12 Human Health

12.1 Introduction

12.1.1 This chapter of the ES has been prepared by the Savills Health and Social Impact Assessment team within the Environment and Infrastructure department.

12.1.2 The chapter presents the environmental assessment of the likely significant effects (both positive and negative) of the Proposed Development during construction and operation with respect to the health of the existing and future community. It should be read in conjunction with the description of the Proposed Development provided in Chapter 3 and with respect to the relevant sections of inter-related ES technical assessments (most notably Chapter 7: Air Quality, Chapter 15: Noise and Vibration, Chapter 16: Socio-economics and Chapter 17: Transport and Access), which inform the assessment of human health.

12.2 Assessment methodology

Legislation, Local Planning Policy, Technical Guidance and Best Practice

12.2.1 This subsection summarises relevant national and local legislation and policy requirements that are directly pertinent to the assessment of health. On the basis that a wide range of environmental, social and economic factors have the potential to influence health, many policies which relate to these determinants are also relevant to health. However, to ensure a focussed list of relevant policies and to avoid duplication of policies pertinent to the inter-related ES technical disciplines, the policies referenced in this section have been selected only if they are considered to be of particular relevance to human health and/or wellbeing, and are relevant to the Proposed Development.

Legislative Context

12.2.2 There is no specific legislation that is relevant to the population and health assessment.

National Planning Policy Framework

12.2.3 The National Planning Policy Framework (NPPF) (2024)[1] sets out the planning policies for England.

12.2.4 Promoting healthy and safe communities is a central theme, whereby the NPPF states that planning policies and decisions should aim to achieve healthy, inclusive and safe places which promote social interaction (including opportunities for meetings between people who might not otherwise come into contact with each other), are safe and accessible, and enable and support healthy lifestyles (paragraph 96).

[1] Ministry of Housing, Communities & Local Government. (2024). National Planning Policy Framework. Retrieved from https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf

12.2.5 Furthermore, the NPPF (paragraph 98) states that to provide the social, recreational and cultural facilities and services that communities need, planning policies and decisions should:

- plan positively for the provision and use of shared spaces, community facilities and other local services to enhance the sustainability of communities and residential environments;
- take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community;
- guard against the unnecessary loss of valued facilities and services, particularly where this would reduce the community's ability to meet its day-to-day needs;
- ensure that established shops, facilities and services are able to develop and modernise, and are retained for the benefit of the community; and
- ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.

12.2.6 Paragraph 101 further states that to ensure faster delivery of other public service infrastructure, such as healthcare infrastructure, delivery partners and statutory bodies are to plan for required facilities and resolve key planning issues before applications are submitted.

12.2.7 Importantly, the NPPF states, in Paragraph 101, that Significant Weight should be placed on the importance of new, expanded or upgraded public service infrastructure when considering proposals for development, thereby helping to differentiate and support projects that prevent, reduce and delay the need for clinical intervention and social care and build capacity, from those that don't.

Local Planning Policy

12.2.8 Relevant local policy documents comprise the Wokingham Borough Council (WBC) Local Development Framework Adopted Core Strategy[2] and the Draft Local Plan[3]. The draft Local Plan was submitted for examination on the 28th February 2025 and is anticipated to go through Examination in Public through 2025 and to be adopted in 2025-2026.

12.2.9 Local policies pertinent to health and wellbeing are outlined in more detail below.

Local Development Framework Adopted Core Strategy

12.2.10 Policy CP2 (Inclusive communities) states that to ensure that new development contributes to the provision of sustainable and inclusive communities (including the provision of community facilities) to meet long term needs, planning permission will be granted for proposals that address the requirements of (amongst other factors) the challenges associated with: an ageing population (particularly in terms of housing, health and wellbeing); children, young people and families (including the co-ordination of services to meet their needs); people with special needs; and those with a protected characteristic. Policy CP2 thereby sets the imperative and rationale for positive weight to be given for projects that facilitate healthy independent living for longer,

[2] Wokingham Borough Council. (2010, January). Adopted Core Strategy Development Plan Document . Retrieved from Wokingham Borough Council: https://www.wokingham.gov.uk/sites/wokingham/files/2023-06/Final%20adopted%20Core%20Strategy%20inc.%20cover.pdf
[3] Wokingham Borough Council. (2025, February 28). Local Plan Update (2023-2040). Retrieved from Wokingham Borough Council: https://www.wokingham.gov.uk/sites/wokingham/files/2024-10/Local%20Plan%20Update%20-%20Regulation%2019%20Plan.pdf

and foster healthy, vibrant and cohesive communities through healthy and inclusive urban design.

Local Plan Update 2023-2040: Proposed Submission Plan

12.2.11 Policy SS1 (Sustainable Development Principles) states that development proposals will be expected to promote healthy lifestyles, wellbeing and social inclusion.

12.2.12 Policy SS2 (Spatial Strategy and Settlement Hierarchy) states that growth should create strong, cohesive and inclusive communities that provide for a high quality of life. This policy also highlights Loddon Valley Garden Village as a contributor to growth.

12.2.13 Policy SS13 (Loddon Valley Garden Village) states that the delivery of the garden village must be supported by a comprehensive package of infrastructure to support a self-sustaining, thriving and healthy community. This policy highlights that the garden village would be a new, sustainable community of around 3,930 homes (2,700 by 2040) with schools, shops, jobs, and green spaces. It includes 40% affordable housing, a country park, and strong public transport and walking/cycling links.

12.2.14 Place shaping principles include walkable neighbourhoods with strong active travel links; protection of local identity and separation from nearby settlements; integration of heritage assets and natural features; higher density developments are located near centres and transport nodes; and there is consideration of flood risk avoidance and sustainable drainage.

12.2.15 Policy C2 (Mitigation of Transport Impacts and Highways Safety and Design) states that with regards to highways safety and design, all development proposals must (amongst other factors) contribute towards a high quality public realm designed in accordance with Living Streets (or any successor document), user access hierarchy and demonstrate how the principles of Healthy Streets have been incorporated[4].

12.2.16 Policy C4 (Green and Blue Infrastructure and Public Rights of Way) states that the existing areas of green and blue infrastructure of Wokingham Borough will be protected and be enhanced for the biodiversity, recreational, amenity, health and townscape and landscape value, and contribution towards mitigating and adapting to climate change.

12.2.17 Policy H7 (Specialist Accommodation) states that development proposals for specialist accommodation will be supported, provided that (amongst other factors) the accommodation is well located, close to an identified town, district or local centre with access to a good range of services and facilities, including existing public transport routes, or incorporates essential community facilities and services, such as healthcare services or day care for older people.

12.2.18 Policy NE5 (Landscape and Design) states that development proposals should incorporate landscape spaces, public realm and green infrastructure to achieve a sense of place, improve health and wellbeing and mitigate and adapt to climate change.

12.2.19 Policy DH1 (Place Making and Quality Design) states that all development will contribute to a strong sense of place through high quality design which should endure over the lifetime of the development. Development is required to (amongst other factors) create places that foster active and healthy lifestyles.

[4] https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets

12.2.20 Policy HC1 (Promoting Healthy Communities) states that:

1. Vibrant, healthy and safe communities will be promoted through a high-quality environment with local services to support health, social and cultural wellbeing and help contribute to reducing deprivation and inequalities in the borough.

2. Development proposals should consider impacts on the health and wellbeing of new and existing residents, by including measures that contribute to healthier communities and reduce inequalities. This includes the creation of high quality, active, safe and accessible places.

3. Development proposals will be supported where they:

   a) Contribute to the health and wellbeing priorities of the borough, including those outlined in the Berkshire West Health and Wellbeing Strategy and Wokingham Health and Wellbeing Strategy (and any other successor or associated document);

   b) Support the provision of new or improved health facilities, in consultation with the borough's Health and Wellbeing Board, Integration Partnership, the Buckinghamshire, Oxfordshire and Berkshire West (BOB) Integrated Care Board and NHS England; and

   c) Protect existing health facilities in line with Policy HC2: Community Facilities.

4. Residential development proposals of 10 dwellings or more, or non-residential development proposals of 1,000 m^2 or greater gross internal area must include a Health Impact Assessment (HIA).

12.2.21 As part of the application for the Proposed Development, key stages of the HIA process were embedded early in the visioning and pre-application stages, providing health intelligence to inform the emerging vision, plan, and healthy urban design features—tailored to local priorities and needs. The front loading of HIA is increasingly applied to inform planning, at a stage where the opportunity to influence is greatest, as opposed to taking a more reactive assessment based approach when the application is more progressed and less flexible to change.

12.2.22 The remaining stages of HIA have since been further integrated into the EIA, in line with the Institute of Sustainability and Environmental Professionals (ISEP; formerly known as IEMA - Institute of Environmental Management and Assessment) guidance. This approach has fulfilled both regulatory and local policy requirements, while also achieving the overarching HIA objective: to support and inform more health-conscious planning and development.

12.2.23 Policy HC5 (Environmental Protection) states that development proposals will only be supported where it can be demonstrated that individually, or cumulatively in combination with other schemes, they do not have an unacceptable impact, either during the construction phase, or when completed, on: human health, wellbeing or safety, residential and public amenity, the quality of land, including soils and the subsurface, air and water quality and other sensitive receptors, including the natural environment.

12.2.24 Policy HC6 (Air Pollution and Air Quality) states that Air Quality Assessments are likely to be required if the site is within proximity to a source of air pollution which could present a significant risk to human health, protected species, or irreplaceable habitats, among other factors.

12.2.25 Policy HC9 (Contaminated Land and Water) states that proposals on or near sites which are known, or suspected to be potentially contaminated, or proposals for sensitive land uses will be supported where it can be demonstrated that sensitive receptors will not be exposed to levels

of potential contamination which would give rise to unacceptable risks or harm to health (amongst other factors), where the policy provides a list of sensitive receptors.

Guidance and Best Practice

12.2.26 The following guidance has been applied to underpin the ES Human Health Chapter:

- National Planning Practice Guidance[5];
- ISEP Guide to Effective Scoping of Human Health in EIA[6]; and
- ISEP Guide to Determining Significance for Human Health in EIA[7].

12.2.27 This chapter details the methodology followed, a review of the baseline conditions in the defined study area, the results of the assessment, additional mitigation measures (if required), the residual effects followed by implications of climate change and any cumulative effects.

12.2.28 As per the EIA Scoping Opinion which was submitted to WBC (Appendix 5.1) in December 2024., WBC has agreed to the Human health section of Scoping Report which set out the methodology for informing the ES in respect to human health.

Predicting effects

Receptor Sensitivity

12.2.29 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. Sensitive 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.

12.2.30 As an example, the elderly, young children and individuals with chronic pre-existing respiratory conditions would be more sensitive to adverse changes to air quality, with the potential for emergency admission to hospital more likely. On the other hand, an individual who has been unemployed for a long period would benefit more from employment opportunities and associated effects on their wellbeing in contrast to an someone who is already employed. Consideration of varying sensitivity to the individual health pathways is therefore key to the individual assessment protocols applied (informing the relative distribution of effect, and any barriers to benefit uptake), but also central to defining the significance of effect.

12.2.31 In order to address the potential variances stated above, the ISEP (formerly IEMA) health sensitivity methodology criteria shown in Table 12.1 below has been applied to structure the assessment of significance.

[5] Ministry of Housing, Communities and Local Government. (n.d.). Healthy and safe communities. Retrieved from National Planning Practice Guidance: https://www.gov.uk/guidance/health-and-wellbeing
[6] IEMA. (2022). Effective scoping of human health in Environmental Impact Assessment. Retrieved from https://www.iema.net/media/s35fughe/iema-eia-guide-to-effective-scoping-of-human-health-nov-2022.pdf
[7] IEMA. (2022). Determining significance for human health in environmental impact assessment. Retrieved from https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf

Table 12.1 Health sensitivity methodology criteria

Sensitivity	Definition
High	High levels of deprivation (including pockets of deprivation); reliance on resources shared (between the population and the Proposed Development); 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 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 known as IEMA) Guide to Determining Significance for Human Health in EIA[8]

12.2.32 Baseline data has been collected to interpret local health and socio-economic circumstance (refer to Section 12.5). Overall, it is concluded that local health and socio-economic circumstance is good, with the majority of indicators analysed better within the Ward Study Area and Wokingham when compared to relevant comparators. When looking at the population in general, the sensitivity of the population within the Ward Study Area and Wokingham is considered to be “low”.

12.2.33 To identify any particularly vulnerable groups that should be considered in the human health assessment, a Study Area of 500m from the Site boundary has been used to identify all receptors who are particularly sensitive and could experience disproportionate or differential effects (for example, those using schools and care homes).

[8] IEMA. (2022). Determining significance for human health in environmental impact assessment. Retrieved from https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf

12.2.34 The exercise identified all registered receptors within 500m of the Site boundary. The search results returned the following types of receptors: dwelling, development, property shell, office, house in multiple occupation, retail, hotel/ motel/ boarding / guest house, park, leisure, industrial, community services, place of worship, education, medical, transport and utility.

12.2.35 Of these receptor types, the following categories were shortlisted to be considered in more detail in Table 12.2: residential institution; community services; place of worship; education; and medical.

Table 12.2 Potentially vulnerable groups for consideration

Receptor name	Receptor type	Address	Rationale for scoping in/out
Austen House Nursing Home	Residential institution	Austen House Nursing Home, Kilnsea Drive, Earley, Reading, RG6 3UJ	Scoped in – primary user group is elderly people (protected characteristic: age).
Liberty House (retirement complex)	Residential institution	Flats 16A, 19, 21-31, Liberty House, Stand Way, Earley, Reading, RG6 4EA	Scoped in – primary user group is elderly people (protected characteristic: age).
Parrot Farm Care Home	Residential institution	Dimensions, Parrot Farm, Arborfield Road, Shinfield, Reading, RG2 9EA	Scoped in – primary user group is elderly people (protected characteristic: age).
Shinfield View Care Home	Residential institution	Shinfield View, School Green, Shinfield, Reading, RG2 9EH	Scoped in – primary user group is elderly people (protected characteristic: age).
Parsons Grange Care Home	Residential institution	Parsons Grange Care Home, School Green, Shinfield, RG2 9EH	Scoped in – primary user group is elderly people (protected characteristic: age).
Hall Farm	Residential institution	Hall Farm, Church Lane, Arborfield, Reading, RG2 9HX	Scoped out – within Proposed Development boundary
Plant Environment Laboratory	Education	Plant Environment Laboratory, Oldhouse Farm, Cutbush Lane, Shinfield, RG2 9AD	Scoped out - not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
The University College of Estate Management	Education	The University College of Estate Management, Cutbush Lane, Shinfield, Reading, RG2 9AF	Scoped out - not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
The University College of Estate Management	Education	Field Unit, The University College of Estate Management, Cutbush Lane, Shinfield, Reading, RG2 9AF	Scoped out - not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
The University College of Estate Management	Education	Plant Environmental Lab, The University College of Estate Management,	Scoped out - not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.

Receptor name	Receptor type	Address	Rationale for scoping in/out
		Cutbush Lane, Shinfield, Reading, RG2 9AF	
The Beauty Academy Reading	Education	Shinfield Grange, Cutbush Lane, Shinfield, Reading, RG2 9AF	Scoped out - not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
Shinfield Infant School	Education	Shinfield Infant School, School Green, Shinfield, Reading, RG2 9EH	Scoped in – primary user group is children (protected characteristic: age).
Shinfield St. Marys Church of England Junior School	Education	Shinfield St. Marys C of E Junior School, Chestnut Crescent, Shinfield, Reading, RG2 9EJ	Scoped in – primary user group is children (protected characteristic: age).
Shinfield Community Church	Place of Worship	6 Hollow Lane, Shinfield, Reading, RG2 9BT	Scoped in – primary user group is those who follow Christianity (protected characteristic: religion).
Shinfield Baptist Church	Place of Worship	Shinfield Baptist Church, Fairmead Road, Shinfield, RG2 9DL	Scoped in – primary user group is those who follow Christianity (protected characteristic: religion).
Church hall	Place of Worship	9 Hollow Lane, Shinfield, RG2 9EG	Scoped in – primary user group is those who follow Christianity (protected characteristic: religion).
St Bartholomew's Church	Place of Worship	St Bartholomew's Church, Church Lane, Arborfield, RG2 9HZ	Scoped in – primary user group is those who follow Christianity (protected characteristic: religion).
Shinfield Parish Hall	Community Services	Shinfield Parish Hall, School Green, Shinfield, RG2 9EH	Scoped out – not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
The Royal British Legion Hall	Community Services	The Royal British Legion Hall, School Green, Shinfield, RG2 9EH	Scoped out – not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
St Bartholomew's Church Hall	Community Services	Church Hall, St Bartholomew's Church, Church Lane, Arborfield, RG2 9HZ	Scoped out – not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.
Swallowfield Medical Practice	Medical	The Surgery, Millworth Lane, Shinfield, Reading, RG2 9EN	Scoped out – not used by any particularly vulnerable group and therefore no potential for disproportionate/differential effects.

12.2.36 For the purpose of the assessment, the sensitivity of these specific receptors is considered to be 'high'.

Magnitude of Impact

12.2.37 A Magnitude of impact, based on the change that the Proposed Development would have upon the receptor, is considered within the range of high, medium, low and negligible. Consideration is given to scale, duration and frequency of impact, and reversibility with reference to the definitions in Table 12.3.

Table 12.3 Magnitude of impact

Magnitude	Description
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 known as IEMA) Guide to Determining Significance for Human Health in EIA[9]

Significance of effect

12.2.38 The significance of an effect is based upon the consideration of magnitude of impact and sensitivity of a receptor.

12.2.39 In all cases the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by supporting evidence to explain and justify the conclusions reached. Where a range of significance levels are presented, the final assessment for each effect is based upon expert judgement.

[9] IEMA. (2022). Determining significance for human health in environmental impact assessment. Retrieved from https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf

Table 12.4 Level of effect

Magnitude of Impact	Receptor 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 known as IEMA) Guide to Determining Significance for Human Health in EIA[10]

12.2.40 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 12.5 provides a description of each significance level.

Table 12.5 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 Proposed Development, 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 Proposed Development, 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 Proposed Development 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 Proposed Development.

[10] IEMA. (2022). Determining significance for human health in environmental impact assessment. Retrieved from https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf

Category/level	Indicative criteria
Moderate (significant)	The narrative explains that this is significant for public health because: - Changes, due to the Proposed Development, 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 Proposed Development, 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 Proposed Development 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 Proposed Development.
Minor (not significant)	The narrative explains that this is not significant for public health because: - Changes, due to the Proposed Development, 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 Proposed Development, 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 Proposed Development and changes to health outcomes.

Category/level	Indicative criteria
	In addition, health priorities for the relevant study area are of low relevance to the determinant of health or population group affected by the Proposed Development.
Negligible (not significant)	The narrative explains that this is not significant for public health because: - Changes, due to the Proposed Development, 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 Proposed Development having no responses on this issue among stakeholders. - Change, due to the Proposed Development, 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 Proposed Development 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 Proposed Development.

Source: ISEP (formerly known as IEMA) Guide to Determining Significance for Human Health in EIA[11]

Geographic Scope

12.2.41 The Proposed Development is located within the 'Hawkedon Ward', the 'Winnersh Ward', the 'Shinfield South Ward' and the 'Arborfield Ward', within the Unitary Authority of Wokingham.

12.2.42 Environmental health determinants (such as changes to air quality and noise exposure) typically have a local distribution pattern, where the hazards are limited by their concentration and physical dispersion characteristics. Likewise, changes in transport nature and flow rate have a particular distribution on the local road network. On this basis, the collection of health data relevant to environmental health determinants focusses on the average of the four wards the Proposed Development is located within (termed the Ward Study Area), with Wokingham, the South East and the national average used as comparators.

12.2.43 Socio-economic health determinants (such as employment and related income generation) have a far wider geographic scope of influence than environmental health determinants, due to the willingness to commute significant distances to work, and the indirect and induced influence

[11] IEMA. (2022). Determining significance for human health in environmental impact assessment. Retrieved from https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf

it can have. Therefore, the socio-economic baseline data presented has a wider geographic scope, focussing on unitary authority level rather than ward data. This approach is consistent with Chapter 16:Socio-economics, and agreed by WBC, which also presents Wokingham as the study area for the baseline conditions.

12.2.44 In all cases, the Ward Study Area defining the relevant sensitive receptors identified for assessment purposes remains consistent with the inter-related technical aspects which inform the assessment of public health and wellbeing (i.e. air, noise, transport and socio-economic assessments).

Temporal Scope

12.2.45 The chapter assesses potential effects across a range of health determinants during both the construction and operation phases of the Proposed Development.

12.2.46 For the construction phase, proposed working hours would be 08:00 to 18:00 hours Monday to Friday inclusive, 08:00 to 13:00 hours on Saturday, and no noisy work on Sundays or Bank Holidays. It is anticipated that development would be undertaken on a rolling programme of site preparation and construction, allowing earlier phases to be completed and occupied while subsequent phases are constructed.

Consultation

12.2.47 A formal request for an EIA Scoping Opinion was submitted to WBC (Appendix 5.1) in December 2024. A Scoping Opinion was received on 28 February 2025 (Appendix 5.2). No issues were raised with regards to human health.

12.2.48 In July 2025, the Savills Health and Social Impact Assessment Team reached out to the Buckinghamshire, Oxfordshire and Berkshire West Integrated Care Board to request initial engagement regarding healthcare planning contributions associated with the Proposed Development. The Savills Health and Social Impact Assessment Team were commissioned to generate local health intelligence, inform and prioritise healthy urban design solutions, and to aid discussions on building in health care through initial analysis of existing healthcare core capacity locally, and the associated impact on demand from the Proposed Development. The Team started to explore the need, viability and aspiration for healthcare on the Proposed Development, and sought to engage with the ICB, to better understand the current estates (ownership space and quality), and the ICB and local practitioner service aspirations and strategy to help explore options and a mutually agreeable/timely solution. Additional discussions are to follow.

12.2.49 No further health-specific consultation has been undertaken with statutory consultees and/or other relevant consultees in relation to the scope and/or methodology of the assessment.

Assumptions and Limitations

12.2.50 The human health assessment draws from and builds upon the technical outputs from inter-related disciplines, most notably: Chapter 7: Air Quality, Chapter 15: Noise, Chapter 16: Socio-economics and Chapter 17: Transport and Access.

12.2.51 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.

12.3 Baseline conditions

Current Baseline

12.3.1 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 purpose of the population and health baseline is to provide insight into how potential health determinants may act disproportionately upon certain communities and sensitive groups. The baseline has been further applied to inform and enhance healthy urban design features tailored to local health circumstance priority and need, and form the platform for the assessment and the basis to determining significance.

12.3.2 This section summarises the findings of the community baseline, provided in Appendix 12.1: Community Baseline.

12.3.3 Wokingham has a comparatively older population to the national average, with a higher proportion of males and females aged 40 to 54 years old and a lower proportion of males and females aged 20 to 34 years old. The employment rate in Wokingham has consistently remained above the national average.

12.3.4 Male and female life expectancy in Wokingham has been consistently higher than the regional and national averages for the years analysed, and has shown a general increase over the years. Healthy life expectancy (i.e. the number of years spent in good health) is also higher than the general trend, but has plateaued over the time period presented (meaning the gap between life expectancy and healthy life expectancy is widening). This trend underpins much of the Local Policy geared to facilitating healthy independent living for longer; preventing, reducing and delaying the demand on clinical intervention and social care.

12.3.5 Following a review of the available health and demographic statistics, the local community within the Ward Study Area (Hawkedon, Winnersh, Shinfield South and Arborfield) and the unitary authority (Wokingham) typically has better health than the England average.

12.3.6 Mortality rates for all causes, cancer, circulatory disease and respiratory disease are all lower in the unitary authority compared to the regional and national averages. Emergency hospital admissions for all causes, coronary heart disease, stroke, myocardial infarction and chronic obstructive pulmonary disease, as well as the incidence of cancer, were all lower in the Ward Study Area compared to the regional and national averages.

12.3.7 Mental health within Wokingham is generally better than the regional and national averages when reviewing data on suicide rate, emergency hospital admissions for intentional self-harm and dementia diagnosis rate.

12.3.8 Finally, lifestyle and behavioural risk factors also show that Wokingham performs better than the national average, with lower admission episodes for alcohol-specific conditions (both adults and under 18s), lower smoking prevalence in adults, lower proportion of adults classified as overweight or obese, lower estimated diabetes diagnosis rate, lower prevalence of obesity in year 6 children and a higher proportion of physically active adults.

12.3.9 On the above basis, local health circumstance is considered good, with resilience to environmental changes considered high, and relative sensitivity considered low. Key local priorities and associated design features therefore centre upon supporting active and healthy lifestyle behaviours, and the needs of an aging population.

Local healthcare capacity

12.3.10 The Site is located within NHS Buckinghamshire, Oxfordshire and Berkshire West ICB, specifically the sub-ICB 15A Berkshire West. Within this sub-ICB there is a total of 46 FTE GPs (per 100,000 population), covering a population of 590,045 (NHS Digital, 2025). This equates to an average list size of 2,153 patients per GP, which is higher 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".

12.3.11 Table 12.6 presents the GP facilities within 1.2 miles (or 2km) of the Site, the upper limit of what is considered a walkable distance[12], the number of FTE GPs, number of patients and the resultant calculated patient per GP ratio.

Table 12.6 Local healthcare facilities within 1.2 miles of the Site

Practice code	Name	Distance (miles)	Number of patients	FTE GPs	Patients per GP	Additional capacity
K81633	South Reading & Shinfield Group Medical Practice	1	11,468	2	5,734	0
K81633	Shinfield Surgery	1	11,468	2	5,734	n/a (branch of South Reading & Shinfield Group Medical Practice)
K81003	Dr M.D. Smith	1	15,848	8.52	1,860	n/a (branch of Swallowfield Medical Practice)
K81003	Dr M.D. Smith	1	15,848	8.52	1,860	n/a (branch of Swallowfield Medical Practice)
Total						**0**

12.3.12 Extending the search to consider GP facilities within 3 miles of the Site, Table 12.7 shows the three GP facilities within this search area, the number of FTE GPs, number of patients and the resultant calculated patient per GP ratio.

12.3.13 Based on the target list size of 2,000 patients per GP defined by NHS England, GP facilities within 3 miles from the Proposed Development have core capacity for an additional 1,192 patients.

[12] 1.2 miles is equivalent to 2 km (i.e. the upper limit of what is considered a walkable distance between primary facilities and residential areas, with the greatest potential to replace short car trips trips) (Department for Transport, 2007)

Table 12.7 Local healthcare facilities within 3 miles of the Site

Practice code	Name	Distance (miles)	Number of patients	FTE GPs	Patients per GP	Additional capacity
K81003	Swallowfield Medical Practice	2.5	15,848	8.52	1,860	1,192
K81605	University Medical Group	2.7	32,285	13.96	2,313	0
K81644	Chancellor House Surgery	2.7	15,439	6.44	2,396	0
					Total	**1,192**

Future Baseline

12.3.14 Consistent with historic national trends, public health within the ward and district study area population is likely to improve over time.

12.3.15 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 that the present-day statistics are used for the purpose of this assessment, offering a precautionary approach.

12.4 Inherent design mitigation

12.4.1 Inherent mitigation, through healthy urban design, promotes health and wellbeing and encourages healthy behaviours during operation. For example, the provision of affordable homes help to address inequalities, but also helps balance population age structure, whilst formal and informal open spaces promote healthy lifestyles by encouraging physical activity and the mental health benefits associated with this.

12.4.2 The description of the Proposed Development is included in Chapter 3: Proposed Development.

12.4.3 Mitigation measures focus on precursors to health and wellbeing outcomes, thereby providing an opportunity for intervention to prevent any adverse impacts.

12.4.4 Within the construction phase of the Proposed Development, there are several inherent mitigation measures that would be commonly implemented through a Construction Environmental Management Plan (CEMP). The CEMP includes details on the hours of operation, noise, vibration, dust, light spill, wheel washing, control of runoff, and routing plan for the demolition, excavation and construction vehicles. It is anticipated that the implementation of the CEMP will be a condition of the planning permission and that it will be regularly monitored. The CEMP will include specific measures to control noise and vibration emissions, as outlined in Chapter 15: Noise and Vibration.

12.4.5 It is important to note, as outlined in Chapter 7: Air Quality, a Dust Management Plan (DMP), included in the CEMP, would outline specific IAQM mitigation recommendations for controlling construction dust which are not considered as embedded mitigation.

12.4.6 In addition to the CEMP, as outlined in Chapter 7: Air Quality, a Sustainable Travel Plan, will include measures designed to encourage sustainable travel options for new users of the Proposed Development, and electric vehicle charging infrastructure are considered to be inherent mitigation measures within the Proposed Development.

12.5 Potential effects prior to additional mitigation

Construction Phase

Health effects from changes in air quality

12.5.1 As presented in Chapter 7: Air Quality, potential effects during the construction phase relate to annoyance and loss of amenity caused by dust emissions. As stated in Chapter 7: Air Quality, potential dust emissions generated from demolition, trackout, earthworks and construction phases. The overall risk from all four phases for dust soiling, human health and ecology is high, as summarised in Chapter 7: Air Quality.

12.5.2 Given that Chapter 7: Air Quality states that the overall risk from all four construction phases is high, additional mitigation measures are discussed in Section 12.6 and residual effects are discussed in Section 12.7.

Health effects from changes in noise exposure

12.5.3 The human health and wellbeing assessment associated with changes in noise exposure relates to both on-site construction activity and traffic noise.

12.5.4 As described in Chapter 15: Noise and Vibration, the Proposed Development would be phased over a number of years. The construction activities would be undertaken during typical construction working hours (generally 07.00 to 19.00 hours Monday to Friday, 07.00 to 13.00 hours Saturdays, with no working on Sundays or Bank/Public holidays. As a result, potential health and wellbeing effects (if any) are likely to be limited to temporary annoyance during the daytime period only (no night noise) and any exceptions to this would be in agreement with WBC.

12.5.5 As stated in Chapter 15: Noise and Vibration, the threshold value for construction activity is 65 dB $L_{Aeq,16hr}$ (façade) for all noise sensitive receptors (NSRs) in regard to noise, and 1.0 mm/s PPV in regard to vibration, which is set to be protective of the environment and human health. Chapter 15: Noise and Vibration notes that the highest levels of construction noise are expected during the early phases of the Proposed Development, particularly during site clearance and earthworks. When buildings are being fitted out, noise emissions would be low since most work would be carried out inside the completed structures using hand tools. Regarding vibration, the Chapter 15: Noise and Vibration identifies potential sources such as piling rigs, vibratory rollers, and ground improvement tampers. As stated in Chapter 15 Noise and Vibration, significant effects on the noise and vibration environment would be avoided due to the implementation of limited construction hours and other mitigation measures outlined in the CEMP. From a health and wellbeing perspective, temporary changes in the noise environment would not persist for long enough to result in a material impact on health and wellbeing.

12.5.6 Changes in the Basic Noise Level (BNL) on existing traffic routes due to construction traffic would be would be below 1 dB, is below what is considered a perceptible change, and is considered negligible from a noise perspective.

12.5.7 Overall, the temporary changes in the noise environment reported from on-site construction activities and construction traffic would not be sufficient to cause any change in adverse health outcomes across the Ward Study Area population. On this basis, the magnitude of impact on human health and wellbeing would be negligible. Based on a low receptor sensitivity, the resultant human health and wellbeing effect is considered to be negligible and not significant.

12.5.8 While it is recognised that some nearby receptors may be more sensitive to changes in the noise environment than others (for example schools and care homes), on the basis that the

magnitude of impact on human health would generally be negligible; construction works would be limited to the day time period only; and due to the temporary/transient nature of the construction phase (where impacts would not persist in the same location for a long period of time); it is not anticipated that following implementation of appropriate mitigation the health of vulnerable receptors would be disproportionately or differentially affected. As such, 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

12.5.9 As stated in Chapter 17: Transport and Access, subject to consent, the Proposed Development is to be fully operational by 2040 and construction activities are expected to commence in 2027. As part of the construction process, the initial stages would include formation of new permanent access routes into the Proposed Development and primary internal roads. Additional details on the construction phase associated with transport and access are discussed in Chapter 17: Transport and Access.

12.5.10 Of relevance to human health and wellbeing, Chapter 17: Transport and Access looks at the impact that construction traffic has on severance, pedestrian delay, non-motorised use amenity, pedestrian fear and intimidation, and accidents and safety.

12.5.11 During the construction phase, approximately 145 construction two way movements are likely to occur during a 24hr working day, of which 37 two way movements would be from Heavy Goods Vehicles (HGV) as stated in Chapter 17: Transport and Access. When comparing the 2032 baseline flows to the additional traffic generated by the construction activities, there is a less than +2% change during the peak hours and over a 24 hr period. As such, from a transport perspective, this magnitude of change would be negligible in accordance to the guidance used in Chapter 17: Transport and Access. On this basis, there would be no material impact on severance, pedestrian delay, pedestrian fear and intimidation and highway safety. Chapter 17: Transport and Access further states that whilst the changes in traffic flows along all areas of the surrounding highway network would not be discernible during the construction stage of the Proposed Development, the construction activity would generate HGV movements that would not occur in the baseline scenario. As such, Chapter 17: Transport and Access states that the HGV trips associated with the construction activities could have the potential to create a minor adverse effect in terms of non-motorised user amenity along the surrounding network. However, the provision of a CEMP which would set out access arrangements throughout the construction stage, the potential impact to non-motorised user amenity would be mitigated.

12.5.12 When assessing the construction of access junctions at Arborfield Road and Lower Early Way frontages, Chapter 17: Transport and Access states that the pedestrian or cycle networks in the area would not have an impact to them resulting in negligible effects on severance, non-motorised user amenity, pedestrian delay, pedestrian fear and intimidation and highway safety.

12.5.13 When considering construction traffic and construction of access junctions, there would be a negligible impact on health and wellbeing, which would result in a negligible human health effect (not significant) given the low receptor sensitivity. 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 socio-economic factors (income and employment)

12.5.14 As noted in Chapter 16: Socioeconomics, construction of the Proposed Development is anticipated to generate 340 full time equivalent (FTE) gross construction jobs per annum over a 15 year construction period. The number of net additional jobs (on and-off site jobs per annum) for residents of Wokingham equates to 195 once leakage, displacement, and multiplier effects are taken into account . While this is the case, the temporary nature of these employment opportunities limit the benefits to human health and wellbeing which would be experienced at the individual level only.

12.5.15 Due to the temporary and phased nature of the construction phase and on the basis that a relatively small number of direct and indirect jobs would be provided throughout this period of time, it is anticipated that any health benefits, while important, would only be measurable at the individual level. As such, the magnitude of impact on human health at the population level would be low, which in an area of low sensitivity would result in a temporary minor beneficial effect, which is not significant. It is not considered that the high sensitivity receptors would disproportionately benefit from the number of jobs created and therefore the effect would also be a temporary minor beneficial effect, which is not significant.

Operational Phase

Health effects from changes in air quality

12.5.16 Potential effects during the occupation phase relate to traffic movements and site suitability.

12.5.17 As stated in Chapter 7: Air Quality, the largest change in NO_2 concentration across all receptors is 0.2 µg/m^3 (at receptor 22 which is residential in nature). When assessed with the UoR and broader LVGV Development, the NO_2 concentration (with the Proposed Development) at the same receptor location is 11.8 µg/m^3 which is approximately 30% of the annual mean objective. As summarised in Chapter 7: Air Quality, the impact on the surrounding area from NO_2 is considered to be 'negligible' when assessing with UoR Proposed Development only and the cumulative UoR and LVGV Development.

12.5.18 Similarly, the largest change in PM_{10} concentration across all receptors is 0.4 µg/m^3 at receptor 22. PM_{10} assessed with the UoR and broader LVGV Development at the same receptor location was calculated to have a predicted concentration of 16.4 µg/m^3 which is approximately 41% of the annual mean objective. As summarised in Chapter 7: Air Quality, the impact on the surrounding area from PM_{10} is considered to be 'negligible' when assessing with UoR Proposed Development only and the cumulative UoR and LVGV Development.

12.5.19 Predicted NO_2 and PM_{10} concentrations also show that the respective short-term objectives will not be exceeded for either pollutant.

12.5.20 Predicted annual-mean $PM_{2.5}$ concentrations are below the AQS objective for $PM_{2.5}$ at all receptors, with the exception of Receptor 1 (residential in nature) when assessing both the UoR only and UoR and broader LVGV Development scenarios. The largest change in concentration in $PM_{2.5}$ concentration across all receptors is 0.1 µg/m^3 when assessing on the UoR Proposed Development. The maximum PM_{10} concentration across all receptors when assessing UoR and LVGV Development is 10.5 µg/m^3 at receptor 1 (residential) which is approximately 105% of the annual mean target. When the magnitude of change is considered in the context of the absolute concentrations, the impact descriptor is categorised as 'moderate' to 'negligible' across all receptors. Chapter 7: Air Quality states that the impact from the change in concentration of $PM_{2.5}$ is moderate adverse. However, as the moderate adverse impact is restricted to one receptor location only (receptor 1) for concentrations of $PM_{2.5}$, and all other receptors and pollutants being predicted to experience a slight or negligible impact, alongside

the application of a conservative approach whereby no improvement in background air quality has been taken into consideration, the overall residual air quality effect is considered to be "not significant" using professional judgement as stated in the Chapter 7: Air Quality.

12.5.21 With regards to receptors within the Site and potential Site suitability, predicated annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations are all below the relevant objectives and not likely to exceed respective short-term objectives, as stated in Chapter 7: Air Quality. The maximum NO_2 concentration is predicted to be 11.7 µg/m^3, the maximum annual PM_{10} concentration 15.9 µg/m^3 and the maximum annual mean $PM_{2.5}$ is predicted to be 8.7 µg/m^3.

12.5.22 Overall, the changes to the local air quality environment detailed in Chapter 7: Air Quality are, with the exception of one receptor, in compliance with air quality objective thresholds, the change in concentration and exposure are not of a level to quantify any measurable change in health. The changes in NO_2, PM_{10} and $PM_{2.5}$ concentrations would result in negligible magnitude of impact on human health and wellbeing at the population level. In an area of low sensitivity, this would result in a negligible effect which is not significant.

12.5.23 As in the construction phase, while it is recognised that some nearby receptors may be more sensitive to changes in the air quality environment than others (for example schools and care homes), on the basis that magnitude of impact on human health would be negligible, it is not anticipated that the health of vulnerable receptors would be disproportionately or differentially affected. As such, 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 noise exposure

12.5.24 Chapter 15: Noise and Vibration assesses noise impacts from plant noise and sport noise (without traffic noise), road traffic, and site suitability.

12.5.25 Chapter 15: Noise and Vibration provides set limits for the operational plant noise given that details of the proposed employment areas are unknown at the time of writing Chapter 15. As such, Chapter 15: Noise and Vibration outlines a Rating Level limit of 41 dB (A) during the daytime, and 36 dB(A) during the night-time, 1 m from the proposed façade, as an appropriate noise limit for the proposed noise sensitive receptors (NSR) (those which would be part of the Proposed Development) to ensure a significant adverse effect is avoided. As summarised in Chapter 15: Noise and Vibration, the significance of plant noise and vibration effects during operation would be negligible, and not significant.

12.5.26 The Proposed Development also has land allocated for outdoor sports facilities and noise from these activities could impact the existing and proposed NSRs. Chapter 15: Noise and Vibration states that provided a setback distance of at least 40 m from the Artificial Grass Pitches is designed into the layout, and localised mitigation is considered, then significant adverse noise effects associated with operational sport noise would be unlikely. Further detailed assessment is recommended once details of the location of the sport pitches are confirmed.

12.5.27 Chapter 15: Noise and Vibration provides a summary of the short-term and long-term changes in road traffic noise level for each relevant road link. The results show a maximum change in short-term noise exposure of 0.1 dB, which is considered negligible in noise terms. Although significant Adverse long-term impacts are predicted on three links (24, 25 and 26), no sensitive receptors are located in this area and as such there would be no adverse effect. Impacts on all other links range between negligible adverse and negligible beneficial.

12.5.28 Overall, the significance of noise effects due to development led road traffic during operation has been concluded in Chapter 15: Noise and Vibration to be negligible and not significant.

12.5.29 In terms of site suitability, Chapter 15 Noise and Vibration, along with its appendices concludes that the proposed residential development would be subject to satisfactory internal acoustic environments with respect to Professional Practice Guidance on Planning and Noise and British Standard (BS) 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings'. It also concludes that the proposed educational development would be subject to satisfactory internal and external acoustic environments with respect to Building Bulletin 93.

12.5.30 Overall, it is anticipated that negligible changes in the noise environment during the operational phase would result in negligible magnitude of impact on human health and wellbeing. Based on a low receptor sensitivity, the resultant human health and wellbeing effect would be negligible which is not significant.

12.5.31 As in the construction phase, while it is recognised that some nearby receptors may be more sensitive to changes in noise exposure than others (for example schools and care homes), on the basis that magnitude of impact on human health would be negligible and temporary in nature, it is not anticipated that the health of vulnerable receptors would be disproportionately or differentially affected. As such, 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

12.5.32 Chapter 17: Transport and Access completed an assessment of traffic flows for the operational phase by comparing the 2040 'Forecast Baseline' flows to the additional traffic generated by the 2040 'With Development' scenario. In many cases, the change in flows is minimal (less than 10%), and therefore unlikely to result in perceptible environmental impacts. There were 16 links where the change in flow was between 10% and 30%, and 5 links which had an increase of traffic flow of above 30% as presented in Chapter 17: Transport and Access.

12.5.33 Of relevance to human health and wellbeing, Chapter 17: Transport and Access assessed the impact that operational traffic has on severance, non-motorised user delay, non-motorised user amenity, fear and intimidation, and highway safety for links which exceeded the transport related guidelines.

Severance

12.5.34 As stated in Chapter 17: Transport and Access, severance "is the perceived division that can occur within a community when it becomes separated by major transport infrastructure". The assessment of potential severance impacts takes into consideration the effects of the changes in traffic flows and the existing pedestrian and cycle provision along the links, including pedestrian crossing locations.

12.5.35 Based on the consideration of the above, Chapter 17: Transport and Access reports that the impact of the Proposed Development on severance on links with a change in flows over 30% and up to 60% would equates to a minor magnitude of effect.

12.5.36 On the basis that the change in severance caused by the Proposed Development would be minor adverse on all 5 links with a change in traffic flows greater than 30%, it is considered that mitigation measures such as new pedestrian crossing points (both signal-controlled and uncontrolled refuge islands) being introduced along Arborfield Road, as part of the proposed footway and cycleway development on the southern side of the corridor leading into Shinfield would result in in a minor beneficial effects in terms of community severance in these locations.

12.5.37 As per Chapter 17: Transport and Access, the impact on human health is anticipated to be a medium magnitude of impact. As discussed in Chapter 17: Transport and Access, the Active

Travel Strategy includes a new signal-controlled crossing on Hatch Farm Way, Arborfield Road, Shinfield Eastern Relief Road combined with the new footway and cycleway between Mill Lane and Hatch Farm Way, along the southern side of the Arborfield Road corridor into Shinfield, and cyclists using Cutbush Lane and for walking trips along the Public Right of Way networks that lie on either side of the Shinfield Eastern Relief Road corridor. Chapter 17 Transport and Access concludes that there would be minor beneficial effects in terms of community severance in these locations (Hatch Farm Way, Arborfield Road, and Shinfield Eastern Relief) once mitigation measures are in place. However, at the remaining two links with a change in flows over 30% (Observer Way Relief Road and Meldreth Way corridor) the proposed mitigation measures are not anticipated to change the minor adverse effect in terms of severance.

12.5.38 Although the infrastructure associated with the Proposed Development would likely provide a moderate net benefit in the long-term due to the strengthening of the local active travel network and reducing severance in 3 out of 5 links further assessed, 2 links were still anticipated to have a minor adverse effect. As such, conservatively, a low magnitude impact on human health and wellbeing would be anticipated. Given the low sensitivity of the receptors, this would result in a minor adverse effect, which is not significant. The same would be true for high sensitivity receptors.

Non-Motorised User (NMU) delay

12.5.39 Regarding non-motorised user delay, Chapter 17: Transport and Access states that in the absence of any mitigation, the additional traffic arising from the Proposed Development has the potential to result in minor adverse effects in terms of pedestrian delay along the Hatch Farm Way, Arborfield Road and Observer Way corridors. Similarly, in the absence of any mitigation, moderate adverse effects in terms of pedestrian delay are predicted along the Shinfield Road and Eastern Relief Road corridors. Following mitigation measures (such as new signals and/or uncontrolled crossings, effects would be reduced to negligible for Hatch Farm Way, Arborfield Road and Shinfield Eastern Relief Road corridors. Minor adverse effects are still predicted for Shinfield Road corridor and Observer Way corridor.

12.5.40 On this basis, there would be a low magnitude of impact on health and wellbeing, which given the low sensitivity of the receptor, would result in a minor adverse effect, which is not significant. The same would be trust for high sensitivity receptors.

Non-motorised user amenity (NMU)

12.5.41 As presented in Chapter 17: Transport and Access, NMU is broadly defined as the relative pleasantness of a journey. In health terms NMU amenity relates to amenity along routes used to get to key facilities, which is often impacted by traffic flow and composition, as well as traffic separation such as footway provision.

12.5.42 The potential effects on NMU amenity along all areas of the network would be negligible with the exception of Mill Lane (Link 11) to the north of the M4 motorway where there is the potential for a moderate beneficial effect in terms of NMU amenity along the link. The moderate beneficial effect at this corridor would be associated with the reduction of traffic flows along Mill Lane due to the proposed new link road to Hatch Farm Way.

12.5.43 As improvements to bus routes and services are not certain, this has not been factored into the determination of magnitude of impact on health and wellbeing. The magnitude of impact on health and wellbeing would be low beneficial, which would result in a minor beneficial effect, which is not significant for both low and high sensitivity receptors.

Fear and intimidation

12.5.44 Changes in pedestrian fear and intimidation take into consideration the total volume of traffic, HGV composition, and the speed of vehicles passing. The combination of weighted averages associated with these factors provide a score for two scenarios: with and without the occupation of the development. This is compared with each other to assess the magnitude of impact in Chapter 17: Transport and Access.

12.5.45 Based on the assessment conducted, the Observer Way and B3270 corridors would not be affected by the proposed mitigation measures and minor adverse effects were identified. Through the proposed implementation of the new footway / cycleway along the Arborfield Road corridor along with the new crossing facilities, the residual effects at this link would be minor beneficial as presented in Chapter 17: Transport and Access.

12.5.46 As such, with low and high sensitivity receptors and a low magnitude of impact on human health or wellbeing the effect is predicted to be minor adverse, which is not significant.

Highway safety

12.5.47 Chapter 17: Transport and Access notes that personal injury accident analysis shows that human error is likely to have been the primary cause in the majority of the accidents, rather than any significant common causation factors that would otherwise indicate particular deficiencies with highway safety in the area.

12.5.48 On this basis, there would be a negligible impact on human health from road safety. Hence, the effect on health and wellbeing would be negligible (neutral), which is not significant.

Conclusion

12.5.49 Overall, for both low and high sensitivity receptors, based on changes to transport nature and flow rate, a minor adverse effect on human health and wellbeing would be predicted with regard to severance, NMU delay, and fear and intimidation, which would not be significant.

12.5.50 With respect to NMU amenity, a minor beneficial effect would be predicted, with would not be significant.

12.5.51 With respect to highway safety, a negligible effect would be predicted, which would not be significant.

Health effects from changes in socio-economic factors (income and employment)

12.5.52 As stated in Chapter 16: Socio-economics, there are a number of socio-economic operational effects that would result from the Proposed Development, including self-employed homeworkers, school workforce, retail and restaurant staff, medical and veterinary centre staff and jobs generated through new residential expenditure and additional indirect economic effects would be generated through the supply chain, from services and the local spend of employees and residents.

12.5.53 An increase in the local population would bring an associated increase in expenditure in local shops, businesses and services, thereby boosting the local economy.

12.5.54 The Proposed Development is estimated to generate 1,335 gross direct on-site employment once operational. When taking into account leakage, displacement and multiplier effects, the total number of net additional on- and off-site FTE jobs is 1,160. Currently, there are three employment uses on site: the University of Reading Centre for Dairy Research, the University

of Reading Cocoa Quarantine Centre, and the Arborleigh Angling Club. The Cocoa Quarantine Centre and Angling Club are set to be retained.

12.5.55 Due to the long-term and permanent nature of the complete development, and on the basis that a relatively small number of direct and indirect jobs would be provided in addition to an increase in local expenditure associated with the new population, it is anticipated that the magnitude of impact on human health would be low, which in an area of low sensitivity would result in a permanent, minor beneficial effect, which is not significant. It is not considered that the high sensitivity receptors would disproportionately benefit from the number of jobs created and therefore the effect would also be a permanent minor beneficial effect, which is not significant.

12.6 Additional Mitigation

Construction Phase

12.6.1 On the basis that no significant adverse population and health effects are reported in the assessment of the construction phase, no further health-specific mitigation measures are proposed.

Air quality mitigation

12.6.2 As stated in Chapter 7: Air Quality, specific mitigation measures through a DMP and a CEMP identified as being appropriate for a high risk site for demolition, earthworks, construction and trackout will be implemented during the construction phase.

Noise exposure mitigation

12.6.3 No additional noise mitigation measures outside of those proposed as part of the CEMP are proposed during the construction phase of the Proposed Development.

Transport and access mitigation

12.6.4 Construction traffic, particularly HGVs, may cause minor adverse effects on pedestrian amenity during access junction formation. To mitigate this, a CEMP will be submitted to and approved by Wokingham Borough Council before development begins. The CEMP will outline measures to safeguard highway safety and amenity, including construction timings, access arrangements, and agreed vehicle routing to minimise disruption.

Socio-economic enhancement

12.6.5 No socio-economic enhancement measures are proposed during the construction phase as no significant adverse effects were identified.

Operational Phase

12.6.6 On the basis that no significant adverse population and health effects are reported in the assessment of the operational phase, no further health-specific mitigation measures are proposed.

Air quality mitigation

12.6.7 The air quality assessment has demonstrated that the overall air quality effect of the Proposed Development will be ‘not significant’ and therefore additional mitigation is not required.

Noise exposure mitigation

12.6.8 No additional noise mitigation measures are proposed during the operational phase provided that the set noise limits are adhered to.

Transport and access mitigation

12.6.9 As presented in Chapter 17: Transport and Access, a suite of proposed improvements to the active travel networks is noted beyond the development which will help better facilitate onward journeys beyond the site by foot and cycle. Proposed mitigation includes a travel plan, a public transport strategy, active travel strategy and highway mitigation.

Socio-economic enhancement

12.6.10 No socio-economic enhancement measures associated with employment are proposed during the operational phase as no significant adverse effects were identified.

12.7 Residual effects

Construction Phase

Health effects from Changes in air quality

12.7.1 As stated in Chapter 7: Air Quality, the overall risk from all four construction phases is high.

12.7.2 Through implementation of mitigation measures outlined in the DMP and CEMP, informed by the Institute of Air Quality Management's dust guidance, changes in local air quality during the construction phase of the Proposed Development are anticipated to be sufficiently mitigated to a level where resultant effects of the dust exposure is considered negligible and not significant.

12.7.3 Overall, the negligible changes to air quality would not be of a type, concentration or exposure sufficient to quantify any measurable risk to health, and would equate to a negligible magnitude of impact on human health and wellbeing. In an area of low sensitivity this would result in a negligible effect, which is not considered to be significant in EIA terms.

12.7.4 While it is recognised that some nearby receptors may be more sensitive to changes in the air quality environment than others (for example schools and care homes), on the basis that magnitude of impact on human health is negligible, and due to the temporary/transient nature of the construction phase (where impacts would not persist in the same location for a long period of time), it is not anticipated that following implementation of appropriate mitigation the health of vulnerable receptors would be disproportionately or differentially affected. As such, 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 noise exposure

12.7.5 No additional noise mitigation measures are proposed. The residual health effects remain the same as in the assessment of potential effects prior to mitigation.

Health effects from changes in transport nature and flow rate

12.7.6 There would still remain a slight adverse effect in terms of NMU amenity along the surrounding network during the construction activities after the implementation of the proposed CEMP.

Health effects from changes in socio-economic factors (income and employment)

12.7.7 On the basis that no socio-economic mitigation measures are proposed for the construction phase, the residual health effects from changes in socio-economic factors remain the same as in the assessment of potential effects prior to mitigation.

12.7.8 While employment opportunities offer the potential for disproportionate benefits to people on low incomes, the relatively small number of jobs created and temporary nature of such jobs would limit the potential for beneficial effects on this vulnerable group. As such, the magnitude of impact on human health at the population level would be low, which in an area of low sensitivity would result in a temporary minor beneficial effect, which is not significant. It is not considered that the high sensitivity receptors would disproportionately benefit from the number of jobs created and therefore the effect would also be a temporary minor beneficial effect, which is not significant.

Operational Phase

Health effects from changes in air quality

12.7.9 On the basis that no air quality mitigation measures are proposed for the operational phase, the residual health effects from changes in air quality remain the same as in the assessment of potential effects prior to mitigation: not significant.

12.7.10 While it is recognised that some nearby receptors may be more sensitive to changes in the air quality environment than others (for example schools), on the basis that the magnitude of impact on human health generally would be negligible, it is not anticipated that the health of vulnerable receptors would be disproportionately or differentially affected. As such, 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 noise exposure

12.7.11 On the basis that no noise mitigation measures are proposed for the operational phase, beyond the limits outlined for operation, the residual health effects from changes in noise exposure remain the same as in the assessment of potential effects prior to mitigation: not significant.

12.7.12 While it is recognised that some nearby receptors may be more sensitive to changes in the noise environment than others (for example schools), on the basis that the magnitude of impact on human health generally would be minor, it is not anticipated that the health of vulnerable receptors would be disproportionately or differentially affected. 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

12.7.13 The Proposed Development may cause minor adverse effects, which is not significant in EIA terms, due to increased traffic, particularly in terms of community severance, pedestrian delay, and fear/intimidation along several corridors. However, a range of mitigation measures (such as new signal-controlled crossings, footway/cycleway improvements, and junction upgrades) are expected to significantly reduce these impacts. The following provides a summary of the discussion provided in Chapter 17: Transport and Access:

- Severance: New crossings and active travel infrastructure would improve connectivity across Hatch Farm Way, Arborfield Road, and Shinfield Eastern Relief Road, resulting

in minor beneficial effects. Some residual adverse effects remain along Observer Way and Meldreth Way.

- Pedestrian Delay: Improved crossings would reduce delays along most corridors, though minor residual effects remain on Shinfield Road and Observer Way.
- Non-Motorised User Amenity: Moderate benefits are expected on Mill Lane and Arborfield Road due to traffic restrictions and new infrastructure.
- Fear and Intimidation: Mitigation measures will improve conditions on Arborfield Road, but minor adverse effects remain on Observer Way and B3270.
- Road Safety: Active travel and junction improvements will enhance safety, with no existing safety deficiencies identified..

Health effects from changes in socio-economic factors (income and employment)

12.7.14 On the basis that no socio-economic mitigation measures are proposed for the operational phase, the residual health effects from changes in socio-economic factors remain the same as in the assessment of potential effects prior to mitigation: a permanent minor beneficial effect, which is not significant for low and high sensitivity receptors.

12.8 Implications of Climate Change

12.8.1 The primary impacts associated with climate change include more extreme temperatures (cold and heat), increased atmospheric CO_2, sea level rise and increased incidence of extreme weather events. These primary impacts affect several environmental functions (such as water availability, varying crop yields, wildfires, ozone/PM concentrations, and migration patterns) which could plausibly alter the prevalence of a range of human health outcomes (including variation in communicable and non-communicable disease).

12.8.2 However, at this stage it is not possible to predict future changes in climate change driven meteorological variations which have the potential to influence human health. While the effects of climate change have the potential to exacerbate existing health and wellbeing outcomes at a population level, there are clear limitations associated with predicting future meteorological variations that influence human health. Despite this, the effects of climate change likely to be realised during the operational lifetime of the Proposed Development are not expected to materially alter the conclusions of this assessment. Additionally, it should be noted that new developments are required to meet building and energy efficiency standards that help build resilience to the effects of climate change.

12.9 Cumulative effects

Construction Phase: Loddon Valley Garden Village Strategic Development Location

Cumulative health effects from changes in air quality

12.9.1 As set out in Chapter 7: Air Quality, with the effective implementation of appropriate dust mitigation measures at all relevant overlapping construction sites, the risk of cumulative dust effects is considered to be minimal and as a result, no cumulative impacts are not anticipated. Hence, the cumulative health effect from changes in air quality is anticipated to be not significant.

Cumulative health effects from change in noise exposure

12.9.2 No cumulative noise impacts are anticipated during the construction phase following the implementation of Best Practicable Means (BPM) and the CEMP. Hence, the cumulative health effect from changes in air quality is anticipated to be not significant.

Cumulative health effects from changes in transport nature and flow rate

12.9.3 As set out within Chapter 17: Transport and Access, during the construction phase, approximately 435 construction two way movements are likely to occur during a 24hr working day, of which 108 two way movements would be from HGVs. When comparing the 2032 baseline flows to the additional traffic generated by the construction activities, there is a less than +3% change during the peak hours and over a 24 hr period. As such, from a transport perspective, this magnitude of change would be negligible in accordance to the guidance used in Chapter 17: Transport and Access. On this basis, there would be no material impact on severance, pedestrian delay, pedestrian fear and intimidation and highway safety. Chapter 17: Transport and Access states that whilst the changes in traffic flows along all areas of the surrounding highway network would not be discernible during the construction stage of the Proposed Development, the construction activity would generate HGV movements that would not occur in the baseline scenario. As such, Chapter 17: Transport and Access further states that the HGV trips associated with the construction activities could have the potential to create a minor adverse effect in terms of non-motorised user amenity along the surrounding network. Following measures within the CEMP which would set out access arrangements throughout the construction stage, the potential impact to non-motorised user amenity would still remain.

12.9.4 As stated in Chapter 17: Transport and Access the construction of the access junctions would have limited effect on the pedestrian or cycle networks in the area. Consequently, the effects in terms of severance, NMU delay, NMU amenity or fear & intimidation would be negligible.

12.9.5 As such, when considering construction traffic and construction of access junctions, there would be a negligible impact on health and wellbeing, which would result in a negligible human health effect (not significant) given the low receptor sensitivity. 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.

Cumulative health effects from changes in socio-economic factors

12.9.6 As reported in Chapter 16: Socio-economics, the Loddon Valley Garden Village Strategic Development Location cumulative assessment results in a temporary beneficial effect of slight significance, which is not significant in EIA terms.

12.9.7 The resulting magnitude of impact on human health as a result of cumulative schemes would be low, which in an area of low and high sensitivity would result in a minor beneficial effect which is not significant.

Operational Phase: Loddon Valley Garden Village Strategic Development Location

Cumulative health effects from changes in air quality

12.9.8 As outlined in Chapter 7: Air Quality, the detailed assessment of potential impacts associated with operational traffic include cumulative traffic flows from the full Loddon Valley Garden Village developments. Therefore, the cumulative effect of air quality will be the same as that of the main assessment.

Health effects from changes in noise exposure

12.9.9 The Loddon Valley Garden Village Development have been included in the traffic model that was used to inform Chapter 15: Noise and Vibration. On the basis that no noise mitigation measures are proposed for the operational phase aside from the set noise limits, the residual health effects from changes in noise exposure remain the same as in the assessment of potential effects prior to mitigation: negligible which is not significant.

12.9.10 While it is recognised that some nearby receptors may be more sensitive to changes in the noise environment than others (for example schools), on the basis that the magnitude of impact on human health generally would be minor, it is not anticipated that the health of vulnerable receptors would be disproportionately or differentially affected. 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

12.9.11 Chapter 17: Transport and Access completed an assessment of traffic flows generated by the full LVGV Development for the operational phase by comparing the 2040 ‘Forecast Baseline’ flows to the additional traffic generated by the 2040 ‘With LVGV’ scenario. In many cases, the change in flows is minimal (less than 10% change) and therefore unlikely to result in perceptible environmental impacts. There were 17 links where the change in flow was between 10% and 30%, and 5 links which had an increase of traffic flow of above 30% as presented in Chapter 17: Transport and Access.

12.9.12 Of relevance to human health and wellbeing, Chapter 17: Transport and Access assessed the impact that operational traffic has on community severance, non-motorised user delay, non-motorised user amenity, fear and intimidation, and highway safety for links which exceeded the transport related guidelines.

Severance

12.9.13 Chapter 17: Transport and Access reports that the impact of on severance on links with a change in flows over 30% and up to 60% would equate to a minor magnitude of effect.

12.9.14 On the basis that the change in severance caused by the LVGV Development would be minor adverse on all 5 links with a change in traffic flows greater than 30%, it is considered that mitigation measures such as new pedestrian crossing facilities being introduced along Arborfield Road would result in a minor beneficial effect in terms of community severance in these locations.

12.9.15 At the remaining two links with a change in flows over 30% (Observer Way Relief Road and Meldreth Way corridor) the proposed mitigation measures are not anticipated to change the minor adverse effect in terms of severance.

12.9.16 Although the infrastructure associated with the LVGV would likely provide a moderate net benefit in the long-term due to the strengthening of the local active travel network and reducing severance in 3 out of 5 links further assessed, 2 links were still anticipated to have a minor adverse effect. As such, a low magnitude impact on human health and wellbeing would be anticipated. Given the low sensitivity of the receptors, this would result in a minor adverse effect, which is not significant. The same would be true for high sensitivity receptors.

NMU delay

12.9.17 Regarding NMU delay, Chapter 17: Transport and Access states that in the absence of any mitigation, the additional traffic arising from the LVGV Development has the potential to result in negligible to minor adverse effects in terms of pedestrian delay along several links.

12.9.18 On this basis, there would be a low magnitude of impact on health and wellbeing, which given the low sensitivity of the receptor, would result in a minor adverse effect, which is not significant. The same would be true for high sensitivity receptors.

NMU amenity

12.9.19 The traffic flows along Mill Lane (Link 11) to the north of the M4 motorway would significantly reduce. There is the potential for a moderate beneficial effect in terms of NMU amenity along the link. The moderate beneficial effect at this corridor would be associated with the reduction of traffic flows along Mill Lane due to the proposed new link road to Hatch Farm Way.

12.9.20 As improvements to bus routes and services are not certain, this has not been factored into the determination of magnitude of impact on health and wellbeing. The magnitude of impact on health and wellbeing would be low beneficial, which would result in a minor beneficial effect, which is not significant for both low and high sensitivity receptors.

Fear and intimidation

12.9.21 As stated in Chapter 17: Transport and Access, the new footway and cycleway along Arborfield Road, together with enhanced crossing facilities, would result in a minor beneficial effect in terms of reducing fear and intimidation for pedestrians and cyclists. Observer Way and B3270 corridor would not be affected by the proposed mitigation measures and as such a minor adverse effect is predicted.

12.9.22 Changes in pedestrian fear and intimidation take into consideration the total volume of traffic, HGV composition, and the speed of vehicles passing. The combination of weighted averages associated with these factors provide a score for two scenarios: with and without the occupation of the LVGV development. This is compared with each other to assess the magnitude of impact in Chapter 17: Transport and Access.

12.9.23 Based on the assessment conducted, the Observer Way and B3270 corridors would not be affected by the proposed mitigation measures and minor adverse effects were identified. Through the proposed implementation of the new footway / cycleway along the Arborfield Road corridor along with the new crossing facilities, the residual effects at this link would be minor beneficial as presented in Chapter 17: Transport and Access .

12.9.24 As such, with low and high sensitivity receptors and a low magnitude of impact on human health or wellbeing the effect is predicted to be minor adverse, which is not significant.

Highway safety

12.9.25 Chapter 17: Transport and Access notes that personal injury accident analysis shows that human error is likely to have been the primary cause in the majority of the accidents, rather than any significant common causation factors that would otherwise indicate particular deficiencies with highway safety in the area.

12.9.26 On this basis, there would be a negligible impact on human health from road safety. Hence, the effect on health and wellbeing would be negligible (neutral), which is not significant.

Conclusion

12.9.27 Overall, for both low and high sensitivity receptors, based on changes to transport nature and flow rate, a minor adverse effect on human health and wellbeing would be predicted with regard to severance, NMU delay, and fear and intimidation, which would not be significant.

12.9.28 With respect to NMU amenity, a minor beneficial effect would be predicted, with would not be significant.

12.9.29 With respect to highway safety, a negligible effect would be predicted, which would not be significant.

Health effects from changes in socio-economic factors (income and employment)

12.9.30 As stated in in Chapter 16: Socio-economics, it is predicted that the Loddon Valley Garden Village Strategic Development will generate 3,450 on-site jobs including homeworkers which would represent 3.7% of the total jobs in the Wokingham study area. The strategic development is expected to result in a permanent beneficial effect of moderate significance, which is significant. The cumulative human health effects relating to changes in socio-economic factors would therefore be of a medium magnitude, which in an area of low sensitivity would result in a minor beneficial effect, which is not significant.

Construction Phase: Wider Committed Development

Cumulative health effects from changes in air quality

12.9.31 As set out in Chapter 7: Air Quality, with the effective implementation of appropriate dust mitigation measures at all relevant overlapping construction sites, the risk of cumulative dust effects is considered to be minimal and as a result, no cumulative impacts are anticipated. Hence, the cumulative health effect from changes in air quality is anticipated to be not significant.

Cumulative health effects from change in noise exposure

12.9.32 The main construction related noise concern would be temporary impacts from overlapping earthworks. Only developments within 600 m of the site are likely to contribute to cumulative noise effects. Two relevant nearby developments (Land to the North of Arborfield Road west of Shinfield Eastern Relief Road (Planning Ref. 242484) and Land North of Reading Road, Arborfield (Planning Ref. 243099)) are considered relevant. All sites must use BPM to minimise noise and vibration, including coordination between contractors to avoid exceeding noise limits at sensitive locations and have CEMPs which outline mitigation measures.

12.9.33 At the population level, these impacts would be temporary, with very few people affected and as such, the cumulative health effect from changes in noise exposure are therefore not significant.

Cumulative health effects from changes in transport nature and flow rate

12.9.34 As set out within Chapter 17: Transport and Access, during the construction phase, cumulative effects have been considered to the extent that the traffic from other wider development has been included in the traffic model and data provided for this assessment.

Cumulative health effects from changes in socio-economic factors

12.9.35 The construction of the cumulative sites would help support construction firms operating in the region and provide jobs in the construction industry. As reported in Chapter 16: Socio-economics, the cumulative assessment results in a temporary beneficial effect of slight significance, which is not significant in EIA terms.

Operational Phase: Wider Committed Development

Cumulative health effects from changes in air quality

12.9.36 As outlined in Chapter 7: Air Quality, the traffic from other wider development has been included in the traffic model and data provided for this assessment. The other developments included within the traffic data provided are described in Chapter 17 Transport and Access of this ES.

12.9.37 Chapter 7:Air Quality identified that the effect is not significant at human receptors. As such, based on a low receptor sensitivity, the resultant human health and wellbeing effect would be negligible 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 noise exposure

12.9.38 As stated in Chapter 15: Noise and Vibration, the Wider Committed Developments considered within the cumulative assessment for the ES are included in the traffic model that was used to inform the assessment completed in Section 12.5 (Potential effects prior to additional mitigation).

12.9.39 As such, at the population level, it is anticipated that negligible changes in the noise environment during the operational phase would result in negligible magnitude of impact on human health and wellbeing. Based on a low receptor sensitivity, the resultant human health and wellbeing effect would be negligible 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

12.9.40 As set out within Chapter 17: Transport and Access, during the operational phase, cumulative effects have been considered to the extent that the traffic from other wider development has been included in the traffic model and data provided for this assessment.

Health effects from changes in socio-economic factors (income and employment)

12.9.41 As stated in in Chapter 16: Socio-economics, whilst the total number of operational jobs generated by the cumulative schemes has not been possible to quantify, employment floorspace and homeworkers would likely generate some additional direct and indirect employment opportunities for residents of Wokingham. Combined with the Proposed Development, committed developments are estimated to have a permanent beneficial effect of moderate significance, which is significant (in socio-economic terms). The cumulative human health effects relating to changes in socio-economic factors would therefore be of a medium

magnitude, which in an area of low sensitivity would result in a minor beneficial effect, which is not significant.

12.10 Summary

12.10.1 Overall, no significant adverse health effects associated with the range in health determinants assessed (air quality, noise exposure, transport nature/flow rate and socio-economic factors) are anticipated to be directly attributable to the Proposed Development. Furthermore, no cumulative effects are anticipated due to appropriate BMP and CEMP expected for the Proposed Development and other associated projects assessed as part of the respective technical disciplines.

12.10.2 A summary of the assessment is set out in Table 12.8 overleaf.

12.11 References

- IEMA. (2022). Determining significance for human health in environmental impact assessment. Retrieved from https://www.iema.net/media/yljb2nbs/iema-eia-guide-to-determining-significance-for-human-health-nov-2022.pdf
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12.12 Assessor information

Table 12.8 Assessor Information

Chapter	Responsibility	Name	Qualifications	Assessor information
Human Health	Savills	Dr. Andrew Buroni	PhD, MSc, Fellow-RSM	Andrew is the market leader for planning focused Health Impact Assessment (HIA) in the UK. He has designed, delivered and presented evidence at public inquiry and issue specific hearing for some of the most complex planning focused examples of HIA, and has an unmatched catalogue of project experience ranging from local planning through to DCO and Hybrid Bill. Under the ISEP Health Assessment Competency Guidance, Andrew is classed as an Advanced Expert.
Human Health	Savills	Anushree Bhatt	Double Major in Environmental Science and Human Biology and Masters in Environmental Science	Anushree is an Associate Health and Social Impact Analyst at Savills with 8 years of environmental consulting experience. She is a member of the Institute of Sustainability and Environmental Professionals (formerly the Institute of Environmental Management and Assessment) health working group. She specialises in public health in planning and Environmental Impact Assessment, Health Impact Assessment, Health care needs assessment, and health care planning contributions.
Human Health	Savills	Millie Potter	BSc, MSc, PISEP, REnvP	Millie is a Senior Consultant within the Health And Social Impact Analysist team at Savills with 3 years experience of environmental impact assessment. Millie is a Registered Environmental Practitioner and Practitioner member of the Institute of Sustainability and Environmental Practitioners.

Table 12.9 Summary of effects

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
Construction Phase					
Human receptors	Low	Health effects from changes in air quality due to construction dust	Implementation of dust mitigation measures within the DMP and CEMP	Negligible	Not significant
		Health effects from construction-related noise	Adherence to the CEMP and good construction practice with regards to noise and vibration.	Negligible	Not significant
		Health effects from construction-related traffic	CEMP	Negligible	Not significant
		Health effects from construction-related job creation	N/A	Minor beneficial	Not significant
Human receptors	High	Health effects from changes in air quality due to construction dust	Implementation of dust mitigation measures within the DMP and CEMP	Minor adverse	Not significant
		Health effects from construction-related noise	Adherence to the CEMP and good construction practice with regards to noise and vibration.	Minor adverse	Not significant
		Health effects from construction-related traffic	CEMP	Minor adverse	Not significant
		Health effects from construction-related job creation	N/A	Minor beneficial	Not significant

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
Operation Phase					
Human receptors	Low	Health effects from air quality (NO_2, PM_{10}, $PM_{2.5}$) impacts on existing and future receptors	N/A	Negligible	Not significant
		Health effects from noise from ambient environment (internal and external), from road traffic, from fixed plant, and outdoor sports facilities	N/A	Negligible	Not significant
		Health effects from operation-related traffic generation	N/A	Minor adverse (severance, NMU delay, and fear and intimidation) Minor beneficial (NMU amenity) Negligible (highway safety)	Not significant
		Health effects from operation-related job creation	N/A	Minor beneficial	Not significant
Human receptors	High	Health effects from air quality (NO_2, PM_{10}, $PM_{2.5}$) impacts on existing and future receptors	N/A	Minor adverse	Not significant

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
		Health effects from noise from ambient environment (internal and external), from road traffic, from fixed plant, and outdoor sports facilities	N/A	Minor adverse	Not significant
		Health effects from operation-related traffic generation	N/A	Minor adverse (severance, NMU delay, and fear and intimidation) Minor beneficial (NMU amenity) Negligible (highway safety)	Not significant
		Health effects from operation-related job creation	N/A	Minor beneficial	Not significant

12.13 Mitigation commitments Summary

Table 12.10 Summary for Securing Mitigation

Identified receptor	Type and purpose of additional mitigation measure (prevent, reduce, offset, enhance)	Means by which mitigation may be secured (e.g. planning condition / legal agreement)	Delivered by	Auditable by
Construction Phase				
Low and High sensitivity receptors	CEMP and DMP: Prevention and reduction of dust and fine particulate matter emissions and deposition during the construction phase. CEMP: Prevention and reduction of noise and vibration impacts. CEMP: Prevention and reduction of adverse effects associated with construction activities including construction traffic.	DMP / CEMP secured by planning condition	Contractor	WBC
Operation Phase				
N/A	N/A	N/A	N/A	N/A