiency;
- Policy 11: Affordable Housing;
- Policy 13: Housing Mix and Standards;
- Policy 14: Loss of Housing;
- Policy 35: Green Belt, Metropolitan Open Land and Local Green Space;

⁴⁰ Elmbridge Borough Council (2011) Elmbridge Core Strategy. Available at: <https://www.elmbridge.gov.uk/sites/default/files/2023-03/Core%20Strategy.pdf> [Accessed: March 2026].

⁴¹ Note: Elmbridge Borough Council is located within Surrey County Council, currently under a two-tier system of governance.

⁴² Surrey County Council (2022) Surrey Health and Well-Being Strategy – update 2022. Available at: <https://www.healthysurrey.org.uk/about/strategy/surrey-health-and-well-being-strategy-update-2022> [Accessed: 16/03/26].

⁴³ Surrey County Council (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.surreyi.gov.uk/jsna/> [Accessed: 16/03/26].

⁴⁴ Surrey County Council (2025) Surrey's Economic Growth Strategy 2023-2035. Available at: <https://www.businesssurrey.co.uk/wp-content/uploads/2025/03/FINAL-SCC-Growth-Strategy-March-25.pdf> [Accessed: 16/03/26].

⁴⁵ London Borough of Richmond upon Thames (2025) Richmond upon Thames Local Plan 'The best for our borough' (2024 to 2039). Available at: https://www2.richmond.gov.uk/docs/localplan/local_plan_interim_track_changes_for_adoption_october_2025.pdf [Accessed: March 2026].

- Policy 37: Public Open Space, Play, Sport and Recreation;
- Policy 46: Amenity and Living Conditions;
- Policy 47: Sustainable Travel Choices;
- Policy 49: Social and Community Infrastructure;
- Policy 50: Education and Training;
- Policy 51: Health and Wellbeing; and
- Policy 53: Local Environmental Impacts.

2.5.19. This HIA has included a review of other relevant documents including:

- Joint Local Health and Wellbeing Strategy 2024-2029⁴⁶; and
- JSNA⁴⁷.

Runnymede

2.5.20. Runnymede Borough Council adopted the Local Plan⁴⁸ in 2020 which sets out the following policies relevant to health:

- Policy SD3: Active & sustainable travel;
- Policy SD6: Retention of social & community infrastructure;
- Policy SL1: Health and wellbeing;
- Policy SL19: Housing mix and size requirements;
- Policy SL20: Affordable housing;
- Policy SL21: Presumption against loss of residential;
- Policy SL25: Existing open space;
- Policy SL26: New open space;
- Policy SL27: Local green space;
- Policy SL28: Playing pitches;
- Policy EE1: Townscape and landscape policy; and
- Policy EE2: Environmental protection.

⁴⁶ London Borough of Richmond-upon-Thames (2024) Joint Local Health and Wellbeing Strategy 2024-2029. Available at: <https://www.richmond.gov.uk/media/2brg1wxv/joint-local-health-and-wellbeing-strategy-2024-29.pdf> [Accessed: 16/03/26].

⁴⁷ Richmond upon Thames (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.richmond.gov.uk/jsna> [Accessed: 16/03/26].

⁴⁸ Runnymede Borough Council (2020) Runnymede 2030 Local Plan. Available at: <https://www.runnymede.gov.uk/downloads/file/781/adopted-2030-lp> [Accessed: March 2026].

2.5.21. This HIA has included a review of other relevant documents including⁴⁹:

- Runnymede Health and Wellbeing Strategy 2022-2026⁵⁰;
- Surrey Health and Well-Being Strategy⁵¹;
- JSNA⁵²;
- Runnymede Economic Development Strategy 2022 to 2026⁵³; and
- Surrey's Economic Growth Strategy 2025-2035⁵⁴.

London Borough of Wandsworth

2.5.22. The Wandsworth Local Plan Partial Review⁵⁵ was adopted in 2026 following the adoption of the Wandsworth Local Plan⁵⁶ in 2023. These local plans set out the following policies relevant to health:

- LP10: Responding to the Climate Crisis (Strategic Policy);
- LP12: Water and Flooding (Strategic Policy);
- LP14: Air Quality, Pollution and Managing Impacts of Development;
- LP15: Health and Wellbeing (Strategic Policy);
- LP17: Social and Community Infrastructure (Strategic Policy);
- LP19: Play Space;
- LP20: New Open Space;
- LP23: Affordable Housing (Strategic Policy);
- LP24: Housing Mix;
- LP25: Protecting the Existing Housing Stock;

⁴⁹ Note: Runnymede Borough Council is located within Surrey County Council, currently under a two-tier system of governance.

⁵⁰ Runnymede Borough Council (2022) Health and Wellbeing Strategy 2022-2026. Available at: <https://www.runnymede.gov.uk/downloads/file/1537/health-and-wellbeing-strategy> [Accessed: 16/03/26].

⁵¹ Surrey County Council (2022) Surrey Health and Well-Being Strategy – update 2022. Available at: <https://www.healthysurrey.org.uk/about/strategy/surrey-health-and-well-being-strategy-update-2022> [Accessed: 16/03/26].

⁵² Surrey County Council (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.surreyi.gov.uk/jsna/> [Accessed: 16/03/26].

⁵³ Runnymede Borough Council (2022) Economic Development Strategy 2022 to 2026. Available at: <https://www.runnymede.gov.uk/downloads/file/1535/economic-development-strategy> [Accessed: March 2026].

⁵⁴ Surrey County Council (2025) Surrey's Economic Growth Strategy 2023-2035. Available at: <https://www.businesssurrey.co.uk/wp-content/uploads/2025/03/FINAL-SCC-Growth-Strategy-March-25.pdf> [Accessed: 16/03/26].

⁵⁵ Wandsworth Council (2026) Wandsworth Local Plan Partial Review. Adoption Version. Available at: https://www.wandsworth.gov.uk/media/jfxbe2u4/wandsworth_local_plan_partial_review.pdf [Accessed: March 2026].

⁵⁶ Wandsworth Council (2023) Wandsworth Local Plan 2023-2038. Available at: https://www.wandsworth.gov.uk/media/large/adopted_local_plan.pdf [Accessed: March 2026].

- LP39: Local Employment and Training Opportunities;
- LP49: Sustainable Transport (Strategic Policy);
- LP50: Transport and Development;
- LP52: Public Transport and Infrastructure; and
- LP54: Open Space, Sport and Recreation.

2.5.23. This HIA has included a review of other relevant documents including:

- Joint Local Health and Wellbeing Strategy 2024-2029: 19 steps to Health & Wellbeing⁵⁷;
- JSNA Start Well 2026⁵⁸; and
- Wandsworth Growth Plan 2025⁵⁹.

Windsor and Maidenhead

2.5.24. The Royal Borough of Windsor & Maidenhead adopted the Local Plan⁶⁰ in 2022 and sets out the following policies relevant to health:

- SP2: Climate Change;
- QP2: Green and Blue Infrastructure;
- HO2: Housing Mix and Type;
- HO3: Affordable Housing;
- EP1: Environmental Protection;
- EP2: Air Pollution;
- EP3: Noise;
- EP5: Contaminated Land and Water;
- IF2: Sustainable Transport;
- IF3: Local Green Space;
- IF4: Open Space;
- IF5: Rights of Way and Access to the Countryside; and

⁵⁷ Wandsworth Council (2024) Joint Local Health and Wellbeing Strategy 2024-2029: 19 steps to Health & Wellbeing. Available at: https://www.wandsworth.gov.uk/media/g0ihkdkb/joint_local_health_and_wellbeing_strategy_2024_29.pdf [Accessed: 16/03/26].

⁵⁸ Wandsworth Borough Council (2026) JSNA Start Well. Available at: <https://www.wandsworth.gov.uk/health-and-social-care/public-health/public-health-publications/jsna/jsna-start-well/> [Accessed: 16/03/26].

⁵⁹ Wandsworth Council (2025) Wandsworth Growth Plan 2025. Available at: <https://www.wandsworth.gov.uk/business-and-licensing/wandsworth-growth-plan/> [Accessed: March 2026].

⁶⁰ Royal Borough of Windsor & Maidenhead (2022) Borough Local Plan 2013-2033. Available at: <https://www.rbwm.gov.uk/planning-and-building-control/planning-policy/development-plan/adopted-local-plan> [Accessed: March 2026].

- IF6: Community Facilities.

2.5.25. This HIA has included a review of other relevant documents including⁶¹:

- Joint Health and Wellbeing Strategy 2026-2036⁶²;
- JSNA⁶³; and
- Berkshire Economic Strategy 2025-2035⁶⁴.

⁶¹ Note: The Royal Borough of Windsor and Maidenhead is located within Berkshire Unitary Authority.

⁶² Royal Borough of Windsor & Maidenhead (2026) Joint Health and Wellbeing Strategy 2026-2036. Available at: https://www.rbwm.gov.uk/sites/default/files/2026-01/ph_joint_health_wellbeing_strategy_2026-2036_0.pdf [Accessed: 16/03/26].

⁶³ Royal Borough of Windsor & Maidenhead (ongoing) Joint Strategic Needs Assessment. Available at: <https://www.rbwm.gov.uk/community-and-living/public-health/joint-strategic-needs-assessment> [Accessed: 16/03/26].

⁶⁴ Berkshire Unitary Authorities and Berkshire Prosperity Board (2024) Berkshire Economic Strategy 2025-2035. Available at: <https://www.rbwm.gov.uk/council-and-democracy/strategies-and-policies/berkshire-economic-strategy> [Accessed: March 2026].

3. Health Impact Analysis Approach

3.1. Introduction

3.1.1. This chapter sets out the approach and scope of the HIAAn, including:

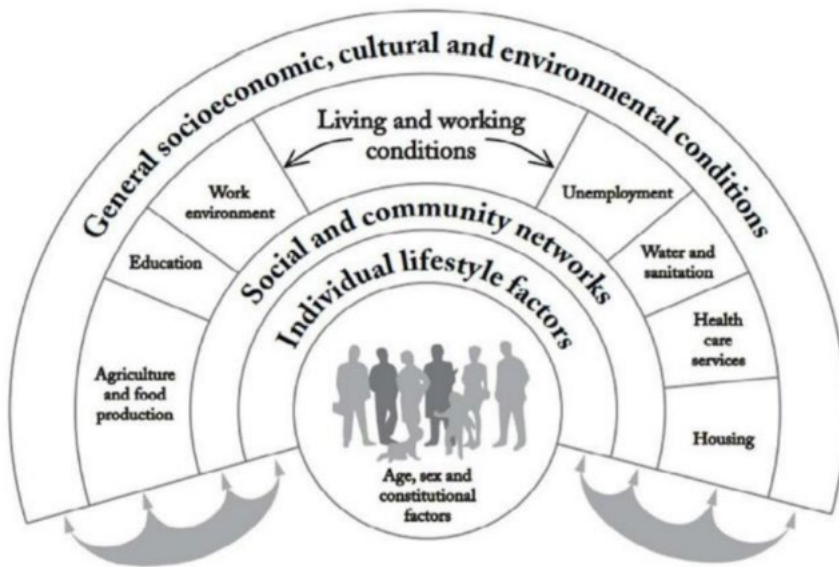
- Overarching approach;
- Information sources;
- Study area;
- Health determinants scoped in, and criteria for determining the magnitude of health impacts;
- Vulnerable groups, and criteria for determining their sensitivity to change;
- Methodology for appraising the significance of impacts;
- Cumulative and in-combination effects; and
- Assumptions and limitations.

3.2. Overarching approach

3.2.1. This HIAAn defines health as encompassing both physical and mental health. The health and wellbeing of individuals is determined by a range of individual constitutional and behavioural factors (or 'determinants'), as well as broader environmental, social and economic factors. Some factors are direct and obvious, others are indirect.

3.2.2. Dahlgreen and Whitehead's model of the main determinants of health illustrates the breadth of possible influences on health, as shown in Plate 1. At the centre of the illustration are factors that are largely fixed, including individual age, sex, constitutional and genetic factors. Outside of this are factors generally described as the wider or broader determinants of health. The model emphasises interactions between the layers. Moving outwards from the centre, individual lifestyle choices are embedded in social norms and community networks, and in living and working conditions, which in turn are shaped by and related to the wider socioeconomic and cultural environment.

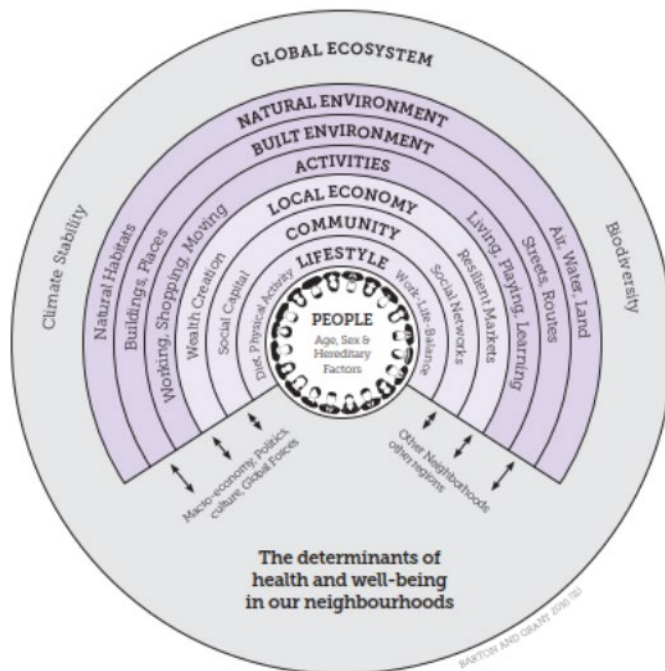
Plate 1: Determinants of health



Source: Dahlgreen and Whitehead (1993)⁶⁵

3.2.3. Plate 2 illustrates how elements of the built environment and communities influence health at a local scale.

Plate 2: Determinants of health in neighbourhoods



Source: Barton and Grant (2006)⁶⁶

⁶⁵ Dahlgreen, G. and Whitehead, M. (1993) Policies and strategies to promote social equity in health. Background document to World Health Organisation – Strategy for Europe. Institute for Future Studies.

⁶⁶ Barton, H. and Grant, M. (2006) A health map for the local human habitat. The Journal of the Royal Society for the Promotion of Health pp. 252-253.

- 3.2.4. The range of personal, social, economic, and environmental factors that influence health status are known as health determinants and include the physical environment, income levels, employment, education, community support, and housing. The scheme informing the Heathrow Expansion NPS has the potential to give rise to changes in health status by influencing these health determinants. Changes can affect the health of receptors, identified as the ‘general population’ and ‘vulnerable groups’. The latter refers to groups who may have a higher sensitivity to these changes in health status, by virtue of characteristics such as age (for example older people or children), ethnicity, socio-economic factors, disability, sex, or gender.

3.3. Information sources

- 3.3.1. A range of information sources were reviewed to inform the approach to the HIAAn and the analysis of health effects contained with Chapter 5 of this report. These are set out below.

Demographic and health indicators

- 3.3.2. To understand the potential health effects of any development enabled by the draft Heathrow Expansion NPS, it is necessary to understand the health characteristics of the populations likely to be affected. Therefore, Chapter 5 of this report sets out, for each of the different health determinants, a baseline with data on the demographic, socio-economic and health characteristics of the relevant populations.
- 3.3.3. These key datasets drawn upon to establish the baseline are set out below. While the below list represents a high-level summary, information sources have been referenced throughout Chapter 5 of this report, and more detail is also provided in the HIAAn Scoping Report.
- Office for National Statistics (ONS) (2022) 2021 Census;
 - ONS (2012) 2011 Census;
 - Department for Levelling Up, Housing and Communities (2025) English Indices of Deprivation;
 - UKHSA (2024) Air Quality and Health Dashboard; and
 - Department of Health & Social Care Fingertips Local Authority Health Profiles.

Consultation and engagement

- 3.3.4. The DfT conducted national consultations on the draft Airports NPS and revised draft Airports NPS in 2017, allowing members of the public, organisations, and interested parties to comment on the documents. The consultation responses include matters relevant to the determinants of health, particularly concerning noise, air quality, and carbon emissions.

- 3.3.5. The HIA prepared for the 2018 Airports NPS reflected the inputs of a Health Impact Analysis Steering Group, which included representatives from Public Health England, the Department for Transport project team, and other relevant government departments. The Steering Group informed the HIA scope and approach, provided technical expertise and helped to ensure the study was robust and proportionate. The HIA builds upon the approach and findings of the HIA prepared for the 2018 Airports NPS, while taking account of guidance, evidence and information which has come forward since 2018.
- 3.3.6. In January 2026, consultation was undertaken with the Office for Health Improvement and Disparities (OHID), part of the Department of Health and Social Care. In March 2026, consultation was undertaken with the UK Health Security Agency (UKHSA). These discussions covered the context and proposed approach to the HIA including study area, useful data sources, methodology, health determinants, and vulnerable groups. Feedback from these consultations informed the HIA Scoping Report and the HIA.

Guidance and literature review

- 3.3.7. The following guidance has come forward since 2018 and therefore has been reviewed to inform the HIA:
- International Association for Impact Assessment (IAIA) (2021) International Best Practice Principles: Health Impact Assessment Series 5⁶⁷;
 - Public Health England (PHE) (2020) Health Impact Assessment in spatial planning: A guide for local authority public health and planning teams⁶⁸;
 - Wales Health Impact Assessment Support Unit (WHIASU) (2021) Health Impact Assessment: A practical guide⁶⁹;
 - Institute of Public Health (2021) Health Impact Assessment Guidance: A Manual⁷⁰;
 - Institute of Public Health (2021) Health Impact Assessment Guidance: Technical Guidance⁷¹;

⁶⁷ IAIA (2021) International Best Practice Principles: Health Impact Assessment. Available at: [International Best Practice Principles: Health Impact Assessment](#) [Accessed: 27/01/26].

⁶⁸ PHE (2020) Health Impact Assessment in spatial planning. A guide for local authority public health and planning teams. Available at: [Health Impact Assessment in spatial planning](#) [Accessed: 27/01/26].

⁶⁹ WHIASU (2021) Health Impact Assessment: A practical guide. Available at: [Health Impact Assessment: A practical guide](#) [Accessed: 27/01/26].

⁷⁰ Institute of Public Health (2021) Health Impact Assessment Guidance: A Manual. Available at: [A Manual](https://instituteofpublichealth.org/hia-guidance) <https://instituteofpublichealth.org/hia-guidance> [Accessed: 27/01/26].

⁷¹ Institute of Public Health (2021) Health Impact Assessment Guidance: Technical Guidance. Available at: [Technical Guidance](#) [Accessed: 29/01/26].

- Institute of Public Health (2021) Health Impact Assessment Guidance: The Case for HIA⁷²;
- Public Health Scotland (2025) A guide to Health Impact Assessment⁷³;
- Institute of Environmental Management and Assessment (IEMA) (2022) Guide to: Effective Scoping of Human Health in Environmental Impact Assessment⁷⁴;
- IEMA (2022) Guide to: Determining Significance for Human Health in Environmental Impact Assessment⁷⁵; and
- World Health Organisation (WHO) (2023) A place in the public health toolbox: Policy briefs 1 on health impact assessments and incorporating health into environmental assessments⁷⁶.

- 3.3.8. The HIA accompanying the 2018 Airports NPS was amended from an HIA to a HIA by WSP following discussion with the Health Impact Analysis Steering Group at the scoping stage. As set out in that document⁷⁷, an HIA excludes the additional mitigations and recommendations stages of a HIA. This is to avoid cutting across the recommendations coming out of the AoS, as well as wider ongoing work to develop a mitigations package. In other respects, the guidance on HIAs listed above remains relevant.
- 3.3.9. Since 2018, a number of airport expansion schemes have come forward through the consenting process (e.g. Gatwick Northern Runway and London Luton Airport Expansion). The impact assessments undertaken for those Development Consent Order (DCO) applications have included investigation of the potential effects of airport expansion on health, and these have been reviewed in order to inform this HIA.
- 3.3.10. A review of the literature relating to the impacts of airports and aviation operations has also been undertaken. This review builds upon, and where relevant updates, the evidence base established in the 2018 HIA and includes the following:

⁷² Institute of Public Health (2021) Health Impact Assessment Guidance: The Case for HIA. Available at: [The Case for HIA](#) [Accessed: 29/01/26].

⁷³ Public Health Scotland (2025) A guide to Health Impact Assessment. Available at: [A guide to Health Impact Assessment](#) [Accessed: 27/01/26].

⁷⁴ IEMA (2022) Guide to: Effective Scoping of Human Health in Environmental Impact Assessment. Available at: [Effective Scoping of Human Health in Environmental Impact Assessment](#) [Accessed: 27/01/26].

⁷⁵ IEMA (2022) Guide to: Determining Significance for Human Health in Environmental Impact Assessment. Available at: [Determining Significance for Human Health in Environmental Impact Assessment](#) [Accessed: 27/01/26].

⁷⁶ WHO (2023) Policy briefs on health impact assessments and incorporating health into environmental assessments. Available at: [Policy briefs on health impact assessments](#) [Accessed: 27/01/26].

⁷⁷ WSP for the DfT (2018) Airports National Policy Statement: health impact analysis, shortlisted schemes. Available at: [2018 HIA](#) [Accessed: 29/01/26]. See Section 2.4.

- Airports Commission (2014) Community: Impact Assessment⁷⁸;
- Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment⁷⁹;
- Airports Commission (2015) Quality of Life: Equalities Impacts Reports⁸⁰;
- Airports Commission (2015) Quality of Life: Health and Equalities Assessment Review⁸¹;
- American Lung Association (2019) Who is most affected by outdoor air pollution⁸²;
- Basner et al., (2014) Auditory and non-auditory effects of noise on health⁸³;
- Chionis, D. (2022) Risk in the aviation context: investigating risk perception and risk communication from a behaviour based approach⁸⁴;
- Civil Aviation Authority (2014) CAP 1164: Aircraft noise, sleep disturbance and health effects⁸⁵;
- European Environment Agency (2025) Air quality around ports and airports⁸⁶;
- European Environmental Agency (2025) Environmental noise in Europe⁸⁷;

⁷⁸ Airports Commission (2014) Community: Impact Assessment. Available at: https://assets.publishing.service.gov.uk/media/5a75698fe5274a1baf95e5ea/AC11_tagged.pdf [Accessed: 19/03/26].

⁷⁹ Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment. Available at: <https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

⁸⁰ Airports Commission (2015) Quality of Life: Equalities Impacts Report. Available at: <https://assets.publishing.service.gov.uk/media/5a81620140f0b62305b8ea74/quality-of-life-equalities-impacts-report.pdf> [Accessed: 19/03/26].

⁸¹ Airports Commission (2015) Quality of Life: Health and Equalities Assessment Review. Available at: <https://www.gov.uk/government/publications/airports-commission-final-report-quality-of-life-and-community> [Accessed: 19/03/26].

⁸² American Lung Association (2026) Who is Most Affected by Outdoor Air Pollution. Available at: <https://www.lung.org/clean-air/outdoors/who-is-at-risk> [Accessed: March 2026].

⁸³ Basner, M., Babisch, W., Davis, A., Brink, M., Clark, C., Janssen, S., et al., (2014) Auditory and non-auditory effects of noise on health. *Lancet*, 383, 1325-1332.

⁸⁴ Chionis, D. (2022) Risk in the aviation context: investigating risk perception and risk communication from a behaviour based approach. University of Greater Manchester. Available at: <https://ub-ir.bolton.ac.uk/esploro/outputs/doctoral/Risk-in-the-aviation-context/999697908841> [Accessed: April 2026].

⁸⁵ Civil Aviation Authority (2014) CAP 1164: Aircraft noise, sleep disturbance and health effects. Available at: <https://www.caa.co.uk/data-and-publications/publications/documents/content/cap1164/> [Accessed: April 2024].

⁸⁶ European Environment Agency (2025) Air quality around ports and airports. Available at: <https://www.eea.europa.eu/en/analysis/publications/air-quality-around-airports-and-ports> [Accessed: 19/03/26].

⁸⁷ European Environment Agency (2025) Environmental noise in Europe. Available at: <https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025> [Accessed: April 2025].

- Higginson et al., (2022) Community severance and health⁸⁸;
- Housing LIN (various) Health and wellbeing: Loneliness and isolation⁸⁹;
- Institute for Road Safety Research (2022) What is the effect of congestion on road safety⁹⁰;
- Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On⁹¹;
- International Civil Aviation Organisation (2018) Water Management at Airports⁹²;
- International Civil Aviation Organisation (2023) Airports Activities and Environment: Webinar on Green airports⁹³;
- Kings College London (2019) Living near a busy road can stunt children's lung growth⁹⁴;
- Landscape Institute (2013) Public Health and Landscape: Creating healthy places⁹⁵;
- Oxford Economics (2024) The economic and social impact of Heathrow Airport⁹⁶;

⁸⁸ Higginson et al., (2022) Community severance and health – A novel approach to measuring community severance and examining its impact on the health of adults in Great Britain. *Journal of Transport & Health*. Vol 25.

⁸⁹ Housing LIN (various) Health and wellbeing: Loneliness and isolation. Available at: <https://www.housinglin.org.uk/Topics/browse/loneliness-and-isolation/health-and-wellbeing/> [Accessed: 19/03/26].

⁹⁰ Institute for Road Safety Research (2022) What is the effect of congestion on road safety. Available at: <https://swov.nl/en/fact/traffic-congestion-3-what-effect-congestion-road-safety> [Accessed: April 2026].

⁹¹ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: 19/03/26].

⁹² International Civil Aviation Organisation (2018) Water Management at Airports. Available at: <https://www.icao.int/sites/default/files/sp-files/environmental-protection/Documents/Water%20management%20at%20airports.pdf> [Accessed: 19/03/26].

⁹³ International Civil Aviation Organisation (2023) Airports Activities and Environment: Webinar on Green airports. Available at: <https://www.icao.int/sites/default/files/WACAF/MeetingDocs/Environment/Past%20Years/2023/ENV%20-%20ICAO%20Green%20Airports/Presentations/Information-on-ENV-impacts-of-airports-activities-Green-airports-22-march-2023-EO-PN.pdf> [Accessed: 19/03/26].

⁹⁴ Kings College London (2019) Living near a busy road can stunt children's lung growth. Available at: <https://www.kcl.ac.uk/news/living-near-a-busy-road-can-stunt-childrens-lung-growth> [Accessed: March 2026].

⁹⁵ Landscape Institute (2013) Public Health and Landscape: Creating healthy places. Available at: https://www.housinglin.org.uk/assets/Resources/Housing/OtherOrganisation/PublicHealthandLandscape_CreatingHealthyPlaces_FINAL.pdf [Accessed: 19/03/26].

⁹⁶ Oxford Economics (2024) The economic and social impact of Heathrow Airport. Available at: https://www.heathrowstrategicplanninggroup.com/wp-content/uploads/2025/01/Session-1-Heathrow-and-Oxford-Economics-The-economic-and-social-impact-of-Heathrow-Airport_Summary.pdf [Accessed: April 2026].

- Public Health Scotland (2026) Income, wealth and health⁹⁷;
- Skills for Health (2024) Addressing health disparities across the UK⁹⁸;
- Sustainable Aviation (2025) Quieter Road-Map⁹⁹;
- Transport for London (2013) Roads Task Force – Technical Note 20: What are the main health impacts of roads in London?¹⁰⁰;
- Transport for London (2017) Healthy Streets for London¹⁰¹;
- Transport & Environment (2024) Can living near an airport make you ill?¹⁰²;
- UK Civil Aviation Authority (2025) Aircraft Noise and Health Effects – a six month update¹⁰³;
- UK Health Security Agency (UKHSA) (2021) Health inequalities: place-based approach to reduce inequalities¹⁰⁴;
- UKHSA (2023) Noise pollution: mapping the health impacts of transportation noise in England¹⁰⁵;
- United Nations (2021) Recommendations for Green and Healthy Sustainable Transport – Building Forward Better¹⁰⁶;

⁹⁷ Public Health Scotland (2026) Income, wealth and health. Available at:

<https://publichealthscotland.scot/population-health/social-and-economic-impacts-on-health/economy-and-poverty/income-wealth-and-health/why-income-and-wealth-matter-for-health/> [Accessed: March 2026].

⁹⁸ Skills for Health (2024) Addressing health disparities across the UK – what can we do to help? Available at: <https://www.skillsforhealth.org.uk/article/addressing-health-disparities-across-the-uk-what-can-we-do-to-help/> [Accessed: March 2026].

⁹⁹ Sustainable Aviation (2025) Quieter Road-Map. Available at: https://www.sustainableaviation.co.uk/wp-content/uploads/2025/02/SA_QuieterRoadmap_Report_Feb25.pdf [Accessed: April 2026].

¹⁰⁰ Transport for London (2013) Roads Task Force – Technical Note 20: What are the main health impacts of roads in London? Available at: <https://content.tfl.gov.uk/technical-note-20-what-are-the-main-health-impacts.pdf> [Accessed: April 2026].

¹⁰¹ Transport for London (2017)

Healthy Streets for London. Available at: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets> [Accessed: March 2026].

¹⁰² Transport & Environment (2024) Can living near an airport make you ill? Available at:

https://www.transportenvironment.org/uploads/files/Health-study-briefing_TE.pdf [Accessed: 19/03/26].

¹⁰³ UK Civil Aviation Authority (2025) Aircraft Noise and Health Effects – a six month update. Available at:

<https://www.caa.co.uk/publication/download/26233> [Accessed: 19/03/26].

¹⁰⁴ UKHSA (2021) Health inequalities: place-based approach to reduce inequalities. Available at:

<https://www.gov.uk/government/publications/health-inequalities-place-based-approaches-to-reduce-inequalities/place-based-approaches-for-reducing-health-inequalities-main-report> [Accessed: 19/03/26].

¹⁰⁵ UKHSA (2023) Noise pollution: mapping the health impacts of transportation noise in England. Available at: <https://ukhsa.blog.gov.uk/2023/06/29/noise-pollution-mapping-the-health-impacts-of-transportation-noise-in-england/> [Accessed: March 2026].

¹⁰⁶ United Nations (2021) Recommendations for Green and Healthy Sustainable Transport – Building Forward Better. Available at: https://unece.org/sites/default/files/2021-05/2101940_E_PDF_WEB.pdf [Accessed: 19/03/26].

- World Health Organisation (WHO) Health and environment: communicating the risks¹⁰⁷;
- WHO (2018) Housing and Health Guidelines¹⁰⁸;
- WHO (2022) Walking and cycling: latest evidence to support policy-making and practice¹⁰⁹;
- WHO (2023) Assessing the value of urban green and blue spaces for health and well-being¹¹⁰; and
- WHO (2021) World report on social determinants of health equity¹¹¹.

3.4. Study area

- 3.4.1. The HIA considers numerous relevant health determinants and impacts, and the study area for the analysis of each will vary according to the population subject to potential health impacts. The HIA reflects the study areas for the specific technical assessments it draws upon, such as noise and air quality.
- 3.4.2. Notwithstanding the above, a high-level Study Area has been established as the starting point for the analysis of the baseline and impacts set out in Chapter 5 of this HIA. In line with the 2018 HIA, this Study Area comprises the 11 local authorities which host and neighbour Heathrow Airport. This Study Area is considered a reasonable representation of the geographical extent of key potential health impacts, including those related to employment, housing, noise, and air quality.
- 3.4.3. Where reflective of the potential impacts being considered, the baseline analysis with Chapter 5 focuses in on individual local authorities in proximity to Heathrow Airport, as well as smaller geographical areas such as wards or LSOAs.
- 3.4.4. It is noted that some impacts (for example, economic benefits) will extend to the regional and national level; this has also been reflected within the HIA.

¹⁰⁷ World Health Organisation (2013) Health and environment: communicating the risks. Available at: https://www.asset-scienceinsociety.eu/sites/default/files/166336_who_vol.pdf [Accessed: March 2026].

¹⁰⁸ World Health Organisation (2018) Housing and Health Guidelines. Available at: <https://iris.who.int/server/api/core/bitstreams/be014865-921a-482c-89e4-9191c7476e13/content> [Accessed: 19/03/26].

¹⁰⁹ World Health Organisation (2022) Walking and cycling: Latest evidence to support policy-making and practice. Available at: <https://www.who.int/europe/publications/i/item/9789289057882> [Accessed: 19/03/26].

¹¹⁰ World Health Organisation (2023) Assessing the value of urban green and blue spaces for health and well-being. Available at: <https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7508-47275-69347> [Accessed: 19/03/26].

¹¹¹ World Health Organisation (2021) World report on social determinants of health equity. Available at: <https://www.who.int/teams/social-determinants-of-health/equity-and-health/world-report-on-social-determinants-of-health-equity> [Accessed: 19/03/26].

- 3.4.5. A proportionate approach to the level of baseline analysis has been taken, noting that the HIA for the draft Heathrow Expansion NPS is a high-level study and the level of detail which can be provided at this stage is necessarily limited.
- 3.4.6. A community profile for the 11 local authority study area is set out in Appendix A, to support the baseline information provided within Chapter 5. The 11 local authorities are listed below. Heathrow Airport is located within Hillingdon, with Ealing, Hounslow, Spelthorne, and Slough located adjacent.
- Hillingdon;
 - Hounslow;
 - Ealing;
 - Spelthorne;
 - Slough;
 - Buckinghamshire¹¹²;
 - Elmbridge;
 - Richmond upon Thames;
 - Runnymede;
 - Wandsworth; and
 - Windsor and Maidenhead.

3.5. Health determinants and impacts

- 3.5.1. The HIA provides an analysis of the potential health impacts on human receptors during the pre-construction, construction, and operational phases of the scheme informing the Heathrow Expansion NPS at Heathrow Airport. The decommissioning phase is not considered in this HIA, as the potential for airport decommissioning is unknown. The scheme informing the Heathrow Expansion NPS has been considered because it is informing the review of the Airports NPS, however, other applicants can still bring a DCO application under the Heathrow Expansion NPS.
- 3.5.2. As outlined in the HIA Scoping Report, Table 1 sets out the health determinants scoped into the HIA.

¹¹² This study area updates that set out in the 2018 HIA following local government reorganisation in 2020, when South Bucks District Council was abolished and incorporated into Buckinghamshire Council Unitary Authority (UA), alongside Aylesbury Vale, Chiltern and Wycombe. It should be noted that Buckinghamshire UA is a large local authority, including some communities located at a substantial distance from Heathrow Airport. This spatial expansion of the study area introduces additional populations with potentially different socio-demographic characteristics to those considered in the 2018 HIA. Accordingly, the community profile data should be interpreted, and comparisons with the 2018 baseline made, with recognition of this expanded geographic scope.

Table 1: Summary of health determinants scoped into the HIA

Social	Economic	Environmental
Access to housing	Employment and income	Air quality
Access to social infrastructure (e.g. healthcare, education, and community facilities)	Education, skills, and training opportunities	Noise
Access to open space and active travel opportunities		Landscape and townscape
Access to transport		Climate change mitigation and adaptation
Insecurity, and perceptions of risk		Soil quality
Community identity and cohesion		Water quality

3.5.3. Health determinants such as diet and nutrition, community safety, radiation, and biodiversity have been scoped out of the HIA. These health determinants are considered to be neutral in effect or insignificant during the pre-construction, construction, and operational phases in the context of the scheme informing the Heathrow Expansion NPS.

3.5.4. As outlined in the HIA Scoping Report, a summary of the proposed scope of the HIA in each phase is set out in Table 2, expanding on Table 1.

Table 2: HIA assessment scope

Health determinant	Impact Source	Potential health impact	Phase		
			Pre-construction	Construction	Operation
Access to housing	Local effects (e.g. demolition/displacement) and wider effects (e.g. increased demand for homes and changes to the housing stock). Includes changes in housing availability, affordability, tenure, and quality/condition.	Access to adequate, affordable housing and living conditions is fundamental to physical and mental health. Disruption may contribute to stress and anxiety and reduced physical and mental health and wellbeing.	Y	Y	Y
Access to social infrastructure (e.g. healthcare, education, and community facilities)	Local impacts on access to social infrastructure via land-take and severance. Wider impacts due to increased demand for services due to population changes.	Social infrastructure includes services which directly meet health and social care needs, as well as facilities such as schools and community centres which underpin healthy, sustainable communities. Increased pressure on social infrastructure may reduce accessibility and service quality, contributing to adverse mental and physical health outcomes.	N	Y	Y
Access to open space and active travel opportunities	Potential loss, severance, or reduced access to open space and active travel resources directly via land-take and severance, and indirectly	Open spaces and active travel opportunities promote physical, outdoor activity. Reduced access to or loss of open space and recreational areas and active travel resources may impact physical	N	Y	Y

Health determinant	Impact Source	Potential health impact	Phase		
			Pre-construction	Construction	Operation
	due to changes in demand.	health, mental wellbeing, and social interaction.			
Access to transport	Changes to transport networks, including road closures, diversions, increased congestion, and altered public transport provision.	Transport disruption may impact access to services and safety, contributing to physical and mental health effects.	N	Y	Y
Insecurity, and perceptions of risk	Uncertainty and anticipation of adverse impacts associated with the airport, including perceived risks (e.g. crime) and hazards.	Increased anxiety and adverse mental health and wellbeing arising from uncertainty and perceived risks.	Y	Y	Y
Community identity and cohesion	Displacement, relocation, and changes in community composition.	Loss of social networks, belonging and stability, with potential effects on mental wellbeing and social cohesion.	Y	Y	Y
Employment and income	Creation of direct and indirect employment and income opportunities. Potential disruption to existing businesses due to land take and relocation.	Employment and income are key determinants of physical and mental health. Economically active members of the population, including local business owners, have potential to experience benefits and disbenefits from the scheme informing the Heathrow Airport NPS.	N	Y	Y

Health determinant	Impact Source	Potential health impact	Phase		
			Pre-construction	Construction	Operation
Education, skills, and training opportunities	Creation of direct and indirect education, skills and training opportunities. Potential disruption to existing opportunities.	Education, skills and training are key determinants of physical and mental health. Potential for those seeking education, skills, and training opportunities to experience benefits and disbenefits from the scheme informing the Heathrow Airport NPS.	N	Y	Y
Air quality	Air quality effects from construction activities and traffic and operational activities and traffic.	Potential direct and indirect effects on physical health including respiratory and cardiovascular impacts.	N	Y	Y
Noise	Noise from construction activities and traffic and operational activities and traffic.	Potential direct and indirect effects on health including on sleep, annoyance, mental health and wellbeing, cognitive performance, and cardiovascular stress.	N	Y	Y
Landscape and townscape	Changes to the landscape and townscape, impacting visual amenity and sense of place.	Potential mental health impacts relating to loss of visual amenity, change in place identity and character.	N	Y	Y
Climate change mitigation and adaptation	Impacts on climate change mitigation due to greenhouse gas emissions from construction and operation activities.	Potential health impacts associated with climate change and changes in environmental exposures from climate change mitigation and adaptation.	N	Y	Y

Health determinant	Impact Source	Potential health impact	Phase		
			Pre-construction	Construction	Operation
	Impacts adaptation and resilience due to climate change.				
Soil quality	Impacts on soil quality due to construction and operation activities.	Potential indirect physical health effects associated with contaminated soils (e.g. contact) and secondary pathways such as dust generation or impacts on food production.	N	Y	Y
Water quality	Impacts on surface water or groundwater quality arising from construction and operation activities (e.g. accidental spills).	Potential indirect physical health effects associated with exposure to contaminated water.	N	Y	Y

3.5.5. The HIA considers the size of the effect on human receptors in the context of the study area and its constituent local authorities, termed the magnitude of impact. Magnitude of impact is informed by duration, population exposure, frequency, severity, the proportion of the population affected, and reversibility or permanence, as set out in Table 3.

Table 3: HIA magnitude of impact criteria

Magnitude of impact	Description
High	An impact that is large in scale or a population has high exposure to; long-term in duration; continuous in frequency; its severity is predominantly related to mortality or changes in morbidity (physical or mental health) for very severe illness/injury outcomes; where the majority of a population is affected; that results in a permanent change; and/or has substantial service quality implications.
Medium	An impact that is moderate in scale or that a population has low exposure to; has a medium-term duration; is frequent; its severity is predominantly related to moderate changes in morbidity or major change in quality-of-life; that affects a large majority of the population; can be gradually reversed; and/or has small service quality implications.
Low	An impact that is small in scale or a population has very low exposure to; is short-term in duration; due to occasional events; its severity predominantly relates to a minor change in morbidity or moderate change in quality-of-life; that affects a small minority of the population; can be rapidly reversed; and/or has slight service quality implications.
Very low	An impact that is negligible in scale or a population has negligible exposure to; is very short-term in duration; its severity predominantly relates to a minor change in quality-of-life; that affects very few people; that can be immediately reversed once the activity is completed; and/or that has no service quality implication.

Source: IEMA (2022) *Guide to: Determining Significance for Human Health in Environmental Impact Assessment*.

3.6. Sensitive sub-groups

3.6.1. Health inequalities are present within populations and are defined by the WHO as: *‘differences in health status or in the distribution of health determinants between different population groups. For example, differences in mobility between elderly people and younger populations or differences in mortality rates between people from different social classes’*¹¹³.

¹¹³ World Health Organisation (WHO) (2018) Health inequalities and their causes. Available at: <https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes> [Accessed: 28/07/25].

- 3.6.2. The HIA considers potential impacts of the scheme informing the Heathrow Expansion NPS on the health of the general population and also on the health of groups which might be less able to respond to, and therefore more sensitive or vulnerable to, change. The sensitivity of these populations may vary spatially, according to existing baseline conditions.
- 3.6.3. The groups identified as sensitive in the context of each health determinant are listed within Chapter 5, within the baseline analysis set out for each determinant.
- 3.6.4. Evidence used to identify sensitive groups in the context of each health determinant includes:
 - Baseline health characteristics of the existing community;
 - Literature review of health impacts of airport projects;
 - Vulnerable groups identified in the 2018 HIA report;
 - Priority groups identified in the EqlA; and
 - Consultation and engagement (with the Department of Health and Social Care, as set out in Section 3.2).
- 3.6.5. Table 4 identifies the sensitivity criteria used to inform the analysis. These are based on IEMA guidance (2022). The HIA adopts a qualitative approach in order to categorise the sensitivity of human receptors, including the general population and potentially vulnerable sub-groups, as high, medium, low, or very low sensitivity.

Table 4: HIA sensitivity criteria

Sensitivity	Description
High	Population or sub-populations who experience high levels of deprivation; are reliant on shared resources; within which there are wide inequalities between the most and the least healthy; whose outlook is predominantly anxiety or concern; who are prevented from undertaking daily activities; dependents; people with very poor health status; and/or people with a very low capacity to adapt.
Medium	Population or sub-populations who experience moderate levels of deprivation; have few alternatives to shared resources; experience widening inequalities between the most and the least healthy; whose outlook is predominantly uncertainty with some concern; who are highly limited from undertaking daily activities; who provide or require a lot of care; those with fair health status; and/or people with a limited capacity to adapt.
Low	Population or sub-populations who experience low levels of deprivation; have many alternatives to shared resources; experience narrowing inequalities between the most and least healthy; whose outlook is predominantly ambivalence with some concern; those who are slightly limited from undertaking daily activities; those who provide or require some care; those with fair health status; and/or people with a high capacity to adapt.

Sensitivity	Description
Very low	Populations or sub-populations who experience very low levels of deprivation; rely on no shared resources; whose outlook is predominantly support with some concern; people who are not limited from undertaking daily activities; people who are independent (not a carer or dependant); people with good health status; and/or people with a very high capacity to adapt.

Source: IEMA (2022) Guide to: Determining Significance for Human Health in Environmental Impact Assessment.

3.7. Methodology for appraisal of impacts

- 3.7.1. The HIA categorises the potential health effects associated with scheme informing the Heathrow Expansion NPS in line with the criteria set out in Table 5 below, which are informed by IEMA (2022) guidance¹¹⁴.
- 3.7.2. Significance of effect is determined based on the intersection of sensitivity and magnitude of impact. Where two options are shown (e.g. Minor/Negligible), professional judgement is used to determine which option is most appropriate. The potential effect is described as either ‘beneficial’ or ‘adverse’.

Table 5: Significance of effect criteria

Magnitude of impact	Sensitivity			
	High	Medium	Low	Very low
High	Major	Major / Moderate	Moderate / Minor	Minor / Negligible
Medium	Major / Moderate	Moderate	Minor	Minor / Negligible
Low	Moderate / Minor	Minor	Minor	Negligible
Very low	Minor / Negligible	Minor / Negligible	Negligible	Negligible

- 3.7.3. The duration of impact is identified for each effect:
 - Short-term: 0-5 years;
 - Medium-term: 5-10 years; and
 - Long-term: 10+ years.

¹¹⁴ IEMA (2022) Guide to: Determining Significance for Human Health in Environmental Impact Assessment. Available at: <https://www.iema.net/media/y/ljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf> [Accessed: 27/01/26].

- 3.7.4. As noted in Section 2.4 of the 2018 HIA¹¹⁵, this HIA does not include additional mitigation or recommendations to avoid inconsistency with the AoS, which is the primary vehicle for mitigation and recommendations.

3.8. Cumulative and in-combination effects

- 3.8.1. The HIA provides a qualitative assessment of cumulative and in-combination effects.
- 3.8.2. Cumulative effects result from the combined influence of the draft Heathrow Expansion NPS and other policies, plans, programmes, and development proposals where these may interact spatially or temporally.
- 3.8.3. In-combination effects may arise where multiple effects of a single policy or plan combine to give rise to a greater (or lesser) effect. For example, this could happen during construction, if a receptor is subjected to noise, air quality, and visual impacts associated with the scheme informing the Heathrow Expansion NPS.
- 3.8.4. The analysis presented in this section is high-level, reflecting a proportionate approach which is appropriate to this HIA. Given this, the assessment of cumulative and in-combination effects identifies whether these effects are likely to be 'beneficial' or 'adverse', but does not assign a level of effect.

3.9. Assumptions and limitations

- 3.9.1. This HIA analyses the policy set out in the draft Heathrow Expansion NPS and therefore is inherently high-level. The draft Heathrow Expansion NPS which is subject to consultation sets out that in order to be compliant with it, a further project level HIA would be required to accompany the DCO application.
- 3.9.2. The study area has been defined using administrative boundaries, rather than distance from Heathrow Airport. Due to the irregular spatial extent of these authorities, some populations located closer to the airport fall outside the study area. This is recognised as a limitation, particularly in relation to Buckinghamshire UA within the Study Area. Where practicable, the analysis has been applied to reflect the anticipated spatial extent of effects; however, this remains a high-level assessment and may not fully capture the distribution of impacts at a more local scale.
- 3.9.3. The analysis of health effects is undertaken against a benchmark of current community characteristics, as far as practicable within the limitations of the data. Baseline data are subject to time lags between collection and publication. As with any dataset, these conditions may be subject to change over time which may

¹¹⁵ WSP for the DfT (2018) Airports National Policy Statement: health impact analysis, shortlisted schemes. Available at: [2018 HIA](#) [Accessed: 29/01/26].

influence the findings of the analysis. All baseline information reflects the most recent available data at the time of writing.

- 3.9.4. The analysis of likely health effects is informed by professional judgement, drawing on relevant guidance, literature, and consultation and engagement.
- 3.9.5. Health effects during the pre-construction, construction, and operation phases are informed by the findings of technical analysis provided by DfT and contained with the AoS and other studies. Therefore, any assumptions and limitations identified within those studies are also applicable to this HIA.

4. Analysis of Health Effects

4.1. Introduction

- 4.1.1. This section provides an analysis of the health effects of the draft Heathrow Expansion NPS, structured according to the determinants scoped into the assessment, as set out in Table 2 in Section 4.5. For each determinant, it sets out:
- Current evidence on how impacts on health could arise;
 - Baseline characteristics of the population which could be affected, including a sensitivity rating for the general population and for any vulnerable groups; and
 - An analysis of how the draft Heathrow Expansion NPS could affect health, including a determination of the likely magnitude of impact and significance of effect.
- 4.1.2. Within the baseline sub-sections, the term 'Study Area' refers to the 11 local authorities which host, neighbour and are in proximity to Heathrow Airport. However, consistent with the approach set out at section 3.3.10, other geographical areas including individual local authorities and wards have also been considered throughout the baseline where appropriate to the potential impact in question.

4.2. Access to housing

Evidence

- 4.2.1. Access to adequate housing is associated with physical, mental, and social well-being¹¹⁶. Key pathways through which housing influences health include access, security of tenure, affordability, and housing quality/condition.
- 4.2.2. Housing tenure is associated with health outcomes, with renters generally experiencing poorer health than homeowners. Insecurity of tenure, concerns with landlords and timely repairs, frequent relocations, and stigma associated with poor housing conditions contribute to poor mental and physical health more commonly experienced by tenants.
- 4.2.3. In 2017, 21% of adults in England reported that a housing issue had negatively impacted their mental health, with housing affordability the most frequently stated reason¹¹⁷. A lack of affordable housing is associated with increased blood pressure,

¹¹⁶ World Health Organisation (2018) Housing and Health Guidelines. Available at: <https://iris.who.int/server/api/core/bitstreams/be014865-921a-482c-89e4-9191c7476e13/content> [Accessed: March 2026].

¹¹⁷ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

hypertension, depression, and anxiety. Rising housing costs have disproportionately adversely impacted renters, contributing to poorer health outcomes.

- 4.2.4. A large proportion of homes in England remain in poor condition, with issues such as damp, condensation, and inadequate heating more commonly reported in the private rented sector¹¹⁸. These conditions are associated with respiratory and cardiovascular disease, communicable disease transmission, and increased mortality, as well as stress, depression, anxiety, and reduced sense of control and empowerment. For children, inadequate or overcrowded housing has been associated with poorer physical health, lower educational attainment, and increased risk of behavioural problems.
- 4.2.5. Housing also influences health through the wider environment, including neighbourhood characteristics and community networks¹¹⁹. Changes to housing and neighbourhoods, including relocation, can influence health and wellbeing. While such changes may provide opportunities for improving housing quality and the surrounding environment, they can also introduce disruption and uncertainty for residents. This may include anxiety associated with moving to unfamiliar areas, as well as concerns relating to safety, security and the loss of established social networks. Therefore, access to housing is considered fundamental to individual security and mental health.

Baseline

Direct and local impacts

- 4.2.6. The Heathrow Villages ward¹²⁰ covers the area where the most direct housing effects are anticipated. Within this ward, areas of existing housing are proposed to be demolished to facilitate the scheme informing the Heathrow Expansion NPS, including the settlements of Harmondsworth, Longford, and parts of Sipson. Residents experiencing relocation due to the demolition of their homes are considered to experience direct access to housing effects as a result of the scheme informing the Heathrow Expansion NPS.
- 4.2.7. In 2024, the population of the Heathrow Villages was estimated at approximately 17,700, with 71.5% of the population of working age (16-64 years), 19.7% 0-15 years, and 8.8% aged 65 and over¹²¹. Compared to the national average, the

¹¹⁸ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

¹¹⁹ World Health Organisation (2018) Housing and Health Guidelines. Available at: <https://iris.who.int/server/api/core/bitstreams/be014865-921a-482c-89e4-9191c7476e13/content> [Accessed: March 2026].

¹²⁰ Note: This does not represent a precise delineation of properties that are likely to be demolished, and not all dwellings within the identified ward would be affected. The analysis is provided for contextual understanding of baseline housing characteristics only.

¹²¹ ONS (2024) Population estimates.

Heathrow Villages has a significantly higher proportion of working age residents (62.9%), a slightly higher proportion of young people (18.4%), and a significantly lower proportion of older residents (18.7%).

- 4.2.8. Housing tenure in Heathrow Villages is characterised by a high proportion of private rented accommodation (45.6%), followed by owner-occupied housing (39.7%) and social rented housing (14.0%). In terms of household composition, one- and two-person households represent the largest shares (24.7% and 24.6% respectively), followed by three- and four-person households (18.1% and 16.5% respectively).
- 4.2.9. Based on IMD data¹²², the LSOAs¹²³ comprising the Heathrow Villages ward are more deprived than 80% and 61% of neighbourhoods in England (Hillingdon 031A and Hillingdon 031B respectively). In particular, the LSOAs show high deprivation in the barriers to housing and services (Hillingdon 031A: 1,461st and Hillingdon 031B: 12th) and living environment (Hillingdon 031A: 1,903rd and Hillingdon 031B: 7,083rd) dimensions (ranked out of 33,755 LSOAs). In terms of the health and disability dimension, the LSOAs are less deprived, at 15,673rd (Hillingdon 031A) and 27,578th (Hillingdon 031B).
- 4.2.10. The general population subject to direct effects are assessed to have a medium sensitivity to changes in access to housing. Vulnerable populations subject to direct housing impacts include residents in private and socially rented housing, residents in poor housing conditions, and residents with low incomes. Vulnerable populations more sensitive to change also include older people, children and younger people, and people with disabilities¹²⁴ and are therefore assessed to have a high sensitivity.

Indirect impacts

- 4.2.11. The geographic extent of indirect effects on the housing market arising from the scheme informing the Heathrow Expansion NPS is uncertain. As such, the Study Area has been adopted as a proxy for analysis purposes. It is recognised, however, that in practice these indirect effects are likely to occur over a more limited spatial extent.
- 4.2.12. In 2024, the population of the Study Area was approximately 2,800,000¹²⁵, and is projected to increase by approximately 23,000 residents between 2024 and 2029, showing the need for additional housing provision within the area.

¹²² Ministry of Housing, Communities & Local Government (2025) English Indices of Deprivation.

¹²³ Note: This does not represent a precise delineation of properties that are likely to be demolished, and not all dwellings within the identified LSOAs would be affected. The analysis is provided for contextual understanding of baseline housing characteristics only. The LSOAs considered are Hillingdon 031A and Hillingdon 031B.

¹²⁴ World Health Organisation (2018) Housing and Health Guidelines. Available at:

<https://iris.who.int/server/api/core/bitstreams/be014865-921a-482c-89e4-9191c7476e13/content> [Accessed: March 2026].

¹²⁵ ONS (2024) Population estimates.

- 4.2.13. The 2021 Census shows that 19.9% of the Study Area population is aged 0–15, above the national average of 18.6%. The working-age population (16–64 years) accounts for 65.6%, also higher than the national average of 63.0%. In contrast, older people (aged 65 and over) comprise 14.5% of the population, notably below the national average of 18.4%. At the local authority level, Slough has the highest proportion of younger residents (24.9%), followed by Elmbridge (21.6%), Hillingdon (20.9%) and Hounslow (20.6%). Wandsworth has the largest working-age population (74.0%), with relatively high proportions also observed in Ealing (68.4%), Hounslow (67.6%) and Hillingdon (65.6%). Buckinghamshire records the highest proportion of older people (18.7%), followed closely by Windsor and Maidenhead (18.5%), Spelthorne (18.0%) and Elmbridge (17.8%).
- 4.2.14. The average population density of the Study Area is 3,478 people per km², with 2,644 people per km² in Hillingdon. The highest population densities are observed in Wandsworth (9,560 people per km²), Ealing (6,612 people per km²), Hounslow (5,148 people per km²) and Slough (4,872 people per km²), whereas Buckinghamshire and Windsor and Maidenhead are characterised by considerably lower densities (353 and 781 people per km² respectively).
- 4.2.15. Gross Disposable Household Income (GDHI) per head varies across the Study Area. Slough, Hillingdon, Spelthorne, Hounslow, Ealing, Runnymede, and Buckinghamshire record lower GDHI per head relative to the Study Area average (£34,644), while Windsor and Maidenhead, Wandsworth, Elmbridge, and Richmond upon Thames record the highest levels.
- 4.2.16. Housing tenure across the Study Area is predominantly owner-occupied (56.5%), followed by private rented (25.9%), and social rented housing (15.9%). The London boroughs tend to have lower levels of owner occupation and higher proportions of private renting, particularly in Wandsworth, Ealing, and Hounslow, with social rented housing more prevalent in Hounslow, Slough, and Wandsworth.
- 4.2.17. In terms of accommodation type, flats represent the largest proportion of housing stock in the Study Area (28.5%), particularly within more urban authorities such as Wandsworth, Hounslow, and Ealing.
- 4.2.18. IMD data indicates that, on average, the Study Area ranks 122nd out of 296 local authorities for barriers to housing and services, and 98th for the living environment domain, the latter representing the worst ranking across all domains. For the barriers to housing and services domain, Ealing (4th), Hounslow (5th), Slough (6th), Hillingdon (28th), and Buckinghamshire (62nd) rank worse than the Study Area average. For the living environment domain, Wandsworth (9th), Richmond upon Thames (12th), Hounslow (18th), Ealing (25th), and Hillingdon (67th) rank worse than the Study Area average.

- 4.2.19. The general population subject to indirect housing impacts is assessed as having a medium sensitivity to changes in access to housing. Vulnerable populations include those outlined above and are assessed as having a high sensitivity.

Analysis – Local effects

- 4.2.20. The scheme informing the Heathrow Expansion NPS is anticipated to require a total land take of 569 hectares (ha) for the Northwest runway and 294 ha for surface access infrastructure and flood storage. As a result, approximately 780 residential properties are potentially subject to compulsory purchase, with a proposed Home Relocation Support Service, requiring permanent relocation of its residents¹²⁶. Assuming a housing density of 2.36 people per house, as per the England average, this would equate to approximately 1,841 residents being displaced.

Pre-construction

- 4.2.21. Direct housing effects during the pre-construction phase may arise in advance of any physical works, particularly where residential properties are identified for compulsory acquisition in Harmondsworth, Longford, and parts of Sipson. Affected households may experience significant uncertainty regarding relocation, including anxiety and stress associated with finding suitable alternative accommodation, disruption to established community networks, and reduced housing security during the transition period.
- 4.2.22. For residents in close proximity to the scheme informing the Heathrow Airport NPS footprint, early enabling activities and heightened awareness could contribute to perceived or anticipated changes in living conditions prior to construction commencement. This includes concerns relating to future noise exposure, air quality deterioration, and general uncertainty about long-term amenity impacts, which may affect wellbeing. It is possible that a tangible deterioration in the built environment may result from a lack of investment in homes which are earmarked for demolition.
- 4.2.23. The draft Heathrow Expansion NPS outlines that people are entitled to know what steps will be taken to help protect them against aircraft noise, and where appropriate, to help them relocate. Given this, and the proposed compulsory acquisition programme including its geographical extent, the magnitude of impact is assessed to be medium.
- 4.2.24. Overall, the effect on health as a result of direct impacts on access to housing effects during the pre-construction phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

¹²⁶ Proposal for the Expansion of Heathrow Airport Final Report – 31 July 2025.

Construction

- 4.2.25. During the construction phase, direct housing effects will primarily relate to the demolition and displacement of existing residents. This will necessitate permanent relocation, with affected households required to secure alternative accommodation.
- 4.2.26. Displaced residents will be expected to find a new home on the open property market, with location, tenure, quality, condition, and affordability depending on the existing housing stock. The relocation process itself is therefore likely to result in poor mental health due to stress and anxiety associated with change and finding suitable accommodation. There is potential that the replacement housing will be less suitable in terms of housing tenure, location, availability, affordability, and quality; this may result in adverse health effects.
- 4.2.27. The draft Heathrow Expansion NPS outlines the importance of the scheme put forward by the applicant with local authorities impacted by the land take to minimise impacts where possible, taking into account the local needs of the area. The draft Heathrow Expansion NPS also sets out mitigation measures including financial compensation to residents who will see their homes compulsorily acquired. This includes the provision by the applicant of an equivalent or better level than payment of 125% of market value plus taxes and reasonable moving costs for all owner-occupied homes within the compulsory acquisition zone, as well as an additional voluntary purchase / acquisition zone within the Heathrow Villages. The draft Heathrow Expansion NPS also expects the applicant to provide ongoing financial compensation to the local community.
- 4.2.28. While these mitigation measures do not remove the disruption associated with displacement, the stress and anxiety of this process, and the potential for changes in housing conditions, they play an important role in offsetting the financial impacts and stresses and supporting affected households.
- 4.2.29. As outlined in the draft Heathrow Expansion NPS, an applicant is also expected to identify vulnerable residents who may require additional assistance to relocate, as well as those who may be significantly affected by the development due to close proximity or dramatic changes to their living environment. This should include direct engagement with affected residents and the ability to recognise and respond to potential mental health effects associated with relocation. Potential measures include ensuring staff are trained in mental health awareness, working with local support groups that have insight into vulnerable residents, and establishing named contacts to facilitate one-to-one communication and a clear understanding of individual needs. The support provided should be tailored to the specific circumstances of affected residents, and applicants should ensure that appropriate services are in place so that individuals with additional needs are not disadvantaged.

- 4.2.30. However, the scale of the relocation required is considerable. Existing pressures with local housing markets, combined with projected population growth in the surrounding area, are likely to constrain the availability of suitable alternative accommodation. As a result, displaced households may be unable to secure suitable housing within close proximity to their original homes, leading to the loss of established community and social support networks. These pressures may be further exacerbated by increased demand for accommodation arising from the construction workforce, particularly for those workers residing outside the area for the duration of the construction phase.
- 4.2.31. There is also potential for local residential properties not being demolished to be impacted by construction activities, with adverse effects on house prices. The draft Heathrow Expansion NPS sets out that compensation can be sought in respect of loss of property value arising from the development during construction.
- 4.2.32. Given the scale and magnitude of disruption, the magnitude of impact is assessed as high.
- 4.2.33. Overall, the effect on health as a result of direct impacts on access to housing effects during the construction phase is assessed to be **major adverse (significant)** for the general population and vulnerable populations.

Operation

- 4.2.34. During operation, access to housing could be impacted through changes in environmental amenity. Adverse impacts associated with the operation of the scheme informing the Heathrow Expansion NPS, including increased aircraft noise, air pollution, and landscape and visual effects, may reduce residential amenity for residents of nearby properties. This could result in downward pressure on property values in the immediate vicinity.
- 4.2.35. The draft Heathrow Expansion NPS sets out mitigation measures including compensation that can be sought in respect of a loss of value of a property arising from the operation of an expanded airport after one year of operation. In addition, the draft Heathrow Expansion NPS sets out the provision of full acoustic insulation for residential property within the full single mode easterly and westerly 60dB $L_{Aeq, (16hr)}$ ¹²⁷ noise contour of an expanded airport, and a contribution of up to £3,000 for acoustic insulation for residential properties within the full single mode easterly and westerly 57dB $L_{Aeq, (16hr)}$ or the full 55dB L_{den} ¹²⁸ noise contours of an expanded airport, whichever is the bigger. Therefore, the magnitude of impact is assessed to be medium.

¹²⁷ L_{Aeq} is the measure used to describe the average sound level experienced over a period of time (usually sixteen hours for day and eight hours for night) resulting in a single decibel value. L_{Aeq} is expressed as L_{Aeq} when it refers to the A-weighted scale

¹²⁸ L_{den} is the 24 hour L_{Aeq} calculated for an annual period, but with a five decibel weighting for evening and a ten decibel weighting for night to reflect people's greater sensitivity to noise within these periods

- 4.2.36. Overall, the effect on health as a result of direct impacts on access to housing effects during the operation phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

Analysis – Wider effects

Pre-construction

- 4.2.37. Wider effects on access to housing during the pre-construction phase may emerge through anticipation of housing market effects associated with the scheme informing the Heathrow Expansion NPS. This may include speculative behaviour within the local housing market, as investors, landlords, and households respond to expectations of future land acquisition, displacement, construction activity, construction workforce demand, and operational activities.
- 4.2.38. These changes could have differential effects by tenure type. While owner-occupiers may benefit from rising property values in some locations, renters are more likely to experience adverse effects through increased competition for housing and upward pressure on rents. As the majority of housing tenure within the Study Area is rented, this has the potential to result in overall adverse effects on access to affordable housing. However, given the early stage of the project and the complexity associated with housing market responses, these impacts remain uncertain and are likely to be limited during the pre-construction phase. Therefore, the magnitude of impact is assessed to be low.
- 4.2.39. Overall, the effect on health as a result of indirect access to housing effects during the pre-construction phase is assessed to be **minor adverse (not significant)** for both the general population and for vulnerable populations.

Construction

- 4.2.40. Wider housing effects during the construction phase could occur due to increased demand for housing arising from two principal sources: displaced residents seeking alternative accommodation and temporary construction workers requiring short-term housing. This combined pressure is likely to be most pronounced within the private rented sector and short-term rental market, where flexibility of supply is greatest, potentially reducing availability and increasing competition for housing.
- 4.2.41. Despite local planning authority commitments to deliver additional residential development, there is a risk that supply will not increase sufficiently in the short term to fully offset this additional demand. As a result, upward pressure on house prices and rental values may occur within the local and wider housing market. This is likely to be most acute in the rental sector due to demand from construction workers. Potential effects include mixed outcomes, such as increased equity values for homeowners, but adverse affordability impacts for renters and prospective first-time buyers, with a particular risk of displacement of lower-income households.
- 4.2.42. Therefore, the magnitude of impact is assessed to be medium.

- 4.2.43. Overall, the effect on health as a result of direct impacts on access to housing effects during the construction phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

Operation

- 4.2.44. During the operational phase, wider housing effects are expected to arise from increased direct, indirect, and induced employment associated with the scheme informing the Heathrow Airport NPS ¹²⁹. This is likely to generate sustained additional demand for housing within the wider travel-to-work area, particularly from incoming workers and households relocating to access employment opportunities. Over time, this increased demand may place upward pressure on housing prices and rents, affecting affordability and potentially displacing housing pressure toward surrounding settlements.
- 4.2.45. While the scale and spatial distribution of these effects is uncertain at this stage, the potential for long-term increases in housing demand is considered likely. On this basis, the magnitude of impact is assessed to be medium.
- 4.2.46. Overall, the effect on health as a result of direct impacts on access to housing effects during the operation phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

4.3. Access to social infrastructure

Evidence

- 4.3.1. Access to social infrastructure, including healthcare, education and community facilities, forms a critical component of healthy and inclusive communities¹³⁰. Access to these services supports physical and mental wellbeing by enabling people to meet essential needs, maintain independence, and participate in social and community life. Where access is reduced or constrained, there is an increased risk of adverse health outcomes and the exacerbation of existing health inequalities, particularly among vulnerable populations.
- 4.3.2. Healthcare services play a central role in maintaining population health across the life course, supporting disease prevention, early diagnosis and effective treatment. Access to healthcare can be influenced by a range of factors, including proximity to services, travel time, transport affordability, physical accessibility and capacity within

¹²⁹ Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment. Available at:

<https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

¹³⁰ Higginson et al., (2022) Community severance and health – A novel approach to measuring community severance and examining its impact on the health of adults in Great Britain. *Journal of Transport & Health* Vol 25.

the healthcare system. Barriers to access can contribute to poorer health outcomes and widen existing inequalities.

- 4.3.3. Access to education is also associated with health and wellbeing. Educational attainment is associated with improved health outcomes through multiple pathways, including enhanced health literacy, improved employment prospects, higher income potential and greater social mobility. The availability and accessibility of education facilities therefore contributes to long-term population health benefits and plays an important role in reducing health inequalities between population groups.
- 4.3.4. Community infrastructure, such as libraries, community centres, sports facilities and recreational spaces, provides important venues for social interaction, lifelong learning and civic participation. These facilities help strengthen social networks, foster community cohesion and support mental wellbeing and quality of life. Reduced access to community infrastructure, whether through physical barriers, displacement or reduced service provision, may limit opportunities for engagement and increase the risk of social isolation, particularly for older people, young people and those with limited mobility.

Baseline

- 4.3.5. Social infrastructure within the vicinity of the airport comprises a range of facilities that support education, health, social care and community life. This includes schools and early years provision, healthcare facilities, places of worship, and community venues such as libraries and community centres.
- 4.3.6. Within Harmondsworth, key social infrastructure includes Harmondsworth Primary School, Landon Harmondsworth School (a special educational needs school), The Eden School, Woodland Day Nursery, New Life Destiny Baptist Church, St Mary's Church, and the Harmondsworth & Longford Community Centre. Provision within Sipson includes Sipson Community Centre, Lady Nafisa Secondary School for Girls, and Heathrow Primary School. In Longford, social infrastructure includes Littlebrook Nursery.
- 4.3.7. Based on IMD data, the LSOAs comprising the Heathrow Villages ward show high levels of deprivation in the barriers to housing and services dimension, with Hillingdon 031A ranked 1,461st and Hillingdon 031B ranked 12th out of 33,755 LSOAs.
- 4.3.8. Beyond Harmondsworth, Sipson, and Longford, the wider surrounding area benefits from a level of social infrastructure broadly consistent with an urban and suburban location on the edge of Greater London. The 2018 HIA identified 343 GP practices and 671 sports and recreational facilities located within a 15 km radius of Heathrow Airport.
- 4.3.9. The 2021 Census indicates that 10.8% of the population of the Heathrow Villages ward are disabled under the Equality Act 2010. This proportion is lower than the

Study Area average (12.7%) and lower than the local authorities in closest proximity to Heathrow Airport, including Spelthorne (14.2%), Hillingdon (12.9%), Hounslow and Ealing (both 12.2%), and Slough (11.3%). All comparator geographies report substantially lower proportions than the national average (17.3%). 4.7% of the population of the Heathrow Villages ward experience that day-to-day activities are limited a lot, compared to the national average of 7.3%.

- 4.3.10. Taking account of the existing provision of social infrastructure and baseline population health, the general population is considered to have a medium sensitivity. Certain population groups are likely to experience greater sensitivity to changes in access to social infrastructure. This includes older people, children and young people, single-parent households, low-income, unemployed or economically inactive residents, people with disabilities, and those with existing physical or mental health conditions. These groups are typically more reliant on local services and less able to adapt to changes in accessibility and are therefore assessed as having a high sensitivity.

Analysis – Local effects

Construction

- 4.3.11. The construction of the scheme informing the Heathrow Expansion NPS is expected to result in both temporary and permanent effects on access to social infrastructure. The direct effects would arise from compulsory land acquisition, the physical and perceptual severance created by construction activities, and associated environmental impacts.
- 4.3.12. Compulsory land acquisition affecting Harmondsworth, Longford and parts of Sipson would result in the permanent loss of existing social infrastructure, including education, healthcare, religious and community facilities identified in the baseline. The removal of educational facilities would directly affect access to education and could disrupt continuity of learning, with potential implications for children's development and wellbeing. The loss of healthcare facilities has the potential to adversely affect health outcomes, particularly for residents with ongoing care needs. The loss of community and faith facilities would also reduce opportunities for social interaction and support, with implications for community cohesion, identity and mental wellbeing.
- 4.3.13. The potential relocation of facilities where available is likely to result in disruption to access, depending on the timing and location of re-provision and the connectivity between residential areas and replacement sites. Residents are unlikely to relocate solely to maintain proximity to social infrastructure, and increased travel distances or reduced accessibility may therefore persist for some users, particularly those with limited mobility or without private transport.
- 4.3.14. Environmental effects associated with construction activity, including noise, air quality, and visual disturbance, have the potential to affect social infrastructure

which remains in situ. The extended duration of the construction programme means that these effects would be experienced over several years. For example, noise levels and disruption to the local environment could adversely affect the operation of schools and early years settings, potentially influencing learning environments and children's wellbeing.

- 4.3.15. Changes to surface access arrangements during construction, including road closures, diversions and increased construction traffic, may result in temporary and, in some cases, longer-term severance. This could affect both pedestrian and vehicular access to social infrastructure, increasing travel times and disrupting established daily routines, particularly for those reliant on walking, cycling or public transport.
- 4.3.16. However, the draft Heathrow Expansion NPS outlines the importance of developing plans put forward by the applicant with local authorities impacted by the land take to minimise impacts where possible, taking into account the local needs of the area. It sets out that the applicant should seek to deliver improvements or mitigation measures that reduce community severance and improve accessibility.
- 4.3.17. Given the scale of impacts and the potential for the permanent loss of social infrastructure, the magnitude of impact is assessed as high.
- 4.3.18. Overall, the effect on health as a result of direct impacts on access to social infrastructure effects during the construction phase is assessed to be **major adverse (significant)** for the general population and vulnerable populations.

Operation

- 4.3.19. The operation of the scheme informing the Heathrow Expansion NPS is expected to result in permanent effects on access to social infrastructure. The associated adverse environmental impacts, including noise, air quality, traffic, and visual disturbance, would impact social infrastructure receptors now located in close proximity to Heathrow Airport due to its extended footprint, as well as receptors further afield in the instance of wider-reaching impacts such as aircraft noise emissions.
- 4.3.20. Educational facilities, particularly schools and early years settings, are likely to be among the most sensitive receptors. Elevated and sustained noise levels have the potential to disrupt learning environments, concentration and communication, with implications for children's wellbeing and educational outcomes. Healthcare, social care and community facilities may also experience adverse effects, including reduced amenity and increased environmental stress, although the consequences for service delivery are expected to be less pronounced than for educational settings.
- 4.3.21. The draft Heathrow Expansion NPS sets out that the applicant should provide an equivalent or better level of compensation measures including a programme of

noise insulation and ventilation for schools and community buildings within the 60 dB $L_{Aeq, (16 \text{ hr})}$ contour. In addition, the draft Heathrow Expansion NPS sets out that noise mitigation measures should ensure that the area impacted by aircraft noise is limited and where reasonably possible, reduced compared to 2024 baselines for daytime noise (with reference to the 51 dB $L_{Aeq, 16hr}$ contour) and nighttime noise (with reference to the 45 dB $L_{Aeq, 8hr}$ contour). Given this, the magnitude of impact is assessed to be medium.

- 4.3.22. Overall, the effect on health as a result of direct impacts on access to social infrastructure effects during the operation phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

Analysis – Wider effects

Construction

- 4.3.23. The construction of the scheme informing the Heathrow Expansion NPS could result in temporary effects on access to social infrastructure due to increased demand generated by the construction workforce. While it is anticipated that the majority of construction workers would be drawn from the local labour pool and therefore would be home-based, a proportion of workers are expected to reside outside the travel-to-work area and may require temporary accommodation within the local area for the duration of construction activities.
- 4.3.24. In addition, the displacement of residents resulting from demolition and land acquisition may alter the spatial distribution of demand for social infrastructure. Receiving areas may experience increased pressure on existing services. The capacity of local healthcare, education and community facilities to accommodate additional demand is uncertain, particularly if population change occurs in advance of any additional provision being delivered.
- 4.3.25. As a result, employment associated with the construction phase may place short to medium-term pressure on existing education, healthcare and community facilities that are not subject to compulsory land acquisition. This could impact access for existing residents, particularly in circumstances where construction workers relocate with family members.
- 4.3.26. However, given the temporary nature of construction employment, and the expected limited proportion of non-local workers, it is not anticipated that increased demand would result in substantial or sustained pressure on social infrastructure. Therefore, the magnitude of impact is assessed to be low.
- 4.3.27. Overall, the effect on health as a result of indirect impacts on access to social infrastructure effects during the construction phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

Operation

- 4.3.28. During the operational phase, wider effects on access to social infrastructure may arise as a result of increased operational employment associated with the scheme informing the Heathrow Expansion NPS (direct employment) and related population growth within the wider area (indirect and induced employment). Over time, this growth is likely to generate additional demand for education, healthcare and community facilities.
- 4.3.29. This increased demand has the potential to place longer-term pressure on existing social infrastructure, which could reduce access for residents. However, over the long-term operational phase, it is anticipated that the increased demand would be addressed through adjustments to service provision and capacity within the wider area. This reflects the ability of public service providers and local strategic planning processes to respond to population change over time.
- 4.3.30. Given this, the magnitude of impact is assessed to be low.
- 4.3.31. Overall, the effect on health as a result of indirect impacts on access to social infrastructure effects during the operation phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

4.4. Access to open space and active travel opportunities

Evidence

- 4.4.1. Access to open space and opportunities for active travel are widely recognised as key determinants of physical and mental health. The availability of green and blue spaces within close proximity to where people live, alongside safe and accessible walking and cycling networks, supports regular physical activity, social interaction and psychological wellbeing^{131,132}. Research shows that physical inactivity and sedentary behaviour are among the most significant contemporary public health challenges¹³³.
- 4.4.2. Engagement in regular physical activity facilitated by open space and active travel is associated with reduced risk of a wide range of both physical and mental health conditions, including cardiovascular disease, type 2 diabetes, certain cancers, dementia and depression. It has also been linked to improved sleep quality,

¹³¹ World Health Organisation (2023) Assessing the value of urban green and blue spaces for health and well-being. Available at: <https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7508-47275-69347> [Accessed: March 2026].

¹³² World Health Organisation (2022) Walking and cycling: latest evidence to support policy-making and practice. Available at: <https://www.who.int/europe/publications/i/item/9789289057882> [Accessed: March 2026].

¹³³ Transport for London (2017) Healthy Streets for London. Available at: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets> [Accessed: March 2026].

cognitive function, and overall quality of life. Evidence indicates that moderate levels of activity, such as walking for approximately 30 minutes or cycling for around 20 minutes on most days, are sufficient to deliver meaningful health benefits. Conversely, low levels of physical activity are associated with an increased risk of both physical and mental ill-health¹³⁴.

- 4.4.3. Active travel, including walking and cycling for everyday journeys such as commuting, shopping or travel to school, is associated with improvements in mental wellbeing and reductions in sickness absence. In children, walking to school has been linked to positive cognitive and developmental outcomes¹³⁵.
- 4.4.4. Open spaces also support social interaction and community cohesion by providing shared environments for leisure and informal social contact, alongside helping to mitigate environmental stressors such as air pollution and noise. These combined social and environmental benefits are associated with improved mental wellbeing and reduced risk of adverse health outcomes.
- 4.4.5. The health benefits associated with open space and active travel opportunities are strongly influenced by their quality, design, and accessibility. Well-maintained, inclusive and attractive green and blue spaces are more likely to be used regularly and are associated with improved physical and mental health outcomes. Access to high-quality open space and active travel infrastructure is not evenly distributed, and disparities in provision can contribute to health inequalities across different population groups. For example, perceptions of safety are a key determinant influencing the use of open space and active travel routes, particularly for women and girls. Evidence indicates that a significant proportion of women report feeling unsafe walking at night, relating to factors such as poor lighting, limited visibility, isolated routes and antisocial behaviour¹³⁶.

Baseline

- 4.4.6. A range of open spaces, recreational assets, and active travel routes are located in proximity to Heathrow Airport. These include large assets such as Colne Valley Regional Park, Cranford Park, Harmondsworth Moor, Black Park Country Park and Windsor Great Park, alongside blue space such as Wraysbury Reservoir and the Queen Mother Reservoir. In addition, long distance and recreational walking and cycling routes, such as the Thames Path National Trail and the Colne Valley Way,

¹³⁴ Transport for London (2017) Healthy Streets for London. Available at: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets> [Accessed: March 2026].

¹³⁵ World Health Organisation (2022) Walking and cycling: latest evidence to support policy-making and practice. Available at: <https://www.who.int/europe/publications/i/item/9789289057882> [Accessed: March 2026].

¹³⁶ Active Travel England, Lilian Greenwood MP, and Jess Phillips MP (2026) Nationwide plans announced to design safer streets as 9 in 10 women report feeling unsafe walking at night. Available at: <https://www.gov.uk/government/news/nationwide-plans-announced-to-design-safer-streets-as-9-in-10-women-report-feeling-unsafe-walking-at-night> [Accessed: May 2026].

provide opportunities for active travel and leisure. Collectively, these assets support physical activity, recreation, and access to the natural environment.

- 4.4.7. Levels of physical activity across the Study Area (68.0%) are marginally higher than the national average (67.4%). However, the local authorities located adjacent to Heathrow Airport exhibit lower levels of physical activity compared with both the Study Area and national averages. These include Hillingdon (56.2%), Slough (57.1%), Spelthorne (58.1%), Hounslow (60.2%), and Ealing (65.7%).
- 4.4.8. Patterns relating to overweight and obesity similarly indicate variation across the area. For example, the proportion of overweight or obese adults exceeds the national average (64.5%) in Slough (70.6%), Buckinghamshire (65.9%) and Runnymede (64.6%). In relation to childhood obesity, higher proportions of obese reception-aged children are recorded in Slough (10.8%) and Hounslow (10.4%) compared with the national average (9.8%), with Ealing (9.7%) and Hillingdon (9.1%) also close to this benchmark. For year 6-aged children, Slough (41.0%), Hounslow (39.8%), Runnymede (38.5%), Hillingdon (37.3%) and Ealing (37.3%) record higher levels of obesity than the national average of 36.2%.
- 4.4.9. Reported use of outdoor space for exercise or health-related purposes in 2023 shows further localised variation¹³⁷. The Surrey local authority area which includes Spelthorne records the highest proportion (20.5%), followed by Ealing (18.7%) and Hounslow (18.3%), which broadly align with the South East (18.2%) and London (18.0%) averages. Lower levels of use were reported in Slough (16.8%) and Hillingdon (14.9%), with the latter recording the lowest level across the Study Area.
- 4.4.10. Taking account of the range of open space and active travel assets, alongside baseline patterns of physical activity, the general population is assessed as having medium sensitivity. However, certain groups are more likely to be sensitive to the effects, including older people, children and young people, people with disabilities, and lower-income households and residents without access to private outdoor space, as well as women and girls. These groups are therefore assessed as having a high sensitivity.

Analysis

Construction

- 4.4.11. During the construction phase, access to open space and active travel opportunities is expected to be impacted through a combination of permanent compulsory land acquisition, temporary closures and diversions of recreational routes, increased demand associated with the construction workforce, and environmental impacts such as noise, air quality, traffic, and visual disturbance.

¹³⁷ UKHSA (2024) Air Quality and Health Dashboard.

- 4.4.12. The scheme informing the Heathrow Expansion NPS would result in the permanent loss of open space and active travel networks. This includes the loss of land within Colne Valley Regional Park, including sections of the Colne Valley Trail, as well as Green Belt land in Hillingdon and Spelthorne. Locally important recreational assets will also be directly affected, including the partial loss of Sipson Recreation Ground, as well as Heathrow Close Children's Playground, and Harmondsworth Recreation Ground. Given the role of accessible outdoor green spaces in supporting physical activity, mental wellbeing, and child development, the direct loss of these assets is likely to have adverse physical and mental health outcomes.
- 4.4.13. In addition to permanent land take, construction activities and associated traffic are likely to adversely affect the use, amenity and enjoyment of remaining open spaces and recreational routes. Environmental effects including construction noise, reduced air quality and changes to visual amenity may discourage use and reduce the perceived quality and tranquillity of these environments. Reduced access to quiet, safe and pleasant outdoor spaces can contribute to increased stress, anxiety and psychological discomfort, particularly for vulnerable populations.
- 4.4.14. The loss of open space, combined with the displacement of residents and the temporary presence of a construction workforce, may also result in changes to the pattern and intensity of demand for remaining open spaces. This has the potential to place pressure on existing provision.
- 4.4.15. The draft Heathrow Expansion NPS sets out that where green infrastructure is affected, the Secretary of State should consider imposing requirements to ensure the functionality and connectivity of the network is maintained and to mitigate any adverse impact where possible.
- 4.4.16. However, temporary disruption is likely during construction, until mitigation measures are fully implemented. Therefore, the magnitude of impact is assessed as medium.
- 4.4.17. Overall, the effect on health as a result of impacts on access to open space and active travel opportunities during the construction phase is assessed to **be minor adverse (not significant)** for the general population and **moderate adverse (significant)** for vulnerable populations.

Operation

- 4.4.18. During the operational phase, open spaces and recreational routes are likely to be impacted by changes in demand for such assets as well as environmental effects associated with operational activities.
- 4.4.19. As discussed, existing population growth alongside increased employment associated with the operational scheme informing the Heathrow Expansion NPS is likely to result in increased demand for open space and active travel opportunities across the wider area. This has the potential to place pressure on existing open

spaces and recreational routes. However, it is anticipated that longer-term changes in demand for open space and recreational provision would be addressed through local and regional planning and service delivery mechanisms, in line with relevant policy. For example, the London Plan¹³⁸ supports the protection of existing public open space and seeks to enhance access to open space in areas of deficiency. Over time, this policy framework is expected to support adjustments in provision and accessibility to respond to population change.

- 4.4.20. Operational aircraft movements and associated surface access traffic are likely to result in long-term adverse amenity effects for users of some open spaces and active travel routes. Exposure to aircraft noise, increased traffic, changes to landscape and visual character, and air quality effects may permanently reduce the quality of the environment experienced by users. These changes may adversely affect enjoyment, tranquillity and perceived safety. Reduced access to quiet, safe and pleasant outdoor environments is particularly relevant in terms of mental health, as it can contribute to increased stress, anxiety and psychological discomfort.
- 4.4.21. The draft Heathrow Expansion NPS sets out that the applicant must prepare an airport surface access strategy in conjunction with its Airport Transport Forum. This would be expected to incentivise mode shift to active travel and develop proposals which prioritise public transport and active travel options for passengers and staff that are safe, efficient, sustainable, and that optimise the user experience. The draft Heathrow Expansion NPS also sets out that Secretary of State should consider imposing requirements to improve the network of green infrastructure and open space, including appropriate access to National Trails and other public rights of way. The Secretary of State should also consider whether any adverse effects on open space are adequately mitigated or compensated by means of any planning obligations, for example to provide exchange land and appropriate management and maintenance agreements.
- 4.4.22. Therefore, the magnitude of impact is assessed as low.
- 4.4.23. Overall, the effect on health as a result of impacts on access to open space and active travel opportunities during the operation phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

¹³⁸ Mayor of London (2021) The London Plan. Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf [Accessed: April 2026].

4.5. Access to transport

Evidence

- 4.5.1. Transport systems influence health both directly and indirectly through impacts on safety and access to employment, education, healthcare, and social networks¹³⁹. Accessible, well-designed transport systems therefore contribute to improved quality of life and healthier, more inclusive urban environments. This section focuses on surface access transport, noting that active travel impacts (e.g. walking and cycling) is covered primarily within the previous section.
- 4.5.2. Road safety is a key health consideration in relation to transport. For example, evidence indicates that the likelihood of collisions increases under congested traffic conditions¹⁴⁰, with road traffic injury the leading cause of death among children aged 5–14¹⁴¹. As noted by Transport for London (TfL), children are particularly vulnerable as pedestrians due to reduced ability to assess traffic risks, while older people are also at increased risk as a result of greater physical fragility and reduced capacity to respond to complex traffic environments. These risks highlight the importance of managing traffic volumes, speeds and network design to protect vulnerable road users.
- 4.5.3. Transport accessibility and connectivity can support social cohesion by reducing physical and perceived severance between communities and enabling participation in daily activities. However, positive health outcomes are dependent on transport services being affordable, safe, reliable and of sufficient quality, as well as being conveniently located and well-integrated with the wider transport network and surrounding urban environment. Poor transport provision or accessibility can act as a barrier to services and opportunities, contributing to social exclusion and health inequalities¹⁴².

Baseline

- 4.5.4. Heathrow Airport and its surrounding area benefit from good connectivity to the strategic road network, including the M4 and M25 motorways. While this provides

¹³⁹ World Health Organisation (2021) World report on social determinants of health equity. Available at: <https://www.who.int/teams/social-determinants-of-health/equity-and-health/world-report-on-social-determinants-of-health-equity> [Accessed: March 2026].

¹⁴⁰ Institute for Road Safety Research (2022) What is the effect of congestion on road safety. Available at: <https://swov.nl/en/fact/traffic-congestion-3-what-effect-congestion-road-safety> [Accessed: April 2026].

¹⁴¹ Transport for London (2013) Roads Task Force – Technical Note 20: What are the main health impacts of roads in London? Available at: <https://content.tfl.gov.uk/technical-note-20-what-are-the-main-health-impacts.pdf> [Accessed: April 2026].

¹⁴² United Nations (2021) Recommendations for Green and Healthy Sustainable Transport – Building Forward Better. Available at: https://unece.org/sites/default/files/2021-05/2101940_E_PDF_WEB.pdf [Accessed: March 2026].

strong regional and national accessibility, parts of this road network experience congestion and operate close to capacity at certain times.

- 4.5.5. Public transport provision in the area includes a network of local and strategic coach and bus services, alongside rail links via the London Underground Picadilly Line, Elizabeth Line, and Heathrow Express. These services provide access to Heathrow Airport, surrounding communities and wider destinations across London and beyond.
- 4.5.6. Car and van availability varies across the Study Area, with variations between local authorities closest to Heathrow Airport and those that are more suburban or rural in character. Census data (2021) show a higher proportion of households without access to a car or van in more urban authorities, including Wandsworth (47.9%), Ealing (36.8%) and Hounslow (32.8%), as well as Richmond upon Thames (25.4%), than the national average (23.5%). This indicates a greater reliance on public transport within these areas. In contrast, Hillingdon (22.3%) and Slough (20.3%) report proportions of households without car access below the national average, while more suburban authorities further from the airport, such as Spelthorne (14.7%), Runnymede (13.9%) and Windsor and Maidenhead (12.7%), show considerably lower levels of car unavailability and higher levels of multi-vehicle ownership. Overall, this pattern indicates that urban local authorities are more dependent on public transport and are therefore could be more vulnerable to reductions in access.
- 4.5.7. Road safety performance also varies across the Study Area. In 2024, the average number of people killed or seriously injured on roads in England was 89.8 per billion vehicle miles¹⁴³. The regional averages for London (184.1) and the South East (91.3) were above this national average. Ealing recorded a notably high rate of killed and seriously injured casualties (185.2 per billion vehicle miles), with Hounslow, Slough and Hillingdon reporting rates of 124.3, 97.4 and 55.3 per billion vehicle miles respectively. Comparable data for Spelthorne were not available.
- 4.5.8. The general population is assessed as having medium. Groups more sensitive to access to transport effects include older people, children, people with disabilities, and lower income groups; these groups are therefore assessed as having high sensitivity.

Analysis

Construction

- 4.5.9. During the construction phase, the scheme informing the Heathrow Expansion NPS has the potential to affect access to transport through changes to accessibility and safety. The primary impact sources include compulsory land acquisition, and

¹⁴³ Department of Health & Social Care (2025) Fingertips Public health profiles: Killed and seriously injured casualties on England's roads.

construction activities and associated traffic. Key routes likely to be affected include the M4, M25, A4, A3044, sections of the local road network, and the Heathrow Road Tunnel.

- 4.5.10. The scheme informing the Heathrow Expansion NPS includes works to the M25 and diversions of the A4 and A3044 to facilitate the expansion of Heathrow Airport. Land take, temporary road closures and diversions on surrounding local and strategic roads in the construction phase are likely to contribute to periods of increased congestion and longer journey times. Reduced network performance has the potential to affect access to employment, education, healthcare and other essential services and facilities, with implications for employment, social inclusion, and daily routines, impacting mental health due to the stress associated with these changes.
- 4.5.11. Increased volumes of traffic associated with construction activities (e.g. Heavy Goods Vehicles (HGVs) and construction staff) would occur during the construction phase. Increased volumes of traffic may impact road safety risks, particularly in areas already experiencing high levels of congestion and casualties, with potential for adverse health outcomes.
- 4.5.12. Although the majority of impacts would be temporary, the extended construction programme means that some effects would be experienced over a prolonged period and could become embedded into everyday travel patterns.
- 4.5.13. The draft Heathrow Expansion NPS expects the applicant to develop a detailed construction management plan to avoid, reduce, and mitigate adverse effects on the strategic and local road network and existing surface access arrangements, as well as a construction traffic management plan that prioritises material movements by rail over road transport and minimises traffic to site. Where road transport is unavoidable, logistics should be planned to minimise transport distances through optimised routing. In addition, the applicant should seek to deliver improvements or mitigation measures that reduce community severance and improve accessibility. Given this, the magnitude of impact is assessed to be medium.
- 4.5.14. Overall, the effect on health as a result of impacts on access to transport during the construction phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

Operation

- 4.5.15. During the operational phase, the scheme informing the Heathrow Expansion NPS would increase the capacity of Heathrow Airport from its cap of 480,000 total Air Transport Movements (ATMs) per year (with 477,894 ATMs in 2025)¹⁴⁴ to a cap of 756,000 (with 722,367 total ATMs by 2055 indicated by DfT modelling¹⁴⁵). This

¹⁴⁴ Heathrow Airport (2026) Operational data. Available at: <https://www.heathrow.com/company/local-community/noise/data/operational-data> [Accessed: April 2026].

¹⁴⁵ Department for Transport (2026) Airport level outputs for LHR model.

increase in capacity would result in associated increased demand on local and strategic transport networks, arising not only from passengers but also freight operators and airport workers. Increased surface access demand has the potential to exacerbate congestion and collision risk, impacting both mental and physical health outcomes.

- 4.5.16. The draft Heathrow Expansion NPS outlines that the Government is committed to a more accessible and inclusive transport network to Heathrow Airport from a wide catchment area across the UK, including supporting disabled people and others with reduced mobility. The applicant should consider accessibility, including community engagement and consideration of a wide range of access needs.
- 4.5.17. The draft Heathrow Expansion NPS outlines that TfL announced changes prior to Heathrow expansion including new trains on the Piccadilly Line and Elizabeth Line, enabling more journeys to Heathrow Airport per hour. The draft Heathrow Expansion NPS sets out expectations for the applicant to consider a surface access strategy that incentivises mode shift to public transport and active travel as well as improving bus and coach services, minimising congestion and environmental impacts. The Government also considers that meeting the mode share targets is likely to require new rail infrastructure, given that the current network is already highly constrained. Therefore, the promoter of Heathrow expansion is expected to identify the necessary rail schemes as part of their surface access strategy and to demonstrate a credible plan for their delivery before annual terminal passenger capacity at the airport is 130 million or more. These measures will improve connectivity and reduce reliance on private vehicle trips associated to mitigate increased capacity associated with the scheme informing the Heathrow Expansion NPS, thereby helping to mitigate congestion and associated health impacts.
- 4.5.18. The draft Heathrow Expansion NPS also sets out that the applicant should demonstrate that any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach, and that opportunities to avoid and mitigate any adverse environmental impacts from traffic and transport infrastructure should be identified, assessed and taken into account. Therefore, potential adverse health outcomes related to congestion, safety, and environmental impacts are likely to be partially mitigated.
- 4.5.19. Therefore, the magnitude of impact is assessed to be low.
- 4.5.20. Overall, the effect on health as a result of impacts on access to transport during the operation phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

4.6. Insecurity and perceptions of risk

Evidence

- 4.6.1. Perceptions of risk and feelings of insecurity are recognised determinants of mental health and wellbeing, particularly relevant in the context of large-scale infrastructure projects. However, insecurity and risk perception have been underrepresented in research due to its complexity, particularly in the aviation industry¹⁴⁶. In the context of the scheme informing the Heathrow Expansion NPS, perceived risks may relate to environmental impacts such as noise, air quality, traffic, as well as safety (e.g. crime and terrorism).
- 4.6.2. The WHO identifies risk perception as closely linked to how these risks are communicated, understood, and acted upon by individuals and communities, rather than actual risk levels¹⁴⁷. People's responses to perceived risks are shaped by factors including expectations of future change, uncertainty, trust, the decision-making process, and the degree to which individuals feel informed and able to influence outcomes.
- 4.6.3. As such, insecurity and perceptions of risk are inherently subjective and vary between individuals¹⁴⁸. People with physical and mental health conditions, older people, and those experiencing socio-economic disadvantages may be more vulnerable to stress and anxiety associated with perceived risk and uncertainty. In addition, communities with prior exposure to stressors such as noise or air pollution may also demonstrate heightened sensitivity to future change.

Baseline

- 4.6.4. Baseline conditions relevant to insecurity and perceptions of risk relate in part to the degree to which communities are aware of, engaged with, and concerned about the change associated with the scheme informing the Heathrow Expansion NPS.
- 4.6.5. Data from the Community Life Survey 2024/5¹⁴⁹ show that participation in civic consultation, defined as involvement in consultation about local services or problems, varies across local authorities closest to Heathrow Airport. Engagement

¹⁴⁶ Chionis, D. (2022) Risk in the aviation context: investigating risk perception and risk communication from a behaviour based approach. University of Greater Manchester. Available at: <https://ub-ir.bolton.ac.uk/esploro/outputs/doctoral/Risk-in-the-aviation-context/999697908841> [Accessed: April 2026].

¹⁴⁷ World Health Organisation (2013) Health and environment: communicating the risks. Available at: https://www.asset-scienceinsociety.eu/sites/default/files/166336_who_vol.pdf [Accessed: March 2026].

¹⁴⁸ World Health Organisation (2013) Health and environment: communicating the risks. Available at: https://www.asset-scienceinsociety.eu/sites/default/files/166336_who_vol.pdf [Accessed: March 2026].

¹⁴⁹ Department for Culture, Media & Sport (2025) Community Life Survey 2024/5: Civic engagement and social action. Available at: <https://www.gov.uk/government/statistics/community-life-survey-202425-annual-publication/community-life-survey-202425-civic-engagement-and-social-action#civic-participation> [Accessed: April 2026].

over the previous 12 months was higher than the national average (19%) in Spelthorne (21%), Ealing (20%) and Hounslow (20%), suggesting heightened awareness of, or concern about, local issues. Lower levels of engagement were reported in Slough (15%) and Hillingdon (14%).

- 4.6.6. Nationally, 28% of adults report that they would like greater involvement in decisions affecting their local area, as identified in the Community Life Survey 2024/5¹⁵⁰. This proportion is higher in most authorities closest to Heathrow Airport, including Slough (37%), Ealing and Hillingdon (both 34%), and Hounslow (31%), indicating a strong desire for influence over decisions with potential implications for environmental conditions, health and quality of life. Spelthorne records a lower proportion (23%), highlighting spatial variation in baseline engagement.
- 4.6.7. Those suffering from stress, anxiety or pre-existing mental health conditions may be at higher risk of experience adverse impacts in this context. In the Study Area, 10.8% of the adult population are diagnosed with depression, notably lower than the national average of 14.3%¹⁵¹. While all local authorities within the Study Area report lower rates of depression compared to the national average, Buckinghamshire (13.5%), Surrey (13.0%), and Windsor and Maidenhead (12.7%) report the highest rates. Data from 2022/23 indicates that 24.2% of the Study Area self-reported a high anxiety score, slightly higher than the national average of 23.3%. The local authorities with the highest rates of anxiety include Ealing (28.0%), Surrey (27.3%), and Richmond upon Thames (26.7%).
- 4.6.8. On this basis, the sensitivity of the general population is assessed to be medium. Vulnerable populations include people with existing health conditions, older people, people with socio-economic disadvantages, and people with prior exposure to hazards, and are assessed as having a high sensitivity.

Analysis

Pre-construction

- 4.6.9. During the pre-construction phase, effects relating to insecurity and perceptions of risk are likely to arise primarily from uncertainty associated with the scheme informing the Heathrow Expansion NPS, rather than from direct hazards. Anticipation of future change, including concerns about safety, security, environmental exposure and long-term health effects, may contribute to anxiety and stress among local communities, even in advance of any on-site works commencing.

¹⁵⁰ Department for Culture, Media & Sport (2025) Community Life Survey 2024/5: Civic engagement and social action. Available at: <https://www.gov.uk/government/statistics/community-life-survey-202425-annual-publication/community-life-survey-202425-civic-engagement-and-social-action#civic-participation> [Accessed: April 2026].

¹⁵¹ Department of Health & Social Care (2026) Fingertips: Public health profiles.

- 4.6.10. As set out in the draft Heathrow Expansion NPS, the Government expects communities to be able to fully participate in the development and delivery of the scheme informing the Heathrow Airport NPS. Community engagement through the draft Heathrow Expansion NPS and the DCO process will allow local concerns to be raised and considered as part of the design and mitigation. The draft Heathrow Expansion NPS emphasises high quality, early, meaningful and constructive engagement with affected communities. Ongoing engagement will also be required as the applicant takes forward its compensation package. A community engagement board will be developed at Heathrow Airport to help to ensure that local communities are able to contribute effectively to the delivery of expansion, including to consultations and evidence gathering during the planning process.
- 4.6.11. As outlined in the draft Heathrow Expansion NPS, an applicant is also expected to identify vulnerable residents who may require additional assistance to relocate, as well as those who may be significantly affected by the development. This should include direct engagement with affected residents and the ability to recognise and respond to potential mental health effects associated with relocation. Measures include ensuring staff are trained in mental health awareness, working with local support groups that have insight into vulnerable residents, and establishing named contacts to facilitate one-to-one communication and a clear understanding of individual needs. The support provided should be tailored to the specific circumstances of affected residents, and applicants should ensure that appropriate services are in place so that individuals with additional needs are not disadvantaged.
- 4.6.12. Given this, the magnitude of impact is assessed to be low.
- 4.6.13. Overall, the effect on health as a result of impacts on insecurity and perceptions of risk during the pre-construction phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

Construction

- 4.6.14. During the construction phase, effects relating to insecurity and perceptions of risk are likely to arise from visible construction activity and associated traffic. Concerns may relate to construction accidents, traffic incidents, safety and security, and the potential for crime, particularly where activity occurs close to residential areas. These factors may heighten anxiety among local communities, especially where disruption is prolonged.
- 4.6.15. Construction activities would be undertaken within controlled work areas and are subject to established health, safety and security requirements. Measures such as fencing, site security, lighting and traffic management are expected to reduce risks to the public. While these arrangements are intended to minimise actual risk, their effectiveness in addressing perceptions of risk is dependent on transparency, communication and public confidence in mitigation.

- 4.6.16. It is acknowledged that the potential for changes associated with the scheme informing the Heathrow Expansion NPS are likely to create uncertainty and anxiety for local people who might anticipate that they will be adversely affected. However, there are general statutory requirements in place to manage the relevant risks. For example, any promoter of Heathrow Expansion would have legal responsibility for on-site safety and would work with contractors and the London Fire Brigade to manage risk of fires.
- 4.6.17. In terms of perceived risk, ongoing engagement with communities and statutory bodies during construction has an important role in moderating insecurity and perceived risk. As set out in the draft Heathrow Expansion NPS and discussed above, the Government expects communities to be able to fully participate in the development and delivery of expansion. Community engagement through the draft Heathrow Expansion NPS and the DCO process will allow local concerns to be raised and considered as part of the design and mitigation. The draft Heathrow Expansion NPS emphasises high-quality, early, meaningful and constructive engagement with affected communities. Ongoing engagement will also be required as the applicant takes forward its compensation package. Additional relocation assistance is expected to be provided to vulnerable residents, including mental health support where relevant, as well as to those significantly affected by the development.
- 4.6.18. Given this, the magnitude of impact is assessed to be low.
- 4.6.19. Overall, the effect on health as a result of impacts on insecurity and perceptions of risk during the construction phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

Operation

- 4.6.20. During the operational phase, perceptions of risk and insecurity may be influenced by the nature and scale of airport activities, including concerns relating to aircraft operations, surface access traffic, crime, and security-related incidents such as terrorism. Given the profile of airports as nationally significant and high-security environments, awareness of such risks may contribute to feelings of insecurity, even where actual risk levels remain low.
- 4.6.21. While airports may be perceived as higher-risk locations, incidents of crime associated with airports are typically linked to the presence of large numbers of transient users and are largely contained within airport operational areas, rather than affecting surrounding residential communities.
- 4.6.22. As outlined in the draft Heathrow Expansion NPS, national security, safety and emergency risks associated with aviation infrastructure are subject to comprehensive statutory and regulatory oversight. The Department for Transport provides strategic leadership for aviation security, working with the Civil Aviation Authority and national protective security bodies to reduce vulnerability to terrorism

and other security threats. Aviation safety is regulated by the Civil Aviation Authority, including standards to minimise collision risk on the ground and in the air, with UK airspace managed by National Air Traffic Services. Together, these arrangements are intended to ensure that safety and security risks are effectively managed.

- 4.6.23. As outlined above, in terms of perceived risk, ongoing engagement with communities and statutory bodies during construction is important in moderating insecurity and perceived risk. As set out in the draft Heathrow Expansion NPS, the Government expects communities to be able to fully participate in the development and delivery of expansion through the draft Heathrow Expansion NPS and DCO process, emphasising early and ongoing engagement with affected communities.
- 4.6.24. Given this, the magnitude of impact is assessed to be low.
- 4.6.25. Overall, the effect on health as a result of impacts on insecurity and perceptions of risk during the operation phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable populations.

4.7. Community identity and cohesion

Evidence

- 4.7.1. Community identity and cohesion are important determinants of physical and mental health. Strong social networks, a sense of belonging and opportunities to participate in community life are associated with improved wellbeing, resilience and social support. Conversely, weakened social ties, social exclusion and limited opportunities for participation can adversely affect mental health¹⁵².
- 4.7.2. Evidence indicates that loneliness and social isolation are associated with a range of adverse health outcomes, including increased risk of depression, anxiety, reduced cognitive function, cardiovascular disease, stroke, premature mortality, and poorer overall quality of life¹⁵³.
- 4.7.3. Community facilities, local services, open spaces and shared public environments play a key role in supporting social interaction and reinforcing community identity. These assets provide venues for everyday contact, community activities and collective experiences, which help strengthen cohesion and reduce isolation.

¹⁵² UKHSA (2021) Health inequalities: place-based approach to reduce inequalities. Available at: <https://www.gov.uk/government/publications/health-inequalities-place-based-approaches-to-reduce-inequalities/place-based-approaches-for-reducing-health-inequalities-main-report> [Accessed: 19/03/26].

¹⁵³ Housing LIN (various) Health and wellbeing: Loneliness and isolation. Available at: <https://www.housinglin.org.uk/Topics/browse/loneliness-and-isolation/health-and-wellbeing/> [Accessed: 19/03/26].

Changes that reduce access to, or continuity of, such spaces may undermine community cohesion, particularly in areas with long-established social networks¹⁵⁴.

Baseline

- 4.7.4. Communities surrounding Heathrow Airport comprise a mix of long-established settlements and areas experiencing population change, with Heathrow Airport already exerting a significant influence on nearby communities. Many of the communities closest to Heathrow Airport have strong local identities shaped by long-standing social networks, shared facilities and historical ties to place, including Harmondsworth, Longford, and Sipson.
- 4.7.5. As identified in Section 4.3, a range of community facilities are located in close proximity to Heathrow Airport, including community centres, libraries, and open spaces, which act to facilitate community networks.
- 4.7.6. The Community Life Survey 2024/5¹⁵⁵ shows that 62% of people in England feel as if they belong strongly to their immediate neighbourhood. However, the five local authorities located in closest proximity to Heathrow Airport all record lower levels. Of these authorities, Spelthorne has the greatest proportion of residents with a strong sense of belonging out of the five local authorities at 61%, followed by Slough (60%), Ealing (59%), Hounslow (57%), and Hillingdon (56%).
- 4.7.7. The general population is therefore assessed to have a medium sensitivity to effects on community identity and cohesion. Children, older people, people with disabilities, single parent families, and unemployed people are considered more sensitive to isolation and therefore to impacts on community identity and cohesion. These vulnerable groups are therefore assessed as having a high sensitivity.

Analysis

Pre-construction

- 4.7.8. During the pre-construction phase, impacts on community identity and cohesion are likely to arise primarily from uncertainty and anticipation of change.
- 4.7.9. As a result of anticipated impacts on access to housing, residents living in close proximity to the proposed airport expansion may experience stress and anxiety associated with the potential loss of homes, changes to neighbourhood character, and disruption to established ways of life. This period of uncertainty may weaken residents' sense of belonging and attachment to place, which are central

¹⁵⁴ Landscape Institute (2013) Public Health and Landscape: Creating healthy places. Available at: https://landscapeinstitute.org/wp-content/uploads/2019/02/Public-Health-and-Landscape_FINAL_single-page.pdf [Accessed: 19/03/26].

¹⁵⁵ Department for Culture, Media and Sport (2025) Community Life Survey 2024/5 annual publication. Table B1c. Available at: <https://www.gov.uk/government/statistics/community-life-survey-202425-annual-publication> [Accessed: March 2026].

components of community identity. This speculation and uncertainty over the area in which compulsory land take will occur, or the potential to be impacted by environmental effects, might increase migration out of the local area, resulting in the fragmentation of communities and social networks.

- 4.7.10. Furthermore, the duration and complexity of the planning and decision-making processes, combined with perceived lack of control or influence over outcomes, may adversely affect community morale and trust, which are important factors underpinning social cohesion.
- 4.7.11. Collectively, these pre-construction effects may contribute to both perceived and actual reductions in community cohesion and identity within settlements likely impacted by compulsory land acquisition as well as within the wider area.
- 4.7.12. The Government expects communities to be able to fully participate in the development and delivery of expansion. Community engagement through the draft Heathrow Expansion NPS and the DCO process will allow local concerns to be raised and considered as part of the design and mitigation. The draft Heathrow Expansion NPS emphasises high-quality, early, meaningful and constructive engagement with affected communities. Ongoing engagement will also be required as the applicant takes forward its compensation package, including additional assistance for vulnerable residents. A community engagement board will be developed at Heathrow Airport to help to ensure that local communities are able to contribute effectively to the delivery of expansion, including to consultations and evidence gathering during the planning process.
- 4.7.13. While these measures may help to communicate proposed changes and provide opportunities for engagement at an early stage, the AoS recognises that it cannot fully mitigate the stress and anxiety associated with uncertainty, anticipated change, and the potential loss of community identity and cohesion.
- 4.7.14. Therefore, the magnitude of impact is assessed to be medium.
- 4.7.15. Overall, the effect on health as a result of impacts on community identity and cohesion during the pre-construction phase is assessed to be **moderate adverse (significant)** for both the general population and for vulnerable populations.

Construction

- 4.7.16. During the construction phase, effects on community identity and cohesion will result from the demolition and displacement of existing residents in Harmondsworth, Longford, and parts of Sipson. As identified in Section 6.2 approximately 1,072 residential properties are identified for compulsory acquisition, requiring permanent relocation of its residents¹⁵⁶. Assuming a housing density of 2.36 people per house,

¹⁵⁶ Airports Commission (2014) Heathrow Airport Northwest Runway: Business Case and Sustainability Assessment. Available at:

as per the England average, this would equate to approximately 2,530 residents being displaced.

- 4.7.17. Given that residents are expected to find alternative accommodation on the open market, it is likely that there will be a permanent spatial displacement of these communities. This is likely to lead to a loss of local identity, particularly where long-standing social networks and shared histories are disrupted.
- 4.7.18. As outlined in Section 6.3 and 6.4, the construction of the scheme informing the Heathrow Expansion NPS would also include the loss of community facilities and open space. Given that these spaces promote social contact and interaction, a loss of community facilities and open space is likely to have adverse mental health outcomes. In addition, remaining community facilities and open space may be adversely impacted by environmental effects, reducing the amenity of these assets and discouraging social interaction.
- 4.7.19. In addition, accessible transportation networks support social inclusion by enabling participation in community activities, employment, education, and services. Disruptions to transport access during construction are likely to result in community severance, increasing the risk of social isolation and exclusion for residents. However, the draft Heathrow Expansion NPS requires the applicant to deliver improvements or mitigation measures that reduce community severance and improve accessibility.
- 4.7.20. The construction phase may also be characterised by changes in population composition, including an increased demand for temporary construction workers. A more transient population may contribute to reduced social stability and weaker community ties, particularly in areas experiencing high levels of turnover.
- 4.7.21. Compensation, relocation support, and construction management controls are anticipated within the draft Heathrow Expansion NPS. While these measures are expected to mitigate some impacts, they cannot fully avoid the loss of community cohesion, social networks, and sense of place associated with long-established settlements. The applicant is expected to deliver appropriate community compensation, including ongoing financial compensation for the local community as well as additional support for vulnerable residents including mental health support where relevant. It is recognised that while the mitigation measures help to manage impacts, compensation and relocation cannot replace lost communities, social networks or the cultural and historic associations of place.
- 4.7.22. Given the permanent nature of the relocation of communities and the extended duration of construction activities, the magnitude of impact is assessed as high.

<https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

4.7.23. Overall, the effect on health as a result of impacts on community identity and cohesion during the construction phase is assessed to be **moderate adverse (significant)** for the general population and **major adverse (significant)** for vulnerable populations.

Operation

4.7.24. During the operational phase, impacts on community identity and cohesion are likely to arise from permanent changes to the built environment, population composition, and environmental effects.

4.7.25. Due to the employment and economic benefits associated with the operation of the scheme informing the Heathrow Expansion NPS, the operational phase is likely to be characterised by an increase in population within the wider area. As noted in Section 6.2, this has the potential to increase house prices, potentially displacing renters in particular. These population shifts may contribute to reduced social stability and weaker community ties.

4.7.26. Visual effects may impact sense of place and belonging. Further environmental effects such as increased aircraft and traffic noise and air pollution may reduce the overall quality of the local environment. This may discourage the use of outdoor and communal spaces, thereby reducing opportunities for social interaction, informal gathering, and community participation.

4.7.27. There remains uncertainty regarding how communities' experiences, sense of place, and levels of cohesion evolve over time. These outcomes are influenced by wider contextual factors, including adaptive behaviours, socio-economic changes, and processes of adjustment or 'getting used' to altered environmental conditions.

4.7.28. As outlined above and in the draft Heathrow Expansion NPS, the applicant is expected to deliver appropriate community compensation, including ongoing financial compensation for the local community. It is recognised that while the mitigation measures help to manage impacts, compensation and relocation cannot replace lost communities, social networks or the cultural and historic associations of place.

4.7.29. Based on the permanence of environmental and physical changes, alongside uncertainty surrounding long-term community adaptation, the magnitude of impact is assessed as medium.

4.7.30. Overall, the effect on health as a result of impacts on community identity and cohesion during the operation phase is assessed to be **moderate adverse (significant)** for the general population and vulnerable populations.

4.8. Employment and income

Evidence

- 4.8.1. Evidence demonstrates that stable, good quality employment supports positive physical and mental health outcomes. In contrast, unemployment, insecure employment, and poor quality work is associated with adverse health effects¹⁵⁷. Disparities in employment opportunities are recognised as a key driver of health inequalities.
- 4.8.2. Income is a fundamental determinant of health, with strong evidence indicating a causal relationship between income levels and health outcomes¹⁵⁸. Higher income enables access to essential goods and services, including housing, nutritious food, education, and transport. Disparities in income therefore contribute to wider inequalities in health across the population¹⁵⁹.
- 4.8.3. As noted, the quality of employment is key in determining health and wellbeing. Workplace conditions, including job demands, autonomy, and support can significantly affect health and wellbeing, particularly in terms of stress levels. Research indicates that rates of work-related stress, depression and anxiety have risen over time, with poor-quality employment identified as a key contributing factor¹⁶⁰.

Baseline

- 4.8.4. Heathrow Airport is a major economic hub and exerts a significant influence on employment, supporting a substantial number of direct, indirect, and induced jobs across the Study Area, London and the South East, and the UK.
- 4.8.5. In 2014, the Airport Commission reported that the five local authorities closest to Heathrow Airport accounted for over half of all direct airport employment, representing approximately 33,500 jobs¹⁶¹. In support of this, Origin-Destination

¹⁵⁷ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

¹⁵⁸ Public Health Scotland (2026) Income, wealth and health. Available at: <https://publichealthscotland.scot/population-health/social-and-economic-impacts-on-health/economy-and-poverty/income-wealth-and-health/why-income-and-wealth-matter-for-health/> [Accessed: March 2026].

¹⁵⁹ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

¹⁶⁰ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

¹⁶¹ Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment. Available at:

data from the 2011 Census^{162,163} indicate that approximately 66.0% of workers travelling Heathrow Airport¹⁶⁴ travel from within the Study Area. The largest proportions of commuters travel from Hounslow (17.0%), followed by other areas in Hillingdon (14.0%), Ealing (9.2%), Spelthorne (6.6%) and Slough (5.6%).

- 4.8.6. A study by Oxford Economics found that in 2023¹⁶⁵, Heathrow Airport directly supported 83,400 jobs, alongside an additional 10,800 indirect jobs, and 11,000 induced jobs in the Heathrow Catchment Area¹⁶⁶. Heathrow Airport supported an additional 63,400 indirect and induced jobs in London and the South East regions, alongside an additional 32,600 indirect and induced jobs across the UK.
- 4.8.7. The Office for National Statistics (ONS) provides data on the Claimant count as a proportion of working aged residents¹⁶⁷. As of March 2026, the average Claimant rate in the Study Area (3.9%) was slightly lower than the national average (4.1%). Claimant rates are well below the national average in Elmbridge (2.4%), Richmond upon Thames, Runnymede and Windsor and Maidenhead (all 2.6%), while Ealing (6.5%), Slough (6.1%), Hounslow (5.0%) and Hillingdon (4.9%) recorded the highest rates and exceeded the national average.
- 4.8.8. IMD data ranks deprivation in local authorities, including by the following dimensions: employment, income, and income deprivation affecting children and older people. In the Study Area, Ealing is the most deprived authority in relation to both employment deprivation (97th out of 296) and income deprivation (18th), followed by Hounslow, Slough and Hillingdon. A similar pattern is observed for income deprivation affecting children, with Ealing again ranking highest, followed by Hounslow, Slough and Hillingdon.
- 4.8.9. In addition, GDHI per head varies notably across the Study Area, with Slough, Hillingdon, Spelthorne, Hounslow, and Ealing reporting the lowest income levels¹⁶⁸. However, all local authorities apart from Slough record income levels above the UK average (£24,836).

<https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

¹⁶² ONS (2012) 2011 Census: WU01EW – Location of usual residence and place of work by sex (MSOA level).

¹⁶³ Note: 2011 Census data is used as more recently available commute data (2021 Census) was skewed by the Covid-19 pandemic.

¹⁶⁴ Heathrow Airport is located within Middle Super Output Area (MSOA) E02000524: Hillingdon 031.

¹⁶⁵ Oxford Economics (2024) The economic and social impact of Heathrow Airport. Available at: https://www.heathrowstrategicplanninggroup.com/wp-content/uploads/2025/01/Session-1-Heathrow-and-Oxford-Economics-The-economic-and-social-impact-of-Heathrow-Airport_Summary.pdf [Accessed: April 2026].

¹⁶⁶ Oxford Economics defines the Heathrow Catchment Area as comprising the following nine local authorities: Ealing, Elmbridge, Hillingdon, Hounslow, Runnymede, Slough, South Bucks (Buckinghamshire), Spelthorne, and Windsor and Maidenhead.

¹⁶⁷ ONS (2026) Claimant count March 2026.

¹⁶⁸ Office for National Statistics (2025) Gross disposable household income.

- 4.8.10. As per the 2021 Census, 7.7% of jobs within the Study Area are within the construction industry, comprising a lower proportion compared to the national average (8.7%). The local authorities closest to Heathrow Airport account for a large proportion of employment in this sector, including Hillingdon (9.8%), Ealing (9.0%), Spelthorne (8.9%), Hounslow (8.0%), and Slough (7.6%).
- 4.8.11. Overall, the general population is therefore assessed as having a medium sensitivity to effects on employment and income. Vulnerable groups include unemployed residents, low income groups, and people with disabilities. These vulnerable groups are assessed as having a high sensitivity.

Analysis

Construction

- 4.8.12. During the construction phase, the scheme informing the Heathrow Expansion NPS would generate substantial additional employment opportunities within the construction sector. Although these jobs would be temporary, the scale and duration of construction activities mean that employment is expected to be sustained over a prolonged period. The creation of employment and income opportunities is likely to result in beneficial health effects, including improvements in mental wellbeing associated with increased income, a sense of purpose, and social connection.
- 4.8.13. Local authorities in closest proximity to the airport have relatively high proportions of employment in the construction sector, alongside higher unemployment rates. As a result, local residents are likely to have relevant experience and a greater propensity to take up construction employment. As outlined in the AoS however, the economic activity generated during construction is also expected to extend beyond the immediate Heathrow area, reflecting the national reach of construction supply chains and specialist services.
- 4.8.14. While it is anticipated that the majority of construction workers would likely be drawn from the local labour pool, a proportion of workers are anticipated to reside beyond a reasonable commuting distance. As a result, some workers may require temporary accommodation within the local area during the working week for the duration of construction activities.
- 4.8.15. The scheme informing the Heathrow Expansion NPS also would result in land take and the displacement of commercial premises in Harmondsworth, Longford and parts of Sipson. This includes industrial land, the White Horse pub, the Kings Arms pub, Harmondsworth Primary School, Sipson Community Centre, Heathrow Special Needs Centre, Longford and Sipson nurseries, and the Wonderland day nursery. The loss of businesses may result in job losses or disruption to employment, especially where businesses are unable to relocate locally or experience reduced accessibility. For some businesses, proximity to the airport, access to the motorway network and agglomeration benefits are critical, and securing suitable alternative sites of sufficient size may be challenging.

- 4.8.16. Existing commercial receptors located in close proximity to the scheme informing the Heathrow Expansion NPS may experience adverse environmental effects as a result of construction activities, including changes in visual amenity, increased noise, reduced air quality, and traffic-related impacts. These effects have the potential to reduce the viability and functioning of business operations and services.
- 4.8.17. As outlined, there is potential for adverse impacts on local commercial premises. However, taking into account the scale of direct, indirect, and induced employment generation in the construction phase across the local, regional, and UK area, the magnitude of beneficial employment and income effects associated is assessed to be high.
- 4.8.18. Overall, the effect on health as a result of employment and income generated during the construction phase is assessed to be **major beneficial (significant)** for the general population and vulnerable populations.

Operation

- 4.8.19. During the operational phase of the scheme informing the Heathrow Expansion NPS, employment is expected to be generated from airport activities and associated supply chains.
- 4.8.20. It is estimated that the scheme informing the Heathrow Expansion NPS would support a total of 22,000-27,000 additional jobs by 2040 (16,000 – 20,000 direct, 2,100 – 2,600 indirect, 3,600 – 4,400 induced), increasing to 33,000 – 40,000 in 2050 (24,000 – 30,000 direct, 3,200 – 3,900 indirect, 5,300 – 6,600 induced), and 50,000 – 61,000 in 2055 (37,000 – 45,000 direct, 4,800 – 6,000 indirect, 8,100 – 10,000 induced). While the distribution of job types and income levels remains uncertain at this stage, a proportion of the direct and indirect employment generated is expected to comprise management, professional and technical roles associated with higher incomes.
- 4.8.21. The scheme informing the Heathrow Expansion NPS is likely to attract businesses to the local area, generating wider economic effects as a result of increased connectivity, reduced operating costs and improved access to international markets, particularly within aviation, logistics, retail and support services. As outlined in the draft Heathrow Expansion NPS, the Heathrow expansion is expected to increase locally collected business rates, with Heathrow Airport consistently being one of the highest single-site business rates payers in the UK. The Government will consider mechanisms through which local authorities may benefit, including business rate retention and opportunities for authorities to cooperate in sharing these benefits.
- 4.8.22. DfT analysis estimates the Government revenue impact at approximately £4.7 billion, based on 2024 market prices (and discounted to 2024). In addition, external analysis commissioned by DfT has found that the Heathrow expansion could also add up to 0.05% to GDP in 2056, as a result of enhanced international connectivity, strengthened domestic links, and increased trade and investment opportunities.

- 4.8.23. However, the increased capacity of Heathrow Airport is expected to partially be a result of a displacement of activity from other airports, including changes in airline behaviour and route patterns. Therefore, associated employment opportunities and economic benefits generated by the scheme informing the Heathrow Expansion NPS may be redistributed from elsewhere. The draft Heathrow Expansion NPS outlines that the applicant should develop a domestic connectivity report, ensuring that Heathrow expansion will maximise opportunities to protect and strengthen existing domestic routes, including to regions currently underserved. It should be noted that this HIA is a strategic, policy level assessment and that a more detailed assessment of economic impacts, cost-benefit analysis and the distribution of economic effects will be undertaken through the business case and at the DCO stage.
- 4.8.24. The draft Heathrow Expansion NPS expects that any promoter of Heathrow expansion will need to demonstrate they can make a significant contribution to local employment and outline any skills and early employment initiatives designed to support the business needs of the airport. The Heathrow Academy supports recruitment and retention of local residents across the retail, construction, aviation and logistics sectors.
- 4.8.25. The EqIA recognises that there is a need to ensure that known barriers to employment opportunities are removed. The draft Heathrow Expansion NPS does not specifically require applicants to demonstrate how opportunities will be made accessible or promoted to those more likely to face barriers to employment. It outlines that further development of tailored recruitment approaches could help to reduce inequality and enhance equality of opportunity for vulnerable groups.
- 4.8.26. Overall, given the scale of direct, indirect, and induced jobs generated, the magnitude of impact is assessed to be high.
- 4.8.27. Overall, the effect on health as a result of permanent employment and income generated during the operation phase is assessed to be **major beneficial (significant)** for the general population and vulnerable populations.

4.9. Education, skills, and training

Evidence

- 4.9.1. Educational attainment is strongly associated with improved health outcomes and longer life expectancy. Higher levels of education are consistently linked to better employment prospects, higher incomes, and reduced exposure to socio-economic

disadvantage, all of which contribute positively to improved physical and mental health outcomes¹⁶⁹.

- 4.9.2. Access to education systems and wider social infrastructure plays an important role in reducing health inequalities, particularly by supporting child and adolescent development. Education supports social inclusion, increases opportunities across the life course, and helps to address structural determinants of health such as poverty and exclusion. This is particularly important given that up to half of all mental health conditions begin before the age of 14¹⁷⁰.
- 4.9.3. Skills development and vocational training are also recognised as important mechanisms for improving employment outcomes and economic participation. The Government emphasises the role of apprenticeships and training pathways in improving workforce productivity, addressing skills shortages, and supporting inclusive economic growth across critical sectors¹⁷¹.

Baseline

- 4.9.4. The draft Heathrow Expansion NPS notes that Heathrow Airport already makes a significant contribution to local employment and has established skills and early-employment initiatives aimed at supporting its workforce needs. The Heathrow Academy supports the recruitment, training and retention of local residents across sectors including retail, construction, aviation and logistics, and provides apprenticeship opportunities¹⁷².
- 4.9.5. The Heathrow Local Growth Taskforce¹⁷³ sets out initiatives to support local education, skills and training, such as the Lift Off Learner's Challenge, which grants college students (including those with Special Educational Needs and Disabilities (SEND)) business experience. A key initiative also includes the SME Academy, offering workshops on key business topics, including carbon reporting, sustainability, health and safety, and cyber security, to upskill and support local businesses.

¹⁶⁹ World Health Organisation (2021) World report on social determinants of health equity. Available at: <https://www.who.int/teams/social-determinants-of-health/equity-and-health/world-report-on-social-determinants-of-health-equity> [Accessed: March 2026].

¹⁷⁰ World Health Organisation (2021) World report on social determinants of health equity. Available at: <https://www.who.int/teams/social-determinants-of-health/equity-and-health/world-report-on-social-determinants-of-health-equity> [Accessed: March 2026].

¹⁷¹ Skills England (2025) Assessment of priority skills to 2030. Available at: <https://www.gov.uk/government/publications/assessment-of-priority-skills-to-2030/assessment-of-priority-skills-to-2030> [Accessed: April 2026].

¹⁷² Heathrow Airport (2026) Heathrow Local Growth Taskforce: Local supply chain task and finish group report. Available at: https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/heathrow-2-0-sustainability/reports/Local_Growth_Taskforce_Supply_Chain_Report.pdf [Accessed: April 2026].

¹⁷³ Heathrow Airport (2026) Heathrow Local Growth Taskforce: Local supply chain task and finish group report. Available at: https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/heathrow-2-0-sustainability/reports/Local_Growth_Taskforce_Supply_Chain_Report.pdf [Accessed: April 2026].

- 4.9.6. As shown in the 2021 Census, the qualifications profile of the Study Area shows a mixed skills base. Overall, several local authorities record higher proportions of residents with no formal qualifications than the England average of 18.1%, most notably Slough (20.2%), Hounslow (18.6%), Hillingdon (18.2%) and Ealing (17.9%). However, all local authorities in the Study Area, apart from Spelthorne (33.6%), had a greater proportion of residents with Level 4 or above qualifications than the national average (33.9%).
- 4.9.7. Based on the 2021 Census, the local authorities with the highest proportions of residents holding apprenticeship qualifications within the Study Area include Spelthorne (5.2%), Buckinghamshire (4.8%), Runnymede (4.7%), Hillingdon (4.3%), and Slough (4.2%). Of the authorities closest to Heathrow Airport, Hounslow and Ealing record slightly lower proportions, at 3.5% and 3.4% respectively. However, all local authorities within the Study Area have lower apprenticeship attainment than the national average of 5.3%.
- 4.9.8. The general population is therefore assessed as having a medium sensitivity to effects on education, skills, and training. Vulnerable groups include those with low skilled jobs, unemployed residents, people with low levels of qualifications, low income groups, people with disabilities, and young people. These vulnerable groups are assessed as having a high sensitivity.

Analysis

Construction

- 4.9.9. As discussed, the construction phase of the scheme informing the Heathrow Expansion NPS is expected to generate a substantial demand for labour across the construction industry, including both higher and lower-skilled roles. This represents an opportunity to support education and skills development, particularly for residents in surrounding areas experiencing unemployment and lower qualifications.
- 4.9.10. The draft Heathrow Expansion NPS expects promoters of Heathrow expansion to demonstrate that they can make a significant contribution to local employment and outline any skills and early employment initiatives designed to support the business needs of the airport. The Heathrow Academy supports recruitment and retention of local residents across the retail, construction, aviation and logistics sectors, and includes apprenticeships as a part of the package. Any promoter of Heathrow expansion should support the delivery of 5,000 youth apprenticeships, traineeships and other recognised entry-level pathways and provide opportunities for work placements, work experience and work-readiness training pathways for people in their workforce. Any promoter of Heathrow expansion should prepare and submit a Youth Employment and Skills Plan, including the construction phase of the proposal. The plan should be proportionate to the scale of the scheme informing the Heathrow Airport NPS and the resulting labour market capabilities.

- 4.9.11. These anticipated opportunities are likely to result in positive health impacts through improved income security, enhanced social mobility, and increased access to stable employment. Improved educational and skills pathways can also contribute to reduced health inequalities over time, particularly in areas with higher levels of deprivation. However, there is a risk that benefits may not be equitably distributed without targeted interventions. Barriers such as limited awareness of opportunities, competition for higher-skilled roles, transport accessibility, and varying levels of prior attainment may reduce take-up among vulnerable groups and some local populations. The extent to which education and skills benefits are realised locally will therefore depend on the effectiveness of outreach, inclusive programme design and partnership working.
- 4.9.12. Given the scale of education and skill development opportunities, the magnitude of impact is assessed to be high.
- 4.9.13. Overall, the effect on health as a result of education, skills, and training opportunities generated during the construction phase is assessed to be **moderate beneficial (significant)** for the general population and **major beneficial (significant)** for vulnerable populations.

Operation

- 4.9.14. The education, skills and training opportunities initiated during the construction phase are likely to continue into the operational phase, supporting ongoing skills development. As set out in the draft Heathrow Expansion NPS, any promoter of Heathrow expansion should support the delivery of 5,000 youth apprenticeships, traineeships and other recognised entry-level pathways and provide opportunities for work placements, work experience and work-readiness training pathways for people in their workforce. Any promoter of Heathrow expansion should prepare and submit a Youth Employment and Skills Plan, including the operational phase of the proposal. The plan should be proportionate to the scale of the Heathrow expansion and the resulting labour market capabilities.
- 4.9.15. As above, these opportunities may have indirect positive health impacts through improved income security, enhanced social mobility, and increased access to stable employment. Improved educational and skills pathways can also contribute to reduced health inequalities over time, particularly in areas with higher levels of deprivation.
- 4.9.16. The EqIA recognises that there is a need to ensure that known barriers to opportunities are removed. The draft Heathrow Expansion NPS does not specifically require applicants to demonstrate how opportunities will be made accessible or promoted to those more likely to face barriers to skill development and training. It outlines that further development of training schemes could help to reduce inequality and enhance equality of opportunity for vulnerable groups.
- 4.9.17. Given this, the magnitude of impact is assessed to be medium.

- 4.9.18. Overall, the effect on health as a result of education, skills, and training opportunities generated during the operation phase is assessed to be **moderate beneficial (significant)** for the general population **major beneficial (significant)** for vulnerable populations.

4.10. Air quality

Evidence

- 4.10.1. Air pollution is recognised as one of the largest environmental risks to human health and is associated with increased risks of premature mortality and morbidity, including cardiovascular disease, a decline in cognitive function¹⁷⁴, cancer, and respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD)¹⁷⁵. Air quality effects may also contribute to stress and anxiety related to perceived pollution risks, as well as reduced enjoyment of outdoor spaces.
- 4.10.2. Exposure to air pollution results in both short- and long-term health effects. Short-term exposure can cause coughing, wheezing, and breathing difficulties, while long-term exposure is associated with reduced lung function, chronic disease, and premature mortality. In children, short and long-term exposure is linked to impaired lung development¹⁷⁶.
- 4.10.3. Air pollution is a key driver of health inequalities. More deprived communities are often disproportionately exposed and may be more vulnerable due to pre-existing health conditions and reduced access to healthcare¹⁷⁷. In urban areas, populations living near major transport infrastructure, including airports and busy roads, are more likely to experience elevated exposure¹⁷⁸.
- 4.10.4. Aviation is a notable source of air pollutant emissions, particularly nitrogen oxides (NOx). In the European Union, domestic and international aviation accounted for

¹⁷⁴ Committee on the Medical Effects of Air Pollutants (2022) Cognitive decline, dementia and air pollution. A report by the Committee on the Medical Effects of Air Pollutants. Available at: <https://assets.publishing.service.gov.uk/media/62ceccdc8fa8f50c012d1406/COMEAP-dementia-report-2022.pdf> [Accessed: June 2026].

¹⁷⁵ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

¹⁷⁶ Mudway, I. S. (2019) Impact of London's low emission zone on air quality and children's respiratory health: a sequential annual cross-sectional study. *The Lancet. Public health* Volume 4 (1) e28-e40. doi:10.1016/S2468-2667(18)30202-0

¹⁷⁷ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

¹⁷⁸ Transport & Environment (2024) Can living near an airport make you ill? Available at: https://www.transportenvironment.org/uploads/files/Health-study-briefing_TE.pdf [Accessed: 19/03/26].

approximately 14% of all transport emissions in 2022¹⁷⁹. Monitoring studies indicate that pollutant concentrations, particularly NO₂, can be elevated in areas surrounding airports due to both aircraft and associated traffic emissions¹⁸⁰. Pollutant concentrations attributable to airport-related sources are expected to be highest in areas closest to the airport, and these receptors are therefore likely to experience the greatest air quality effects. However, pollutants such as PM_{2.5} can be transported over relatively long distances.

- 4.10.5. Aircraft operations also emit ultrafine particles (UFPs), defined as particles with a diameter of less than 100 nanometres, which can penetrate the lungs, enter the bloodstream, and potentially reach organs such as the brain, heart, and placenta¹⁸¹. Concentrations are typically highest within close proximity to airports, decreasing with distance but potentially extending several kilometres depending on meteorological conditions. Short-term exposure to UFPs has been linked to cancer^{182, 183, 184}, inflammation in people with asthma, impacts on lung function, neurodegeneration, and sleep disorders^{185, 186}. Research also suggests that UFP emissions may impact birth outcomes and the health of children living close to near to major airports^{187, 188, 189}. Long-term exposure is increasingly suspected to contribute to chronic cardiovascular diseases, however evidence on long-term impacts remain emerging¹⁹⁰.

¹⁷⁹ European Environment Agency (2025) Air quality around ports and airports. Available at: <https://www.eea.europa.eu/en/analysis/publications/air-quality-around-airports-and-ports> [Accessed: 09/03/26].

¹⁸⁰ European Environment Agency (2025) Air quality around ports and airports. Available at: <https://www.eea.europa.eu/en/analysis/publications/air-quality-around-airports-and-ports> [Accessed: 09/03/26].

¹⁸¹ Kwon, H.; Ryu, M.H.; Carlsten, C. (2020) Ultrafine particles: unique physicochemical properties relevant to health and disease. *Experimental & Molecular Medicine* Vol 52 pp. 318-328.

¹⁸² Bookstein, et al., (2025) Association between Airport Ultrafine Particles and Lung Cancer Risk: The Multiethnic Cohort Study. *Cancer Epidemiology, Biomarkers & Prevention*.

¹⁸³ Wu, A. et al., (2021) Association between Airport-Related Ultrafine Particles and Risk of Malignant Brain Cancer: A Multiethnic Cohort Study. *Research Support, N.I.H., Extramural ; Research Support, Non-U.S. Gov't*.

¹⁸⁴ Ji, X. et al., (2023) Investigation of incidence and geographic distribution of gliomas in Canada from 1992 to 2010: a national population-based study highlighting the importance of exposure to airport operations. *Frontiers in Oncology*.

¹⁸⁵ Habre, R. et al., (2018) Short-term effects of airport-associated ultrafine particle exposure on lung function and inflammation in adults with asthma. *Environment international*.

¹⁸⁶ Calderón-Garcidueñas, L. et al., (2023) Sleep matters: Neurodegeneration spectrum heterogeneity, combustion and friction ultrafine particles, industrial nanoparticle pollution, and sleep disorders--Denial is not an option. *Frontiers in Neurology*.

¹⁸⁷ Jacobs, J. et al., (2025) Birth Outcomes among Infants Born between 2006 and 2018 after Maternal Exposure during Pregnancy to Ultrafine Particles from Aviation around a Large International Airport in the Netherlands. *Environmental Health Perspectives*.

¹⁸⁸ Wing, S. et al., (2020) Preterm Birth among Infants Exposed to in Utero Ultrafine Particles from Aircraft Emissions. *Environmental Health Perspectives*.

¹⁸⁹ Lenssen, E. et al., (2024) Beyond the Runway: Respiratory health effects of ultrafine particles from aviation in children. *Environment international*.

¹⁹⁰ European Environment Agency (2025) Air quality around ports and airports. Available at: <https://www.eea.europa.eu/en/analysis/publications/air-quality-around-airports-and-ports> [Accessed: 09/03/26].

4.10.6. In addition, road traffic is a major contributor to urban air pollution. Living near busy roads is associated with increased risks of respiratory and cardiovascular conditions, cancer, impaired lung development in children, and outcomes such as cardiac arrest, heart disease, stroke, lung cancer, and bronchitis. Approximately one-third of London's population is estimated to live near a busy road and is therefore exposed to elevated pollution levels¹⁹¹.

Baseline

4.10.7. As outlined in the AoS, Heathrow Airport is located within a densely populated area of west London where air quality remains a longstanding concern. Much of the scheme informing the Heathrow Expansion NPS lies within the London Borough of Hillingdon Air Quality Management Area (AQMA), declared due to exceedances of the annual mean NO₂ target, primarily associated with major roads and airport-related traffic. However, monitoring indicates that pollutant concentrations are generally below statutory limits, with a long-term improving trend driven by cleaner vehicles and policy interventions.

4.10.8. Additional AQMAs in proximity include Hounslow, Spelthorne, M25, Slough and South Bucks (NO₂), and Ealing and Richmond (PM₁₀ and NO₂).

4.10.9. In 2026, DfT commissioned a review of existing baseline air quality around Heathrow Airport, considering NO₂ and PM₁₀ monitoring data between 2018 and 2024 from sites within 200 m of the Heathrow Airport expansion area. In general, NO₂ and PM₁₀ concentrations have decreased since 2018, with no exceedance of the annual mean objective at any of these monitoring sites, as reported by the latest available data (2024). The only exception is HS7 Hatton Cross in Hounslow, where PM₁₀ concentrations increased slightly from 21 µg/m³ in 2018 to 22 µg/m³ in 2024. In addition, analysis by Defra shows that average background concentrations (calculated in 2021) of NO₂ and PM₁₀ are below the relevant targets in all years from 2018 to 2040, and project a notable reduction over this time period. Once new background maps are available as part of updates to Defra's National modelling, these may show an updated position.

4.10.10. Data from Defra shows that in 2023:

- Mean NO₂ concentrations in the local authorities surrounding Heathrow Airport were highest in Hounslow (17.9 µg/m³), followed by Ealing (17.3 µg/m³) and Hillingdon (16.7 µg/m³), with peak concentrations in Hillingdon and Hounslow (both

¹⁹¹ Kings College London (2019) Living near a busy road can stunt children's lung growth. Available at: <https://www.kcl.ac.uk/news/living-near-a-busy-road-can-stunt-childrens-lung-growth> [Accessed: March 2026].

28.7 $\mu\text{g}/\text{m}^3$)¹⁹². All local authorities are therefore below the annual mean NO₂ limit value of 40 $\mu\text{g}/\text{m}^3$ ¹⁹³.

- Mean PM_{2.5} concentrations were again highest in Ealing (8.1 $\mu\text{g}/\text{m}^3$) and Hounslow (8 $\mu\text{g}/\text{m}^3$), with peak concentrations also highest in Ealing (9.1 $\mu\text{g}/\text{m}^3$) and Hounslow (8.5 $\mu\text{g}/\text{m}^3$)¹⁹⁴. All local authorities are therefore below the annual mean PM_{2.5} target of 10 $\mu\text{g}/\text{m}^3$ set for achievement by 2040 for the protection of human health¹⁹⁵.
- Mean PM₁₀ concentrations were highest in Ealing (13.8 $\mu\text{g}/\text{m}^3$) and Hounslow (13.6 $\mu\text{g}/\text{m}^3$), followed by Hillingdon and Slough (13.1 $\mu\text{g}/\text{m}^3$), with similar spatial patterns for peak values¹⁹⁶. All local authorities are therefore below the annual mean PM₁₀ limit value of 40 $\mu\text{g}/\text{m}^3$ ¹⁹⁷.

4.10.11. Health indicators broadly reflect this pattern. UKHSA provides data on the fraction of mortality attributable to particulate air pollution in 2024^{198, 199}. Of the five local authorities surrounding Heathrow Airport, the highest proportion was in Ealing (6.5%), followed by Hounslow (6.4%), and Hillingdon (6.1%). Asthma-related hospital admissions among under-19s in 2023 was greatest in Hillingdon (157.3 per 100,000 residents), followed closely by Ealing (135.5) both above the London (135.3) and national average (122.2). Emergency COPD admissions were highest in Hillingdon (398.8 per 100,000), exceeding the national (356.8) and London average (298.3).

4.10.12. As shown in UKHSA Air pollution vulnerability indicator data, a large number of residents fall within the highest vulnerability group (quintile 5) for PM_{2.5} exposure, including in Ealing (53,322 residents, comprising 14.4% of the population) and Hillingdon (39,231, 12.6%), followed by Slough (30,531, 19.2%). For NO₂, Ealing

¹⁹² Defra (2026) UK AIR: Modelled background pollution data. Available at: <https://uk-air.defra.gov.uk/data/pcm-data> [Accessed: 01/05/26].

¹⁹³ UK Government (2010) The Air Quality Standards Regulations 2010. Available at: <https://www.legislation.gov.uk/uksi/2010/1001> [Accessed: 01/05/26].

¹⁹⁴ Defra (2026) UK AIR: Modelled background pollution data. Available at: <https://uk-air.defra.gov.uk/data/pcm-data> [Accessed: 01/05/26].

¹⁹⁵ Defra (2023) The air quality strategy for England. Available at: <https://www.gov.uk/government/publications/the-air-quality-strategy-for-england> [Accessed: April 2026].

¹⁹⁶ Defra (2026) UK AIR: Modelled background pollution data. Available at: <https://uk-air.defra.gov.uk/data/pcm-data> [Accessed: 01/05/26].

¹⁹⁷ UK Government (2010) The Air Quality Standards Regulations 2010. Available at: <https://www.legislation.gov.uk/uksi/2010/1001> [Accessed: 01/05/26].

¹⁹⁹ Note: Fraction of annual all cause adult mortality attributable to particulate air pollution (measured as fine particulate matter, PM_{2.5}). Mortality burden associated with long term exposure to particulate air pollution at current levels, expressed as the percentage of annual deaths from all causes in those aged 30 and older.

¹⁹⁹ Note: Fraction of annual all cause adult mortality attributable to particulate air pollution (measured as fine particulate matter, PM_{2.5}). Mortality burden associated with long term exposure to particulate air pollution at current levels, expressed as the percentage of annual deaths from all causes in those aged 30 and older.

has 66,343 people in vulnerability quintile 5, accounting for 17.9% of its population, followed by Hounslow (58,007, 20.0%).

- 4.10.13. Based on 2021 Census data, the five local authorities in closest proximity to Heathrow Airport exhibit a higher proportion of residents reporting 'very good health' compared to the national average (48.5%), including Ealing (52.5%), followed by Hounslow (51.9%), Slough (51.7%), Hillingdon (51.3%) and Spelthorne (50.4%). Similarly, the proportion of residents reporting 'very bad' health is lower across all five authorities compared to the national average of 1.2%, ranging from 0.8% in Slough to 1.0% in Ealing and Hounslow.
- 4.10.14. As of 2024, 19.5% of the Study Area population was aged 0-15, with 14.8% aged 65+. The Study Area has a slightly higher proportion of younger people than the national average (18.4%) and a notably lower proportion of older residents than the national average (18.7%).
- 4.10.15. Given existing pollution levels and the demographic and health profile of the study area, the sensitivity of the general population to air quality effects is assessed to be medium. Certain population groups are more vulnerable to the health effects of air pollution, including children, older people, pregnant women, and individuals with pre-existing respiratory or cardiovascular conditions²⁰⁰. These vulnerable groups are assessed to have a high sensitivity to air quality effects.

Analysis

Construction

- 4.10.16. The construction phase of the scheme informing the Heathrow Expansion NPS would involve temporary but extensive construction activities and traffic associated with HGV movements and construction staff. These activities would generate air pollution which have the potential to impact the health outcomes of local communities.
- 4.10.17. As outlined in the AoS, construction air quality effects are typically spatially concentrated, with the greatest impacts experienced in close proximity to construction compounds, haul routes, and diverted traffic corridors and junctions. Communities located adjacent to these areas may experience intermittent or prolonged exposure depending on the duration and sequencing of works. While construction-related air quality impacts are generally temporary in nature, the extended timeframe of airport expansion projects means that affected populations could experience repeated periods of exposure over several years, resulting in adverse physical health outcomes. It is also acknowledged that the potential for air

²⁰⁰ American Lung Association (2026) Who is Most Affected by Outdoor Air Pollution. Available at: <https://www.lung.org/clean-air/outdoors/who-is-at-risk> [Accessed: March 2026].

quality effects could result in stress and anxiety for local people who might anticipate that they will be adversely affected.

- 4.10.18. As set out in the draft Heathrow Expansion NPS, the Secretary of State would expect to see evidence of considerations to mitigate air quality impacts of construction, including the development of a construction traffic management plan, low emission construction plant and fleet, and the selection of construction material to minimise distance of transport. The draft Heathrow Expansion NPS outlines that the Secretary of State must be satisfied that—with appropriate mitigation, surface access strategies and operational measures—the scheme would not cause air quality impacts that result in any new breaches, or make existing breaches materially worse, of legal obligations on air quality. This includes meeting National Emissions Ceilings (NECR 2018) or exceeding standards set through the Air Quality Standards Regulations (2010) or hindering the government's ability to achieve compliance with The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. For the latter, this includes identifying key sources of emissions and the potential scale of impact, demonstrating that an applicant has taken appropriate action to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable, and implementing appropriate mitigations to minimise PM_{2.5} exposure for development users and people who will be exposed, in line with Defra guidance.
- 4.10.19. Given this, the magnitude of impact is assessed to be medium.
- 4.10.20. Overall, the effect of air quality on health during construction at a policy level is assessed to be **moderate adverse (significant)** for the general population and vulnerable groups.

Operation

- 4.10.21. During the operational phase of the scheme informing the Heathrow Expansion NPS, increased airport capacity would result in higher levels of activities which could produce emissions, including aircraft operations, airside vehicles, ground support equipment, freight and logistics activity, and surface access traffic. Based on DfT analysis, these activities are expected to increase emissions of NO_x and particulate matter in particular, with an estimated -£879 million monetised air quality disbenefit for the UK (based on 2024 market prices discounted to 2024).
- 4.10.22. To inform the draft Heathrow Expansion NPS, the DfT commissioned a review of emissions analysis conducted for the 2018 Airports NPS. The indicative analysis suggests that, based on current evidence, the Government's conclusions for NO₂ and PM₁₀ impacts for the 2018 ANPS can be applied to the position as at 2026 (subject to the uncertainties identified in the analysis)". While tailpipe emissions from road vehicles of these pollutants have generally decreased since 2018, and projections for 2030 and years beyond 2030 predict that emission rates from vehicles are lower than previously assumed across most road types, other inputs

assumptions and tools used in the 2018 analysis of NO_x and NO₂ have not been reassessed at this time. Despite notable improvements in emissions impact of ground support equipment due to electrification, and auxiliary power unit usage due to increased operating restrictions at the airport, the trend towards heavier aircraft, and increased activity due to runway expansion means that long term adverse air quality effects cannot be ruled out. There are approximately 121,377 residents (47,063 properties) where annual mean NO₂ concentrations are predicted to be higher with the scheme informing the Heathrow Expansion NPS.

- 4.10.23. The review of the analysis conducted for the 2018 Airports NPS also considered PM_{2.5} targets not in place at the time of the 2018 ANPS, as well as a literature review of the current evidence base regarding ultrafine particles (UFPs). This assessment comprised a preliminary and indicative analysis of road and aircraft related emissions, which predicted future PM_{2.5} contributions at existing monitoring locations around the airport. Based on this preliminary assessment, no new exceedances of PM_{2.5} air quality targets were identified at the monitoring locations assessed as a result of the scheme informing the Heathrow Airport NPS. However, the analysis indicates a potential exceedance of the 2040 target at one monitoring site under both the do nothing and expansion scenarios. This monitoring site is located approximately 11.4 km east of Heathrow Airport, where the elevated PM_{2.5} concentrations are likely due to traffic congestion and other local sources of emissions. The assessment suggests that the contribution of the scheme informing the Heathrow Expansion NPS to PM_{2.5} concentrations would be minimal when compared with the no expansion scenario.
- 4.10.24. Evidence prepared to support the draft Heathrow Expansion NPS in 2026 indicated that overall, the scheme informing the Heathrow Expansion NPS is expected to result in a redistribution of PM_{2.5} exposure rather than a uniform change. Localised increases in exposure are anticipated north of the proposed new runway and along sections of the western boundary associated with new road alignments, while reductions are expected near the existing runways where traffic is redistributed, and for some receptors adjacent to the M25 where tunnelling or realignment increases separation from emissions. The eastward shift of the M4 is expected to result in a combination of increases and decreases in exposure depending on changes in proximity. While background PM_{2.5} concentrations are forecast to decline between 2018 and 2040, local changes in exposure are likely to be significant. At a population level, the removal of homes and businesses in areas of currently high exposure would reduce population-weighted exposure; however, planned housing growth, particularly to the east of the airport, could introduce new receptors closer to surface access routes and airside activity, potentially increasing population-weighted exposure depending on dispersion conditions, runway use and the balance of receptors affected.
- 4.10.25. As reported in the AoS, under central assumptions and reflecting updated emissions factors and background trends, the Government considers that it is possible for

Heathrow to expand without affecting national compliance with air quality limit values, provided mitigation measures are fully implemented. The draft Heathrow Expansion NPS sets out that there has been significant progress in reducing background concentrations of key pollutants due to modernisation of transport fleet.

- 4.10.26. The draft Heathrow Expansion NPS sets out that where a project is likely to lead to a breach of any relevant statutory air quality limits, objectives or targets, the applicant should work with the relevant authorities to secure appropriate mitigation measures. Where a project is located within, or in close proximity to, an AQMA or Clean Air Zone, applicants should engage with the relevant local authority to ensure the project is compatible with the Local Air Quality Action Plan. The promoter should work with Transport for London, the Greater London Authority, and local authorities in Hillingdon, Hounslow, Slough and Spelthorne in particular. The draft Heathrow Expansion NPS also outlines that the Secretary of State must be satisfied that – with appropriate mitigation, surface access strategies and operational measures – the scheme would not cause air quality impacts that result in any new breaches, or make existing breaches materially worse, of legal obligations on air quality. This includes meeting National Emissions Ceilings (NECR 2018) or exceeding standards set through the Air Quality Standards Regulations (2010) or hindering the government's ability to achieve compliance with The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. For the latter, this includes identifying key sources of emissions and the potential scale of impact, demonstrating that an applicant has taken appropriate action to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable, and implementing appropriate mitigations to minimise PM_{2.5} exposure for development users and people who will be exposed, in line with Defra guidance.
- 4.10.27. However, these assumptions remain highly uncertain and dependent on the delivery of mitigation measures, regulatory controls, behavioural change, and the delivery of wider policy measures. While these measures will act to reduce the effects of operational air quality emissions, operational activity is anticipated to be a considerable source of emissions. Therefore, the magnitude of impact is assessed as high.
- 4.10.28. Overall, the effect of air quality on health in the medium term is assessed as **moderate adverse (significant)** for the general population and **major adverse (significant)** for vulnerable groups.

4.11. Noise

Evidence

- 4.11.1. Noise can affect both physical and mental health through multiple pathways, including disturbance, annoyance, sleep disruption, cognitive impacts, and interference with daily activities. It is associated with reduced enjoyment of indoor

and outdoor spaces, stress and anxiety, and increased risks of cardiovascular disease, stroke, and premature mortality²⁰¹⁻²⁰², with risks increasing alongside exposure level and duration. Mental health impacts such as annoyance are experienced subjectively, and are influenced by intensity, duration, frequency, time of day, indoor environmental conditions, and individual sensitivity²⁰³⁻²⁰⁴. The Aviation Noise Attitudes Survey (ANAS)²⁰⁵ gathered data on experiences of exposure to daytime aviation noise which suggested that people are more annoyed by aviation noise and at lower levels than previous evidence indicated.

- 4.11.2. Aircraft noise is one of the main local environmental effects associated with operations at Heathrow Airport and has a direct influence on quality of life, health and wellbeing. Aircraft noise is strongly associated with annoyance, a key pathway linking exposure to health outcomes, and therefore is one of the Government's four tests for Heathrow expansion. Research indicates that take-offs are typically perceived as more annoying than landings²⁰⁶.
- 4.11.3. In addition, night-time exposure is particularly significant due to its effects on sleep, with poor sleep linked to endocrine and metabolic disruption, increased cardiovascular risk, reduced cognitive performance, and adverse mental health outcomes. The Aviation Night Noise Effects (ANNE)²⁰⁷ study showed associations of night aviation noise on subjective annoyance and sleep disturbance. Annoyance increased with exposure until levelling out for exposures in the 55-60 LAeq, 8hr range, with sleep disturbance also increasing with exposure and levelling out for exposures in the 50-60 LAeq 8hr range. The analyses also found annoyance and sleep disturbance effects outside the traditional 23.00-07.00 night time period, where very low levels of exposure were associated with annoyance between the hours of 03.00 and 06.00.
- 4.11.4. Long-term exposure to environmental noise, including aircraft noise, is associated with increased risks of cardiovascular and metabolic conditions. Evidence suggests

²⁰¹ European Environment Agency (2025) Environmental noise in Europe. Available at: <https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025> [Accessed: April 2025].

²⁰² UKHSA (2023) Noise pollution: mapping the health impacts of transportation noise in England. Available at: <https://ukhsa.blog.gov.uk/2023/06/29/noise-pollution-mapping-the-health-impacts-of-transportation-noise-in-england/> [Accessed: March 2026].

²⁰³ Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment. Available at: <https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

²⁰⁴ European Environment Agency (2025) Environmental noise in Europe. Available at: <https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025> [Accessed: April 2025].

²⁰⁵ <https://www.caa.co.uk/data-and-publications/publications/documents/content/cap3131/>

²⁰⁶ UK Civil Aviation Authority (2025) Aircraft Noise and Health Effects – a six-month update. Available at: <https://www.caa.co.uk/publication/download/26233> [Accessed: 09/03/26].

²⁰⁷ Department for Transport and Civil Aviation Authority (2026) Aviation Night Noise Effects (ANNE) study. Available at: <https://www.gov.uk/government/publications/aviation-night-noise-effects-anne-study> [Accessed: June 2026].

that the risk of hypertension, coronary heart disease and stroke may increase by approximately 7–17% per 10 dB increase in exposure, with studies around Heathrow Airport identifying elevated risks among more exposed populations²⁰⁸. Recent evidence indicates that public sensitivity to noise has increased in recent years, and that adverse health effects may occur at lower thresholds than previously understood²⁰⁹.

- 4.11.5. Children are particularly vulnerable to noise impacts. Chronic exposure to aircraft noise has been linked to reduced reading comprehension, impaired attention, lower cognitive performance and educational attainment, as well as increased risk of being overweight, with younger children appearing particularly sensitive to effects²¹⁰.
- 4.11.6. Aviation noise has reduced over recent decades due to technological and operational improvements, including quieter aircraft and more efficient flight procedures. Further reductions are expected through fleet modernisation and airspace changes, with UK aviation noise output forecast to reduce by around 35% by 2035 compared to 2019²¹¹. Newer aircraft have substantially smaller noise footprints²¹², and the UK Airspace Modernisation Strategy aims to deliver quieter operations²¹³.
- 4.11.7. Road traffic noise contributes substantially to population health burden, with approximately 100,000 Disability Adjusted Life Years (DALYs) lost in England in 2018, primarily due to annoyance and sleep disturbance, alongside cardiovascular outcomes²¹⁴. Near airports and under flight paths however, road traffic noise is a relatively small proportion of overall noise, with noise from aircraft being the dominant source.

Baseline

- 4.11.8. The noise environment around Heathrow Airport is dominated by aircraft arrivals, departures, and ground operations, with additional contributions from major

²⁰⁸ Basner, M., Babisch, W., Davis, A., Brink, M., Clark, C., Janssen, S., et al., 2014. Auditory and non-auditory effects of noise on health. *Lancet*, 383, 1325-1332.

²⁰⁹ Civil Aviation Authority (2014) CAP 1164: Aircraft noise, sleep disturbance and health effects. Available at: <https://www.caa.co.uk/data-and-publications/publications/documents/content/cap1164/> [Accessed: April 2024].

²¹⁰ European Environment Agency (2025) Environmental noise in Europe. Available at: <https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025> [Accessed: April 2025].

²¹¹ Sustainable Aviation (2025) Quieter Road-Map. Available at: https://www.sustainableaviation.co.uk/wp-content/uploads/2025/02/SA_QuieterRoadmap_Report_Feb25.pdf [Accessed: April 2026].

²¹² UK Airspace Policy: A framework for balanced decisions on the design and use of airspace, p24, para 3.11

²¹³ Civil Aviation Authority (2018) Airspace Modernisation Strategy. Available at: <https://www.caa.co.uk/commercial-industry/airspace/airspace-modernisation/airspace-modernisation-strategy/> [Accessed: April 2026].

²¹⁴ UKHSA (2023) Noise pollution: mapping the health impacts of transportation noise in England. Available at: <https://ukhsa.blog.gov.uk/2023/06/29/noise-pollution-mapping-the-health-impacts-of-transportation-noise-in-england/> [Accessed: March 2026].

transport infrastructure including the M25, M4, and surrounding road and rail networks. As a result, large areas across Hillingdon, Hounslow, Ealing, Richmond upon Thames, Spelthorne, Slough, and Windsor and Maidenhead are exposed to elevated noise levels, particularly in proximity to flight paths and major roads.

- 4.11.9. Heathrow Airport has the largest population exposure to aircraft noise of any airport in the UK or European Union. Noise contour data indicates that hundreds of thousands of people are currently exposed to daytime and night-time aviation noise. The current LOAELs (Lowest Observed Adverse Effect Level) used in government noise policy are 51 dB $L_{Aeq,16hr}$ (day time) and 45 dB $L_{Aeq,8hr}$ (night time). In 2019, 1,016,000 people (413,000 households) were exposed to summer day time noise at or above 51 dB $L_{Aeq,16hr}$, and 808,500 people (332,300 households) during the summer night time period at or above 45 dB $L_{Aeq,8hr}$ ²¹⁵. Under the same scenario in 2024, 884,000 people (359,700 households) were exposed during the day time, and 740,000 people (305,400 households) during the night time.
- 4.11.10. Based on 2021 Census data, the five local authorities in closest proximity to Heathrow Airport exhibit better self-reported general health than the national average (48.5%), including Ealing (52.5%), followed by Hounslow (51.9%), Slough (51.7%), Hillingdon (51.3%) and Spelthorne (50.4%). Similarly, the proportion of residents reporting 'very bad' health is lower across the five authorities compared to the national average of 1.2%, ranging from 0.8% in Slough to 1.0% in Ealing and Hounslow.
- 4.11.11. IMD data shows that of the 11 local authorities within the Study Area, those with the highest health and disability deprivation are Ealing (177th), Hillingdon (181st), Hounslow (209th), and Slough (210th). Overall, the Study Area has an average rank of 236th in the health and disability domain, out of 296 local authorities in total.
- 4.11.12. Overall, the Study Area has a lower proportion of mortality from cardiovascular disease (92.4 per 100) and mortality from cardiovascular disease of those aged under 75 (87.5 per 100) than the national average (100). However, Slough (118.5 people per 100 and 135.3 people per 100) and Ealing (96.5 per 100 and 101.9 per 100) have rates of mortality due to cardiovascular disease or mortality due to cardiovascular disease aged under 75 above the national average.
- 4.11.13. Therefore, the sensitivity of the general population to noise effects is assessed to be medium. Groups such as children and younger people, people with disabilities, and night shift workers are considered more sensitive to noise impacts. The sensitivity of these vulnerable groups is therefore assessed as high.

²¹⁵ See Noise Annex to Draft Heathrow Expansion National Policy Statement Appraisal of Sustainability (2026) <https://www.gov.uk/government/publications/draft-heathrow-expansion-national-policy-statement-appraisal-of-sustainability>

Analysis

Construction

- 4.11.14. The construction of the scheme informing the Heathrow Expansion NPS would generate noise from construction activities and associated construction traffic on local and strategic road networks. These activities would primarily affect receptors located in close proximity to construction areas, haul routes, and temporary infrastructure works. These sources may affect health and wellbeing through pathways including annoyance, sleep disturbance, and educational attainment.
- 4.11.15. In addition to residential receptors, noise generated during the construction phase will have disamenity effects on local receptors, including open spaces, commercial premises, and community facilities.
- 4.11.16. In line with the draft Heathrow Expansion NPS, noise mitigation measures at the construction phase should be provided, drawing on best practice from other major construction schemes, with due regard given to any relevant British Standards and other guidance, and should be considered during the procurement of contractors. Noise mitigation measures for the construction and operation of the development may include reducing noise at point of generation, the containment of noise generated, incorporating good design to minimise noise transmission through screening, and restricting activities allowed on site.
- 4.11.17. Despite mitigation, the magnitude of construction activity, its prolonged duration and wide geographical extent mean that adverse noise effects are likely to occur for local receptors over an extended period. Given this, the magnitude of impact is assessed as medium.
- 4.11.18. Overall, the effect of noise on health and wellbeing during construction is assessed as **moderate adverse (significant)** for the general population and vulnerable groups.

Operation

- 4.11.19. During the operational phase, the scheme informing the Heathrow Expansion NPS would result in a substantial increase in aircraft movements, altering both the frequency and spatial distribution of aircraft noise exposure to surrounding communities. There would also be changes in noise emissions associated with ground movements and surface access traffic along road and rail transport corridors (e.g. M4, M25, A4, A30, and A3044). Higher levels of exposure in some locations could lead to increased annoyance, sleep disturbance, impacts on educational attainment, and other associated health effects.
- 4.11.20. Ongoing improvements in aircraft technology, fleet modernisation (including the introduction of new existing aircraft and future models), and operational practices such as steeper approaches, continuous climb, and the delayed employment of landing gear are expected to reduce noise impacts over time. Therefore, over the

long-term, the operational impact of noise on health is anticipated to decrease. However, these measures remain somewhat dependent on detailed implementation, regulatory controls, airline behaviour, and future technological change.

- 4.11.21. As noted above, in 2026 local noise analysis for Heathrow expansion was carried out. For a 'Current Trends' scenario and a 'Technology Development' scenario, aviation noise levels were modelled for the do-minimum (no expansion) and the do-something (expansion) position. For each scenario, the area, population, and households affected by noise levels above the Lowest Observed Adverse Effect Level (LOAELs)²¹⁶ were modelled. In the long term (2055), exposure would be substantially higher under the expansion scenario. However, when compared to the 2024 baseline, the population impacted by the day time and night time noise contours is lower under both scenarios.
- 4.11.22. No new ground noise or surface access noise modelling has been undertaken for the draft Heathrow Expansion NPS. The 2018 AoS assessment indicated that total local population exposure to higher levels of ground noise would reduce relative to a no-expansion scenario in 2030, primarily due to the relocation of noise sources away from more densely populated areas. On this basis, local effects of ground noise were assessed as beneficial. In the absence of updated assessment, this conclusion is considered to remain indicative only and is subject to uncertainty. While overall population exposure may reduce, this does not remove the possibility that localised increases in noise may be experienced by specific communities, particularly in areas affected by changes in surface access patterns (such as increased traffic flows or changes in rail services). In addition, potential changes in airspace activity may influence the overall noise environment experienced by some receptors, which may offset benefits in certain locations.
- 4.11.23. In 2026, DfT estimated that aviation noise impacts of expansion would result in a monetised disbenefit of -£1.6 billion over the appraisal period²¹⁷. See the Heathrow Expansion Appraisal Report²¹⁸ for further details on noise monetisation.
- 4.11.24. Figure 1 below illustrates the outcomes of the noise analysis for the 51 dB $L_{Aeq,16hr}$ contour under the Current Trends scenario. With the scheme informing the Heathrow Expansion NPS, approximately 662,200 people (272,400 households) are estimated to fall within this noise contour in 2035, representing 21% fewer people than under the two-runway scenario. This reflects that although the third runway will be operational by 2035, there are anticipated to be terminal capacity constraints and

²¹⁶ The current LOAELs (Lowest Observed Adverse Effect Level) used in government noise policy are 51 dB $L_{Aeq,16hr}$ (for day time aircraft noise) and 45 dB $L_{Aeq,8hr}$ (for night time aircraft noise).

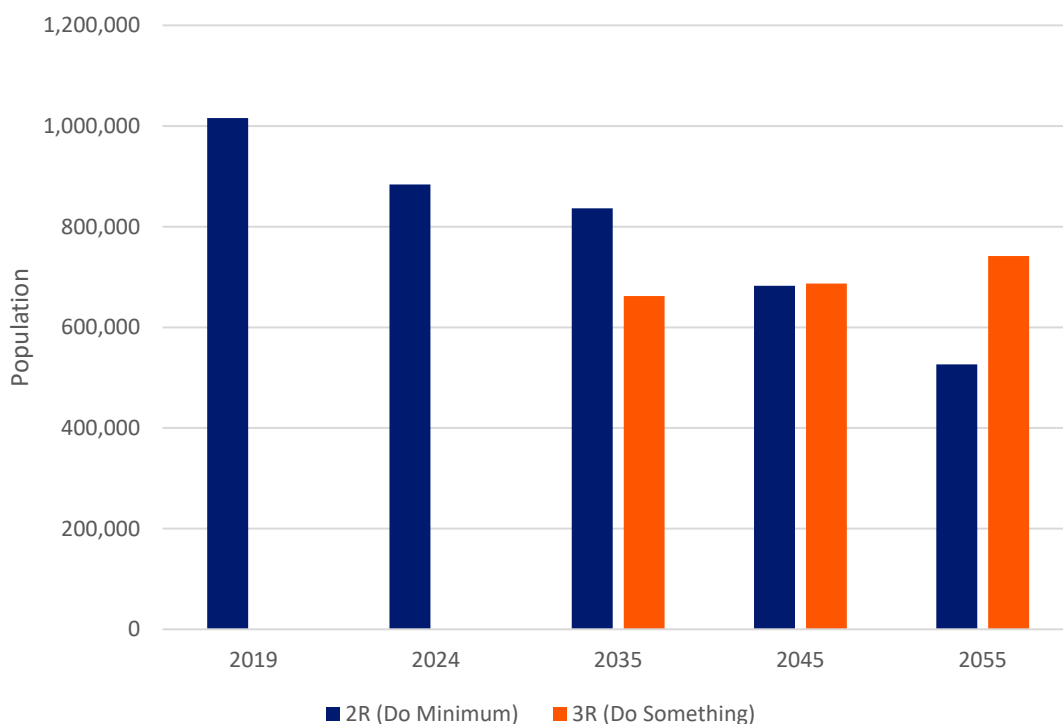
²¹⁷ Based on 2024 market prices, discounted to 2024.

²¹⁸ Heathrow Expansion Appraisal Report (2026). Available at:

<https://www.gov.uk/government/publications/draft-heathrow-expansion-national-policy-statement-appraisal-report>

so a similar number of movements are made over three runways, resulting in greater operational flexibility. By 2045, 687,000 people (289,500 households) are estimated to be within the contour under the scheme informing the Heathrow Expansion NPS. This equates to slightly more residents but fewer households than under the two-runway scenario (682,600 residents, 290,500 households). By 2055, the population within the contour is projected to increase to 741,600 people (315,100 households) under the scheme informing the Heathrow Expansion NPS, approximately 41% higher than the two-runway position.²¹⁹ However, this remains below the 2024 baseline, when 884,000 residents (359,700 households) were exposed.

Figure 1: Population exposed to daytime noise (51 dB LAeq,16hr – Current Trends scenario)



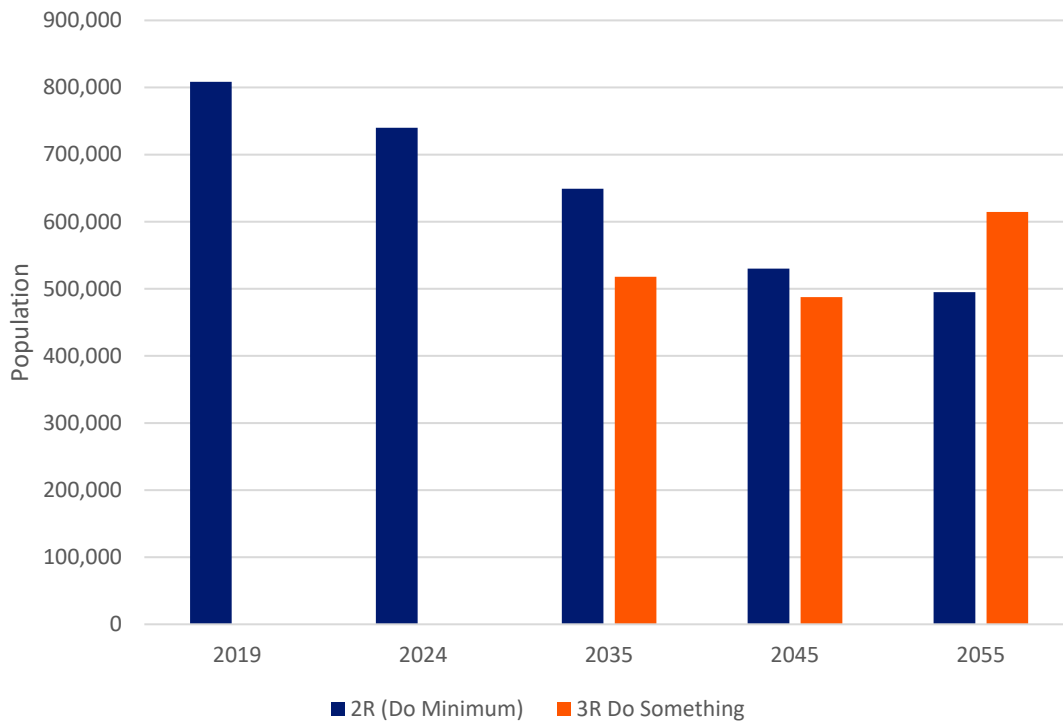
Source: CAA and DfT 2026 Airports NPS Local Noise Impacts.

4.11.25. Figure 2 below illustrates the outcomes of the noise analysis for the 45 dB LAeq, 8hr contour under the Current Trends scenario. With the scheme informing the Heathrow Expansion NPS, approximately 517,900 people (214,500 households) are estimated to fall within this noise contour in 2035, representing 20% fewer people than under the two-runway scenario. By 2045, 487,500 people (205,000 households) are estimated to be within the contour under the scheme informing the Heathrow Expansion NPS. This equates to fewer residents than under the two-runway scenario (530,000 residents, 227,000 households). By 2055, the population

²¹⁹ See Noise Annex to Draft Heathrow Expansion National Policy Statement Appraisal of Sustainability (2026) <https://www.gov.uk/government/publications/draft-heathrow-expansion-national-policy-statement-appraisal-of-sustainability>

within the contour is projected to increase to 614,400 people (264,000 households), approximately 24% higher than the two-runway position. However, this remains below the 2024 baseline, when 740,000 residents (305,400 households) were exposed.

Figure 2: Population exposed to nighttime noise (45 dB LAeq, 8hr – Current Trends scenario)



Source: CAA and DfT 2026 Airports NPS Local Noise Impacts.

4.11.26. A range of mitigation and management measures would be required to control the severity of operational noise effects, considering the 51 dB LAeq,16 hr and 45 dB LAeq, 8hr contours for a 2024 baseline. These include residential and community noise insulation schemes for dwellings and other sensitive receptors (such as schools and community buildings) within the 60 dB LAeq contour, active operational monitoring, community engagement initiatives, the provision of a community compensation fund proportionate to environmental impacts, and restrictions on night-time operations. The promoter of Heathrow expansion has committed to providing acoustic insulation within defined noise contours, together with financial contributions to properties significantly affected by aircraft noise.

4.11.27. The Government recognises that predictable periods of respite from aircraft noise are important for communities, particularly during the night when noise is widely regarded as the least acceptable aspect of aviation noise. The draft Heathrow Expansion NPS sets out that noise mitigation measures should ensure that the area impacted by aircraft noise is limited and, where possible, no greater than 2024 baselines for daytime noise (with reference to the 51 dB LAeq,16hr contour) and

nighttime noise (with reference to the 45dB $L_{Aeq, 8hr}$ contour). The applicant must put forward as part of their application a ban on scheduled night flights for a period of six and a half hours between the hours of 11pm and 7am. In addition, outside the hours of a ban, the applicant must make particular efforts to incentivise the use of the quietest aircraft during the nighttime period (11pm - 7am). It is recognised that Heathrow Airport already supports a number of initiatives to mitigate aircraft noise, such as developing quieter operating procedures (like steeper descent approaches) and keeping landing gear up as long as possible. The applicant must continue to do so, and must explore all reasonable opportunities to mitigate operational noise in line with UK best practice. Noise mitigation measures should be subject to engagement with local communities and other relevant stakeholders.

- 4.11.28. Overall, the magnitude of impact is assessed as medium. This reflects that in the long term (2055) population exposure to noise is predicted to be lower than the 2024 baseline exposure, but that exposure would nonetheless be substantially higher under the do-something (expansion) scenario than a do-minimum (no expansion) scenario in future. In addition, ongoing improvements in aircraft technology, fleet modernisation, and operational practices such as steeper approaches, continuous climb, and the delayed employment of landing gear are expected to reduce noise impacts over time.
- 4.11.29. Overall, the effect of noise on health and wellbeing is assessed as **moderate adverse (significant)** for the general population and for vulnerable groups.

4.12. Landscape and townscape

Evidence

- 4.12.1. The quality and character of landscape and townscape play an important role in shaping how people perceive, experience, and interact with their surroundings, influencing amenity and place attachment, and are therefore closely linked to health and wellbeing outcomes.
- 4.12.2. Research demonstrates that attractive and well-maintained environments can support mental wellbeing by reducing stress, improving mood, and encouraging social interaction²²⁰. Conversely, poor quality environments that are visually intrusive or fragmented can contribute to feelings of anxiety, reduced sense of identity, and lower overall quality of life.
- 4.12.3. Changes to landscape and townscape can affect visual amenity, tranquillity, and sense of place. Adverse effects may arise through landscape and townscape change, the introduction of visually unappealing features, or disruption to familiar

²²⁰ Landscape Institute (2013) Public Health and Landscape: Creating healthy places. Available at: https://www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/PublicHealthandLandscape_CreatingHealthyPlaces_FINAL.pdf [Accessed: 19/03/26].

environments. Such changes can weaken place attachment and social cohesion, with potential implications for mental wellbeing, including increased stress and anxiety. Indirect effects on physical health may also occur where changes to environmental quality reduce the attractiveness of outdoor spaces and discourage physical activity.

Baseline

- 4.12.4. Heathrow Airport lies within the Thames Valley National Character Area and is located in close proximity to the Chilterns National Landscape (approximately 15 km north-west) and the Surrey Hills National Landscape (approximately 20 km south). While the airport itself lies outside any nationally designated landscape, the wider river catchment provides a physical and perceptual link between these areas.
- 4.12.5. Heathrow Airport is located within a heavily modified urban and industrial landscape, characterised by large-scale transport infrastructure, logistics uses, and associated development. However, areas of designated Green Belt land remain within the local area, alongside green and blue infrastructure such as the River Thames corridor and Colne Valley Regional Park.
- 4.12.6. In addition, the surrounding area contains a range of heritage assets that reflect historic settlement patterns and land use. This includes villages such as Longford and Harmondsworth, which feature numerous listed buildings, conservation areas, and historic street patterns. Other designated assets in the wider area include Ditton Park Registered Park and Garden, as well as internationally recognised sites such as Windsor Castle and the Kew Royal Botanic Gardens (World Heritage Site). Individual assets of high significance include the Grade I listed Harmondsworth Great Barn, located adjacent to the scheme informing the Heathrow Expansion NPS.
- 4.12.7. The Community Life Survey (2023/4)²²¹ shows that 62% of people in England feel they belong strongly to their immediate neighbourhood, in line with the Study Area average (62%). However, the five local authorities located in closest proximity to Heathrow Airport all record lower levels of belonging, the lowest being in Hillingdon (56%) where Heathrow Airport is located, followed by Hounslow (57%), Ealing (59%), Slough (60%), and Spelthorne (61%).
- 4.12.8. Due to the predominantly urban character of the local area, the general population is considered to have a low sensitivity to changes in landscape and townscape. Vulnerable groups, including older people and people with poor mental health, are likely to be more sensitive to changes landscape and townscape. Therefore, the sensitivity of vulnerable populations is assessed as medium.

²²¹ Department for Culture, Media and Sport (2025) Community Life Survey 2024/5 annual publication. Table B1c. Available at: <https://www.gov.uk/government/statistics/community-life-survey-202425-annual-publication> [Accessed: March 2026].

Analysis

Construction

- 4.12.9. The construction phase of the scheme informing the Heathrow Expansion NPS would result in both temporary and permanent changes to landscape and townscape, overall resulting in increased urbanisation and effects on the scale, form, and function of the surrounding area. Construction phase effects capture the temporary disturbance from construction activities as well as the permanent transformation of the landscape associated with the scheme informing the Heathrow Expansion NPS. These changes have the potential to adversely affect visual amenity and tranquillity, reducing scenic quality, sense of place, and the amenity value derived from experiencing the surrounding environment.
- 4.12.10. The permanent land take required would result in the loss of areas within Harmondsworth, Longford, and parts of Sipson, in addition to land within the Colne Valley Regional Park, Green Belt land, and areas of woodland. Areas currently experienced as open, rural or transitional, particularly within the Colne Valley, would be permanently transformed into a continuous airport landscape dominated by large-scale built form and infrastructure. Runway infrastructure, terminal buildings, road realignments, lighting and associated airport structures would become defining features in views from surrounding communities and transport corridors. Over the long term, the loss of Green Belt land could increase development pressure on remaining Green Belt areas in close proximity to the airport, with increased likelihood of those areas being identified as additional 'grey belt'. This may result in cumulative changes to the wider built environment and landscape character of the area.
- 4.12.11. Within affected settlements, a number of listed and non-designated historic buildings within conservation areas would be demolished as part of construction, resulting in the irreversible loss of historic fabric and the fragmentation or removal of historic settlement patterns. These permanent townscape changes would alter local identity and the character of established communities, with implications for sense of place and wellbeing.
- 4.12.12. The diversion and realignment of the River Colne and associated watercourses would also be undertaken as part of construction, resulting in permanent alteration to the character and appearance of the river corridor. Although re-profiling and landscape integration may establish a coherent new river environment over time, the loss of the existing river alignment and setting represents a lasting change to landscape character and visual amenity.
- 4.12.13. In addition to these permanent impacts, construction activities would give rise to temporary landscape and townscape disruption, resulting in temporary disturbance to visual amenity and tranquillity of open spaces and settlements within close proximity to these activities.

- 4.12.14. The draft Heathrow Expansion NPS outlines that the applicant should consider significant effects during the construction phase, including landscape and visual impacts. Adverse effects may be minimised through appropriate design.
- 4.12.15. Given the permanent loss of local landscape and townscape features and the scale of temporary disruption to the landscape and townscape, the magnitude of impact is assessed to be high.
- 4.12.16. Overall, the effect of landscape and townscape on health and wellbeing is assessed **moderate adverse (significant)** for both the general population and for vulnerable groups.

Operation

- 4.12.17. During the operation phase, the scheme informing the Heathrow Expansion NPS would introduce permanent changes to landscape and townscape character through operational activities, including aircraft operations and surface access. Operational effects therefore include perceptual and experiential impacts associated with aircraft movements, including visual presence in the sky, frequency of overflight, and effects on tranquillity.
- 4.12.18. Increased aircraft activity would alter how the surrounding landscape and townscape are experienced, particularly within communities beneath or in close proximity to flight paths. Frequent aircraft movements may reduce perceptions of tranquillity, which could affect enjoyment of outdoor spaces and contribute to stress or reduced mental and physical health. As noted in the baseline, nationally designated landscapes such as the Chilterns and Surrey Hills National Landscapes lie within the wider area. While no direct physical changes to these landscapes would occur during operation, aircraft activity may affect their perceived tranquillity and visual amenity, particularly during periods of frequent overflight.
- 4.12.19. The draft Heathrow Expansion NPS outlines that the applicant should consider significant effects during the operation phase, including landscape and visual impacts. Adverse effects may be minimised through landscaping schemes. The draft Heathrow Expansion NPS recognises that the proposed Heathrow expansion is likely to have visual effects for receptors around the proposed site. The Secretary of State will judge whether the visual effects on receptors outweigh the benefits of the development.
- 4.12.20. As noted in Section 4.11, the draft Heathrow Expansion NPS sets out a range of mitigation measures to manage operational noise effects. Ongoing improvements in aircraft technology, fleet modernisation, and operational practices such as steeper approaches, continuous climb, and the delayed employment of landing gear are expected to reduce noise impacts over time. Therefore, over the long-term, the operational impact of noise on health is anticipated to decrease. However, these measures are dependent on detailed implementation, regulatory controls, airline behaviour, and future technological change.

- 4.12.21. Nonetheless, the change in character in the surrounding environment is likely to be prominent. Over time, some receptors may experience partial adaptation to aircraft movement, however, for communities experiencing regular overflight, operational effects on tranquillity and landscape experience are likely to remain perceptible. Therefore, the magnitude of impact is assessed to be medium.
- 4.12.22. Overall, the effect of landscape and townscape on health and wellbeing is assessed as **minor adverse (not significant)** for the general population and **moderate adverse (significant)** for vulnerable groups.

4.13. Climate change

Evidence

- 4.13.1. Climate change presents both direct and indirect risks to human health. These include the effects of extreme weather events, as well as changes in environmental quality, disruption to infrastructure, and reduced access to essential services. Climate change is widely recognised as a significant, and growing threat, to population health²²².
- 4.13.2. In the UK, climate change is projected to result in hotter, drier summers and milder, wetter winters, alongside an increased frequency and intensity of extreme weather events, including heatwaves, heavy rainfall, flooding, storms, and drought.
- 4.13.3. Therefore, reducing greenhouse gas emissions is critical to limiting the impacts of climate change. Aviation is a notable source of such emissions (a mitigation consideration), while airport infrastructure is also inherently vulnerable to climate-related risks (an adaptation consideration), including flooding, extreme rainfall, and high temperatures. Emissions associated with airport expansion arise from multiple sources, including increased flight activity, airside operations, surface access transport, and construction. While construction emissions are typically short term, operational emissions, particularly from aircraft movements, represent the most substantial and long-term contribution.
- 4.13.4. Aviation contributes to climate change through both carbon dioxide (CO₂) and non-CO₂ emissions. As outlined in the draft Heathrow Expansion NPS, while the effects of CO₂ emissions are well understood, there remains uncertainty regarding the scale and significance of non-CO₂ impacts. The UK Government is funding research to improve understanding of these effects and to identify potential mitigation measures.
- 4.13.5. The health impacts of climate change are not experienced equally and are likely to exacerbate existing health inequalities. Older people, young children, and those

²²² Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

with pre-existing health conditions are particularly vulnerable to extremes in temperature and weather. In addition, lower-income populations may be more exposed to climate risks due to factors such as poorer housing quality and residence in areas more susceptible to flooding or other hazards²²³.

Baseline

- 4.13.6. Domestic transport is the largest source of greenhouse gas emissions in the UK²²⁴. Under the Climate Change Act 2008²²⁵, the UK has committed to achieving net zero emissions by 2050, supported by a framework of carbon budgets and sector-specific strategies such as the Jet Zero Strategy outlined in Section 2.2.
- 4.13.7. In line with international reporting requirements, the UK 2030 and 2035 emissions reduction targets under the Paris Agreement do not include emissions from international aviation²²⁶. However, in 2021 the UK government set the Sixth Carbon Budget, covering the period 2033-37, to include the UK share of international aviation and shipping emissions, as recommended by the Climate Change Committee. This is the first time emissions from international aviation and shipping will be included in UK domestic carbon budget targets, and climate change therefore represents one of the Government's four tests for Heathrow expansion.
- 4.13.8. Emissions associated with Heathrow Airport arise predominantly from aircraft operations and surface access activities. While there is no sector-specific cap on aviation emissions, future growth is expected to be accommodated within economy-wide carbon limits through a combination of indirect demand management (e.g. carbon pricing), technological improvements (including more efficient aircraft), the uptake of sustainable aviation fuels, and carbon removal technologies. Heathrow Airport has already implemented a range of decarbonisation measures, including

²²³ Institute of Health Equity (2020) Health Equity in England: The Marmot Review 10 Years On. Available at: <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-full-report.pdf> [Accessed: March 2026].

²²⁴ Department for Energy Security & Net Zero (2026) 2025 UK greenhouse gas emissions: provisional figures – statistical release. Available at: <https://www.gov.uk/government/statistics/provisional-uk-greenhouse-gas-emissions-statistics-2025/2025-uk-greenhouse-gas-emissions-provisional-figures-statistical-release#:~:text=in%20each%20table,-.In%202025%2C%2031%25%20of%20net%20greenhouse%20gas%20emissions%20in%20the,Electricity%20sapply> [Accessed: April 2026].

²²⁵ UK Government (2008) Climate Change Act 2008. Available at: <https://www.legislation.gov.uk/ukpga/2008/27/contents> [Accessed: April 2026].

²²⁶ Department for Energy Security & Net Zero (2026) 2025 UK greenhouse gas emissions: provisional figures – statistical release. Available at: <https://www.gov.uk/government/statistics/provisional-uk-greenhouse-gas-emissions-statistics-2025/2025-uk-greenhouse-gas-emissions-provisional-figures-statistical-release#:~:text=in%20each%20table,-.In%202025%2C%2031%25%20of%20net%20greenhouse%20gas%20emissions%20in%20the,Electricity%20sapply> [Accessed: April 2026].

renewable energy use, on-site energy generation, and electrification of ground-based fleets.

- 4.13.9. In addition to its contribution to greenhouse gas emissions, Heathrow Airport is also exposed to the physical risks associated with climate change. The airport is located within the River Colne catchment, where there is an existing risk of fluvial, surface water, and groundwater flooding. Projected increases in extreme weather events, including heatwaves and intense rainfall, are expected to increase pressure on infrastructure resilience and operation.
- 4.13.10. The characteristics of the local population influence vulnerability to climate-related health effects. In the 2021 Census, 54.4% of residents in the Study Area reported 'very good' health, greater than the national average of 48.5%. The proportion of the study area in 'very bad' health (0.8%) is lower than the national average (1.2%), with Ealing and Hounslow both having the highest proportion of residents in 'very bad' health (1.0%).
- 4.13.11. Socio-economic conditions also vary across the Study Area and influence adaptive capacity. For example, GDHI per head varies notably across the Study Area, with Slough, Hillingdon, Spelthorne, Hounslow, and Ealing reporting the lowest income levels. However, all local authorities apart from Slough record income levels above the UK average (£24,836).
- 4.13.12. Therefore, the sensitivity of the general population to climate change effects is assessed to be medium. Certain population groups are more vulnerable to the health effects of climate change. These include younger people, older people, people in lower socio-economic backgrounds, and people with existing health conditions. These vulnerable groups are therefore assessed to have a high sensitivity to climate change effects.

Analysis

Construction

- 4.13.13. During the construction phase, the production of construction materials, construction activities, and associated traffic would generate greenhouse gases. These emissions are temporary and represent a one-off carbon cost²²⁷, but contribute to climate change.
- 4.13.14. The climate change assessment undertaken in 2026 for the AoS indicates that annual emissions associated with construction would peak in 2029 and 2033.

²²⁷ Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment. Available at: <https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

- 4.13.15. Previous construction carbon analysis undertaken by the Airports Commission in 2014 estimated that a total of 11.3 MTCO₂e of carbon would be emitted throughout the construction period. Around 97% of these emissions were attributed to embodied carbon in construction materials, with the remainder arising from fuel use. The 2026 assessment²²⁸ indicates that carbon emissions would be similar to, or slightly lower than, this estimate if re-calculated, reflecting improvements to construction activities. These emissions comprise a relatively small proportion of the total carbon emissions throughout the lifetime of the project.
- 4.13.16. As outlined in the draft Heathrow Expansion NPS, ensuring that Heathrow Expansion aligns with legislated carbon budgets and net zero 2050 is one of the Government's four tests for Heathrow expansion. A carbon management plan should be produced as part of the DCO application, including how construction emissions have been reduced as much as possible using the carbon reduction hierarchy and the impact of residual carbon on any relevant statutory carbon budgets. Carbon hotspots at the construction stage should be identified and mitigated, with measures drawing on best practice from other major construction schemes and expectations for carbon reduction set out during the procurement of contractors.
- 4.13.17. In addition to emissions, construction of the scheme informing the Heathrow Expansion NPS would take place within a sensitive hydrological environment, with activities involving extensive works within and adjacent to rivers and floodplains. This would include the diversion, realignment, and reconfiguration of watercourses within the River Colne catchment, alongside temporary alterations to drainage systems and floodplain connectivity.
- 4.13.18. As a result, the construction phase represents a period of heightened exposure to climate-related risks, particularly fluvial and surface-water flooding during extreme rainfall events, prior to the completion of permanent flood risk management and drainage infrastructure. As set out in the draft Heathrow Expansion NPS, for construction work which has drainage implications, approval for the scheme's overall approach to drainage systems will form part of any development consent issued by the Secretary of State. Therefore, although construction activities would increase exposure to climate-related hazards, these risks would be confined to the construction period and managed through temporary mitigation.
- 4.13.19. Taking both mitigation and adaptation considerations into account, the magnitude of impact is assessed as medium.

²²⁸ Department for Transport (2026) Draft Heathrow Expansion National Policy Statement appraisal report <https://www.gov.uk/government/publications/draft-heathrow-expansion-national-policy-statement-appraisal-report>

- 4.13.20. Overall, the effect of climate change adaptation on health effects is assessed as **minor adverse (not significant)** for the general population and **moderate adverse (significant)** for vulnerable groups.

Operation

- 4.13.21. During operation, the scheme informing the Heathrow Expansion NPS would result in ongoing greenhouse gas emissions associated with the increased airport capacity. Sources of emissions include: aviation carbon, surface access, and airport operations (terminal operation, ground movements, maintenance, etc.). These emissions represent a long-term and cumulative contribution to climate change²²⁹.
- 4.13.22. Annual emissions are expected to vary throughout the operational period, with aviation activity remaining the dominant source. DfT analysis indicates that additional aviation carbon per year under the Current Trends scenario would peak in 2054 and 2055, declining thereafter to the end of the appraisal period in 2095. Under the Technology Development scenario, carbon emissions would peak in 2059, declining thereafter to the end of the appraisal period. DfT estimate the monetised disbenefit of aircraft carbon emissions in the UK as up to -£52,250 million²³⁰ for the Current Trends scenario.
- 4.13.23. Additional carbon per year from operations under both a Current Trends and Technology Development scenario is projected to peak in 2055. Previous analysis found that, over the 60-year appraisal period, the expansion of airport operations at Heathrow would generate approximately 2.6 MtCO₂e. Given the policy and legislation commitments since 2018, it is anticipated that this figure is conservative, and that operational carbon emissions would be lower if calculated under current assumptions.
- 4.13.24. DfT analysis also indicates that additional carbon per year from surface access under both a Current Trends and Technological Development scenario would increase from 2035 to 2053, before increasing slightly and remaining consistent until the end of the appraisal period.
- 4.13.25. Surface access modelling undertaken for the 2018 Airports NPS estimated that approximately 9.5 MtCO₂e would be generated over a 60-year appraisal period from the scheme informing the Heathrow Expansion NPS, assuming an estimated 2.6 billion additional trips by passengers. While subsequent policy and technological changes, including vehicle electrification are expected to reduce emissions per trip, residual emissions would remain. It should be noted that the original analysis did not include freight and resultant HGV movements, introducing uncertainty and the

²²⁹ Airports Commission (2014) Heathrow Airport North West Runway: Business Case and Sustainability Assessment. Available at: <https://assets.publishing.service.gov.uk/media/5a7db88a40f0b65d8863400a/evidence-base-heathrow-north-west-final.pdf> [Accessed: 19/03/26].

²³⁰ Based on 2024 market prices and discounted to 2024.

potential for underestimation of surface access emissions associated with Heathrow airport expansion.

- 4.13.26. DfT estimate the monetised disbenefit of non-aircraft carbon emissions in the UK as -£5,154 million²³¹.
- 4.13.27. As outlined in Section 4.10, aircraft and surface access vehicles are expected to become progressively cleaner over time as technology advances, standards tighten and fleet composition evolves. As stated in the draft Heathrow Expansion NPS, ensuring that Heathrow expansion aligns with legislated carbon budgets and net zero by 2050 is one of the Government's four tests. It is also required that any promoter of Heathrow expansion will put forward a comprehensive package of mitigation measures, which builds on Heathrow's current decarbonisation commitments. Although improvements in aircraft efficiency, sustainable aviation fuel uptake and airspace modernisation are expected to reduce emissions intensity over time, these measures are assumed to occur independently of Heathrow expansion and would not fully offset emissions associated with increased capacity.
- 4.13.28. With respect to climate change adaptation, the operational phase of the scheme informing the Heathrow Expansion NPS would rely on permanent engineered flood risk management and drainage infrastructure, including reconfigured river channels, flood storage areas and surface water management systems, designed to accommodate future climate conditions. These measures aim to maintain downstream flow regimes and ensure no increase in peak water levels. While it is assumed that the proposed adaptation measures would be sufficient to manage climate-related risks during operation, there remains inherent uncertainty over the lifetime of the infrastructure. This uncertainty relates to the scale and timing of future climate change, the frequency and severity of extreme weather events, and the long-term performance and maintenance of engineered systems.
- 4.13.29. The draft Heathrow Expansion NPS requires the applicant to ensure Heathrow expansion is safe from flooding and will not increase flood risk elsewhere for its lifetime, taking into account climate change. It also requires suitable surface water drainage systems that exceed the design capacity of the system.
- 4.13.30. Taking both climate change mitigation and adaptation considerations into account, the magnitude of impact is assessed as medium.
- 4.13.31. Overall, the effect of climate change on health is assessed as **minor adverse (not significant)** for the general population and **moderate adverse (significant)** for vulnerable groups.

²³¹ Based on 2024 market prices and discounted to 2024.

4.14. Soil quality

Evidence

- 4.14.1. Soils are a finite and valuable natural resource that perform a range of essential functions, including supporting ecosystems, regulating water flows, storing carbon, and enabling agricultural production.
- 4.14.2. Soil contamination can present risks to human health through multiple exposure pathways, including direct contact, ingestion of soil or dust, inhalation of airborne particles, and indirect exposure via contaminated groundwater, surface water or the food chain. The level of risk is influenced by the type, concentration, and mobility of contaminants, as well as the nature and duration of human exposure.
- 4.14.3. The potential for adverse health effects arising from soil contamination is influenced by both environmental factors and human behaviour, including the proximity of receptors, land use, and duration of exposure.
- 4.14.4. Exposure to contaminated soils has been associated with a range of health outcomes. For example, heavy metals such as lead and arsenic can affect neurological development and organ function, particularly in children, while hydrocarbons and other organic pollutants may contribute to respiratory effects and increased cancer risk. Many of the emerging contaminants of concern in soils such as per- and polyfluoroalkyl substances (PFAS), phthalates and flame retardants are associated with significant health effects²³². Health effects may arise from short-term exposure, resulting in irritation or acute symptoms, as well as long-term exposure, which may lead to chronic conditions.

Baseline

- 4.14.5. As outlined in the AoS, the Study Area comprises a mix of urban development, transport infrastructure, and areas of open land, including agricultural land of varying quality. Soils in the surrounding area include a range of agricultural classifications, with some areas identified as Best and Most Versatile (BMV) agricultural land, alongside soils that contribute to floodplain function. The area also includes land with a history of industrial activity and transport infrastructure, where soils may be previously disturbed or affected by contamination.
- 4.14.6. In the 2021 Census, 54.4% of residents in the Study Area reported 'very good' health, greater than the national average of 48.5%. The proportion of the Study Area in 'very bad' health (0.8%) is lower than the national average (1.2%), with

²³² European Environment Agency (2025) Soil pollution and health. Available at: https://www.eea.europa.eu/en/analysis/publications/zero-pollution/health/soil-pollution-and-health#:~:text=Soil%20pollution%20can%20affect%20human%20health%20in,*,%20Mining%20operations%20*%20Waste%20management%20facilities [Accessed: April 2026].

Ealing and Hounslow both having the highest proportion of residents in 'very bad' health (1.0%).

- 4.14.7. Given the combination of varied land uses and generally good baseline health, the sensitivity of the general population is assessed to be medium. However, children, older people, and people with existing poor health may be more vulnerable to soil quality impacts. The sensitivity of these vulnerable groups is therefore assessed as high.

Analysis

Construction

- 4.14.8. Construction of the scheme informing the Heathrow Expansion NPS would involve extensive excavation and earthworks, alongside construction activities and associated construction traffic. These activities have the potential to adversely affect soil quality through soil compaction, disturbance of soil structure, contamination, and the permanent loss of soil resources (including areas of BMV land).
- 4.14.9. Construction works would also disturb areas of historic landfill with the scheme informing the Heathrow Expansion NPS footprint. Excavation and reworking of these materials would require careful investigation, handling and management to prevent the mobilisation of contaminants and potential exposure. In accordance with the draft Heathrow Expansion NPS, these effects would be managed through appropriate site investigation, materials management strategies and construction controls.
- 4.14.10. The draft Heathrow Expansion NPS sets out that during the development lifecycle, soil should be sustainably managed and handled appropriately. Any land affected by contamination will need to be remediated appropriately. The applicant is encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination and protect and improve soil quality. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance.
- 4.14.11. Potential health effects associated with the construction phase are expected to be primarily relevant to individuals with direct and prolonged contact with soils, particularly construction workers. For the general population, exposure pathways would be limited due to the controlled nature of construction areas, restricted access, and standard health and safety. Given this, the magnitude of impact assessed to be low.
- 4.14.12. Overall, the effect of soil quality on health and wellbeing during the construction phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable groups.

Operation

- 4.14.13. During the operational phase, airport activities have the potential to affect soil quality through contamination and degradation arising from day-to-day operations. These effects may occur where contaminants come into contact with soils and, if unmanaged, could pose a risk to human health through direct contact or secondary exposure pathways.
- 4.14.14. Potential sources of soil contamination during operation include fuel storage and refuelling activities, aircraft and vehicle maintenance, de-icing and anti-icing operations, fire-training activities and the handling of other operational chemicals. Contaminants may enter soils through accidental spills, leaks, or via surface water runoff, particularly in areas of frequent operational activity.
- 4.14.15. The draft Heathrow Expansion NPS sets out that during the development lifecycle, soil should be sustainably managed and handled appropriately. Any land affected by contamination will need to be remediated appropriately. The applicant is encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance soils are affected by contamination. The application of appropriate environmental management systems and operational controls is assumed to minimise the likelihood of contamination and prevent unacceptable risks to soil quality.
- 4.14.16. Potential health effects associated with soil quality during operation are therefore primarily relevant to individuals with direct and prolonged contact with operational areas, particularly airport and maintenance workers. For the general population, exposure pathways would be very limited, as operational soils are not generally accessible and are subject to ongoing management and monitoring. Given this, the magnitude of impact is assessed to be low.
- 4.14.17. Overall, the effect of soil quality on health and wellbeing during the operation phase is assessed to be **minor adverse (not significant)** for the general population and vulnerable groups.

4.15. Water quality

Evidence

- 4.15.1. Clean water is essential for human health, with poor water quality linked to a range of adverse health outcomes. Contamination of surface water or groundwater can

affect drinking water supplies, recreational use and wider environmental conditions that support health and wellbeing²³³.

- 4.15.2. Airport activities have the potential to introduce pollutants into water systems through surface runoff such as runways and taxiways and through infiltration of spills and leaks into groundwater²³⁴. Common contaminants include de-icing and anti-icing chemicals, hydrocarbons from fuel and engine leaks, firefighting foams, and chemicals used in vegetation management. These substances may be mobilised during rainfall events and enter nearby watercourses²³⁵.
- 4.15.3. Human exposure to contaminated water can occur through ingestion, dermal contact, or indirectly through the food chain. Depending on the nature and concentration of pollutants, this may result in adverse health outcomes, including gastrointestinal illness, skin irritation, and longer-term effects associated with toxic substances²³⁶.

Baseline

- 4.15.4. The local area contains an extensive network of surface watercourses and groundwater bodies within the River Colne catchment which contribute to local water supply and environmental quality. Key receptors include the River Colne, Colne Brook, Wraysbury River, Longford River, Duke of Northumberland's River and their associated floodplains. These water resources are hydraulically connected and play an important role in regulating downstream water quality.
- 4.15.5. In addition to these watercourses, there are a number of lakes and a groundwater body within the vicinity of Heathrow Airport. The majority of these water bodies are classified as artificial or heavily modified, reflecting the urbanised and infrastructure-dominated character of the area.

²³³ International Civil Aviation Organisation (2023) Airports Activities and Environment: Webinar on Green airports. Available at:

<https://www.icao.int/sites/default/files/WACAF/MeetingDocs/Environment/Past%20Years/2023/ENV%20-%20ICAO%20Green%20Airports/Presentations/Information-on-ENV-impacts-of-airports-activities-Green-airports-22-march-2023-EO-PN.pdf> [Accessed: 19/03/26].

²³⁴ International Civil Aviation Organisation (2023) Airports Activities and Environment: Webinar on Green airports. Available at:

<https://www.icao.int/sites/default/files/WACAF/MeetingDocs/Environment/Past%20Years/2023/ENV%20-%20ICAO%20Green%20Airports/Presentations/Information-on-ENV-impacts-of-airports-activities-Green-airports-22-march-2023-EO-PN.pdf> [Accessed: 19/03/26].

²³⁵ International Civil Aviation Organisation (2018) Water Management at Airports. Available at:

<https://www.icao.int/sites/default/files/sp-files/environmental-protection/Documents/Water%20management%20at%20airports.pdf> [Accessed: 19/03/26].

²³⁶ International Civil Aviation Organisation (2023) Airports Activities and Environment: Webinar on Green airports. Available at:

<https://www.icao.int/sites/default/files/WACAF/MeetingDocs/Environment/Past%20Years/2023/ENV%20-%20ICAO%20Green%20Airports/Presentations/Information-on-ENV-impacts-of-airports-activities-Green-airports-22-march-2023-EO-PN.pdf> [Accessed: 19/03/26].

- 4.15.6. A large proportion of the scheme informing the Heathrow Expansion NPS footprint extends into a Drinking Water Safeguard Zone (DWSZ), associated with groundwater resources used for potable supply. This designation indicates that groundwater quality is vulnerable to pollution from surface activities, including runoff, infiltration, and historic land uses.
- 4.15.7. In the 2021 Census, 54.4% of residents in the Study Area reported 'very good' health, greater than the national average of 48.5%. The proportion of the study area in 'very bad' health (0.8%) is lower than the national average (1.2%), with Ealing and Hounslow both having the highest proportion of residents in 'very bad' health (1.0%).
- 4.15.8. Therefore, the sensitivity of the general population is assessed to be medium. Children, older people, and people with poor health are considered to be more sensitive to water quality effects and are assessed to have a high sensitivity.

Analysis

Construction

- 4.15.9. The construction phase would involve extensive and sustained interaction with surface and groundwater systems within the River Colne catchment. Construction within and adjacent to river corridors represents a period of increased sensitivity for the water environment. Activities such as watercourse diversion, realignment and temporary reconfiguration have the potential to directly affect water quality through physical disturbance and increased pathways for pollutant mobilisation.
- 4.15.10. Watercourse diversion and engineering works may temporarily disrupt established flow regimes, modify sediment transport processes and alter hydraulic connectivity between surface water and groundwater. These activities have the potential to increase sediment mobilisation, bank erosion, and to release contaminants, particularly where works intersect areas of made ground or historic landfill.
- 4.15.11. Construction activities also present a risk of accidental pollution incidents, including spills or leaks of fuels, oils, concretes, grouts and other construction chemicals. If not appropriately managed, such substances could enter surface waters via runoff or infiltrate shallow groundwater, resulting in deterioration in water quality.
- 4.15.12. As outlined in the draft Heathrow Expansion NPS, the Secretary of State will need to be satisfied that a proposal has had regard to the Thames River Basin District Management Plan and the Water Framework Directive Regulations and should avoid or mitigate deterioration of water bodies in the area. Therefore, the magnitude of impact is assessed to be medium.
- 4.15.13. Overall, the effect of water quality on health and wellbeing during the construction phase is assessed to be **moderate adverse (significant)** for both the general population and vulnerable groups.

Operation

- 4.15.14. During operation, the scheme informing the Heathrow Expansion NPS has the potential to affect surface water and groundwater quality through polluted runoff associated with aircraft operations, surface access traffic, maintenance activities and general airport servicing. These represent ongoing and diffuse sources of potential pollution which, if not effectively managed over the long term, could contribute to a deterioration in water quality.
- 4.15.15. Operational activities also carry a risk of accidental pollution incidents, such as spills or leaks from fuel storage and refuelling infrastructure, aircraft and vehicle maintenance areas, and waste handling facilities. While such events are expected to be rare, they represent an ongoing risk that requires active management throughout the operational lifetime of the airport. Operational water-quality risks include runoff containing hydrocarbons, heavy metals, rubber residues, suspended solids and other contaminants generated by aircraft movements, vehicle traffic and hardstanding areas. Even low frequency events could have significant implications for water quality and treatment requirements.
- 4.15.16. As stated in the draft Heathrow Expansion NPS, the project should identify opportunities and secure measures to protect and improve water quality and resources through green and blue infrastructure and sustainable drainage. The risk of impacts on the water environment can be reduced through careful design to facilitate adherence to good pollution practice. For example, designated areas for storage and unloading, with appropriate drainage facilities, should be marked clearly. Activities that discharge to the water environment are subject to pollution control and potentially the Environmental Permitting Regulations. In addition, the applicant should consider the Government's PFAS which sets out a long-term vision to reduce and minimise the impacts of harmful PFAS including through the transition to safer alternatives, including the restriction of their use in firefighting foams.
- 4.15.17. Therefore, the magnitude of impact is assessed to be medium.
- 4.15.18. Overall, the effect of water quality on health and wellbeing during the operational phase is assessed to be **moderate adverse (significant)** for both the general population and vulnerable groups.

5. Cumulative and In-combination effects

5.1. Introduction

- 5.1.1. The cumulative effects assessment considers the combined health impacts of the draft Heathrow Expansion NPS, and the scheme informing the Heathrow Expansion NPS it supports, alongside other relevant plans, programmes and major development proposals. Given the strategic nature of the draft Heathrow Expansion NPS, cumulative effects have been considered primarily at a policy and sectoral level, rather than through detailed project-by-project interaction. The assessment therefore focuses on the combined influence of aviation growth, surface transport investment and wider infrastructure delivery, and the associated health effects, rather than attributing effects exclusively to individual schemes.
- 5.1.2. In-combination effects arise when two or more predicted health effects resulting from the scheme informing the Heathrow Expansion NPS over the same area and time may collectively cause a greater (or lesser) effect than each effect in isolation.
- 5.1.3. The analysis presented in this section is high-level, reflecting a proportionate approach which is appropriate to this HIA.

5.2. In-combination effects

- 5.2.1. Table 6 identifies the key in-combination effects relating to health which could arise from the scheme informing the Heathrow Expansion NPS, based on the analysis set out in Section 5.

Table 6: In-combination effects summary

Health determinants	Description of potential in-combination effect
Access to housing, access to social infrastructure, and community identity and cohesion	<p>Pre-construction (access to housing and community identity and cohesion) – Communities within areas identified for potential land take and property acquisition are likely to experience concurrent effects relating to housing uncertainty and changes in community stability. These effects may contribute to increased stress, anxiety, and reduced mental wellbeing associated with uncertainty and perceived loss of control. Therefore, there is potential for adverse in-combination effects where impacts on access to housing and community identity and cohesion are affected in the pre-construction phase.</p>
	<p>Construction – Communities subject to land take or disruption are likely to experience multiple concurrent effects, including loss of housing, loss or disruption of access to social infrastructure, and changes to community identity and cohesion. These effects may combine to disrupt established social networks and sense of place, with particular implications for children and older people, and those with pre-existing mental and physical health conditions. This may result in increased social isolation, stress, anxiety, and effects on mental health, as well as indirect impacts on physical health and wellbeing. Therefore, there is potential for adverse in-combination effects where impacts on access to housing, access to social infrastructure, and community identity and cohesion are affected by land take or disruption in the construction phase.</p>
	<p>Operation – Communities within areas experiencing population growth associated with new employment opportunities (including areas in proximity to Heathrow Airport and key growth locations) are likely to experience concurrent pressures on housing availability, increased demand for social infrastructure, and changes in community identity and cohesion. These combined pressures may contribute to stress, reduced wellbeing, and potential impacts on both mental and physical health. Therefore, there is potential for adverse in-combination effects where impacts on access to housing, access to social infrastructure, and community identity and cohesion are affected by population changes in the operation phase.</p>
Noise, air quality, and landscape and townscape	<p>Construction – Communities located in close proximity to construction activities, including Heathrow Airport and along surface access routes, are likely to experience concurrent exposure to elevated noise levels, reduced air quality, and changes in landscape and townscape. These combined environmental stressors may contribute to adverse health outcomes, including annoyance, stress, sleep disturbance, and short-term respiratory effects. Therefore, there is potential for adverse in-combination effects for receptors impacted by noise, air quality, and landscape and townscape by construction activities in the construction phase.</p>

Operation – Communities located beneath flight paths and in proximity to Heathrow Airport or surface access corridors with higher traffic flows are likely to experience concurrent long-term exposure to noise, air pollution, and changes in landscape and townscape. These combined exposures may contribute to longer-term health outcomes, including cardiovascular disease, respiratory conditions (e.g. asthma), sleep disturbance, and effects on mental wellbeing. Therefore, there is potential for **adverse** in-combination effects for receptors impacted by noise, air quality, and landscape and townscape by operational activities in the operation phase.

Climate change and air quality

Construction and operation – Communities located where air quality effects are likely to be experienced (in proximity to Heathrow Airport, beneath flight paths, and along surface access corridors) may also be subject to wider climate-related changes, specifically more frequent extreme temperatures, which may interact with more localised air pollution to increase health risks. This may include exacerbation of respiratory conditions (e.g. asthma), increased risk of cardiovascular disease, and heightened vulnerability to heat-related illness, particularly for older people and those with pre-existing conditions. Therefore, there is potential for **adverse** in-combination effects for receptors impacted by air quality and climate change by activities in the construction and operation phases.

Employment and income and education, skills, and training

Construction and operation – Communities accessing these opportunities may experience concurrent beneficial effects relating to enhanced access to education, skills, and training alongside the delivery of new employment opportunities. The provision of education, skills, and training may support and enable access to higher-quality and more secure employment generated by the scheme informing the Heathrow Expansion NPS, contributing to increased income and financial security. This may result in associated benefits for mental wellbeing, reduced stress and anxiety, and improved overall health outcomes. These effects may be particularly beneficial for vulnerable groups (e.g. low-skilled, unemployed, or economically disadvantaged populations), with potential for notable improvements in health. Therefore, there is potential for **beneficial** in-combination effects for receptors impacted by employment and income and education, skills, and training opportunities in the construction and operation phases.

5.3. Cumulative effects

- 5.3.1. Cumulative effects are considered in terms of the aviation sector, strategic transport infrastructure, and wider growth and development. An assessment of the likely significant inter-project cumulative effects in relation to human health is provided below. As this is a policy-level assessment, specific cumulative schemes have not been identified.

Access to housing

- 5.3.2. Cumulatively, the scheme informing the Heathrow Expansion NPS alongside other major developments in the surrounding area may influence both the supply and demand for housing. Additional construction and operational employment associated with cumulative schemes may increase housing demand and affordability pressures, particularly in areas with constrained supply over the pre-construction, construction, and operational phases. These effects may contribute to increased stress, anxiety, and reduced mental wellbeing, particularly for households experiencing housing insecurity or displacement. Conversely, the delivery of new housing associated with growth may contribute to meeting local and regional housing needs if appropriately planned. At a policy level, cumulative effects on access to housing are assessed as mixed but overall **adverse**, reflecting pressure on affordability and displacement risks.

Access to social infrastructure

- 5.3.3. Associated with increased employment opportunities as outlined above, cumulative schemes could increase the demand for social infrastructure, such as health and social care, school places, and community facilities. In addition, cumulative schemes could contribute to the loss of these facilities, where they are displaced or subject to severance or disamenity. Without timely expansion of social infrastructure, this could place pressure on existing services and affect access for both existing and new residents. This may result in delayed treatment, reduced preventative care, and impacts on mental wellbeing and overall quality of life. Conversely, coordinated mitigation including planning obligations may support new or expanded facilities. At a policy level, cumulative effects on social infrastructure are assessed as **adverse**, unless effectively mitigated through integrated service planning.

Access to open space and active travel opportunities

- 5.3.4. Cumulative schemes could contribute to the loss or fragmentation of accessible green spaces and routes, thus reducing opportunities for physical activity, mental restoration and social interaction. This could increase the risk of cardiovascular disease and obesity and adverse effects on mental wellbeing. Conversely, where developments are coordinated, cumulative investment in green infrastructure, public

rights of way and active travel networks could enhance connectivity and accessibility across a wider area. At a policy level, cumulative effects on access to open space and active travel are assessed as potentially **adverse**, unless mitigated through integrated planning and the delivery of high-quality, accessible green and active travel infrastructure.

Access to transport

- 5.3.5. Cumulative schemes are likely to increase pressure on the local and strategic road network during both construction and operation. During construction, overlapping construction programmes could generate increased HGV movements and worker travel, leading to temporary congestion and reduced network resilience, particularly during peak periods. In operation, additional employment and associated population growth in surrounding areas may increase daily commuting and freight movements. Without fully coordinated delivery of transport mitigation, these combined effects could exacerbate congestion, collision risk and journey times. These effects may contribute to increased stress, reduced wellbeing, and potential impacts on road safety, including premature mortality and injuries. At a policy level, cumulative transport effects relating to road congestion are therefore assessed as **adverse**, notwithstanding the potential for partial mitigation through strategic transport investment and modal shift initiatives.

Insecurity and perceptions of risk

- 5.3.6. Cumulative schemes may influence perceptions of safety, risk, and security during both construction and operation. At the pre-construction stage, uncertainty, the property acquisition process, and anticipation of change may heighten anxiety and perceived risks among affected communities. Overlapping construction activity, increased construction traffic, temporary changes to road layouts and higher numbers of unfamiliar workers may heighten perceptions of risk related to personal safety, road safety and environmental disturbance. During operation, increased traffic volumes, operational activities, and changes to land use patterns may further affect perceptions of safety, particularly in areas experiencing rapid change or increased activity. While design standards, lighting, surveillance and management measures may reduce actual risk, perceptions of insecurity may persist where cumulative change is substantial or prolonged, contributing to increased stress, anxiety, and reduced mental wellbeing. At a policy level, cumulative effects on insecurity and perceptions of risk are therefore assessed as **adverse**.

Community identity and cohesion

- 5.3.7. Cumulative schemes may have implications for community identity and social cohesion by accelerating population change, altering settlement patterns and introducing prolonged periods of physical and social disruption across the pre-construction, construction, and operational phases. The combined effects of demolition, relocation, new housing delivery and an influx of construction and

operational workers may weaken existing social networks, disrupt long-standing relationships and reduce residents' sense of place, particularly in communities experiencing repeated or overlapping change. In the short to medium term, these pressures may contribute to reduced social cohesion, feelings of disconnection and loss of local identity, adversely impacting mental health, especially among older residents or those with strong ties to place. While over the longer-term new communities and social networks may form, cumulative change is likely to challenge community stability during periods of transition. At a policy level, cumulative effects on community identity and social cohesion are therefore assessed as **adverse**.

Employment and income

- 5.3.8. Cumulative schemes are likely to support employment and income generation across both the construction and operational phases. Construction activity would generate temporary employment opportunities, contributing to short to medium-term employment and income generation. During operation, the cumulative schemes would likely support long-term employment, providing sustained job opportunities and income stability for a large workforce. These benefits may contribute to improved mental wellbeing, reduced stress and anxiety associated with financial insecurity. At a policy level, cumulative effects on employment and income are therefore assessed as **beneficial**.

Education, skills, and training

- 5.3.9. During the construction phase, cumulative schemes may increase opportunities for training and skills development linked to temporary construction employment activities. During operation, longer-term growth associated with the airport and related development may also require skills and workforce development, thus leading to private and public sector investment in training programmes which local workers and potential workers can take advantage of. These effects may enhance long-term employment prospects, contributing to improved income, reduced health inequalities, and associated benefits for mental health. At a policy level, cumulative effects on education, skills and training are therefore assessed as **beneficial**.

Air quality

- 5.3.10. Cumulative schemes may increase pressure on air quality through the combined effect of emissions from construction and operation. While individual schemes may incorporate mitigation measures to limit emissions, the aggregate effect of multiple developments could contribute to a deterioration in local air quality and increased exposure to pollutants. Increased exposure to air pollutants may contribute to adverse health outcomes, including respiratory conditions (e.g. asthma), cardiovascular disease, and premature mortality, particularly for vulnerable groups. At a policy level, cumulative effects on air quality are therefore assessed as **adverse**.

Noise

- 5.3.11. The aggregate effect of multiple developments may increase the overall number of people exposed to elevated noise levels, particularly where impacts overlap or occur across similar time periods. Elevated noise exposure may contribute to sleep disturbance, annoyance, stress, and increased risk of cardiovascular effects. At a policy level, cumulative effects on noise are therefore assessed as **adverse**.

Landscape and townscape

- 5.3.12. Cumulative schemes are likely to contribute to progressive changes in landscape and townscape character, particularly where growth is associated with major infrastructure corridors and urban expansion. Over time, the combined effects of multiple developments may increase levels of urbanisation, alter views and reduce perceived openness, with implications for sense of place and visual amenity. These changes may adversely impact mental wellbeing. At a policy level, cumulative effects on landscape and townscape are therefore assessed as **adverse**.

Climate change

- 5.3.13. Cumulative schemes may increase pressure on climate change mitigation through the combined effect of increased greenhouse gas emissions during construction and operation phases. While individual schemes may incorporate measures to reduce emissions and improve efficiency, the aggregate effect of multiple developments is likely to reinforce emissions growth at a broader scale. Increased greenhouse gas emissions may indirectly contribute to long-term health risks associated with climate change, including respiratory diseases, cardiovascular disease, and premature mortality.
- 5.3.14. Cumulative schemes may also influence climate change adaptation, as multiple developments could increase the exposure and vulnerability of people, assets, and infrastructure to climate-related risks such as flooding, overheating, and extreme weather events. Although individual schemes are typically designed to incorporate resilience measures, the combined effect of development may place additional pressure on existing adaptation systems and reduce overall resilience if not planned strategically. This could result in heat-related illness and mortality, injury and fatalities from extreme weather, and exacerbation of cardiovascular and respiratory conditions. Therefore, at a policy level, cumulative effects on climate change mitigation and adaptation are therefore assessed as **adverse**.

Soil quality

- 5.3.15. Cumulative schemes may increase pressure on soil quality through contamination arising from construction and operational activities and the mobilisation of existing contaminants. Sources may include spills, leakages, deposition of pollutants, and the reuse or disposal of excavated materials. While individual schemes are likely to

incorporate mitigation and remediation measures, the combined effect of multiple developments could increase the risk of soil contamination and degradation if not managed in a coordinated manner, impacting physical health. At a policy level, cumulative effects on soil quality are therefore assessed as **adverse**.

Water quality

- 5.3.16. Cumulative schemes may increase pressure on surface water and groundwater quality through runoff, discharges or diffuse pollution. While individual schemes may incorporate mitigation measures, the combined effect of development could increase the risk of water quality deterioration if not managed at a catchment scale, impacting physical health. At a policy level, cumulative effects on water quality are therefore assessed as **adverse**.

6. Conclusions

- 6.1.1. The evidence within Chapter 5 demonstrates that the scheme informing the Heathrow Expansion NPS has potential to impact the health of local communities through a wide variety of pathways.
- 6.1.2. Heathrow Airport is situated in densely populated area with a growing, relatively young and economically active population. This indicates that there is good potential for local residents to take advantage of the economic opportunities which a Heathrow expansion scheme offers. However, baseline indicators identify that in some locations there are sub-groups which are likely to be more vulnerable to the potential adverse effects of airport expansion.
- 6.1.3. Heathrow Villages ward, whose residents would likely be displaced, is characterised by high deprivation in the IMD living environment domain, as well as in the barriers to housing and services domain, and by a high proportion of renters who might be particularly exposed to rising housing costs.
- 6.1.4. When considering the local authority areas in proximity to Heathrow, some general indicators of physical and mental health compare favourably with the national average. However, the local authority areas of Hillingdon, Ealing, Hounslow and Slough perform markedly less well in a number of respects, including barriers to housing and services, child obesity, road safety, and health conditions attributable to air pollution.
- 6.1.5. Table 7 sets out a summary of the conclusions of the health analysis.
- 6.1.6. Beneficial health effects are considered likely relating to employment and income (construction and operation) and education, skills and training opportunities (construction and operation). While it is acknowledged that some local businesses will be displaced or disrupted, it is assumed that a substantial number of jobs will be generated by airport expansion. With positive interventions around skills and training, workers from surrounding boroughs could derive substantial benefit from these economic opportunities.
- 6.1.7. However, adverse effects are considered likely with regard to the other determinants which cover environmental and social considerations, and many of these have potential to be significant. Potential major adverse health effects are identified with regard to: access to housing (direct and local impacts) during the construction and operational phase; access to social infrastructure (direct and local impacts) during the construction and operational phase; community identity and cohesion during the operational phase (vulnerable sub-groups only), and air quality during the operational phase (vulnerable sub-groups only).
- 6.1.8. There is potential for cumulative and in-combination effects to amplify both the beneficial and the adverse effects identified within the HIA. Joint-working to plan

mitigation measures and service provision could help avoid adverse effects in this regard.

- 6.1.9. This HIA has been undertaken at a high-level, reflecting the strategic nature of the draft Heathrow Expansion NPS. As such, effects have been considered primarily at a policy level. Future assessments of the health effects of individual schemes under the draft Heathrow Expansion NPS should be undertaken at project level, enabling more detailed appraisal of impacts and the development of targeted mitigation and enhancement measures. This approach should support the maximisation of potential health benefits, alongside the effective management and reduction of adverse effects.

Table 7: Summary of analysis: significance of health effects

Health Determinant	General population	Vulnerable groups
Pre-construction		
Access to housing – Local effects	Moderate adverse	Moderate adverse
Access to housing – Wider effects	Minor adverse	Minor adverse
Insecurity and perceptions of risk	Minor adverse	Minor adverse
Community identity and cohesion	Moderate adverse	Moderate adverse
Construction		
Access to housing – Local effects	Major adverse	Major adverse
Access to housing – Wider effects	Moderate adverse	Moderate adverse
Access to social infrastructure – Local effects	Major adverse	Major adverse
Access to social infrastructure – Wider effects	Minor adverse	Minor adverse
Access to open space and active travel opportunities	Minor adverse	Moderate adverse
Access to transport	Moderate adverse	Moderate adverse
Insecurity and perceptions of risk	Minor adverse	Minor adverse
Community identity and cohesion	Moderate adverse	Major adverse
Employment and income	Major beneficial	Major beneficial
Education, skills, and training	Moderate beneficial	Major beneficial
Air quality	Moderate adverse	Moderate adverse
Noise	Moderate adverse	Moderate adverse
Landscape and townscape	Moderate adverse	Moderate adverse
Climate change	Minor adverse	Moderate adverse

Soil quality	Minor adverse	Minor adverse
Water quality	Moderate adverse	Moderate adverse
Operation		
Access to housing – Local effects	Moderate adverse	Moderate adverse
Access to housing – Wider effects	Moderate adverse	Moderate adverse
Access to social infrastructure – Local effects	Moderate adverse	Moderate adverse
Access to social infrastructure – Wider effects	Minor adverse	Minor adverse
Access to open space and active travel opportunities	Minor adverse	Minor adverse
Access to transport	Minor adverse	Minor adverse
Insecurity and perceptions of risk	Minor adverse	Minor adverse
Community identity and cohesion	Moderate adverse	Moderate adverse
Employment and income	Major beneficial	Major beneficial
Education, skills, and training	Moderate beneficial	Major beneficial
Air quality	Moderate adverse	Major adverse
Noise	Moderate adverse	Moderate adverse
Landscape and townscape	Minor adverse	Moderate adverse
Climate change	Minor adverse	Moderate adverse
Soil quality	Minor adverse	Minor adverse
Water quality	Moderate adverse	Moderate adverse

Note: Significant effects are shown in bold.

Appendix A Community Profile

A community profile for the 11 local authorities within the Study Area has been set out below, to support the baseline information provided within Chapter 5. It outlines population characteristics, socio-economic factors, and health indicators within the local authorities whose populations are likely to experience health effects associated with the expansion of Heathrow Airport.

The Study Area takes in the following local authorities. It includes the local authorities which host and neighbour Heathrow, as well as others which are further afield:

- Hillingdon;
- Hounslow;
- Ealing;
- Slough;
- Spelthorne;
- Buckinghamshire²³⁷;
- Elmbridge;
- Richmond upon Thames;
- Runnymede;
- Wandsworth; and
- Windsor and Maidenhead.

This community profile presents baseline data for the Study Area using an average of the local authorities and compares this with the national average. It also presents data for individual local authorities to illustrate inequalities within the Study Area.

Data for the community profile baseline has been obtained from the following sources and the most recent publicly available data has been used:

- Office for National Statistics (ONS) (2022) 2021 Census²³⁸;
- ONS (2012) 2011 Census²³⁹;

²³⁷ This updates the study area set out in 2018 by WSP as South Bucks District Council was abolished and its functions transferred to Buckinghamshire Council Unitary Authority in 2020, combining the four former districts of Aylesbury Vale, Chiltern, South Bucks, and Wycombe.

²³⁸ ONS (2022) 2021 Census. Available at: https://www.nomisweb.co.uk/sources/census_2021 [Accessed: 27/01/26].

²³⁹ ONS (2011) 2011 Census. Available at: https://www.nomisweb.co.uk/sources/census_2011 [Accessed: 27/01/26].

- Department for Levelling Up, Housing and Communities (2025) English Indices of Deprivation²⁴⁰; and
- Department of Health & Social Care Fingertips Local Authority Health Profiles^{241,242}.

Population

According to the 2021 Census, the population of the Study Area is 2,678,853. Buckinghamshire accounts for the largest share of this (20.6%), and Runnymede the smallest (3.3%).

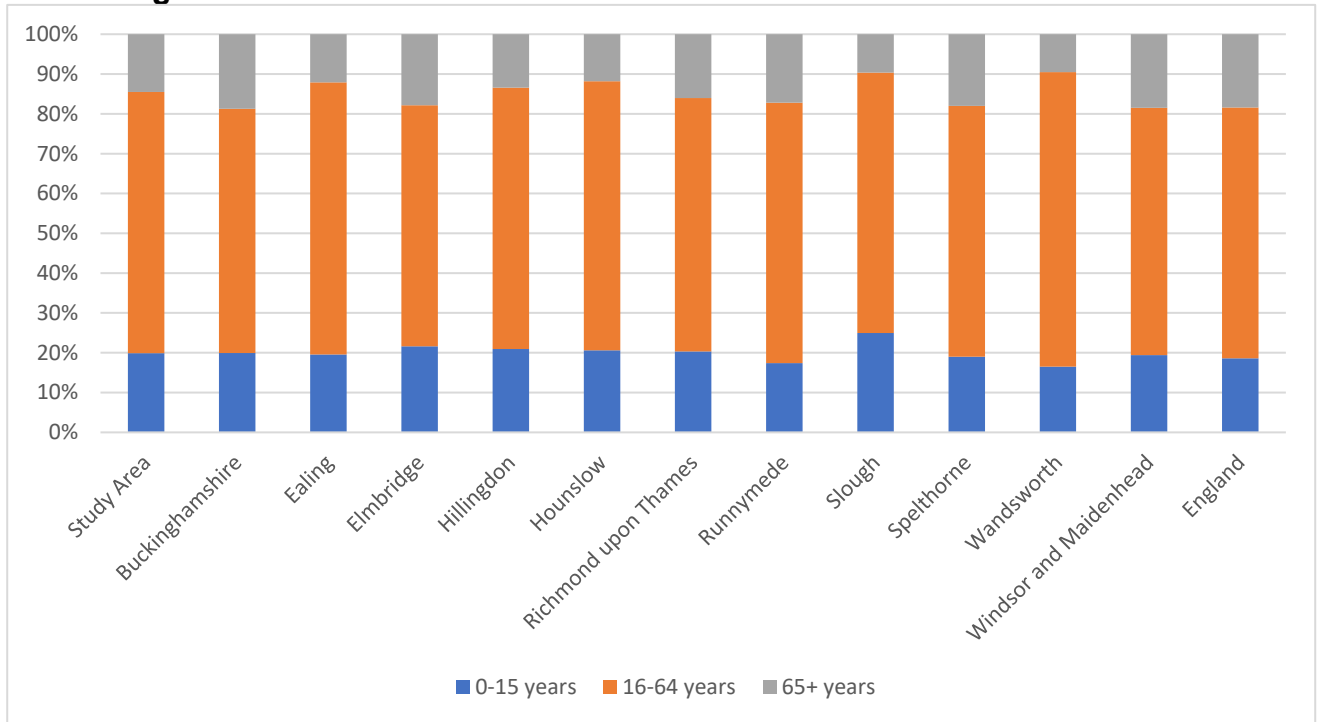
As shown in **Plate 3**, 19.9% of the population of the Study Area is aged under 16, above the national average of 18.6%. The working population (16-64 years) comprises 65.6% of the Study Area, greater than the national average of 63.0%. In comparison, older people (65+ years) represent 14.5%, lower than the national average of 18.4%. Slough has the greatest proportion of younger residents (24.9%) in the Study Area, followed by Elmbridge (21.6%), Hillingdon (20.9%), and Hounslow (20.6%). Wandsworth has the greatest proportion of working age residents, with 74.0% of the population, followed by Ealing (68.4%), Hounslow (67.6%), and Hillingdon (65.6%). The local authority with the greatest proportion of older people is Buckinghamshire at 18.7%, followed by Windsor and Maidenhead (18.5%), Spelthorne (18.0%), and Elmbridge (17.8%).

²⁴⁰ Ministry of Housing, Communities and Local Government (2025) English indices of deprivation. Available at: <https://www.gov.uk/government/collections/english-indices-of-deprivation> [Accessed: 16/01/26].

²⁴¹ Note: The most recent available data varies by dataset.

²⁴² Department of Health & Social Care (various) Fingertips Local Authority Health Profiles. Available at: <https://fingertips.phe.org.uk/profile/health-profiles> [Accessed: 16/01/26].

Plate 3: Age breakdown



Source: ONS (2022) 2021 Census.

ONS provides data about subnational population projections for England based on 2022 data. Population projections are shown in Table 8, estimating that the Study Area population will rise to 2,818,022 by 2029. As shown, Wandsworth is projected to have the greatest population growth, followed closely by Buckinghamshire, and Elmbridge.

Table 8: Population projection

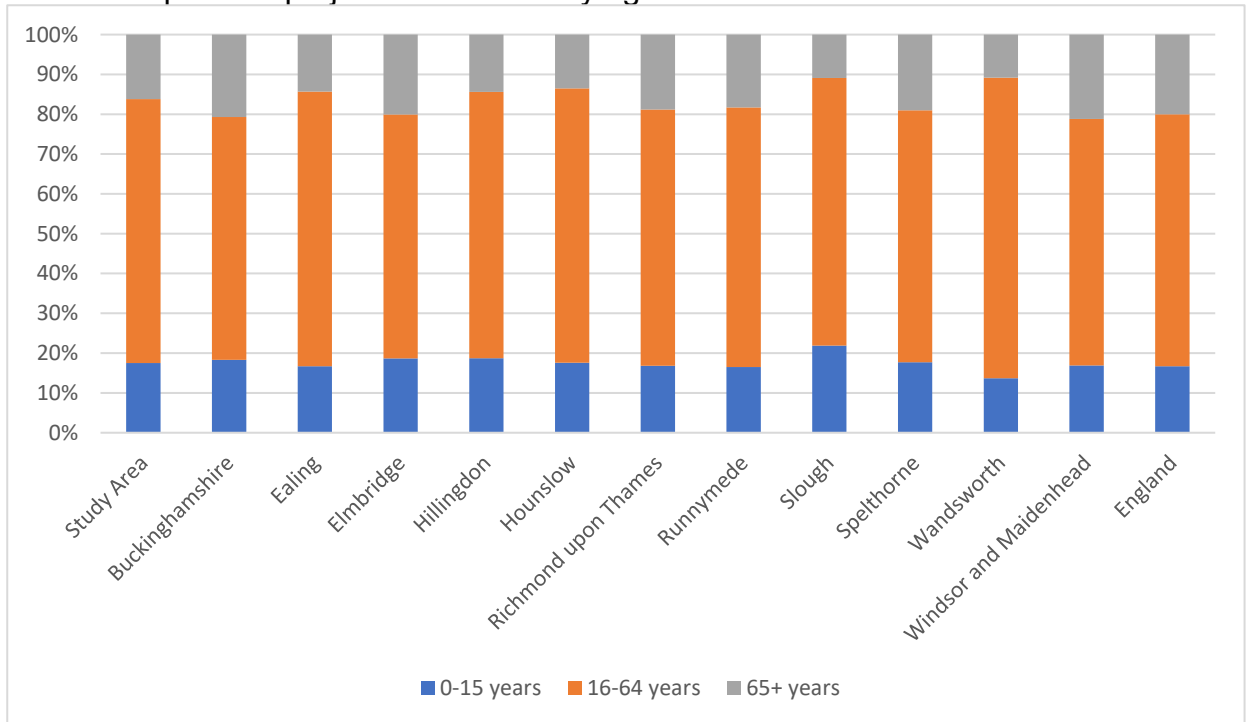
Local Authority	2024	2047	Change (number)	Change (%)
Buckinghamshire	578,772	641,480	62,708	10.8%
Ealing	385,985	399,143	13,158	3.4%
Elmbridge	141,926	155,824	13,898	9.8%
Hillingdon	329,185	351,032	21,847	6.6%
Hounslow	299,424	314,426	15,002	5.0%
Richmond-upon-Thames	196,678	208,428	11,750	6.0%
Runnymede	92,118	100,215	8,097	8.8%
Slough	167,359	168,692	1,333	0.8%
Spelthorne	107,074	113,117	6,043	5.6%

Wandsworth	337,655	377,779	40,124	11.9%
Windsor and Maidenhead	158,943	164,804	5,861	3.7%

Source: ONS (2024) Population estimates; ONS (2024) Population projections.

The projected age breakdown is 17.5% aged under 15, 66.3% aged 16 to 64, and 16.2% aged over 65 in the Study Area, as shown in **Plate 4**. Slough is projected to have the greatest proportion of younger residents (21.9%), compared to Wandsworth with the lowest proportion (13.7%). In comparison, Wandsworth is projected to have the greatest proportion of working aged residents (75.5%), and Buckinghamshire (61.0%) the lowest. Windsor and Maidenhead is projected to have the greatest proportion of older residents (21.2%), with Wandsworth the lowest proportion (10.8%).

Plate 4: Population projections in 2029 by age



Source: ONS (2022) Subnational population projections for England: 2022-based.

The 2021 Census outlines a self-assessment of the extent to which residents’ day-to-day activities are impacted by long-term health problems or disability, as shown in **Table 9**. Under the Equality Act 2010, disability is defined as a physical or mental impairment that has a ‘substantial’ or ‘long-term’ negative effect in individuals’ ability to do normal daily activities. The Study Area has a lower proportion of disabled people at 12.6% compared to the national average (17.3%). Runnymede has the greatest proportion of disabled residents disabled at 14.6%, and Slough the lowest at 11.3%. Similarly, the Study Area has a lower proportion of disabled residents with

their day-to-day activities limited a lot and limited a little (5.1% and 7.6% respectively) compared to England (7.3% and 10.0% respectively).

Table 9: Disability

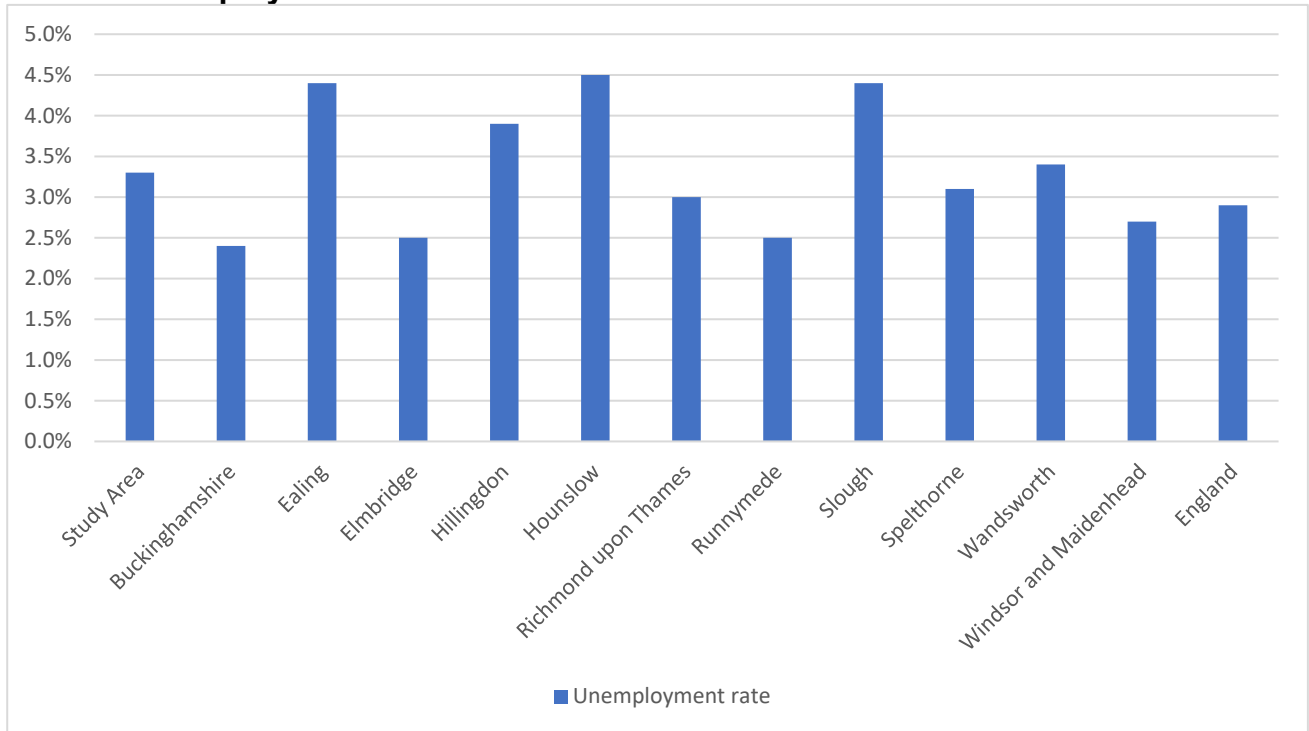
Area	Disabled under the Equality Act (%)	Disabled – Day-to-day activities limited a lot (%)	Disabled – Day-to-day activities limited a little (%)
Study Area	12.67	5.1	7.6
Buckinghamshire	13.5	5.0	8.5
Ealing	12.2	5.4	6.8
Elmbridge	11.9	4.4	7.5
Hillingdon	12.9	5.6	7.3
Hounslow	12.2	5.4	6.9
Richmond upon Thames	12.0	4.5	7.6
Runnymede	14.6	5.5	9.1
Slough	11.3	5.0	6.4
Spelthorne	14.2	5.7	8.6
Wandsworth	11.4	4.5	6.9
Windsor and Maidenhead	12.3	4.7	7.6
England	17.3	7.3	10.0

Source: ONS (2022) 2021 Census.

Socio-economic factors

Economic activity data from the 2021 Census shows that 63.5% of residents in the Study Area are economically active (excluding full-time students), while 3.3% are unemployed. The economic activity rate in the Study Area is higher than the national average of 58.6%. However, the unemployment rate in the Study Area is also higher than the national average of 2.9%. **Plate 5** shows the variation in unemployment rates between the local authorities. There is variation in unemployment rates between the local authorities: Hounslow, Ealing, Slough and Hillingdon all have unemployment rates above 3.5%.

Plate 5: Unemployment rate



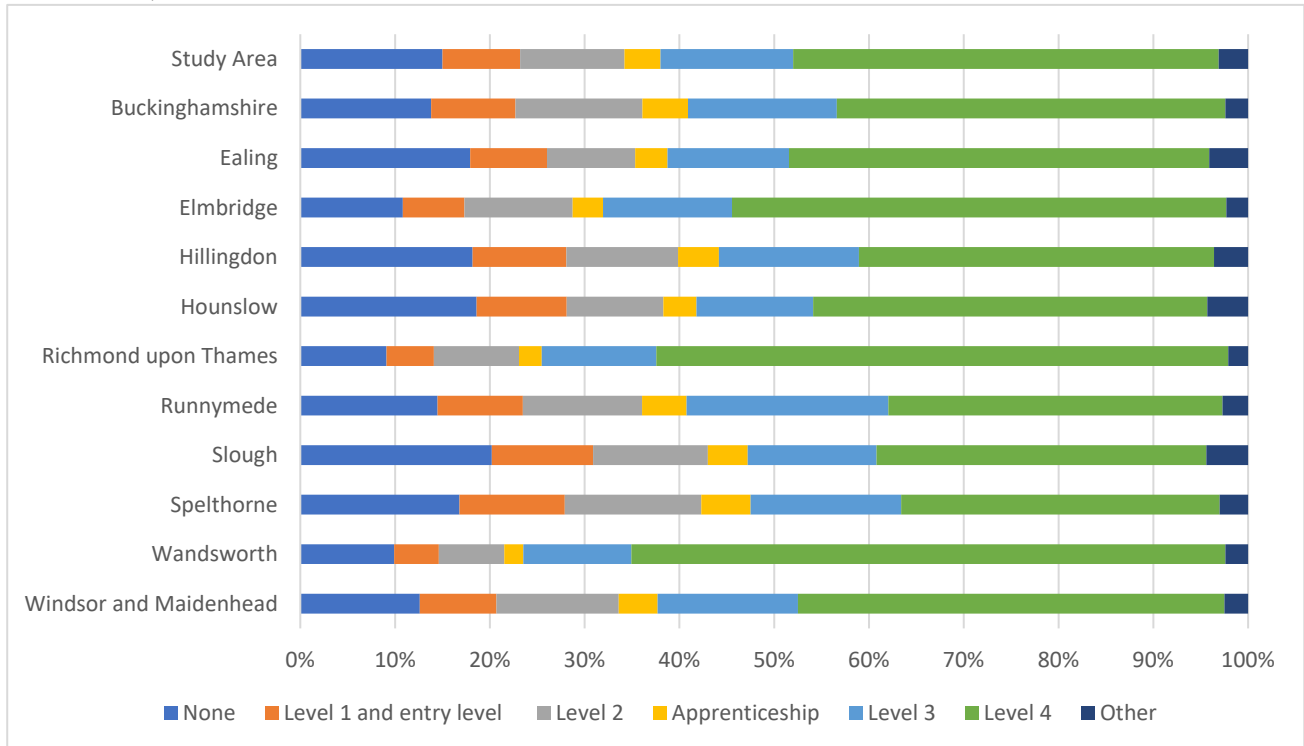
Source: ONS (2022) 2021 Census.

The Department of Health & Social Care²⁴³ provides data on long-term unemployment in 2024/5, defined as those claiming out of work benefit for over 12 months aged between 16 and 64. The Study Area has a lower proportion of long-term unemployment, at 0.43 people per 1,000 residents, compared to the national average (0.51 people per 1,000 residents). Elmbridge has the lowest proportion of long-term unemployed residents (0.20 residents per 1,000), closely followed by 0.24 residents in Windsor and Maidenhead. In comparison, Ealing has the highest proportion of long-term unemployed residents (0.88 residents), followed by Spelthorne (0.59 residents).

Qualifications in the Study Area and constituent local authorities are presented **Plate 6**. The Study Area shows a large proportion of Level 4 qualifications (44.9%), alongside a notable proportion of residents with no qualifications (15.0%), showing a mixed skills base. Higher-skilled concentrations are most evident in Wandsworth (62.6%) and Richmond upon Thames (60.4%), where Level 4 attainment is substantially above the Study Area average. In contrast, authorities closest to Heathrow show a greater prevalence of lower qualification levels. Slough (20.2%), Hounslow (18.6%), Hillingdon (18.2%), and Ealing (17.9%) all exceed the Study Area average for residents with no qualifications.

²⁴³ Department of Health & Social Care (2025) Fingertips Local Authority Health Profiles. Available at: <https://fingertips.phe.org.uk/profile/health-profiles> [Accessed: 16/01/26].

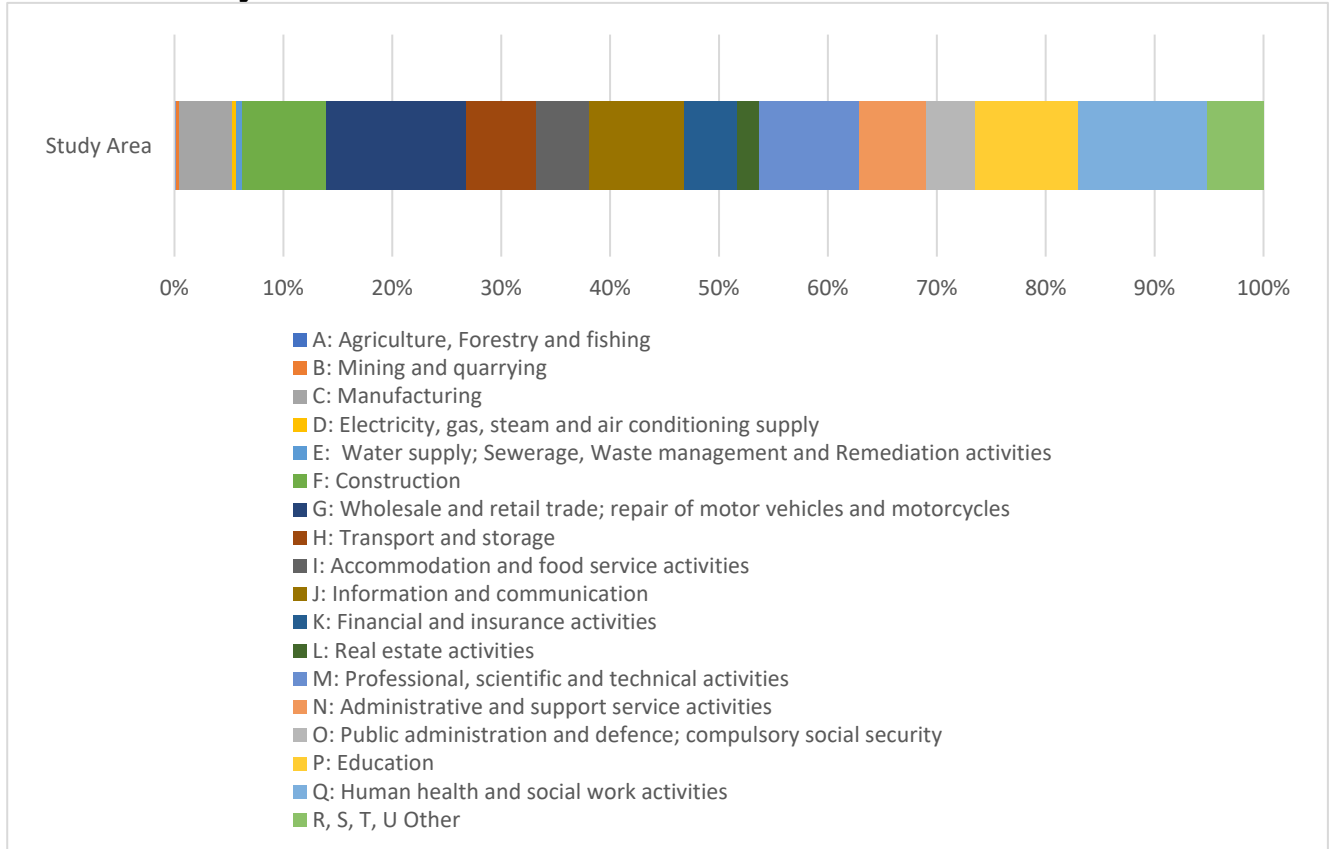
Plate 6: Qualifications



Source: ONS (2022) 2021 Census.

As shown in Plate 7Error! Reference source not found., the Study Area shows a broadly service-led employment profile, the largest proportion of residents in wholesale and retail (12.9%), health (11.8%), education (9.5%), and professional services (9.2%). Transport and storage (6.4%), construction (7.7%), manufacturing (4.9%) and administrative/support services (6.1%) also form a notable proportion. In the constituent local authorities, Slough (12.2%) and Spelthorne (11.9%), alongside Hounslow (10.2%) and Hillingdon (9.2%), show significantly elevated transport and storage employment compared to the Study Area, highlighting their key role in employment linked to Heathrow. Manufacturing is greater in Buckinghamshire (6.9%), Windsor and Maidenhead (6.8%), and Slough (6.1%) compared to the Study Area, potentially suggesting industry-related activity supporting airport supply chains.

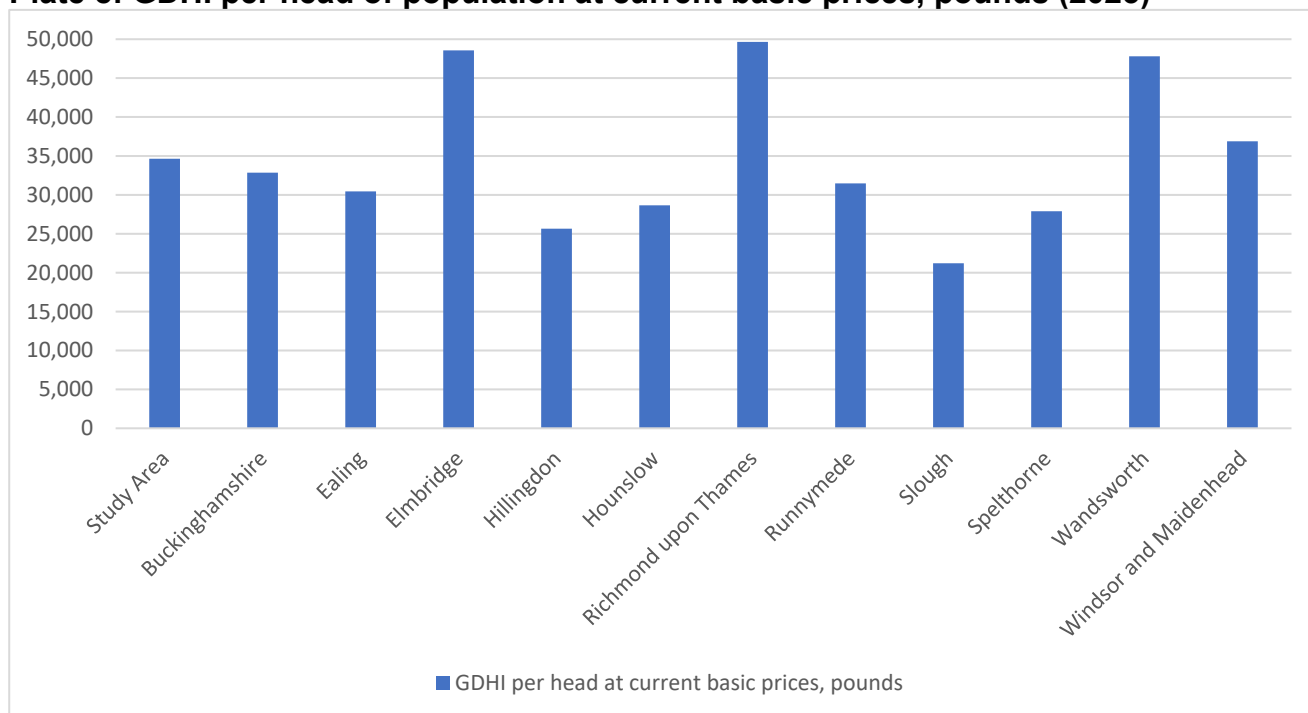
Plate 7: Industry



Source: ONS (2022) 2021 Census.

Plate 8 shows the Gross Disposable Household Income (GDHI) per resident at current basic prices in 2023. The Study Area recorded an average GDHI per head of £34,644, with the highest GDHI per head in Richmond upon Thames (£49,666), Elmbridge (£48,562), and Wandsworth (£47,804). In contrast, some authorities show notably lower GDHI levels, particularly Slough (£21,205), as well as Hillingdon (£25,649), Spelthorne (£27,896) and Hounslow (£28,652). These areas fall well below the Study Area average, indicating comparatively lower household incomes.

Plate 8: GDHI per head of population at current basic prices, pounds (2023)



Source: ONS (2025) Regional gross disposable household income: local authorities 2023²⁴⁴.

The 2025 English Indices of Deprivation provides information on deprivation dimensions in the local authorities comprising the Study Area. **Table 10** shows the average deprivation rank for each dimension out of 296 local authorities, with 1 being the most deprived. The average rank shows that the Study Area is most deprived in the living environment dimension, with an average rank of 98, followed by barriers to housing and services with an average rank of 122. The Study Area is least deprived in terms of health and disability, ranked 236th.

Table 10: Deprivation by rank

Deprivation Dimension	Study Area (average)
Deprivation	184
Employment	209
Education Skills and Training	206
Income	166
Income deprivation affecting children index (IDACI)	171
Income deprivation affecting older people index (IDAOP)	141

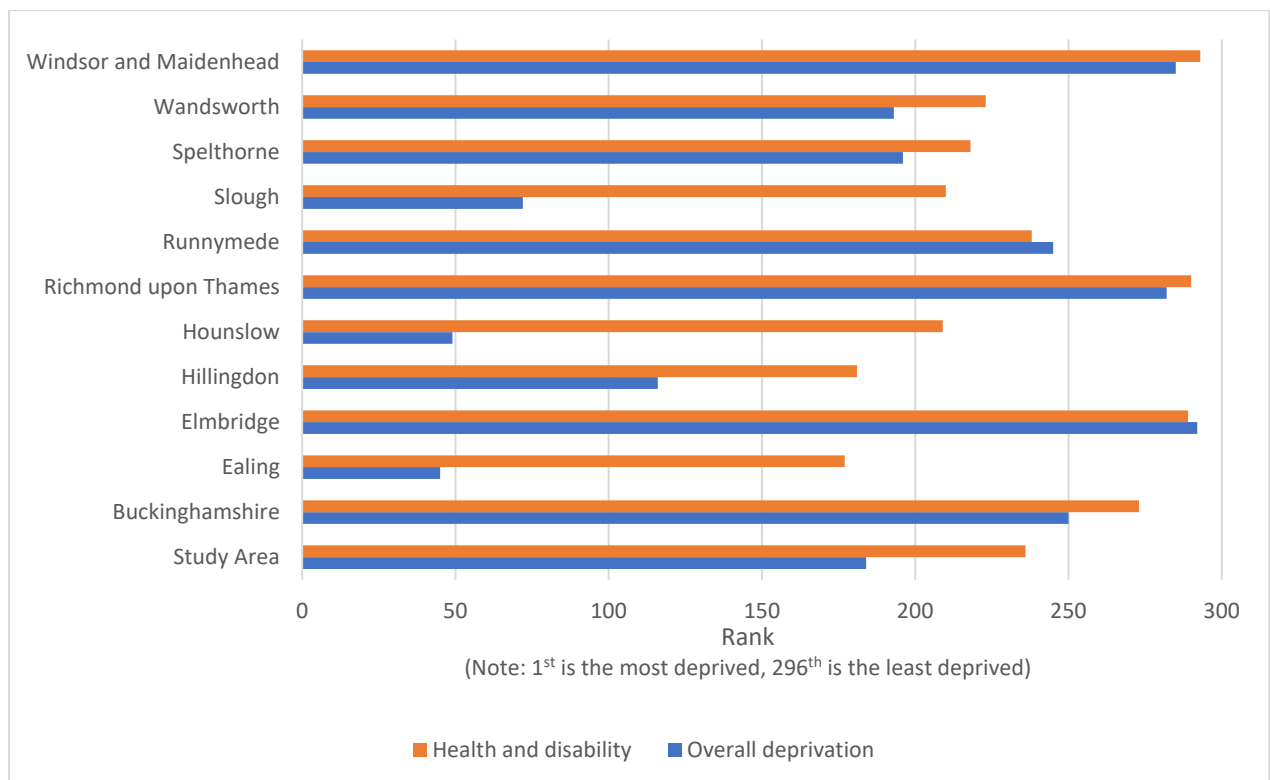
²⁴⁴ ONS (2025) Regional gross disposable household income: local authorities 2023. Available at: <https://www.ons.gov.uk/economy/regionalaccounts/grossdisposablehouseholdincome/datasets/regionalgrossdisposablehouseholdincomelocalauthorities> [Accessed: March 2026].

Deprivation Dimension	Study Area (average)
Health and disability	236
Barriers to housing and services	122
Living environment	98

Source: Ministry of Housing, Communities and Local Government (2025) English indices of deprivation.

It is noted that there is variation in the districts comprising the Study Area. This variation in overall deprivation and health and disability dimensions is shown in **Plate 9**. As shown, Elmbridge is the least deprived local authority in terms of overall deprivation, ranked 292nd, closely followed by Windsor and Maidenhead (285th), and Richmond upon Thames (282nd). In comparison, Ealing is the most deprived (45th), closely followed by Hounslow (49th). In terms of health and disability deprivation, Windsor and Maidenhead is similarly the least deprived (293rd), closely followed by Richmond upon Thames (290th). In comparison, Ealing is the most deprived (177th), followed by Hillingdon (181st).

Plate 9: Overall deprivation and health and disability deprivation

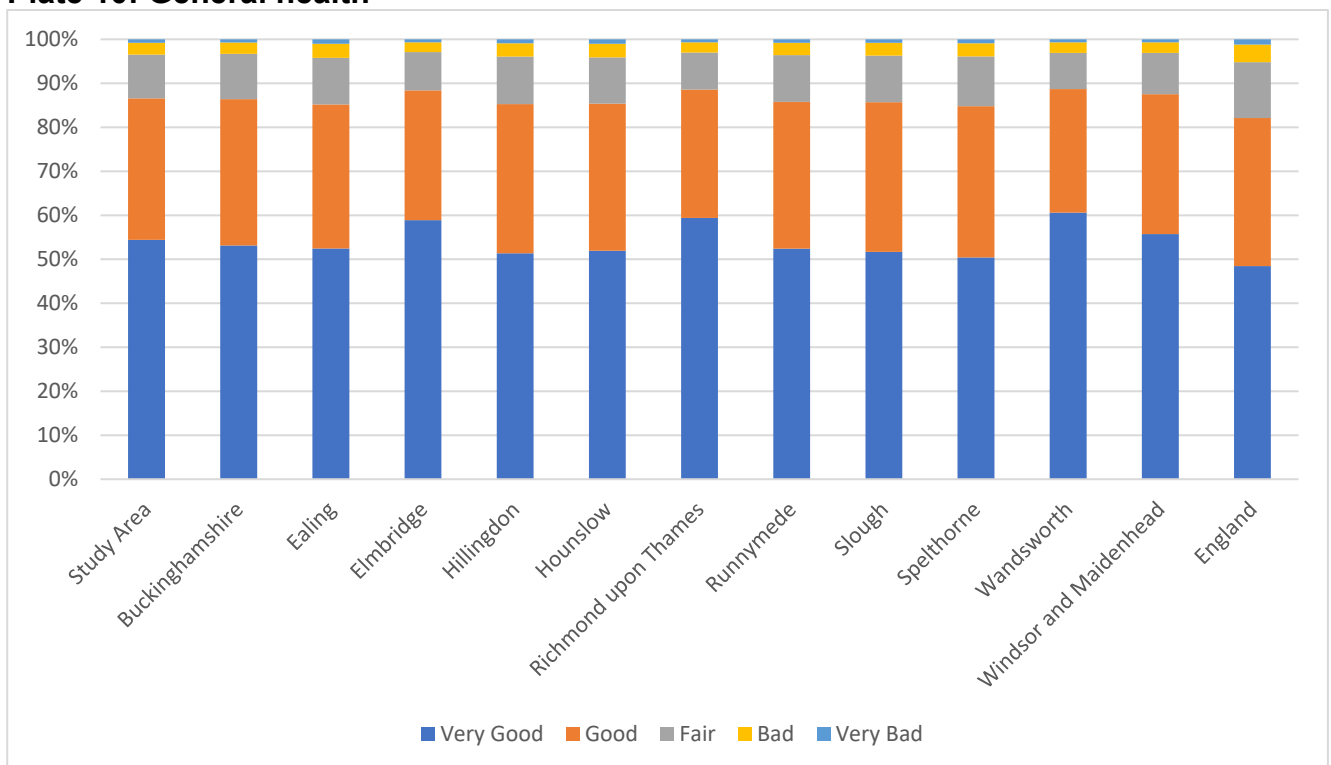


Source: Ministry of Housing, Communities and Local Government (2025) English indices of deprivation.

Health

The 2021 Census provides data on self-assessed general health, as shown in Plate 10. In the Study Area, 54.4% of residents report ‘very good’ health, greater than the national average of 48.5%. The population of Wandsworth has the greatest proportion of residents in ‘very good’ health (60.6%), compared to 50.4% in Spelthorne. The proportion of the Study Area in ‘very bad’ health (0.8%) is lower than the national average (1.2%), with Ealing and Hounslow both having the highest proportion of residents in ‘very bad’ health (1.0%) and Buckinghamshire, Elmbridge, Richmond upon Thames, Wandsworth, and Windsor and Maidenhead the lowest (0.7%).

Plate 10: General health



Source: ONS (2022) 2021 Census.

Table 11 presents numerous health indicators from the Department of Health and Social Care for the Study Area, its constituent local authorities, and the national average. Overall, the data suggests that the Study Area performs better than the England average across all health indicators presented, apart from the rate of live babies with a low birth weight, in which the Study Area performed slightly worse than the national average. There is clear spatial variation between local authorities within the Study Area, with areas such as Slough, Hillingdon and Hounslow performing worse than Richmond upon Thames, Windsor and Maidenhead, Buckinghamshire, and Ealing in general.

Table 11: Baseline health indicators

Health indicators	Study Area	Buckinghamshire	Ealing	Elmbridge	Hillingdon	Hounslow	Richmond upon Thames	Runnymede	Slough	Spelthorne	Wandsworth	Windsor and Maidenhead	England
Physically active adults (%) (2024)	68.0	73.7	65.7	80.3	56.2	60.2	76.6	71.0	57.1	58.1	74.8	74.1	67.4
Population reporting depression or anxiety (%) (2017)	11.3	10.1	11.2	10.0	11.6	11.5	9.7	13.1	11.5	12.5	12.7	9.9	13.7
Low birth weight of live babies (%) (2018-22)	6.9	6.6	7.6	6.4	6.4	8.2	5.8	6.7	8.4	7.5	6.2	6.5	6.8
Obese children (reception year) (%) (2022/3-2024/5)	8.2	7.6	9.7	6.0	9.1	10.4	5.6	7.7	10.8	7.9	8.1	7.1	9.8
Obese children (year 6) (%) (2022/3-2024/5)	32.5	30.4	37.3	13.1	37.3	39.8	24.2	38.5	41.0	32.7	33.1	29.7	36.2
Mortality from causes considered preventable (aged	82.7	70.5	93.4	63.8	92.8	94.7	61.2	82.2	115.8	79.7	83.0	72.2	100.0

Health indicators	Study Area	Buckinghamshire	Ealing	Elmbridge	Hillingdon	Hounslow	Richmond upon Thames	Runnymede	Slough	Spelthorne	Wandsworth	Windsor and Maidenhead	England
under 75) (per 100,000) (2024)													
Mortality from cancer (per 100) (2024)	89.1	88.2	85.4	81.7	95.2	87.5	84.0	95.0	96.0	91.7	90.6	84.8	100.0
Mortality from cancer (aged under 75) (per 100,000) (2024)	86.6	86.6	82.1	95.7	92.8	84.8	72.0	92.3	95.7	80.7	87.8	82.3	100.0
Mortality from cardiovascular disease (per 100) (2024)	92.4	83.3	96.5	87.1	97.9	99.6	74.2	98.3	118.5	91.8	89.0	80.4	100.0
Mortality from cardiovascular disease (aged under 75) (per 100) (2024)	87.5	70.3	101.9	61.7	96.1	99.5	65.4	87.8	135.3	95.5	82.3	67.2	100.0
Mortality from respiratory diseases (per 100) (2024)	90.8	80.4	96.1	80.6	94.7	86.6	64.0	104.0	118.6	102.1	83.3	88.2	100.0

Health indicators	Study Area	Buckinghamshire	Ealing	Elmbridge	Hillingdon	Hounslow	Richmond upon Thames	Runnymede	Slough	Spelthorne	Wandsworth	Windsor and Maidenhead	England
Hip fractures: emergency hospital admissions (65 years+) (per 100) (2021)	88.3	94.4	83.4	97.0	89.9	86.1	90.8	89.8	85.9	86.6	75.4	92.0	100.0

Source: Department of Health & Social Care. Fingertips Local Authority Health Profiles.

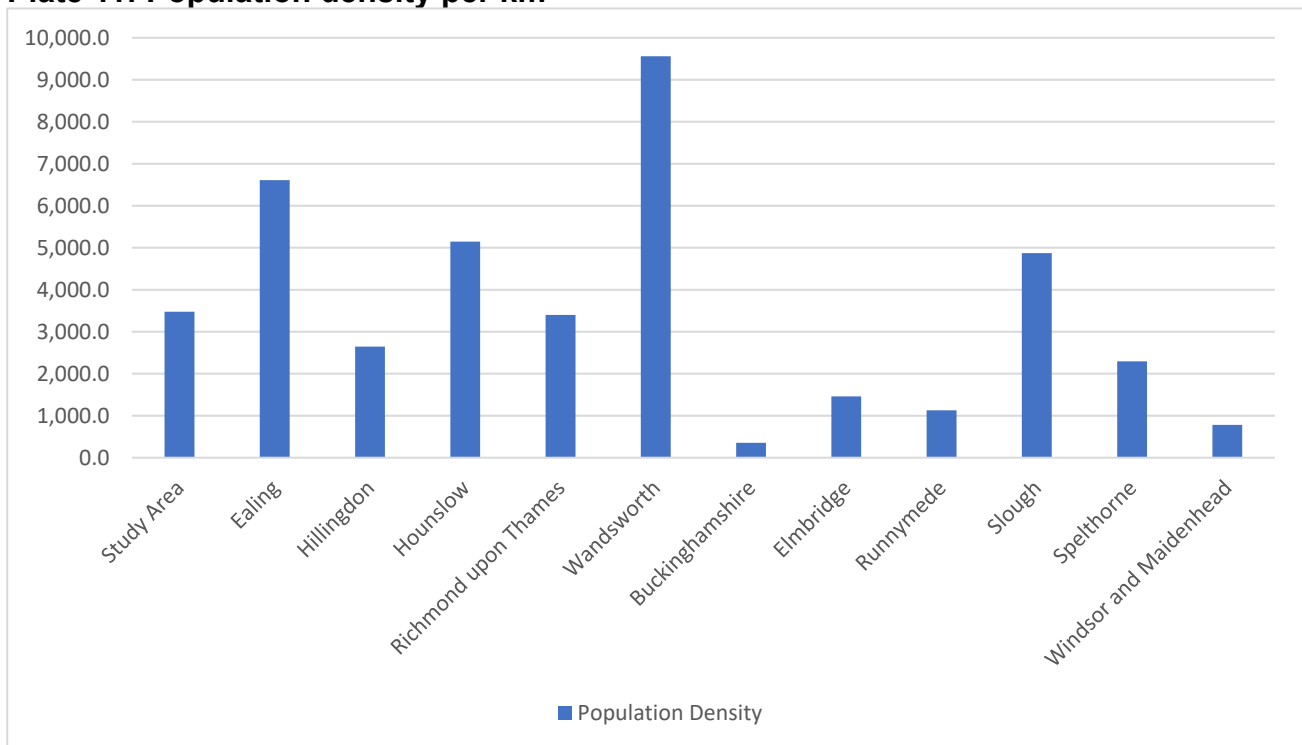
Note: Green shading indicates health outcomes in the area that are better than the national average. Pink shading indicates health outcomes in the area that are worse than the national average.

Housing

Population Density

Population density per km² varies considerably across the local authorities within the Study Area, as shown in Plate 11. Some of the London boroughs exhibit the highest densities, particularly Wandsworth (9,560 people/km²), Ealing (6,611.6 people/km²), and Hounslow (5,148 people/km²). In contrast, authorities such as Buckinghamshire (353.4 people/km²) and Windsor and Maidenhead (781.1 people/km²) have much lower population densities. Overall, the Study Area has an average population density of 3,477.6 people per km², reflecting a mix of densely populated urban boroughs and less densely populated suburban and rural areas.

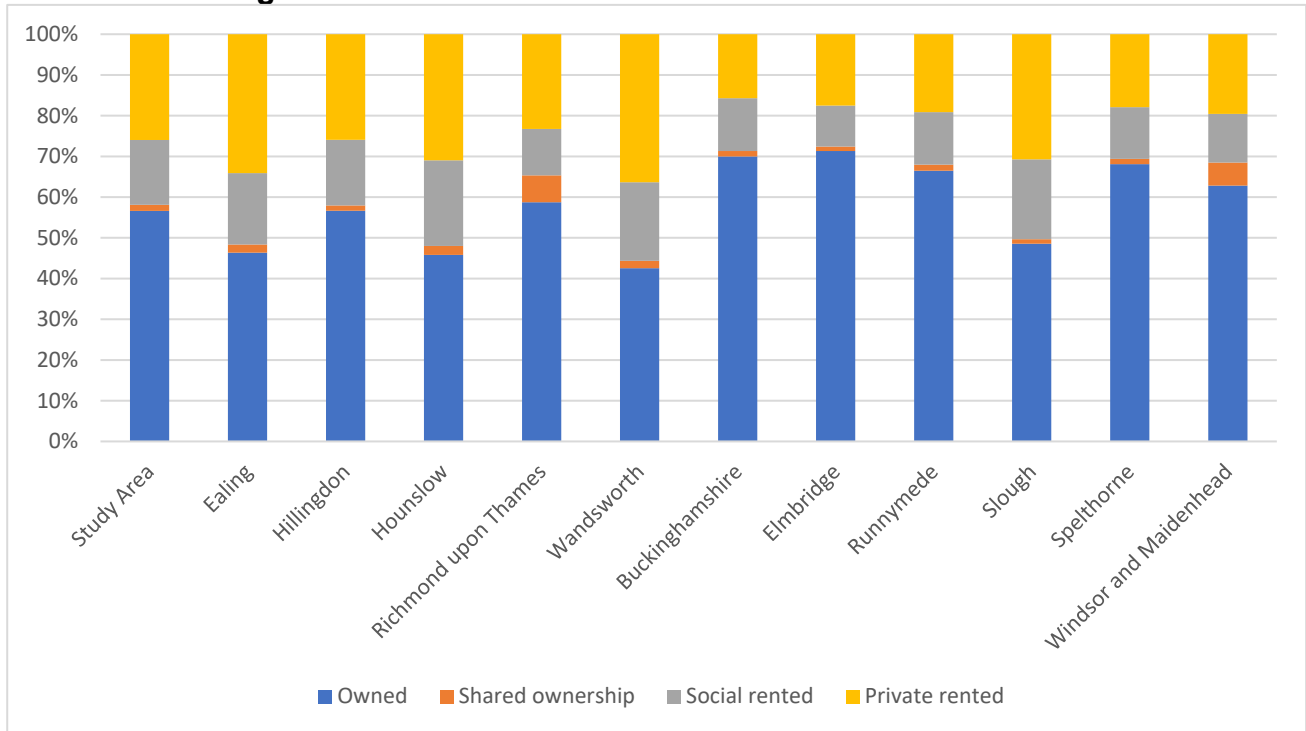
Plate 11: Population density per km²



Source: ONS (2022) 2021 Census.

Housing tenure across the Study Area is characterised by a majority of owner-occupied properties (56.5%), followed by private rented accommodation (25.9%), social rented housing (15.9%), and a small proportion of shared ownership (1.5%). More suburban authorities such as Elmbridge, Buckinghamshire, Spelthorne, Runnymede, and Windsor and Maidenhead have the highest levels of home ownership and comparatively lower proportions of private renting. In contrast, the London boroughs generally have lower levels of ownership and higher proportions of private rented housing, particularly in Wandsworth (36.3%), Ealing (34.0%), and Hounslow (30.9%). Social rented housing is most prevalent in Hounslow (21.0%), Slough (19.6%), and Wandsworth (19.3%).

Plate 12: Housing tenure

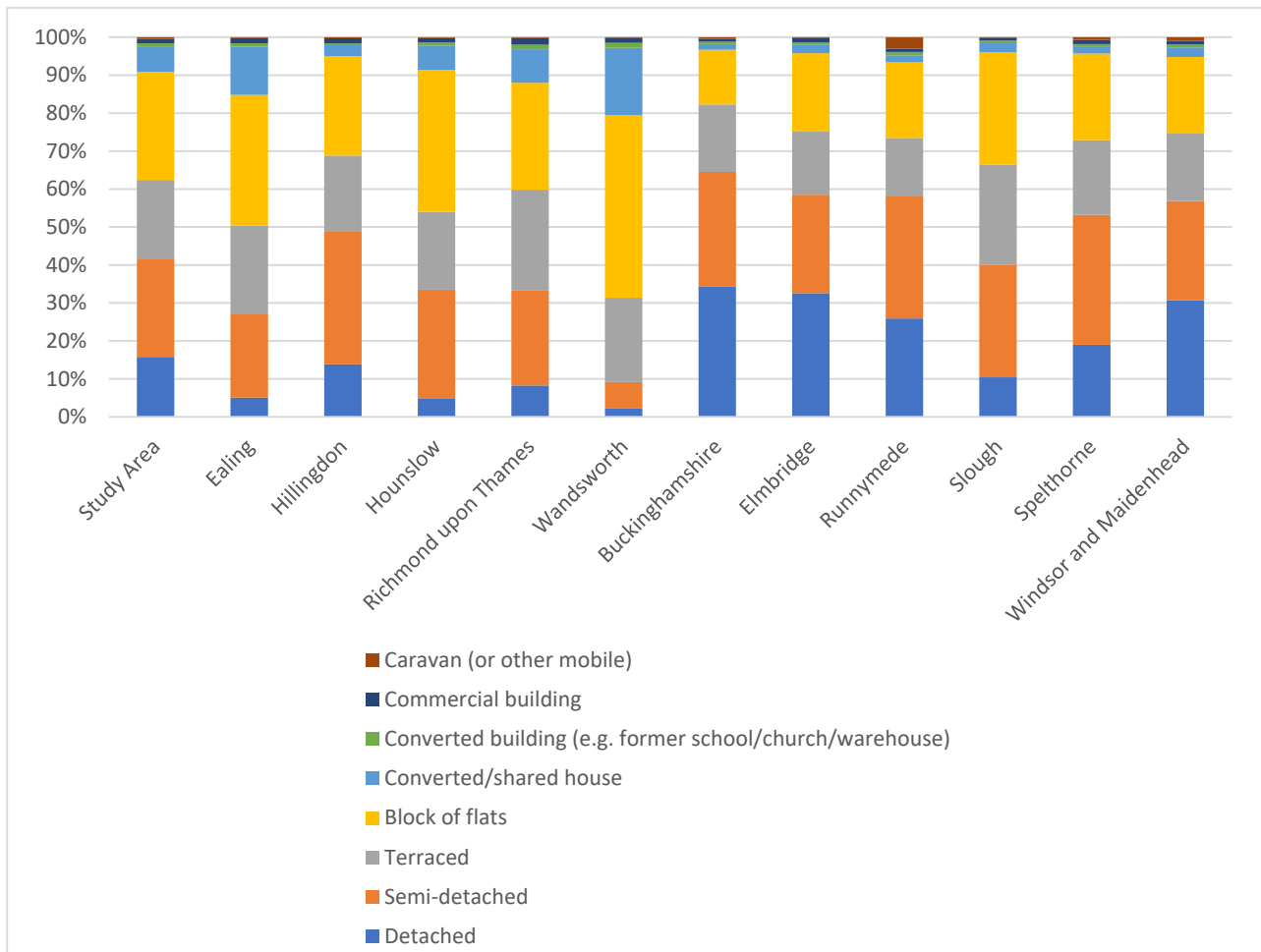


Source: ONS (2022) 2021 Census.

Accommodation type

Plate 13 shows accommodation type within the Study Area and its constituent local authorities. Flats form the largest proportion of the Study Area (28.5%), followed by semi-detached houses (25.7%), and terraced properties (20.9%). Urban local authorities are characterised by higher densities of flats, particularly Wandsworth, where flats account for 48.1% of dwellings, followed by Hounslow and Ealing at 37.4% and 34.5% respectively. In contrast, Buckinghamshire, Elmbridge, and Windsor and Maidenhead have higher shares of detached housing, at 34.3%, 32.6%, and 30.7% respectively.

Plate 13: Accommodation type

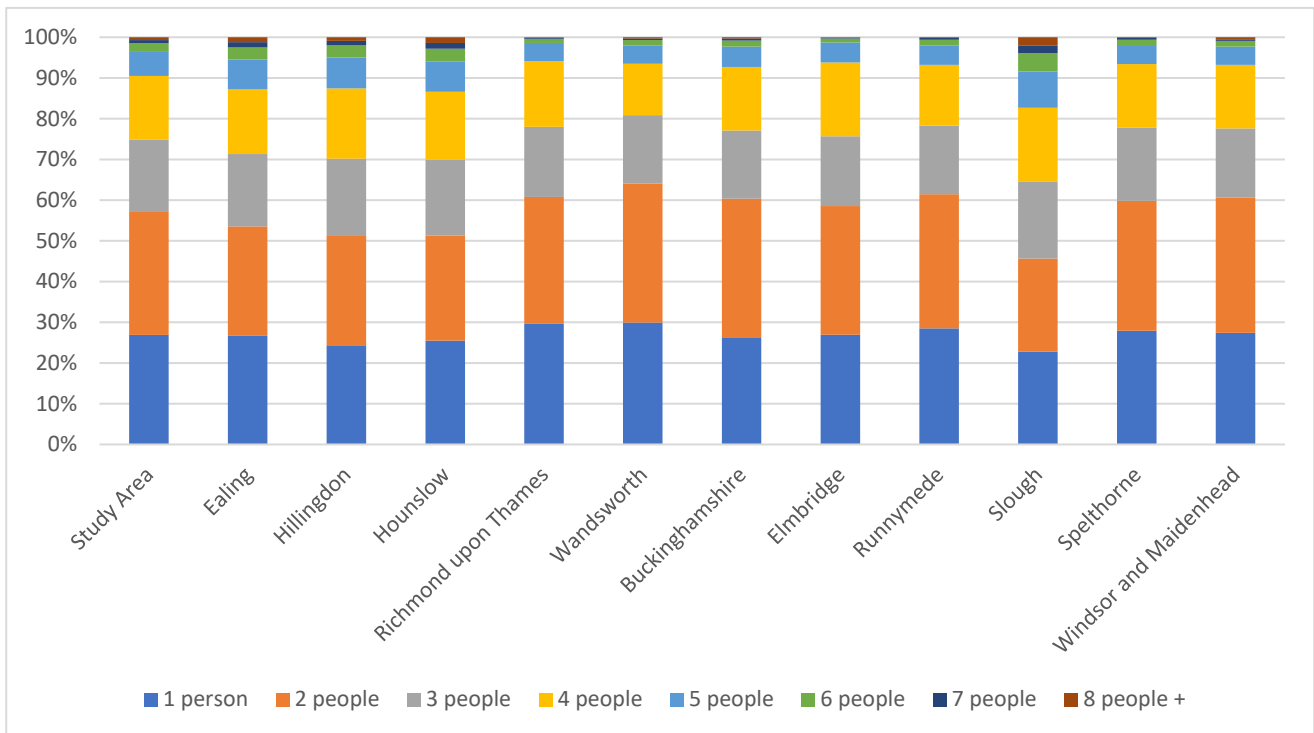


Source: ONS (2022) 2021 Census.

Household size

Plate 14 shows household size for the Study Area and its constituent local authorities. Household size across the Study Area is predominantly small, with the largest proportions comprising two-person households (30.4%) and single-person households (26.9%). In terms of variation across the authorities, Slough has a notably higher proportion of larger households, with approximately 17.3% of households consisting of five or more people. In contrast, areas such as Richmond upon Thames (5.9%) and Wandsworth (6.5%) have lower proportions of these larger households, and a greater concentration of smaller household sizes.

Plate 14: Household size



Source: ONS (2022) 2021 Census.

The Community Life Survey (October 2024 to March 2025) provides data on residents’ sense of belonging to their immediate neighbourhoods among those aged 16 and over²⁴⁵. The survey found that across the local authorities constituting the Study Area, an average of 62% of respondents reported feeling that they belonged strongly to their local neighbourhood, in line with the national average of 62%. This varied from 56% in Hillingdon to 77% in Richmond upon Thames.

Transport and travel

Commuter-Origin data from 2011 shows that 66.0% of people travelling to the MSOA²⁴⁶ in which Heathrow Airport is located are located within the Study Area. The majority of these come from Hounslow, followed closely by Hillingdon, Ealing, Spelthorne, and Slough.

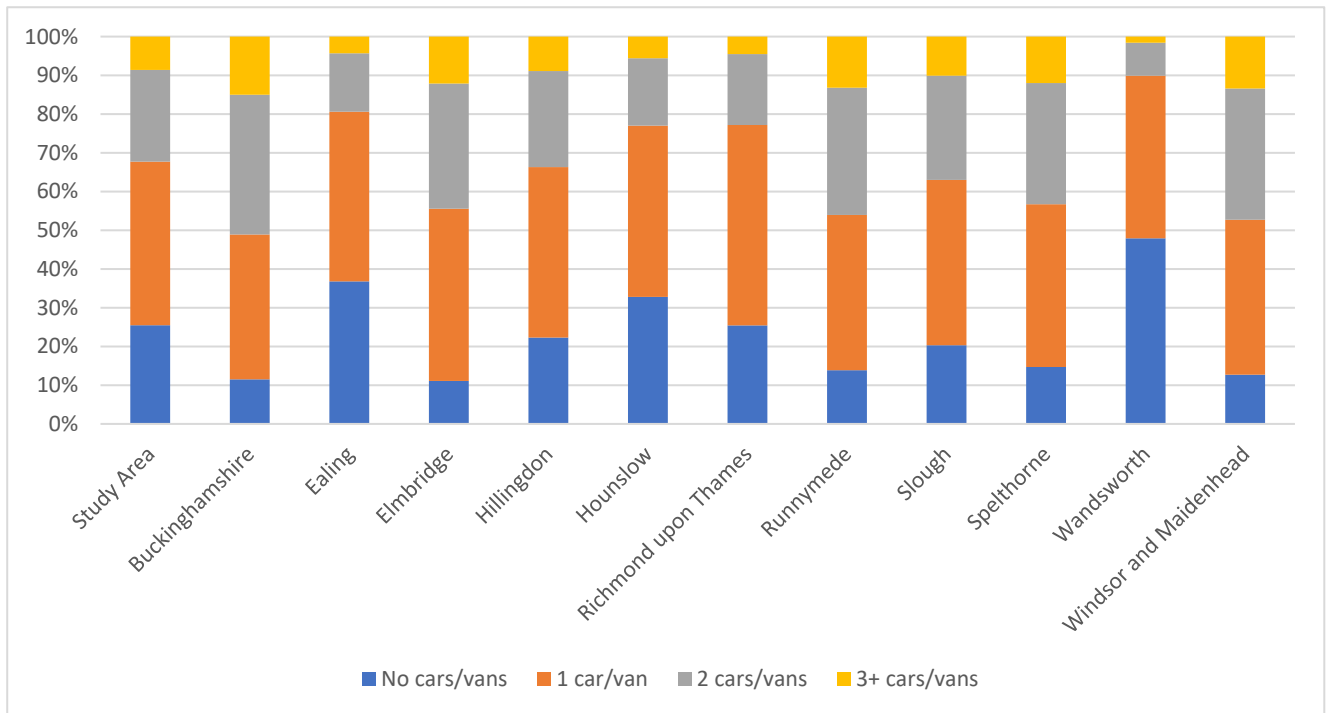
Plate 15 shows a mixed pattern of car and van availability. Around a quarter of households (25.5%) have no access to a car or van, while the largest proportion have one vehicle (42.3%). There is notable variation across local authorities. Wandsworth (47.9%) and Ealing (36.8%) have substantially higher proportions of

²⁴⁵ Department for Culture, Media and Sport (2025) Community Life Survey 2024/5 annual publication. Table B1c. Available at: <https://www.gov.uk/government/statistics/community-life-survey-202425-annual-publication> [Accessed: March 2026].

²⁴⁶ E02000524: Hillingdon 031

households with no vehicles compared to the Study Area average. In contrast, more suburban and semi-rural authorities show higher levels of multi-vehicle ownership. Buckinghamshire (36.1%), Elmbridge (32.3%), Runnymede (32.9%), Spelthorne (31.3%), and Windsor and Maidenhead (33.9%) all have significantly higher proportions of households with two cars, alongside higher shares of households with three or more vehicles (ranging from 12.0% to 15.0%), well above the Study Area average.

Plate 15: Car or van availability



Source: ONS (2022) 2021 Census.

