

8 Human Health

8.1 Introduction

8.1.1 This chapter was prepared by the Savills UK Environment & Infrastructure team and presents an assessment of the likely significant effects of the Development on human health during both the construction and completed development stages of the project. Mitigation measures are identified, where appropriate, to avoid, reduce or offset any significant adverse effects identified and / or enhance likely beneficial effects. The nature and significance of the likely residual effects are then reported. An assessment of the cumulative effects of the project with other cumulative developments (as identified in Chapter 3: EIA Methodology and Appendix 3.4) is also presented.

8.1.2 The chapter is supported by the following appendices:

- Appendix 8.1: Legislation, Policy and Guidance;
- Appendix 8.2: Community Baseline; and
- Appendix 8.3: Health Impact Assessment.

Competence

8.1.3 Chapter 8: Human Health has been written by Millie Potter, BSc, MSc, PISEP and REnvP. Millie is a Senior Consultant at Savills and is a Registered Environmental Practitioner (REnvP) and Practitioner Member of the Institute of Sustainability and Environmental Professionals (ISEP). Millie has over three years' experience of environmental impact assessment, including human health assessments.

8.1.4 The chapter has been reviewed by Tara Barratt, an Associate Director, who has over 9 years of experience coordinating and delivering health impact assessments and human health ES chapters for major infrastructure projects across the UK. She has co-authored WHO and ISEP (formerly IEMA) guidance on health in EIA.

8.1.5 The chapter has also been reviewed by Anushree Bhatt, an Associate, who has 8 years of international HIA and environmental consulting experience. Anushree sits on ISEP's (formerly IEMA) Health in EIA Working Group and is a co-author on ISEP guidance on health in EIA. Anushree has experience conducting numerous HIAs and ES chapters, from Local Plans and Vision Documents to urban expansions and major infrastructure projects.

8.2 Legislation, Planning Policy and Guidance

8.2.1 The following sections provide a summary of the legislation, planning policy and guidance that is of relevance to this assessment and the Development. For a detailed review, please refer to Appendix 8.1.

Legislation Context

8.2.2 Beyond the EIA Regulations, there is no specific legislation relevant to the assessment of human health.

Planning Policy Context

National

8.2.3 The following national planning policy is relevant to the Development:

- National Planning Policy Framework (2025)¹.

Regional

8.2.4 The following regional planning policy is relevant to the Development:

- Hertfordshire Health and Wellbeing Strategy 2022-2026².

Local

8.2.5 The following local planning policy is relevant to the Development:

- Draft SADC Local Plan – Draft Local Plan 2041 ('Emerging Local Plan')³.

Guidance

8.2.6 The following guidance is relevant to the Development:

- Hertfordshire County Council Health Impact Assessment (HIA) Position Statement;
- Planning Practice Guidance (PPG) (Live Document);
- National Planning Practice Guidance⁴;
- ISEP (formerly IEMA) Guide to Effective Scoping of Human Health in EIA⁵; and
- ISEP (formerly IEMA) Guide to Determining Significance for Human Health in EIA⁶.

8.3 Assessment Methodology

Consultation

EIA Scoping Opinion

8.3.1 A request for a Scoping Opinion was submitted by the Applicant to SADC on 27 March 2025. The Scoping Report accompanied the request (Appendix 3.2). The Scoping Opinion (Appendix 3.3) was issued by SADC on 23 May which included comments from statutory consultees. Table 8.1 summarises key comments raised by consultees of relevance to this assessment during the EIA Scoping study and how the assessment responded to them.

Table 8.1: EIA Scoping Response Summary

Consultee and Comment	Response
<i>St Albans City and District Council (23/05/2025)</i>	
The scope of the EIA proposed is considered acceptable, and no additional topics are required to be scoped in. More specifically, the SADC agreed that the scope of the human health chapter in the EIA Scoping	This is noted and the scope of this chapter is consistent with that set out in the Scoping Report.

Consultee and Comment	Response
Report was suitable. They further agreed that the technical chapters which inform the human health chapter were also of suitable scope.	
The SADC further commented that remarks from HCC Public Health must also be taken into account.	Comments from HCC Public Health are reviewed and addressed below.
<i>HCC Public Health</i>	
HCC Public Health requested that a Health Impact assessment (HIA) is undertaken to complement the EIA, in order to ensure human health requirements are met.	In addition to the Human Health ES chapter, a standalone HIA has been appended (Appendix 8.3) to ensure that a comprehensive set of health determinants have been considered in the assessment process.
HCC Public Health further requested that they be consulted at the scoping stage of the HIA to ensure that the HIA accounts for the 'wider determinants of health' and 'health inequalities'.	The appended HIA (Appendix 8.3) considers all relevant wider determinants of health and provides a comprehensive analysis of both the positive and negative impacts the Development could have on health. On this basis, no further consultation was considered to be necessary
<i>Health and Safety Executive (HSE)</i>	
The HSE were sent a scoping request and provided key three points: - As the Development is residential led, it does not appear to store or process hazard substances which risk industrial major accidents with respect to The Planning (Hazardous Substances) Regulations 2015. - The Site is not located within a safeguarding zone of an explosives licensed site. - The Development is not located within HSE's land use planning consultation zones for major accident hazard pipelines and hazardous consented sites. Considering the three points above, HSE stated they have no further comments to make and there appears to be no need to further consult HSE.	Comments provided by HSE regarding the Development are acknowledged.

Consultee and Comment	Response
<i>NHS Hertfordshire and West Essex Integrated Care Board (HWE ICB) (25 April 2025)</i>	
The HWE ICB commented that the EIA scoping report had identified the priority health topics which required attention. In particular, the HWE ICB ‘welcomes the intention to scope in ‘human health’ and is in full agreement that ‘health and social care services and facilities’ is ‘scoped in’ at the construction and completed development stage.	Agreement of the proposed scope of the human health assessment by HWE ICB is acknowledged in the scope of this chapter.
The HWE ICB further commented on the need for ‘an onsite medical facility, to be located in either the site allocation subject of this EIA scoping opinion consultation, or at SADC site allocation land to the east of Hemel Hempstead North’ to prevent the cumulative impacts on existing health services and facilities. This included a request for the NHS to be involved within pre application discussions regarding health infrastructure required to mitigate impacts created by the Development.	It is understood that a medical facility is being delivered as part of the application for the SADC site allocation on land to the east of Hemel Hempstead North. Chapter 7: Socio-Economics provides an assessment of healthcare capacity for the Development, which is summarised in the Baseline section of this chapter. The Applicant will engage with the NHS ICB as part of the application determination process.
<i>East of England Ambulance Service NHS Trust</i>	
The East of England Ambulance Service NHS Trust commented that the HIA should consider the impact on emergency ambulance services.	Consideration of the Development’s impact on emergency ambulance services is acknowledged in the HIA appended (Appendix 8.3).

Pre-Application Consultation

- 8.3.2 No further consultation was undertaken over and above the EIA Scoping process.

Summary of Assessment Scope

- 8.3.3 The proposed scope of the assessment was set out within Appendix 6.1 of the Scoping Report, with the note that the scope of the health chapter would be kept under review once the other technical chapters are completed. Following a review of the relevant technical assessments, the scope of this chapter is limited to the below potential impacts and assessment of effects.

Construction

- 8.3.4 For the construction phase of the Development, the following potential effects have been assessed:
- Health effects due to changes in transport modes, access and connections;

- Health effects due to changes in air quality (nuisance dust from earthworks, construction and trackout activities); and
- Health effects due to changes in noise and vibration (construction generated traffic movements and construction machinery).

Completed Development

8.3.5 For the completed Development, the following potential effects have been assessed:

- Health effects due to changes in transport modes, access and connections (severance, pedestrian / cycle delay and amenity, fear and intimidation, road vehicle driver and passenger delay, and road user and pedestrian safety);
- Health effects due to changes in air quality (operational road traffic emissions); and
- Health effects due to changes in noise and vibration (operational road traffic noise on existing and future human health receptors, noise from commercial use, noise from school use, and noise from sports pitches).

Cumulative Assessment

8.3.6 The cumulative assessment will consider the same potential likely significant effects (where possible and where the necessary information is available) as identified for the Development (outlined above).

Non-Significant Effects

8.3.7 As reported in Appendix 6.1 of the Scoping Report, the following effects were scoped out of further assessment within this ES on the basis that the impacts to human health at the population level are not expected to be significant:

- Physical activity;
- Risk-taking behaviour;
- Diet and nutrition;
- Housing;
- Relocation;
- Open space, leisure and play;
- Community safety;
- Community identity, culture, resilience and influence;
- Social participation, interaction and support;
- Education and training;
- Employment and income;
- Climate change and adaptation;
- Water quality or availability;
- Land quality;
- Radiation;
- Health and social care services;

- Built environment; and
- Wider societal infrastructure and resources.

8.3.8 Based on the fact that no likely sources of significant contamination were reported within the Phase I Geo-Environmental Desk Study which accompanies the application, human health risks from contamination and land quality have been scoped out of further assessment within this chapter.

Study Area

- 8.3.9 Environmental health determinants (such as changes to air quality and noise exposure) are likely to have a local impact where the potential change in hazard exposure is limited by physical dispersion characteristics. Changes in transport nature and flow rate likewise have a particular distribution on the local road network. As a result, the study area for health-specific baseline statistics relating to human health effects focuses on the Middle-layer Super Output Area¹ ('MSOA study area'), composed of Redbourn MSOA, and the following neighbouring MSOAs to the Site: Woodhall Farm and Markyate, Flamstead & Gaddesden in Dacorum, with the 'district study area' (consisting of St Albans and Dacorum), county (Hertfordshire), region (East of England) and national (England) averages used as comparators.
- 8.3.10 The study area defining the relevant sensitive receptors identified for assessment purposes remains consistent with the inter-related technical disciplines assessed within the ES, which the human health topic relies upon.

Baseline Characterisation Approach

Existing Baseline

- 8.3.11 The approach to defining the baseline conditions within the study area for the assessment involved desk based research, as set out below.

Desk Study

- 8.3.12 To determine the baseline conditions for the health conditions within the Site and its surrounding area, the following information sources were utilised:
- Office for National Statistics (ONS)⁷;
 - Department of Health and Social Care (DHSC) Local Authority Health Profiles⁸;
 - DHSC Local health, public health data for small geographic areas⁹; and
 - NHS Digital General Practice Workforce¹⁰.

Field Study

- 8.3.13 No field studies were undertaken to establish the human health baseline as they were not considered to be necessary.

¹ A medium-sized geographic area used by the UK's Office for National Statistics (ONS) for releasing census data and other health-specific data.

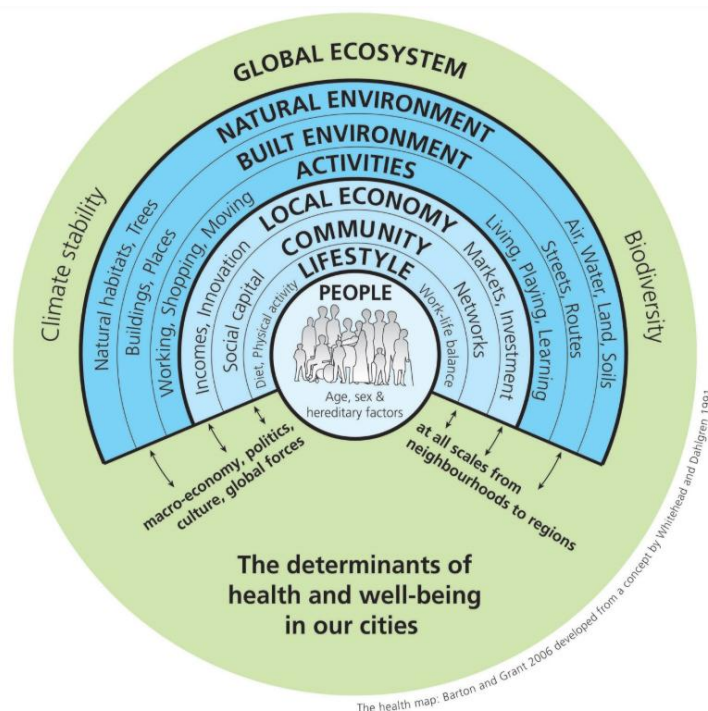
Future Baseline

- 8.3.14 Consistent with recent local and national trends, the health of the population living within the study area is likely to improve over the lifetime of the Development. This will be the case with or without the Development.
- 8.3.15 While this is the case, any improvement is challenging to predict with high confidence and unlikely to be substantial. On this basis, it is considered appropriate and precautionary to use present-day statistics for the purpose of this assessment.
- 8.3.16 The effects of climate change have the potential to exacerbate health outcomes at a population level, however there are clear limitations associated with predicting meteorological variations that influence human health. The effects of climate change likely to be realised during the operational lifetime of the Development are not expected to materially alter the conclusions of this assessment.

Assessment Method

- 8.3.17 The assessment of health and wellbeing impacts applies a broad socio-economic model of health (see Figure 8.1) that encompasses conventional health impacts such as disease, accidents and risk, along with wider health determinants vital to achieving good health and wellbeing such as employment and local amenity. It addresses both physical and mental health outcomes and also considers equality and social impacts where possible.

Figure 8.1: The determinants of health and wellbeing in our neighbourhoods¹¹



- 8.3.18 The assessment methodology follows a source-pathway-receptor model to identify and assess population and health effects that are plausible and directly attributable to the Development. As shown in Table 8.2, a hazard source itself does not constitute a health risk: it is only when there is a hazard source, a sensitive receptor and a pathway of exposure that there is a potential risk to human health. The same is true for potential health benefits

where a positive influence must be present alongside a pathway of exposure and a receptor for there to be a potential health improvement.

- 8.3.19 Where a source-pathway-receptor linkage exists, it is then the nature of the specific hazard source or positive influence; the magnitude of impact via the pathway of exposure; and the sensitivity of the receptor that will determine what level of health risk or benefit is predicted, if any.

Table 8.2: Source-pathway-receptor model. Sourced from: Health in Environmental Impact Assessment – A Primer for a Proportionate Approach¹²

Source	Pathway	Receptor	Plausible health impact?	Explanation
x	✓	✓	No	There is not a clear source from where a potential health impact could originate.
✓	x	✓	No	The source of a potential health impact lacks a means of transmission to a population.
✓	✓	x	No	Receptors that would be sensitive or vulnerable to the health outcome are not present.
✓	✓	✓	Yes	Identifying a source, pathway and receptor does not mean a health outcome is a likely significant effect; health impacts should be assessed (describing what effect will occur and its likelihood) and likely health effects are then evaluated for significance.

- 8.3.20 When defining potential population and health determinants associated with a project, it is also useful to consider three broad domains of public health:

- Health protection (i.e. environmental objective thresholds set to be protective of health);
- Health promotion (i.e. ways in which to support healthy lifestyles, improve socio-economic status and address inequality); and
- Healthcare (i.e. provision, effectiveness and equity of access to healthcare services).

- 8.3.21 Methodologies to determine effects for construction and operational phases of the Development are further detailed below.

Construction

- 8.3.22 The chapter has assessed the potential health effects as a result of changes to air quality; noise and vibration; and transport modes, access and connections during the construction phase. The assessment draws from the conclusions in the respective ES chapters and significance has been determined based on the methodology described in the 'Assessment Criteria' section below.

Completed Development

- 8.3.23 The chapter has assessed the potential health effects as a result of changes to air quality; noise and vibration; and transport modes, access and connections during the construction phase. The assessment draws from the conclusions in the respective ES chapters and significance has been determined based on the methodology described in the 'Assessment Criteria' section below.

Assessment Criteria

Sensitivity of Receptor

- 8.3.24 Within a defined population, individuals will range in level of sensitivity due to a series of factors such as age, socio-economic deprivation, and the prevalence of any pre-existing health conditions which could become exacerbated. These individuals can be considered particularly vulnerable to changes in environmental and socio-economic factors (both adversely and beneficially) whereby they could experience disproportionate effects when compared to the general population.
- 8.3.25 As an example, the elderly, young children and individuals with chronic pre-existing respiratory conditions would be more sensitive to adverse changes in air quality, with the potential for emergency admission to hospital more likely than for someone of working age who has good respiratory health. On the other hand, an individual who has been unemployed for a long period of time would benefit more from employment opportunities generated by the Development (e.g. during construction) in comparison to an individual who is already employed.
- 8.3.26 The health sensitivity methodology criteria shown in Table 8.3 has been used to inform the assessment of significance.

Table 8.3: Health sensitivity methodology criteria

Category / level	Indicative criteria
High	High levels of deprivation (including pockets of deprivation); reliance on resources shared (between the population and the project); existing wide inequalities between the most and least healthy; a community whose outlook is predominantly anxiety or concern; people who are prevented from undertaking daily activities; dependants; people with very poor health status; and / or people with a very low capacity to adapt.
Medium	Moderate levels of deprivation; few alternatives to shared resources; existing widening inequalities between the most and least healthy; a community whose outlook is predominantly uncertainty with some concern; people who are highly limited from undertaking daily activities; people providing or requiring a lot of care; people with poor health status; and / or people with a limited capacity to adapt.
Low	Low levels of deprivation; many alternatives to shared resources; existing narrowing inequalities between the most and least healthy; a community whose outlook is predominantly ambivalence with some concern; people who are slightly limited from undertaking daily activities; people providing or requiring

Category / level	Indicative criteria
	some care; people with fair health status; and / or people with a high capacity to adapt.
Very low	Very low levels of deprivation; no shared resources; existing narrow inequalities between the most and least healthy; a community 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: ISEP (formerly IEMA) Guide to Determining Significance for Human Health in EIA⁵

- 8.3.27 Baseline data has been collected to interpret local health, demographic and socio-economic circumstance (refer to Section 8.4). Overall, it is concluded that the population in the study area generally has a lower burden of poor health when compared to the national average.
- 8.3.28 As such, when looking at the population in general, the existing burden of poor health is “low”. However, this does not exclude the probability that there will be individuals within a defined population who are particularly sensitive and could experience disproportionate effects.
- 8.3.29 To identify any particularly vulnerable groups which should be considered in the human health assessment, a Study Area of 500m from the Site boundary has been used to identify all receptors using OS AddressBase data who are particularly sensitive and could experience disproportionate or differential effects (for example, those using schools and care homes), consistent with the Equality Act 2010.
- 8.3.30 The exercise identified all registered receptors within 500m of the Site boundary. The search results returned the following types of receptors: Dwelling, Property Shell, Animal Centre, Agricultural, Education, Industrial, Leisure, Medical, Office, Retail, Development, and Royal Mail Infrastructure.
- 8.3.31 Of these receptor types, the following categories were shortlisted to be considered in more detail in Table 8.4: medical and education.

Table 8.4: Potentially vulnerable groups for consideration

Receptor name	Receptor type	Address	Rationale for scoping in / out
Doctors Surgery	Medical	Doctors Surgery, 2 Coleridge Crescent, Hemel Hempstead, HP2 7PQ	Scoped in – primary users are likely to be elderly (protected characteristic: age) or have existing health problems (protected characteristic: disability).
Woodhall Farm Surgery	Medical	Woodhall Farm Surgery, Woodhall Farm Medical Centre, Valley Green, Hemel Hempstead, HP2 7RJ	

Receptor name	Receptor type	Address	Rationale for scoping in / out
Brockswood JMI School	Education	Brockswood JMI School, Shenley Road, Hemel Hempstead, HP2 7QH	Scoped in – primary user group is children (protected characteristic: age).
Jack in the Box	Education	Brockswood Primary School, Shenley Road, Hemel Hempstead, HP2 7QH	
World Shapers Academy	Education	World Shapers Academy, Brockswood Primary School, Shenley Road, Hemel Hempstead, HP2 7QH	

8.3.32 For the purpose of the assessment, the sensitivity of the scoped in receptors is considered to be 'high'.

Magnitude of Impact

8.3.33 The health magnitude assessment criteria shown in Table 8.5 has been used to inform the assessment of significance.

Table 8.5: Health magnitude methodology criteria

Category / level	Indicative criteria
High	High exposure or scale; long-term duration; continuous frequency; severity predominantly related to mortality or changes in morbidity (physical or mental health) for very severe illness / injury outcomes; majority of population affected; permanent change; substantial service quality implications.
Medium	Low exposure or medium scale; medium-term duration; frequent events; severity predominantly related to moderate changes in morbidity or major change in quality-of-life; large minority of population affected; gradual reversal; small service quality implications.
Low	Very low exposure or small scale; short-term duration; occasional events; severity predominantly related to minor change in morbidity or moderate change in quality-of-life; small minority of population affected; rapid reversal; slight service quality implications
Negligible	Negligible exposure or scale; very short-term duration; one-off frequency; severity predominantly relates to a minor change in quality-of-life; very few people affected; immediate reversal once activity complete; no service quality implication.

Source: ISEP (formerly IEMA) Guide to Determining Significance for Human Health in EIA⁵

Assessing Significance

- 8.3.34 The significance of an effect is determined based on the sensitivity of a receptor and the magnitude of an impact. The method employed for this assessment is presented in Table 8.6. Where a range of significance levels are presented, the final assessment for each effect is based upon professional judgement.
- 8.3.35 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

Table 8.6: Significance matrix

Magnitude	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
Negligible	Minor / negligible	Minor / negligible	Negligible	Negligible

Source: ISEP (formerly IEMA) Guide to Determining Significance for Human Health in EIA⁵

- 8.3.36 Table 8.7 provides a description of each significance level. For this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations.

Table 8.7: Significance conclusion and reasoning related to public health

Category / level	Indicative criteria
Major (significant)	The narrative explains that this is significant for public health because: - Changes, due to the project, have a substantial effect on the ability to deliver current health policy and / or the ability to narrow health inequalities, including as evidenced by referencing relevant policy and effect size (magnitude and sensitivity levels), and as informed by consultation themes among stakeholders, particularly public health stakeholders, that show consensus on the importance of the effect. - Change, due to the project, could result in a regulatory threshold or statutory standard being crossed (if applicable). - There is likely to be a substantial change in the health baseline of the population, including as evidenced by the effect size and scientific literature showing there is a causal relationship between changes that would result from the project and changes to health outcomes. - In addition, health priorities for the relevant study area are of specific relevance to the determinant of health or population group affected by the project.

Category / level	Indicative criteria
Moderate (significant)	The narrative explains that this is significant for public health because: ▪ Changes, due to the project, have an influential effect on the ability to deliver current health policy and / or the ability to narrow health inequalities, including as evidenced by referencing relevant policy and effect size, and as informed by consultation themes among stakeholders, which may show mixed views. ▪ Change, due to the project, could result in a regulatory threshold or statutory standard being approached (if applicable). ▪ There is likely to be a small change in the health baseline of the population, including as evidenced by the effect size and scientific literature showing there is a clear relationship between changes that would result from the project and changes to health outcomes. ▪ In addition, health priorities for the relevant study area are of general relevance to the determinant of health or population group affected by the project.
Minor (not significant)	The narrative explains that this is not significant for public health because: ▪ Changes, due to the project, have a marginal effect on the ability to deliver current health policy and / or the ability to narrow health inequalities, including as evidenced by effect size of limited policy influence and / or that no relevant consultation themes emerge among stakeholders. ▪ Change, due to the project, would be well within a regulatory threshold or statutory standard (if applicable); but could result in a guideline being crossed (if applicable). ▪ There is likely to be a slight change in the health baseline of the population, including as evidenced by the effect size and / or scientific literature showing there is only a suggestive relationship between changes that would result from the project and changes to health outcomes. ▪ In addition, health priorities for the relevant study area are of low relevance to the determinant of health or population group affected by the project.
Negligible (not significant)	The narrative explains that this is not significant for public health because: ▪ Changes, due to the project, are not related to the ability to deliver current health policy and / or the ability to narrow health inequalities, including as evidenced by effect size or lack of relevant policy, and as informed by the project having no responses on this issue among stakeholders. ▪ Change, due to the project, would not affect a regulatory threshold, statutory standard or guideline (if applicable). ▪ There is likely to be a very limited change in the health baseline of the population, including as evidenced by the effect size and / or scientific literature showing there is an unsupported relationship between changes that would result from the project and changes to health outcomes. ▪ In addition, health priorities for the relevant study area are not relevant to the determinant of health or population group affected by the project.

Source: ISEP (formerly IEMA) Guide to Determining Significance for Human Health in EIA⁵

Assumptions and Limitations

8.3.37 The following assumptions and limitations have informed this assessment:

- The human health assessment draws from and builds upon the technical outputs from inter-related disciplines, most notably: Chapter 9: Transport and Access, Chapter 10: Noise and Vibration, and Chapter 11: Air Quality. As a consequence, the assumptions and limitations of those assessments also apply to any information used in this chapter (e.g. for modelling work undertaken). It is, however, considered that the information available provides a suitable basis for the assessment of human health.

8.4 Baseline Conditions

Existing Baseline

- 8.4.1 The Site is in the Redbourn MSOA within SADC to the east of the town of Hemel Hempstead. The Site is predominantly used for agriculture, and employment associated with this use is low. There is also currently very low demand for social infrastructure (e.g. schools and healthcare) as there is only a single residential property within the Site. The Site is not known to currently offer any recreational or leisure uses other than the use of Public Right of Ways (PRoWs). Further detail on the Site and Development can be found in ES Chapter 2: Site and Setting and ES Chapter 5: Description of Development.
- 8.4.2 As previously noted, different communities have varying susceptibilities to both health impacts and benefits due to social and demographic structure, behaviour and relative economic circumstance. The aim of the following section is to outline the findings of the community baseline, provided in Appendix 8.2: Community Baseline. It focuses on the population living within Redbourn; Woodhall Farm and Markyate, Flamstead and Gaddesden MSOAs (collectively referred to as the 'MSOA study area') and Dacorum and St Albans districts (collectively referred to as the 'district study area'). It should be noted that the description of the whole population, and of the populations within the study area, does not exclude the probability that there will be some individuals or groups of people who do not conform to the overall profile.
- 8.4.3 The MSOA study area has an ageing population when compared to the national average, with a higher proportion of males aged 40 to 54 & 80+ and females aged 35 to 79. Comparatively, the MSOA study area has a lower proportion of males and females aged 15 and 34 when compared to the national average.
- 8.4.4 Male and female life expectancy in the district study area has been consistently higher than the national average for the years analysed and has shown a general increase over the years. Hertfordshire is the lowest geographical area for which healthy life expectancy (HLE) data is available for and is considered representative of the population living within the study area. The HLE in Hertfordshire for both males and females has fluctuated throughout the years but has remained consistently higher than the national average.
- 8.4.5 Mortality rates for all causes are lower in the district study area compared to all relevant comparators, and in the region compared to the national average. When analysing specific underlying causes, the same remains true for mortality rates from cancer and circulatory disease. The only exception is cancer mortality rate in 2015 for the district study area which

was higher than the regional average. Comparatively, mortality rate from respiratory disease has risen above regional levels in recent years but remained below the national average. The standardised mortality rate (SMR) for all causes in the MSOA study area is lower than all relevant comparators.

- 8.4.6 Emergency hospital admissions for all causes are lower in the MSOA study area compared to the national average, but higher than the district and county level. When analysing specific underlying causes, emergency hospital admissions for stroke and chronic obstructive pulmonary disease (COPD) are also lower within the MSOA study area compared to the national average. Emergency hospital admissions from coronary heart disease and heart attack in the MSOA study area are higher than all relevant comparators.
- 8.4.7 Mental health within the district study area is generally better than the regional and national average when reviewing data on suicide rate and dementia diagnosis rate. However, emergency hospital admissions for intentional self-harm in the district study area has recently risen above both regional and national averages.
- 8.4.8 Finally, with regards to lifestyle and behavioural risk factors, admissions for alcohol-related conditions in the adult population in the district study area is higher than the regional average, but below the national average since 2022/23. Consistently, admissions for alcohol-related conditions for the under 18 population in the district study area is also higher than the regional and national average in the most recent data (2021/22- 23/24). The prevalence of smoking in adults in the district study area has been consistently lower than all comparators. The percentage of adults classified as overweight or obese is lower in the district study area compared to the regional and national averages. Relatedly, the percentage of physically active adults is higher in the district study area compared to the regional and national average. Similarly, the prevalence of obesity, including severe obesity, in Year 6 children is lower in the district study area compared to all relevant comparators.
- 8.4.9 Chapter 7: Socio-Economics provides the baseline for local healthcare capacity. When considering the local healthcare capacity, the Site is located within the NHS Hertfordshire & West Essex ICB, which has an average list size of 1,869 patients per FTE GP. This is lower than the target list size of 2,000 patients per GP defined in NHS England's "Premises Principles of Best Practice Part 1 Procurement & Development".
- 8.4.10 As reported within Chapter 7: Socio-Economics, there are six GP facilities within 5km of the Site. The average list size across these GP facilities is 1,451 patients per FTE GP, which is lower than the target list size of 2,000. Based on this list size, there is additional capacity for 28,047 patients across the six GP facilities.
- 8.4.11 On the above basis, local health circumstance is considered good, with resilience to environmental changes considered high, and relative sensitivity considered low.

Future Baseline

- 8.4.12 Consistent with historic national trends, public health circumstance within the MSOA study area and district study area population is likely to improve over time.
- 8.4.13 While this is the case, any improvement is challenging to predict with high confidence and unlikely to be substantial. On this basis, it is considered appropriate that the present-day statistics are used for the purpose of this assessment, offering a precautionary approach.

Summary of Receptors and Sensitivity

8.4.14 Table 8.8 provides a summary of the sensitive receptors.

Table 8.8: Summary of Receptor Sensitivity

Receptor	Sensitivity (Value)	Rationale
<i>Existing</i>		
Brockwood Primary School (including Jack in the Box Nursery)	High	Primary user group is children (protected characteristic: age).
Users of GP surgeries within 500m of the Development	High	Primary users are likely to be elderly (protected characteristic: age) or have existing health problems (protected characteristic: disability).
Existing community	Low	Local health circumstance is good, with resilience to environmental changes considered high
<i>Future</i>		
Proposed 3 Form Entry primary school	High	Primary user group is children (protected characteristic: age).
Proposed care home	High	Primary user group is elderly people (protected characteristic: age).

8.5 Embedded Mitigation (Scheme Design and Management)

- 8.5.1 Public health is by definition preventative in nature. Therefore, embedded mitigation measures focus on precursors to health and wellbeing outcomes, thereby providing an opportunity for intervention to prevent any adverse impacts.
- 8.5.2 Table 8.9 summarises the embedded mitigation measures that have been accounted for within this assessment. As set out in Chapter 3: EIA Methodology, and in line with ISEP guidance, this includes both primary and tertiary mitigation measures.

Table 8.9: Summary of Embedded Mitigation

Embedded Mitigation Measure	Description	How Secured
<i>Construction</i>		
CEMP	A CEMP would be prepared to address hours of working, noise, vibration, dust, light spill, wheel washing and control of runoff, to be secured via an appropriately worded planning condition. An Outline CEMP is provided as Appendix 6.1.	Planning Condition

Embedded Mitigation Measure	Description	How Secured
CTMP	A Framework CTMP has been prepared (Appendix 9.5) to minimise disturbance which could potentially arise from traffic generated by the Development	Planning Condition
<i>Completed Development</i>		
Green Routes	The Green Loop will be an active travel route that allows continuous access through the wider HGC. This will help promote healthy lifestyles by encouraging physical activity and the mental health benefits associated with this.	Included within the Site and extension beyond to be safeguarded
Strategic Alternative Natural Greenspace (SANG) / Community Park	The SANG / Community Park is an area of land designated for recreational purposes, which will help promote healthy lifestyles by encouraging physical activity and the mental health benefits associated with this.	Included within the Site
Green Infrastructure Strategy	The Green Infrastructure Strategy outlines how the provision of different types of open space (including play space) will be delivered throughout the Site. The provision of this space will help promote healthy lifestyles by encouraging physical activity and the mental health benefits associated with this.	Included within the Site, as per the Land Use and Green Infrastructure Parameter Plan
Public Rights of Way (PRoW) enhancements and Active Travel Interventions	Contributions to improve and enhance countryside access links and off-road paths (Public Rights of Way) including Footpath 9, 10 and 11, as dictated by draft allocation policy H1, and active travel interventions along Redbourn Road. The provision of active travel routes will help promote healthy lifestyles by encouraging physical activity and the mental health benefits associated with this.	S106 contributions

8.6 Assessment of Effects - Construction

Health effects from changes in air quality

- 8.6.1 During construction of the Development, there is potential for nuisance dust to be generated from earthworks, construction and trackout activities. As stated in Chapter 11: Air Quality, the potential risk of dust soiling is major from all activities, and the potential risk of human health impacts is moderate from all activities.
- 8.6.2 Mitigation measures have been proposed based on the conclusions of the construction dust assessment. Following the successful implementation of the specific mitigation measures proposed, exposure to nuisance dust would not be significant in air quality terms.
- 8.6.3 Insignificant changes in dust emissions would not be sufficient to result in any material adverse population health or wellbeing outcome. As a result, the magnitude of impact on health would be negligible, which in an area of low sensitivity would result in a temporary

negligible effect, which is **not significant** in EIA terms. For those receptors that have been identified as having a high sensitivity, the significance of effect would be minor adverse, which is also not considered to be significant in EIA terms. It should be noted that Brockswold Primary School has been included as a specific sensitive receptor within Chapter 11: Air Quality.

- 8.6.4 The impact of traffic emissions during the construction phase have been scoped out of Chapter 11: Air Quality on the basis that the predicted trip generation is below the screening criteria for requiring an air quality assessment. As such, air quality effects from construction traffic would also not be significant.

Health effects from changes in noise exposure

- 8.6.5 The construction working hours are limited to 08:00 to 18:00 hours Monday to Friday inclusive, and 08:00 to 14:00 on Saturdays. As a result, potential health and wellbeing impacts (if any) are likely to be limited to temporary annoyance during the daytime period only as there would be no change in noise exposure during the night-time period.
- 8.6.6 As reported in Chapter 10: Noise and Vibration, the construction noise assessment has been based on worst-case assumptions of no additional attenuation of sound due to ground absorption, and no acoustic barriers such as local buildings. The average predicted unmitigated earthworks and construction noise levels at all identified receptors would be below the noise criteria level and have a negligible magnitude of effect in noise terms. Similarly, ground-borne vibration from construction activities would also result in a negligible magnitude of impact on all identified receptors.
- 8.6.7 With regard to construction generated road traffic noise, Chapter 10: Noise and Vibration reports that the road with the greatest predicted increase in Heavy Goods Vehicles (HGVs) due to construction traffic (Piccotts End Road N of the Link Road) would increase the L_{A10hr} noise level by +0.6dB. Such a magnitude of impact would not exceed the Lowest Observed Adverse Effect Level (LOAEL) and so the magnitude of impact is classed as negligible.
- 8.6.8 On this basis, it is anticipated that the magnitude of impact on human health would be negligible, which in an area of low sensitivity would result in a temporary **negligible** effect which is **not significant**. For those receptors that have been identified as having a high sensitivity, the significance of effect would be minor adverse, which is also not considered to be significant in EIA terms.

Health effects from changes in transport nature and flow rate

- 8.6.9 As stated in Chapter 9: Transport and Access, construction would generate short term increases in vehicle movements on the highway in the vicinity of the Site. According to the ISEP Environmental Assessment of Traffic and Movement guidelines (2023), there are two broad rules to identify the appropriate extent of the highways assessment area. These are:
- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of Heavy Goods Vehicles (HGVs) will increase by more than 30%); and
 - Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

- 8.6.10 Where the predicted increases in traffic flows are lower than the above thresholds, the ISEP guidelines suggest that the significance of effects should be stated to be negligible and therefore further assessment as part of the EIA would not be warranted.
- 8.6.11 As reported in Chapter 9: Transport and Access, assuming the most intensive buildout year of 150 dwellings per annum, the assessment of construction trips demonstrated that the temporary uplift in total vehicles or HGVs during the construction phase would not exceed 30%. Therefore, according to the ISEP guidance, further assessment is not required.
- 8.6.12 On this basis, the magnitude of impact on human health would be negligible, which in an area of low sensitivity and would result in a temporary **negligible** effect, which is **not significant**.
- 8.6.13 It is not considered that the significance of effect would change for the vulnerable receptor groups identified in this instance. This is on the basis that there would be no direct interaction between the users of Brockswood Primary School and the traffic environment. Given that predicted increases in traffic flows are negligible, there would be no impact on how vulnerable receptors of the GP facilities would access the facilities, and therefore the effect remains negligible.

Additional Mitigation, Monitoring and Residual Effects

- 8.6.14 No significant adverse effects were identified and therefore no additional mitigation is required, and the residual effects remain as presented above.

8.7 Assessment of Effects - Completed Development

Health effects from changes in air quality

- 8.7.1 The potential impact on local air quality from the increase in vehicle movements associated with the Development has been assessed within Chapter 11: Air Quality. Concentrations of NO₂, PM₁₀ and PM_{2.5} were predicted at identified existing and proposed receptors for the year 2041, representing the year of completion for the Development.
- 8.7.2 Predicted annual mean NO₂, PM₁₀ and PM_{2.5} concentrations in the year 2041 with the Development area well below the relevant air quality objective thresholds (set to be protective of the environment and human health). At some receptors, a decrease in NO₂ concentrations occurs due to a reduction in HDVs on local roads associated with the introduction of new road links. As such, these changes would lead to the redistribution of traffic across the local road network, as stated in Chapter 11: Air Quality.
- 8.7.3 At the most affected receptor (R9, Residential East Hemel Development 1), there is a 0.25 µg/m³ increase in predicted annual mean NO₂ concentration, a 0.07 µg/m³ increase in predicted annual mean PM₁₀ concentration, and a 0.04 µg/m³ increase in predicted annual mean PM_{2.5} concentration in the future year (2041) between the without development and Development scenario. All impacts from the change in NO₂, PM₁₀ and PM_{2.5} annual mean concentrations are described as being negligible at all existing and proposed receptors.
- 8.7.4 Overall, the magnitude of impact on human health from changes in air quality would be negligible for existing and proposed receptors. In an area of low sensitivity, this would result in a long-term **negligible** effect which is **not significant**. For the high sensitivity receptors,

the effect would be minor adverse, which is also not considered to be significant in EIA terms.

Health effects from changes in noise exposure

- 8.7.5 As stated in Chapter 10: Noise and Vibration, upon completion of the Development, it is anticipated that local road traffic noise levels may change as a result of the Development generated vehicle movements.
- 8.7.6 For existing receptors, changes in road traffic noise levels in the short term will result in a maximum change in noise level of +0.7dB (Link 32, Cherry Tree Lane) and a negligible magnitude of impact. Such a magnitude of impact is not considered to exceed the LOAEL and as such, consideration of mitigation measures is not considered necessary. Changes in road traffic noise levels in the long term will result in a maximum change in noise level of +2.0dB (Link 122, Scheme Road North N) and a negligible magnitude of impact. This is also below the LOAEL and so mitigation measures are not considered necessary.
- 8.7.7 Daytime noise levels within the Development are predicted to exceed the 55 dB LAeq,16hr criterion, representing a high level of noise impact. To ensure compliance with this limit, the residential layout near the B487 Hemel Hempstead Road must incorporate principles of good acoustic design. Following mitigation, garden noise levels are expected to remain below the 55 dB LAeq,T threshold, resulting in a negligible magnitude of impact.
- 8.7.8 For existing commercial noise affecting residential amenity, the rated noise level is anticipated to remain below typical background sound levels, equating to a negligible impact on proposed receptors. Similarly, noise from proposed commercial uses is predicted to have a negligible effect.
- 8.7.9 Finally, the proposed sports pitch will result in a 0dB change in ambient noise level, which is 2.9dB below the permitted change in ambient noise level before noise mitigation is required. Therefore, the magnitude of impact is negligible.
- 8.7.10 Overall, a negligible magnitude of effect is predicted for all noise impacts associated with the Development. The magnitude of impact on human health would therefore be negligible, which in an area of low sensitivity would result in a long-term **negligible** effect which is **not significant**. For the high sensitivity receptors, the effect would be minor adverse, which is also considered to be not significant in EIA terms.

Health effects from changes in transport nature and flow rate

- 8.7.11 As reported within Chapter 9: Transport and Access, no road links exceed a 30% change in traffic flow as a result of the Development. All links are therefore considered negligible with regards to severance. All of the considered links are also subject to a two-way traffic flow of less than 1,400 vehicles per hour, which categorises them as having a negligible impact with regards to pedestrian / cycle delay and amenity, as stated in Chapter 9: Transport and Access. Fear and intimidation on and by road users is also categorised as having a negligible magnitude of impact.
- 8.7.12 As a result of active travel interventions, the B487 Hemel Hempstead Road will offer a safe route for pedestrians and cyclists. Furthermore, with the implementation of the STC, traffic will be alleviated from Cherry Tree Lane, Three Cherry Trees Lane and Green Lane and be displaced onto the wider network. The STC will offer wide segregated active travel corridors,

controlled vehicle speeds and pedestrian and cycle priority. An accompanying green loop will also offer full segregation from any traffic. As reported within the Chapter 9, there will be a betterment in road user and pedestrian safety. Such an improvement in pedestrian safety would encourage the use of active modes of transport, with associated health benefits.

- 8.7.13 Overall, the magnitude of impact on human health would be at worst negligible, which in an area of low sensitivity would result in a long-term **negligible** effect, which is **not significant**. It is not considered that the significance of effect would change for the vulnerable receptor groups identified in this instance. This is on the basis that there would be no direct interaction between users of the Brockwood Primary School and the traffic environment. Given that effects are negligible with regards to severance, pedestrian / cycle delay and amenity and fear and intimidation, there would be no impact on how vulnerable receptors of the GP facilities would access the facilities, and therefore the effect remains negligible.

Additional Mitigation, Monitoring and Residual Effects

- 8.7.14 No significant adverse effects were identified and therefore no additional mitigation is required, and the residual effects remain as presented above.

8.8 Cumulative Effects

Construction

Assessment

Cumulative health effects from changes in air quality

- 8.8.1 As set out in Chapter 11: Air Quality, should permission be granted for other committed developments within 500m of the Site, fugitive dust emissions for the Development will be minimised through the outlined dust mitigation measures. A similar level of control would also be expected for any other scheme such that the magnitude of impact would remain negligible in terms of air quality. As such, the magnitude of impact on human health would also be negligible, which in an area of low sensitivity would result in a **negligible** effect which is **not significant**. For the high sensitivity receptors, there would be a minor adverse effect, which is also not significant.
- 8.8.2 In terms of cumulative road vehicle exhaust emissions, the vehicle trip generation is anticipated to be below the relevant screening criteria for any other committed development. As such, an assessment of road vehicle exhaust emissions has been scoped out of the cumulative assessment for air quality.

Cumulative health effects from changes in noise exposure

- 8.8.3 As set out in Chapter 10: Noise and Vibration, it is assumed that other developments will be required to implement Best Practicable Means as standard working practices during their construction phases. It is also assumed that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2. Based on this, it is considered that any overlapping of construction phases between the Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise sensitive receptors. The magnitude of impact would therefore remain negligible, which in an area of low sensitivity, would result in a **negligible** effect which is **not significant**. For the high sensitivity receptors, there would be a minor adverse effect, which is also not significant.

Cumulative health effects from changes in transport nature and flow rate

- 8.8.4 As set out in Chapter 9: Transport and Access, it is anticipated that the Council will manage cumulative construction impacts and the developer will cooperate with this process. As set out within Section 8.6, a Framework CTMP forms part of the embedded mitigation, which includes liaison with stakeholders and the East Hemel development contractors prior to commencing construction and throughout work on-site. This measure is included specifically to manage cumulative construction impacts. No additional cumulative impacts are reported within Chapter 9: Transport and Access and so the assessment of effects remains the same as above: a **negligible** effect which is **not significant** for both low and high sensitivity receptors.

Mitigation, Monitoring and Residual Effects

- 8.8.5 No additional cumulative effects have been identified and therefore no additional health specific mitigation measures are required. The residual effects remain the same as in the assessment of effects section above.

Completed Development

Assessment

Cumulative health effects from changes in air quality

- 8.8.6 Additional vehicle movements associated with the operation of the cumulative schemes have been included within the future baseline scenario considered in the main assessment. Therefore, a separate cumulative assessment is not required, and the effect remains as reported above: a **negligible** effect which is **not significant**, and a minor adverse effect for the high sensitivity receptors, which is also not significant.

Cumulative health effects from changes in noise exposure

- 8.8.7 As stated in Chapter 10: Noise and Vibration, the baseline and future year traffic data included in the noise assessment includes all relevant committed developments. Therefore, a separate cumulative assessment is not required, and the effect remains as reported above: a **negligible** effect which is **not significant**, and a minor adverse effect for the high sensitivity receptors, which is also not significant.

Cumulative health effects from changes in transport nature and flow rate

- 8.8.8 As set out in Chapter 9: Transport and Access, the main assessment includes the potential trip generation associated with the cumulative sites. As such, the cumulative health effects from changes in transport nature and flow rate remains the same as above: a **negligible** effect which is **not significant** for both low and high sensitivity receptors.

Mitigation, Monitoring and Residual Effects

- 8.8.9 No additional cumulative effects have been identified and therefore no additional health specific mitigation measures are required. The residual effects remain the same as in the assessment of effects section above.

8.9 Summary

- 8.9.1 A summary of the residual effects is provided in 8.10.

Table 8.10: Summary of Residual Effects

Effect	Receptor (Sensitivity)	Magnitude of Impact	Scale of Effect	Additional Mitigation and Monitoring	Residual Effect
Construction					
Health effects from changes in air quality due to construction dust	Low	Negligible	Negligible	Implementation of dust mitigation measures within the CEMP	Negligible
	High	Negligible	Minor Adverse	No health specific mitigation measures are proposed	Minor Adverse
Health effects from changes in noise exposure	Low	Negligible	Negligible		Negligible
	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in transport and movement	Low	Negligible	Negligible		Negligible
	High	Negligible	Negligible		Negligible
Completed Development					
Health effects from changes in air quality due to operational traffic	Low	Negligible	Negligible	None proposed	Negligible
	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in noise exposure	Low	Negligible	Negligible		Negligible
	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in transport and movement	Low	Negligible	Negligible		Negligible
	High	Negligible	Negligible		Negligible
Cumulative Assessment					
Construction					
	Low	Negligible	Negligible	None proposed	Negligible

Effect	Receptor (Sensitivity)	Magnitude of Impact	Scale of Effect	Additional Mitigation and Monitoring	Residual Effect
Health effects from changes in air quality due to construction dust	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in noise exposure	Low	Negligible	Negligible		Negligible
	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in transport and movement	Low	Negligible	Negligible		Negligible
	High	Negligible	Negligible		Negligible

Completed Development

Health effects from changes in air quality due to operational traffic	Low	Negligible	Negligible	None proposed	Negligible
	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in noise exposure	Low	Negligible	Negligible		Negligible
	High	Negligible	Minor Adverse		Minor Adverse
Health effects from changes in transport and movement	Low	Negligible	Negligible		Negligible
	High	Negligible	Negligible		Negligible

References

- ¹ Department for Communities and Local Government, (2025). National Planning Policy Framework.
- ² Hertfordshire County Council, (2022). *Hertfordshire Health and Wellbeing Strategy 2022-2026*. Available at: <https://www.hertfordshire.gov.uk/media-library/documents/about-the-council/data-and-information/public-health/hertfordshire-health-and-wellbeing-strategy-2022-2026.pdf>. Last accessed: 18/09/2025
- ³ St Albans City and District Council, (2025). *Draft Local Plan 2041 – Regulation 19 Publication*. Available at: [https://www.stalbans.gov.uk/sites/default/files/attachments/Planning%20Policy/LPCD/LPCD%2020.01%20-%20Reg%2019%20Local%20Plan%20Part%20A%20\(2024\).pdf](https://www.stalbans.gov.uk/sites/default/files/attachments/Planning%20Policy/LPCD/LPCD%2020.01%20-%20Reg%2019%20Local%20Plan%20Part%20A%20(2024).pdf). Last accessed: 18/09/2025
- ⁴ Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (2022). *Healthy and safe communities*. Retrieved from National Planning Practice Guidance. Available at: <https://www.gov.uk/guidance/health-and-wellbeing>. Last accessed: 18/09/2025
- ⁵ ISEP, (2022). *Determining significance for human health in environmental impact assessment*. Available at: <https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf>. Last accessed: 18/09/2025
- ⁶ ISEP, (2022). *Effective scoping of human health in Environmental Impact Assessment*. Available at: <https://www.iema.net/media/s35fughe/iema-eia-guide-to-effective-scoping-of-human-health-nov-2022.pdf>. Last accessed: 18/09/2025
- ⁷ ONS (n.d). Office for National Statistics – nomis. Available at: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?opt=3&theme=&subgrp=>. Last accessed 12/11/25.
- ⁸ Department of Health and Social Care (n.d.). Fingertips Public Health Profiles – Local Authority Health Profiles. Available at: <https://fingertips.phe.org.uk/profile/health-profiles>. Last accessed 12/11/25.
- ⁹ Department of Health and Social Care (n.d.). Fingertips Public Health Profiles – Local health, public health data for small geographic areas. Available at: <https://fingertips.phe.org.uk/profile/local-health/data#page/1/gid/1938133180/ati/15/iid/93744/age/28/sex/4/cat/-1/ctp/-1/yr/1/cid/4/tbm/1>. Last Accessed 12/11/25.
- ¹⁰ NHS Digital (2025). General Practice Workforce. Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services>. Last Accessed 12/11/25.
- ¹¹ Barton, H., and Grant, M., (2006). *A health map for the local human habitat*. *Journal of the Royal Society for the Promotion of Health*, 252-253. doi:10.1177/1466424006070466

¹² ISEP, (2017). *Health in Environmental Impact Assessment: A Primer for Proportionate Approach*. Available at: <https://www.iema.net/download-document/7010>. Last accessed: 22/09/2025