

Statutory Consultation 2022

Preliminary Environmental Information Report

Volume 2: Main Report

Chapter 13: Health and Community

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13 HEALTH AND COMMUNITY

13.1 Introduction

- 13.1.1 This chapter presents the preliminary assessment of likely significant effects of the Proposed Development on population health and community.
- 13.1.2 The EIA Scoping Report set out the proposed scope for the assessment of health and community effects. The health and community assessment identifies effects on the health of the population and on the lives of people within the local community, arising from direct and indirect impacts on community resources and the environmental, social and economic impacts of the Proposed Development. It brings together the assessment of effects on people living close to, or affected by, the Proposed Development in a single chapter. It should be noted that the assessment of health effects is provided at a population, rather than an individual level.
- 13.1.3 In summary, the following have been assessed in the health and community chapter:
- a. Health effects arising from impacts on the following environmental, social, or economic factors that influence health and wellbeing ('health determinants'):
 - i. access to open space, recreation, and physical activity;
 - ii. access to services;
 - iii. employment and income;
 - iv. housing;
 - v. increased population exposure to air pollutants;
 - vi. neighbourhood quality;
 - vii. aircraft noise;
 - viii. perception and uncertainty; and
 - ix. social capital.
 - b. Impacts on community resources, and the resultant effects on the people ('receptors') using those resources, including:
 - i. residential properties;
 - ii. schools;
 - iii. community facilities;
 - iv. open spaces and Public Rights of Way (PRoW); and
 - v. leisure and recreation facilities.
- 13.1.4 The following matters have been scoped out of the assessment:
- a. Health effects arising from impacts on the following health determinants:
 - i. electromagnetic interference (EMI);
 - ii. ground and water contamination;
 - iii. increased flooding; and
 - iv. major accidents and incidents, such as air traffic accidents or major pollution incidents.
 - b. Impacts on individual business owners or operators.

13.1.5 Further details on the matters which have been scoped out is provided in **Section 13.3** of this chapter.

13.1.6 The remainder of this chapter consists of:

- a. **Section 13.2** Legislation, policy and guidance relevant to the scope and methodology of the health and community preliminary assessment;
- b. **Section 13.3** Scope of the assessment;
- c. **Section 13.4** Stakeholder engagement undertaken to inform the preliminary assessment;
- d. **Section 13.5** Methodology applied to the preliminary assessment;
- e. **Section 13.6** Assumptions and limitations at this stage of work;
- f. **Section 13.7** Baseline conditions;
- g. **Section 13.8** Embedded and good practice mitigation;
- h. **Section 13.9** Preliminary assessment;
- i. **Section 13.10** Additional mitigation;
- j. **Section 13.11** Residual effects;
- k. **Section 13.12** In-combination climate change;
- l. **Section 13.13** Monitoring;
- m. **Section 13.14** Assessment summary; and
- n. **Section 13.15** Completing the assessment - remaining work to complete the EIA for the Environmental Statement (ES) to be submitted with the application for development consent.

13.2 Legislation, policy and guidance

- 13.2.1 This section identifies the key legislation, policy, and guidance relevant to the scope and methodology for the population health and community assessment which may influence the type of mitigation measures that could be incorporated into the Proposed Development during construction or operation.
- 13.2.2 **Table 13.1** to **Table 13.4** provides a description of the relevant legislation, policy, and guidance, and where each of these have been addressed in the PEIR.

Legislation

Table 13.1: Health and community legislation

Legislation	How and where addressed in PEIR
<p>The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref. 13.1)</p> <p>Section 5 paragraph 2 states the requirement that <i>“the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the Proposed Development on the following factors – (a) population and human health.”</i></p>	<p>This chapter includes a community and health assessment summarised in Section 13.14.</p>

Policy

Table 13.2: Health and community policy

Policy	How and where addressed in PEIR
National	
<p>National Planning Policy Framework, July 2021 (Ref. 13.2)</p> <p>Paragraph 7 of the NPPF sets out the government’s objective of achieving sustainable development. The three overarching objectives of sustainable development include the economic, social, and environmental objectives. These are interdependent and mutually supportive. The social objective seeks <i>“to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-</i></p>	<p>This chapter includes a health assessment which assesses the impact of the Proposed Development on various health determinants including housing, social capital, access to open space, access to services, and neighbourhood quality. Details of the significant health effects and mitigation measures are provided in Section 13.11 and Section 13.10, respectively.</p> <p>Open spaces and recreational infrastructure are assessed as part of the health and community assessment in Section 13.9.</p>

<p><i>designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being”.</i></p> <p>Chapter 8 of the NPPF states that planning policies and decisions should aim to achieve healthy, inclusive, and safe places (paragraph 92). Paragraph 98 emphasises that “...<i>access to a network of high-quality open spaces...is important for the health and well-being of communities...</i>” Paragraph 99 indicates that existing open space should not be built on unless “...<i>the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location.</i>” Paragraph 100 emphasises that public rights of way should be protected and enhanced.</p> <p>Paragraph 130 seeks to ensure that developments create places which “...<i>promote health and well-being, with a high standard of amenity for existing and future users.</i>”</p> <p>Paragraph 185 seeks to ensure that development is appropriate for its location taking into account the likely effects of pollution on health, living conditions and the natural environment. In doing so, the policy states that development should: “a) <i>mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.</i>”</p>	<p>Details of the noise assessment are provided in Chapter 16 Noise and Vibration respectively. The health and community assessment considers significant residual noise effects in the in-combination assessment in Section 13.9. Details of mitigation measures identified by the noise assessment relevant to the health and community assessment are summarised in Section 13.10 of this chapter. The effects of aircraft noise on health will be quantitatively assessed using Government guidance and reported in the ES.</p>
<p>National Policy Statement for National Networks – December 2014 (NPSNN)</p> <p>The NPSNN sets out the need for, and Government’s policies to deliver, development of nationally significant infrastructure projects on the national road and rail networks in England. It provides planning guidance for promoters of nationally significant infrastructure projects (NSIP) on</p>	<p>There are no elements of the Proposed Development that would be classified as a NSIP on the national road or rail network. However, the NPSNN remains a relevant consideration as works are proposed on the SRN at Junction 10 as part of the Proposed Development. As provisions relevant to environmental assessment broadly mirror those as outlined in the ANPS they have been</p>

<p>the road and rail networks. The provisions of the NPSNN relevant to environmental assessment broadly mirror those as outlined in the ANPS.</p>	<p>appropriately considered in this preliminary assessment. Further consideration of the proposals against relevant NPSNN policies will take place following this consultation and in preparation of the DCO application.</p>
<p>Aviation 2050: The future of UK aviation, consultation document, December 2018 (Ref. 13.3)</p> <p>The Aviation Strategy contains objectives relating to air quality and noise. For air quality, this includes proposed measures improving the monitoring of air pollution. For noise, this includes setting a new objective, and where possible, reducing total adverse effects on health and quality of life from aviation noise.</p>	<p>Details of the air quality assessment and noise assessment are provided in Chapter 7 Air Quality and Chapter 16 Noise and Vibration respectively. The health and community assessment considers significant residual air quality and noise effects in the in-combination assessment in Section 13.9. Details of mitigation measures identified by the noise assessment relevant to the health assessment are summarised in Section 13.10 of this chapter. The effects of aircraft noise on health will be quantitatively assessed using Government guidance and reported in the ES.</p>
<p>Local</p>	
<p>Central Bedfordshire Local Plan 2015-2035, July 2021 (Ref. 13.4)</p> <p>Policy EE6 states: "<i>Developments should consider how they would affect tranquillity, using existing tools such as [...] Health Impact Assessment [...]</i>" The Policy seeks to: "<i>Require planning applications for both major residential and commercial developments to demonstrate how they have assessed the potential impact of their proposals on areas of high tranquillity.</i>"</p> <p>Policy EE12 states that "<i>Development should protect, enhance and promote the public rights of way network</i>".</p> <p>Policy T2 states that "<i>The proposal retains or enhances existing footpaths and cycleway links; The proposal promotes walking and cycling permeability and ensure that linkages and publicly-accessible through routes are created to successfully integrate the development into wider networks; The</i></p>	<p>This chapter includes a health assessment, and the community assessment considers impacts on areas of high tranquillity through the in-combination assessment in Section 13.9. Open spaces and recreational routes likely to be affected by the Proposed Development have been assessed as part of the health and community assessment in Section 13.9. User count surveys have been undertaken along these routes likely to be directly affected by the development and at Wigmore Valley Park (WVP).</p> <p>Details of the air quality, noise and transport assessment are provided in Chapter 7 Air Quality, Chapter 16 Noise and Vibration, and Chapter 18 Traffic and Transport, respectively. Details of mitigation measures identified by the noise assessment relevant to the health assessment are summarised in Section 13.10 of this chapter. The effects of aircraft noise on health have</p>

<p><i>development provides safe and convenient access in accordance with appropriate standards, that promote accessibility for all users and all modes of transport.”</i></p> <p>Policy HQ1 seeks to promote high quality development including ensuring development does not have an unacceptable adverse impact upon nearby existing or permitted uses, including impacts on amenity, privacy, noise, or air quality.</p>	<p>been qualitatively addressed in Section 13.9 and will be quantitatively assessed using Government guidance and reported in the ES.</p>
<p>Luton’s Population Wellbeing Strategy 2019-2024, January 2020 (Ref. 13.5)</p> <p>Luton’s Population Wellbeing Strategy 2019 – 2024 aims to make Luton “<i>a more equitable place where people thrive, have the opportunity to live a healthy life mentally, socially and physically; and maximize their potential.</i>”</p>	<p>This chapter includes a health assessment which appraises the impact of the Proposed Development on health and wellbeing of the population, including impacts on vulnerable groups. Details of the significant health effects and mitigation measures are provided in Section 13.11 and Section 13.10, respectively.</p>
<p>Luton 2020 – 2040 A Place to Thrive, October 2020 (Ref. 13.6)</p> <p>Luton’s strategic priorities aim to “<i>protect the most disadvantaged in our town by prioritising services and interventions that focus on prevention, alleviate the impact of poverty and reduce health inequalities</i>” and “<i>make Luton a child-friendly town, where our children and young people grow up feeling happy, healthy and secure, with a voice that matters and the opportunities they need to thrive.</i>”</p>	<p>This chapter includes a health assessment which appraises the impact of the Proposed Development on vulnerable groups. Details of the significant health effects and mitigation measures are provided in Section 13.11 and Section 13.10, respectively.</p>
<p>Oxford-Cambridge Arc: Government ambition and joint declaration between Government and local partners, March 2019 (Ref. 13.7)</p> <p>The Oxford-Cambridge Arc aims to improve access to the environment for existing and new communities in order to improve health and wellbeing. It hopes to create places valued by local communities and improve access to wider services including health and education.</p>	<p>This chapter includes a health assessment which appraises the impact of the Proposed Development on access to services and access to open space, recreation, and physical activity. Details of the significant health effects and mitigation measures are provided in Section 13.11 and Section 13.10, respectively.</p>
<p>Luton Local Plan 2011-2031, November 2017 (Ref. 13.8)</p>	<p>This chapter includes a health and community assessment which appraises the impact of the Proposed</p>

<p>Policy LLP25 seeks to promote high quality design which is safe and easily accessed by all members of the community. The policy notes that provision should improve access to open spaces and promote sport and physical activity and healthy communities.</p> <p>Policy LLP27 seeks to safeguard and enhance existing networks of open space. Clause B refers to the loss of open space and notes that <i>“exceptionally, losses will be permitted where: i) replacement open space provision can be made that is of an equivalent type, quality, and quantity or better and is accessible and within the vicinity; or ii) the proposal is for alternative or ancillary sports and recreational provision, the need for which clearly outweighs the loss.”</i> Clause C of the policy refers to development on open space and indicates that <i>“development will only be permitted where development is ancillary, complementary, and limited in scale securing the efficient and effective use of the existing green space.”</i></p> <p>Policy LLP38 seeks to limit pollution and contamination and states that <i>“the scheme will need to demonstrate whether the development (individually or cumulatively with other proposals) will result in any significantly adverse effects with regard to air, land or water on neighbouring development, adjoining land, or the wider environment.”</i></p>	<p>Development on access to open space, recreation, and physical activity. Details of the significant health effects and mitigation measures are provided in Section 13.11 and Section 13.10, respectively.</p> <p>Open spaces and recreational infrastructure are assessed as part of the health and community assessment in Section 13.9.</p> <p>Details of the air quality assessment and noise assessment are provided in Chapter 7 Air Quality and Chapter 16 Noise and Vibration respectively. Details of mitigation measures identified by the noise assessment relevant to the health assessment are summarised in Section 13.10 of this chapter. The effects of aircraft noise on health will be qualitatively addressed in Section 13.9 and will be quantitatively assessed using Government guidance in the ES.</p>
<p>North Hertfordshire District Local Plan 2011-2031, June 2017 (Ref. 13.9)</p> <p>Policy SP10 states that <i>‘We will provide and maintain healthy, inclusive communities for our residents. We will a) Support the retention of existing community, cultural, leisure or recreation facilities; and f) Protect, enhance and create new physical and green infrastructure to foster healthy lifestyles.’</i></p>	<p>This chapter includes a health assessment which appraises the impact of the Proposed Development on health determinants including access to services and access to open space, recreation, and physical activity. Details of the significant health effects and mitigation measures are provided in Section 13.11 and Section 13.10, respectively. This chapter includes a community assessment which appraises the impact of the Proposed Development on existing community, leisure and recreation facilities. Details</p>

	of the significant community effects are provided in Section 13.9 .
<p>Luton Green Spaces Strategy Review, October 2015 (Ref. 13.10)</p> <p>The Luton Green Space Strategy Review provides a review of the previous strategy objectives which include <i>“local standards for green space provision, a strategy to ensure both the protection of green spaces and sustainable new provision, guidance on how management and maintenance of green space would meet the needs of existing and new communities, as well as visitors and an adopted Supplementary Planning Document for the Local Development Framework.”</i></p>	Open spaces and recreational infrastructure are assessed as part of the health and community assessment in Section 13.9 .
<p>Luton Local Transport Plan 3 2011-2026, March 2011 (Ref. 13.11)</p> <p>Policy 20 aims to <i>“encourage the use of the Public Rights of Way network.”</i></p> <p>Policy 21 aims to <i>“reduce noise and vibration from traffic, with priority being given to those areas where these impacts are excessive and adversely impact on the greatest number of people; and reducing light pollution and nuisance at night where it is possible and safe to do so by designing new and replacement lighting schemes to minimise these impacts.”</i></p>	<p>An assessment of the impacts on public rights of way is provided in Chapter 18 Traffic and Transport. Open spaces and recreational routes likely to be affected by the Proposed Development have been assessed as part of the health and community assessment in Section 13.9.</p> <p>Details of the noise and light obtrusion assessment are provided in Chapter 16 Noise and Vibration and Appendix 5.2 Light Obtrusion, respectively. This chapter includes a health and community assessment which considers significant residual noise and light effects under neighbourhood quality in Section 13.9. Details of mitigation measures identified by the noise and light obtrusion assessment relevant to the health and community assessment are summarised in Section 13.10 of this chapter.</p>

- 13.2.3 The Airports National Policy Statement (ANPS) (Ref. 13.12) does not have effect in relation to an application for development consent for an airport development not comprised of an application relating to the Heathrow Northwest Runway. Nevertheless, as set out within paragraph 1.41 of the ANPS, the Secretary of State considers that the contents of the ANPS will be both important and relevant considerations in the determination of such an application, particularly where it relates to London or the southeast of England.
- 13.2.4 Accordingly, whilst the ANPS does not have effect in relation to the Proposed Development, it will be an important and relevant consideration in the

determination of the application for development consent. A summary of the relevant provisions for the health and community assessment and how these have been addressed in this PEIR is provided within **Table 13.3**.

Table 13.3: How relevant Health and community requirements of ANPS are addressed in the PEIR

ANPS Section	How and where addressed in PEIR
<p>Paragraph 4.70-4.73 Health: <i>“The construction and use of airports infrastructure has the potential to affect people’s health, wellbeing, and quality of life through direct and indirect health impacts, both negative and positive. Likely significant health impacts need to be assessed. Measures to avoid, reduce or compensate for adverse health impacts need to be identified.”</i></p>	<p>The preliminary assessment of likely significant health effects is provided in Section 13.9. Measures to mitigate adverse health effects are described in Section 13.10. Residual likely significant health effects, following mitigation, are described in Section 13.11.</p>
<p>Paragraph 5.23-5.24 and 5.42 Air quality: <i>“Increased emissions can contribute to adverse impacts on human health and on the natural environment. The European Union has established common, health-based and ecosystem based ambient concentration limit values for the main pollutants in the Ambient Air Quality Directive (2008/50/EC) which member states are required to meet... The Secretary of State will consider air quality impacts over the wider area likely to be affected, as well as in the vicinity of the scheme... [the Secretary of State] will need to be satisfied that, with mitigation, the scheme would be compliant with legal obligations that provide for the protection of human health and the environment.”</i></p>	<p>Details of the air quality assessment are provided in Chapter 7 Air Quality. The community assessment considers significant residual air quality effects in the in-combination assessment in Section 13.9. Reasons for scoping out the quantitative assessment of health effects resulting from increased exposure to air pollutants are provided in Section 13.3 of this chapter.</p>
<p>Paragraphs 5.46-5.47, 5.56 and 5.68 Noise: <i>“...people’s sensitivity to noise has increased in recent years, and there has been growing evidence that exposure to high levels of aircraft noise can adversely affect people’s health. The Government wants to strike a fair balance between the negative impacts of noise (on health, amenity, quality of life and productivity) and the positive impacts of flights...”</i></p>	<p>Details of the noise assessment are provided in Chapter 16 Noise and Vibration. The community assessment considers significant residual noise effects in the in-combination assessment in Section 13.9. Specific noise mitigation measures are set out in Chapter 16 Noise and Vibration. Details of mitigation measures identified by the noise assessment relevant to the health and community assessment are summarised in Section 13.10 of this chapter.</p>

ANPS Section	How and where addressed in PEIR
<p><i>The Government also recognises that predictable periods of relief from aircraft noise and important for communities affected, and that noise at night is widely regarded as the least acceptable aspect of aviation noise...with the costs on communities of aircraft noise during the night being higher.</i></p> <p><i>Avoid significant adverse impacts on health and quality of life from noise; Mitigate and minimise adverse impacts on health and quality of life from noise; and Where possible, contribute to improvements to health and quality of life.”</i></p>	<p>The effects of aircraft noise on health have been qualitatively assessed in Section 13.9 and will be quantitatively assessed using Government guidance in the ES.</p>
<p>Paragraph 5.106 Open space: <i>“Access to high quality open spaces and the countryside and opportunities for sport and recreation can be a means of providing necessary mitigation and / or compensation requirements...”</i></p>	<p>Open spaces and recreational infrastructure are assessed as part of the health and community assessment in Section 13.9. A series of surveys of open spaces and recreational routes have been undertaken to ascertain quality and usage. The methodology and results of the surveys are included in Appendix 13.1 and 13.2 in Volume 3 of this PEIR.</p>
<p>Paragraph 5.112 Open space: <i>“Existing open space, sports and recreational buildings and land should not be developed unless the land is no longer needed or the loss would be replaced by equivalent or better provision... Any exchange land should be at least as good in terms of size, usefulness, attractiveness, quality, and accessibility...”</i></p>	
<p>Paragraph 5.120 Open space: <i>“Any exchange land should be at least as good in terms of size, usefulness, attractiveness, quality, and accessibility...”</i></p>	
<p>Paragraph 5.123-5.124 Open space: <i>“The applicant is expected to take appropriate mitigation measures to address adverse effects on National Trails, other public rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve access.</i></p> <p><i>The Secretary of State should not grant consent for development on existing open space, sports and recreational buildings</i></p>	<p>Open spaces and recreational routes likely to be affected by the Proposed Development have been assessed as part of the health and community assessment in Section 13.9. User count surveys have been undertaken along these routes likely to be directly affected by the development and at WVP.</p>

ANPS Section	How and where addressed in PEIR
<p><i>and land, including playing fields, unless...the Secretary of State determines that the benefits of the project outweigh the potential loss of such facilities, taking into account any positive proposals made by the applicant to provide new, improved, or compensatory land or facilities.”</i></p>	
<p>Paragraph 5.135 Resource and waste management: <i>“Government policy on hazardous and non-hazardous waste is intended to protect human health and the environment by producing less waste and by using it as a resource...waste management regulation ensures that waste is disposed of in a way that is least damaging to the environment and to human health.”</i></p>	<p>Waste disposal facilities are subject to regulatory requirements to protect public health therefore no direct health effects are likely to arise as a result of waste generated by the Proposed Development. Details of the waste and resources assessment are provided in Chapter 19 Waste and Resources.</p>
<p>Paragraph 5.172 Water quality and resources: <i>“Effects (on the water environment) could lead to adverse impacts on health or on protected and other species and habitats...”</i></p>	<p>The water resources assessment (Chapter 20 Water Resources and Flood Risk) assesses the potential impacts of contaminants associated with the Proposed Development on groundwater receptors. This is informed by potential impacts on human health.</p>
<p>Paragraph 5.226 Land instability: <i>“The effects of land instability may result in landslides, subsidence, or ground heave. Failing to deal with this issue could cause harm to human health, local property and associated infrastructure, and the wider environment.”</i></p>	<p>Extensive geotechnical and earthworks investigations and assessments have been undertaken as part of the design development process. Details of the soils and geology assessment are provided in Chapter 17 Soils and Geology. The health assessment does not specifically consider the health impacts of land instability further. See scoping out text Paragraph 13.3.22 for further justification.</p>
<p>Paragraph 5.239 Community compensation: <i>“The Secretary of State recognises that, in addition to providing economic growth and employment opportunities, airport expansion will also have negative impacts upon local communities. This will include impacts through land take requiring the compulsory acquisition of houses that fall within the new boundary of the airport,</i></p>	<p>The findings of the health and community assessment, significant impacts and mitigation measures are provided in Section 13.11 and Section 13.10 of this chapter, respectively. This includes consideration of the following health determinants: economics and employment, housing market, neighbourhood quality and aircraft noise. Reasons for scoping air quality out</p>

ANPS Section	How and where addressed in PEIR
<i>exposure to air quality impacts, and aircraft noise, that is both an annoyance and can have an adverse impact on health and cognitive development.”</i>	of the health assessment are provided in Section 13.3 of this chapter.

Guidance

Table 13.4: Health and community guidance

Guidance	How and where addressed in PEIR
International Association of Impact Assessment (IAIA), 2021: Human Health: Ensuring a high level of protection (Ref. 13.13)	This guidance has informed the significance criteria for the health assessment provided in Section 13.5 of this chapter.
Public Health England, 2020, Health Impact Assessment in spatial planning: A guide for local authority public health and planning teams (Ref. 13.14)	This guidance document has informed the health assessment methodology provided in Section 13.5 in terms of significance impact and likelihood impact.
NHS London Healthy Urban Development Unit (HUDU), 2019. Healthy Urban Planning Checklist and Rapid Health Impact Assessment Tool (Ref. 13.15)	This guidance document has informed the assessment methodology provided in Section 13.5 including assessing the impact of the Proposed Development on health determinants.
Hertfordshire County Council Health Impact Assessment Position Statement, 2019 (Ref. 13.16)	In line with this position statement, the methodology for the assessment of health effects in this chapter (Section 13.5) is based on the wider model of health that looks at potential impacts on the social determinants of health. It includes an evidence review, and consideration of health inequalities/effects on vulnerable groups.
Central Bedfordshire and Luton Strategic Housing Market Assessment (SHMA), 2018 (Ref. 13.17)	This guidance document has informed the baseline housing conditions for the study area provided in Section 13.7 .
Institute of Environmental Management and Assessment, 2017: Health in Environmental Assessment, a primer for a proportionate approach (Ref. 13.18)	This guidance document has informed the significance criteria for the health assessment provided in Section 13.5 of this chapter.
Luton’s Joint Strategic Needs Assessment, 2015 (Ref. 13.19)	This chapter includes a health assessment which utilises this information to inform the baseline profile of the study area provided in Section 13.7 .

Guidance	How and where addressed in PEIR
This guidance document highlights the current and future health needs of the local population and identifies priorities.	
Wales Health Impact Assessment Support Unit (WHIASU), 2012, Health Impact Assessment: A practical guide (Ref. 13.20)	This guidance document has informed the health baseline provided in Section 13.7 in terms of identification of vulnerable groups.
National Mental Wellbeing Impact Assessment Collaborative 2011: Mental Wellbeing Impact Assessment Toolkit (Ref. 13.21)	This guidance document has informed the health assessment scope and methodology provided in Section 13.3 and Section 13.5 of this chapter, respectively.
Health Scotland et al, 2007: Health Impact Assessment of Transport Initiatives: A Guide (Ref. 13.22)	This guidance document has informed the evidence review provided in Appendix 13.5 , scope provided in Section 13.3 and methodology provided in Section 13.5 from a transport initiative point of view.

13.3 Scope of the assessment

13.3.1 This section describes the scope of the health and community assessment, including how the assessment has responded to the Scoping Opinion. The temporal and spatial scope, the relevant receptors, and matters scoped in and out are identified. A description of engagement undertaken with relevant technical stakeholders to develop and agree this scope is provided in **Section 13.4**.

Scoping Opinion

13.3.2 The EIA Scoping Report set out the proposed scope and assessment methodologies to be employed in the EIA and is provided in **Appendices 1.1 and 1.2** of Volume 3 to this PEIR.

13.3.3 In response to the Scoping Report, a Scoping Opinion was received from the Planning Inspectorate on 9 May 2019 and is provided in **Appendix 1.3** in Volume 3 of this PEIR.

13.3.4 **Table 13.5** describes the main matters highlighted by the Planning Inspectorate in the Scoping Opinion and how these have been addressed in this PEIR. Final responses to all comments received during Scoping will be provided in an appropriate format in the ES.

Table 13.5: Health and community Scoping Opinion comments

Scoping Opinion ID	Scoping Opinion comment	How is this addressed
Paragraph 4.10.1	We are unconvinced that at this stage the health effects from increased population exposure to air pollutants can be scoped out. Dealing with localised impacts through the AQA only is likely to conceal differential impacts on different groups in the population. Moreover, adopting this approach negates the potentially wider impacts of PM.	A preliminary assessment of the operation of the Proposed Development on air quality is provided in Section 13.9 . The effects of the Proposed Development on air quality have been assessed in Chapter 7 Air quality. As described in Chapter 7 all air quality effects have been assessed as negligible and therefore not significant.
Paragraph 4.10.2	The Scoping Report states that the Proposed Development does not include any significant sources of EMI in proximity to sensitive receptors. The Scoping Report does not identify what these sensitive receptors would be and over what geographical extent impacts could be expected to	The geographic extent of the detectable magnetic field from a substation typically extends to between 3 and 8 metres (and in rare cases up to 15 metres). Outside of the detectable magnetic field, there can be no health effect (Ref. 14.23) Sensitive receptors include anywhere that individuals spend a

Scoping Opinion ID	Scoping Opinion comment	How is this addressed
	<p>occur. There is no specific information presented on any significant EMI sources which form part of the Proposed Development. Without this information the Inspectorate cannot agree to scope this matter out and advises that it should be assessed in the ES where significant effects could arise.</p>	<p>significant amount of time, such as residential properties and businesses. The Proposed Development does not include any new substations or any other sources of EMI within 15m of sensitive receptors. In addition, the Proposed Development will comply with the relevant standards for electromagnetic compatibility (EMC) and personal protection, for example BS EN 50121-5:2017, BS EN 50122-1:2011 and EU Directive 2013/35/EU Electromagnetic Fields (EMF) limits (Ref. 14.24), enforced in the UK by the Control of Electromagnetic Fields at Work (CEMFAW) 2016 Regulations (Ref. 14.25). There are therefore no likely significant effects from EMI and no further assessment is required.</p>
Paragraph 4.10.3	<p>The Scoping Report states that these matters will be assessed and mitigated through the relevant chapters of the ES; given in the Scoping Report as Chapter 11 Soils and Geology, Chapter 12 Water Resources, and Chapter 20 Major Accidents and Disasters, as well as the proposed Flood Risk Assessment, and are therefore proposed to be scoped out of the Health and Community aspect chapter of the ES.</p> <p>It is noted that Chapter 12 Water Resources of the Scoping Report does not contain any reference to assessment of effects on health, in particular any likely significant effects arising from water and groundwater contamination. The Inspectorate does note the reference to health in the Soils and Geology aspect chapter. The Inspectorate does not agree to</p>	<p>The water resources assessment (Chapter 20 Water Resources) includes an assessment of impacts of the Proposed Development on water quantity and quality against standards that are based on preventing impact to human health. The assessment concludes that during construction any potential impacts on groundwater and surface water quality will be mitigated through measures outlined in the Draft CoCP. During both construction and operation, it is assessed that there will be beneficial effects on both groundwater and surface water quality as result of the processing and treatment of the former landfill site and the addition of a capping layer that will close the pathway for contaminants into the underlying aquifer.</p> <p>Flood risk outside of the Main Application Site (as defined in</p>

Scoping Opinion ID	Scoping Opinion comment	How is this addressed
	<p>scope these matters out and advises that the ES should assess any likely significant effects to health associated with water and groundwater contamination. If the Applicant chooses to assess these matters in another relevant aspect chapter, it should be clearly referenced.</p> <p>The Inspectorate agrees to scope out health effects to receptors at the Main Application Site. However, the flood risk associated with Proposed Development outside of the Main Application Site is not clearly stated in the Scoping Report. Therefore, the Inspectorate does not agree to scope these matters out of the assessment and where significant effects are likely to occur, they should be assessed in the ES.</p>	<p>Chapter 2) is considered in Chapter 20 Water Resources and the Flood Risk Assessment (FRA) provided as Appendix 20.1 in Volume 3 of this PEIR. The FRA concludes that it has not identified any flood risk consideration related to the Proposed Development at the Main Application Site or the off-site works, in any of the three phases that result in an impact that would result in a significant effect, when the normal standards of design (1% AEP + CC) are applied.</p>
Paragraph 4.10.6	<p>The Inspectorate notes the information sources listed in the Scoping Report and advises that the ES provides an explanation of the specific data to be gathered from these sources. It is not clear from the Scoping Report how mental health indicators will be determined from these sources, and the Inspectorate advises that both mental and physical health effects should be assessed in the ES.</p>	<p>Baseline conditions for health and community are provided in Section 13.7 and includes references which link the indicators to information sources. Mental health indicators have been obtained from the Mental Health and Wellbeing JSNA and Public Health England Local Authority Health Profile for the local and wider study area as indicated in Section 13.7. Both, mental and physical health effects are assessed in Section 13.9 and Section 13.11.</p>
Paragraph 4.10.7	<p>While it is understood from this paragraph that the ES will identify community resources within the Study Area only if they may be affected by the Proposed Development, it will be necessary for the ES to provide an</p>	<p>The approach to defining the community baseline is described in Section 13.5. Using the information sources described in Section 13.5, all community resources in the Study Area were identified. The matters listed in Section 13.3 under 'Matters scoped in' explains the possible</p>

Scoping Opinion ID	Scoping Opinion comment	How is this addressed
	explanation of how the baseline has been established and therefore, it should explain what possible effects have been considered when identifying community resources.	effects which have been considered as part of the community assessment. These possible effects were used to refine the community baseline.
Paragraph 4.10.8	With regard to the quality surveys to be undertaken, it should be clear in the ES how the locations/sites to be surveyed have been chosen, including how consultation has informed the decision. The data for the assessment, for example the attribute table referred to in Paragraph 15.4.10, should be provided in the ES.	The methodology and results of the open space surveys are included in Appendix 13.1 and 13.2 in Volume 3 of this PEIR. The methodology was shared with Luton Borough Council ahead of the first surveys taking place in Spring 2019. The number of visits were agreed, and the survey hours were extended to account for additional morning and evening users.
Paragraph 4.10.9	The ES should explain how future changes to the profile of the affected communities and wider relevant policy has been considered within the assessment. Any forecasts used must be explained and the methods used justified. The Applicant should make effort to verify the information used with relevant consultation bodies.	The approach to defining future baseline is described in Section 5.4 of Chapter 5 Approach to the Assessment. The future baseline considered for health and community is described in Section 13.7 of this chapter. The baseline was verified through engagement with Luton Borough Council, Public Health England and through a community workshop with various community groups, as discussed in Section 13.4 .
Paragraph 4.10.10	The Inspectorate welcomes the 'Relationship to other EIA topics' section and would expect to see corresponding sections in the ES explaining how the other environmental aspect assessments have informed the assessment of health and community effects. The Inspectorate considers that elements of the Cultural Heritage assessment and assessment of Major Accidents and Disasters will also be relevant to the assessment of wellbeing and health. The ES	No elements of the Cultural Heritage assessment are considered relevant to health and wellbeing as the type of assets identified by the cultural heritage assessment (Chapter 10) do not have the ability to influence health outcomes. Elements of the cultural heritage assessment may be relevant to the community assessment where they constitute a community resource, for example, a church. Major Accidents and Disasters is scoped out of the health assessment. The justification for

Scoping Opinion ID	Scoping Opinion comment	How is this addressed
	should provide explanation and justification for the basis of the assessment and the Applicant should seek to agree with consultation bodies the approach taken.	scoping out Major Accidents and Disasters is provided in Section 13.3 . The scope and methodology for the assessment has been discussed and agreed with key stakeholders, as discussed in Section 13.4 .
Paragraph 4.10.11	The Inspectorate acknowledges the information provided in the Scoping Report about the factors which will be considered when determining the magnitude of impacts and sensitivity of population (health effects) and receptor (community effects); however, Paragraph 15.5.10 refers to these judgements being based on 'defined assessment criteria'. These criteria are not presented in the Scoping Report and the ES should provide this information.	The assessment criteria and guidance used to determine the magnitude of impact has been applied using professional judgement and is provided in Section 13.5 and Table 13.7 . Further details can be seen in Appendix 13.4 Methodology for Health and Community Assessment in Volume 3 of this PEIR.
Paragraph 4.10.12	The Scoping Report states that as a 'general rule' major and moderate effects will be considered significant. The ES should clearly define significant effects and any deviation from the defined method in the ES should be justified.	Significant effects are defined in Section 6.2 , and the methodology for the assessment of effects for the health and community assessment is provided in Section 6.6 , of Appendix 13.4 in Volume 3 of this PEIR.
Paragraph 4.10.13	Table 15 – 3 sets out the potential effects of the Proposed Development relevant to each Activity/Stage. However, these are sometimes conflated with the impacts set out in the preceding paragraphs, and some impacts are not represented in the Table at all, for example 'permanent loss or gain of community facilities due to construction'. The ES must clearly set out the anticipated effects of the Proposed Development having regard to all impacts identified and where significant effects are likely to occur.	A preliminary assessment is included in Section 13.9 . Residual effects observed after mitigation are presented in Section 13.11 . The summary of the preliminary assessment includes all identified impacts and is presented in Section 13.14 .

Spatial scope

Study area and zone of influence

13.3.5 The study area for the health and community assessment is based on the spatial distribution of the environmental and economic impacts of the Proposed Development and the location of sensitive receptors. The study area for health and community is comprised of:

- a. **local neighbourhood area** – this is comprised of four ‘local neighbourhood’ areas. These are the areas in which the majority of direct and indirect effects on health and community resources are likely to occur. Four local neighbourhood areas have been identified:
 - i. **Central Airport Area** - containing the airport and the majority of the boundary of the Proposed Development. This neighbourhood area lies within Wigmore unitary authority ward and Luton Borough Council administrative area;
 - ii. **North of the Airport** – this area lies within Wigmore and Crawley unitary authority wards within the Luton Borough Council administrative area and includes the residential area on the eastern edge of Luton;
 - iii. **South and East of the Airport** – this area lies within the Caddington and Hitchwood, Offa and Hoo unitary authority wards within the Central Bedfordshire and North Hertfordshire District Council administrative areas, respectively. It includes agricultural land with small settlements and isolated rural properties; and
 - iv. **West of the Airport** – this area lies within the South and Farley unitary authority wards within the Luton Borough Council administrative area and includes residential areas on the southern edge of Luton.

These local neighbourhood areas are shown on **Figure 13.1** Health and Community Study Areas in Volume 4 of this PEIR.

- b. **wider area** - in addition to these local neighbourhood areas, effects will occur across the wider area of **Luton, Hertfordshire, Central Bedfordshire** and **Buckinghamshire**.

A figure of the wider study area has not been provided as it will be defined by the location of impacts from other relevant topics and will therefore vary with determinant.

Table 13.6 below shows how the study area has been broken down for the purpose of the health and community assessment.

Table 13.6: Health and community assessment study area.

Study Area	Health	Community
Local Neighbourhood Areas		
Local communities in Luton that are directly affected by the construction and operation of the Proposed Development (e.g. land take).	Y	Y
Areas within which there are likely to be some environmental impacts (e.g. noise and visual impacts of the airport; construction and surface access traffic routes).	Y	Y
Wider Area		
Areas within which there are likely to be some environmental impacts (e.g. noise and visual impacts of the airport; construction and surface access traffic routes).	Y	Y
Population within the lowest observed adverse effect level (LOAEL) noise contour for aircraft noise (daytime and night-time).	Y	N
Population affected by issues such as economic growth, employment and changes to the housing market resulting from the Proposed Development. This will include Luton, Hertfordshire, Central Bedfordshire and Buckinghamshire area.	Y	N

- 13.3.6 It should be noted that the study area for the assessment of the Proposed Development on economics and employment (**Chapter 11**) varies slightly from the health and community study area. The economics and employment assessment focuses on the local Airport Operations Area (AOA) which covers much of the Central Airport Area but differs slightly as the boundary is drawn on businesses directly related to airport activity. **Chapter 11** Economics and Employment also considers the effects on the Luton economy and wider area of Hertfordshire, Bedfordshire and Buckinghamshire, in addition to the broader employment area.
- 13.3.7 The study area and zone of influence for the purposes of the cumulative assessment for health and community are the same. The preliminary cumulative effects assessment is provided in **Chapter 21** In-Combination and Cumulative Effects Assessment.
- 13.3.8 The community resources within the existing baseline are described under each neighbourhood area. Community resources are only mentioned where they may be affected by the Proposed Development and therefore not all resources within the areas have been described in the baseline.
- 13.3.9 Data for the local neighbourhood area was collected at the unitary authority ward level and data for the wider area baseline was collected at county level. Therefore, district level baseline data was not collected for Stevenage and North Hertfordshire District Council (NHDC) as they are present within Hertfordshire County, which is included in the wider area baseline. Hitchwood,

Offa and Hoo ward, present within NHDC, is covered under the South and East of the Airport local neighbourhood area. Based on a review of **Chapter 7** Air Quality and **Chapter 16** Noise and Vibration no significant impacts or residual effects are observed in the Stevenage area therefore, this area is not included in the baseline. For NHDC present within Hertfordshire, significant noise impacts are observed for Breachwood Green and Bendish within the Hitchwood, Offa and Hoo ward, which is reported on under the South and East of the Airport local neighbourhood study area.

Temporal Scope

- 13.3.10 The Proposed Development will be delivered over two phases, within which construction and operation may take place simultaneously. For the purposes of assessment three assessment phases are considered as described in **Chapter 5** Approach to the Assessment.
- 13.3.11 During both construction and operation, the health and community assessment generally considers the effects arising from three assessment phases of the Proposed Development combined.
- 13.3.12 For those effects such as employment generation, where the level of activity varies at each stage, this detail is reported, but an overall assessment of the cumulative effect across all stages is reported for the health effect.

Receptors

- 13.3.13 The health assessment considers the impact on the environmental, social, or economic factors that influence health and wellbeing ('health determinants'). The assessment of health effects on receptors, arising from the impacts on these determinants, is provided at a population, rather than individual level.
- 13.3.14 The community assessment assesses the impacts on community resources, and the resultant effects on the people ('receptors') using those resources.

Matters scoped in

- 13.3.15 The following matters have been scoped into the Health and Community chapter:

Health:

- a. changes in access to public open space, altering opportunities for informal recreation and physical activity;
- b. effects on levels of physical activity resulting from changes in traffic movements on adjacent roads;
- c. effects on health and wellbeing associated with changes in access to services and community facilities
- d. effects on health and wellbeing associated with employment, income and training including the impacts of:
 - i. displacement of businesses

- ii. opportunities for construction employment, training and apprenticeships
 - iii. changes to the local economy arising from the construction supply chain and expenditure by the temporary workforce
 - iv. increased opportunities for employment within the expanded airport.
- e. the impact of the construction and operational workforce on housing supply and demand;
 - f. changes in population exposure to air pollutants;
 - g. changes to the character and quality of neighbourhoods, due to combined environmental impacts (noise, air quality, traffic, visual effects)
 - h. change in exposure of the population to aircraft noise, resulting from changes in air traffic movements (ATMs)
 - i. public concern and uncertainty about the effects of the Proposed Development
 - j. presence of the construction workforce within the local community, and the impacts of that on social cohesion;

Community:

- a. loss or gain: a loss or gain of a resource or receptor;
- b. displacement: the re-location of receptors and resources from one location to another;
- c. in-combination effects: changes to the amenity of a resource due to combined environmental impacts (noise, air quality, traffic, visual effects), affecting enjoyment of a resource by a receptor;
- d. isolation effects: isolation of communities from services and facilities, measured by significant delay/disruption to routes from local communities to access services and facilities.

Matters scoped out

Electromagnetic interference (EMI)

- 13.3.16 There is a potential for health effects associated with the electric and magnetic fields around substations, power lines and cables. The field strength reduces rapidly with distance from such equipment. Health effects associated with electromagnetic interference (EMI) have been scoped out, as although the Proposed Development does include a new electrical substation, this is not located within close proximity to sensitive receptors. It lies approximately 700m from the nearest residential receptors.

Ground and water contamination

- 13.3.17 Health effects associated with ground and water contamination have been scoped out. These effects will be assessed in **Chapter 17** Soils and Geology, and **Chapter 20** Water Resources and Flood Risk. The risks to health will be assessed in line with the UK framework for the assessment of contaminated

land, which is based upon considerations of pollution linkages between contaminated sources and sensitive receptors, using a source-pathway-receptor model of the site. The investigations and assessments undertaken in the EIA will identify any source-pathway-receptor linkages and apply appropriate control and mitigation measures to ensure that health risks are avoided.

- 13.3.18 Health effects associated with increased flooding have been scoped out. A Draft Flood Risk Assessment (FRA) is provided as **Appendix 20.1** in Volume 3 of this PEIR. This sets out how legal requirements relating to flood risk management will be addressed, including the requirements of the ANPS to *‘Consider the risk of all forms of flooding arising from the development comprised in the preferred scheme, in addition to the risk of flooding to the project, and demonstrate how these risks will be managed and, where relevant, mitigated, so that the development remains safe throughout its lifetime’*. On this basis it is considered that there will be no residual risk of flooding that could be potentially harmful to health.

Major accidents and disasters

- 13.3.19 Health effects associated with major accidents and disasters, such as air traffic accidents or major pollution incidents, are assessed in **Chapter 15** Major Accidents and Disasters. This is a risk-based assessment which considers the potential consequences of events, which have a low probability of occurring but potentially major consequences. In contrast, the health assessment identifies the likely health and wellbeing effects resulting from the exposure of the population to impacts on health determinants that are predicted to result from the Proposed Development. There is no available method for assessing the potential health outcomes of a major accident or disaster which, while potentially wide-ranging and severe, are unlikely to occur.

Individual businesses

- 13.3.20 Impacts on individual business owners or operators, or impacts on agricultural businesses, are also scoped out of this assessment. These impacts are addressed in **Chapters 11** Economics and Employment and **Chapter 6** Agricultural Land Quality and Farm Holdings respectively.

13.4 Stakeholder engagement and consultation

- 13.4.1 Engagement in relation to health and community has been undertaken with a number of prescribed and non-prescribed stakeholders.
- 13.4.2 In 2018 a health and community technical stakeholder workshop was held to gain feedback on the scope of the assessment and obtain information on local issues and priorities. In 2019 a community workshop was held to gain further information on how local community resources are used, and the concerns and aspirations of local communities.
- 13.4.3 The methodology for conducting open space surveys was shared with Luton Borough Council ahead of the first surveys taking place in Spring 2019. Feedback was incorporated where appropriate and additional resources were identified by Luton Borough Council for consideration during the assessment process.
- 13.4.4 A meeting was held with the Director for Public Health for Luton Borough Council in December 2019 to discuss the health and community assessment within the PEIR and obtain an LBC perspective on public health issues in Luton, the role of the airport in the community, and any health, community and equality issues associated with the Proposed Development. This has informed this PEIR.
- 13.4.5 The **2019 Statutory Consultation Feedback Report** contains a full account of the previous statutory consultation process and issues raised in feedback. Matters raised regarding the scope, method, mitigation or compensation being considered as part of the health and community assessment were then subject to further discussions directly with stakeholders during working group meetings. The main matters/themes raised during consultation considered relevant to the health and community assessment were:
- a. Proposals do not go far enough to mitigate impacts on communities in the surrounding areas including impacts on smaller villages along flight paths, rather focusing on the nearby larger settlements such as Luton, Hitchin, Dunstable and St Albans.
 - b. Concern that proposals do not properly taken into account the mental and physical health impacts associated with the airport expansion and that the health status of the population is not identified within the PEIR.
 - c. Greater clarity is required on the definition of noise impacts/terminology used and what this means in population health terms.
 - d. Greater consideration should be given to increases in greenhouse gas emissions as a direct threat to human health.
 - e. Concern that developing on a landfill site has potential impacts on health and safety, with regards to excavation, treatment, transport, and disposal of hazardous waste.
 - f. Proposals will increase the demand for housing and will increase demand for housing in the Green Belt and on greenfield sites.

- g. Proposals may increase the demand for ancillary facilities including education, health and wellbeing facilities.
- h. Avoid impacting the Tidy Tip. Any impacts resulting in removal of the facility will need to be mitigated through a new local facility and to avoid increased fly tipping.
- i. Changes associated with the airport and WVP may result in additional light pollution.
- j. Concerns regarding WVP design, location, size, management, and maintenance including impacts on noise and residential properties and funding and fees.
- k. Suggestion that tree planting and mound construction along airport perimeter may shield surrounding residents from light and noise pollution.
- l. Consideration should be given to views impacted by the airport expansion, this includes views from residential properties, Chilterns AONB and designated heritage assets.

13.4.6 For health and community, a working group was formed comprising representatives from the following organisations:

- a. Public Health Luton Borough Council;
- b. Public Health Hertfordshire County Council;
- c. North Herts Health and Communities;
- d. Central Beds Health and Community;
- e. Buckinghamshire County Council;
- f. Bedfordshire Public Health;
- g. Luton Clinical Commissioning Group (CCG); and
- h. Public Health England (PHE).

13.4.7 Workshops were convened in December 2020 and July 2021 with this group to discuss and seek agreement on issues arising from consultation on the PEIR.

13.4.8 **Table 13.7** provides a summary of engagement with relevant stakeholders, undertaken to inform the EIA to date, including the date and time of meetings and a summary of discussions to resolve matters raised.

Table 13.7: Stakeholder engagement relating to health and community

Meeting name and date	Attendees (organisation)	Summary of discussion
Health and community technical stakeholder workshop, 26 November 2018	Luton Borough Council (Engagement Officer, Service Manager, Parks Facilities Manager) Buckinghamshire Council (Public Health Consultant)	Purpose was to gain feedback on the scope of the assessment and obtain information on local issues and priorities. This included WVP re-provision, vulnerable groups, and isolation.

Meeting name and date	Attendees (organisation)	Summary of discussion
	North Hertfordshire District Council (Policy Officers and Health Improvement Lead) Central Bedfordshire Council (Community Engagement Manager)	
Discussion regarding open space survey methodology, April 2019	Luton Borough Council, the Applicant and advisors	Purpose was to agree scope of assessment for open space surveys. The number of visits were agreed, and the survey hours were extended to account for additional morning and evening users.
Community workshop, 9 July 2019	Representatives from Disability Resource Centre, Flying Start, Luton Borough Council Education, Link Centre, Luton All Women's Centre, Luton Irish Forum, Raynham Way Community Centre, Signposts, Team Beds and Luton (Active Luton), and TOKKO.	Purpose was to discuss the baseline and to gain further information on how local resources are used, and the concerns and aspirations of local communities.
Telecon review of Preliminary Environmental Information Report (PEIR) Health and Community assessment with Director Public Health, Luton Borough Council, 7 December 2019	Director Public Health, Luton Borough Council and Corporate Responsibility Director, Luton Rising Applicant's Health Assessment Advisors	Purpose was to provide an overview of the Health and Community assessment within the PEIR (with a focus on the health assessment and reference to the Equalities Impact Assessment (EqIA)), in order to understand the LBC perspective on public health issues in Luton, the role of the airport in the community, and any health, community and equality issues associated with the Proposed Development.
Meeting with PHE on health and community, 15 December 2020	Public Health England Representatives, Applicant's Representatives and Applicant's Health Assessment, Air Quality assessment and Major	Purpose was to provide an update since the PEIR submission. PHE raised comments and suggestions relating to monitoring, impact on housing, and healthcare services during construction.

Meeting name and date	Attendees (organisation)	Summary of discussion
	Accidents and Disasters assessment advisors.	PHE accepted that monitoring should be proportionate and should focus on determinants of health rather than actual changes in health outcomes. Monitoring of complaints data for health-related issues and concerns was also suggested by PHE. It was agreed that Department of Public Health would be contacted to inform what health data is being monitored over the time period to link to the health assessment. PHE highlighted that social and private rented sector is dominated by vulnerable groups. It was agreed that more work would be done to inform the baseline for housing supply and demand. The housing baseline can be found in Section 13.7.
Health working group meeting, 15 July 2021	LBC Public Health Representatives, Public Health England Representatives, North Herts Health and Communities Representatives, Applicant Representatives	Purpose was to discuss outstanding queries from the PEIR consultation on the methodology, approach, study area, receptors, WVP, and monitoring. It was agreed with representatives from Public Health LBC that a health chapter in the EIA was an acceptable approach to health assessment as long as the methodology was akin to that used in a stand-alone Health Impact Assessment (HIA). The project team confirmed that the assessment approach was based on HIA guidance provided by HUDU, WHIASU and the IAIA. It was confirmed that it was based on a wider model of health that looked at potential impacts on the social

Meeting name and date	Attendees (organisation)	Summary of discussion
		<p>determinants of health. It was also confirmed that the health assessment would include an evidence review, and consideration of health inequalities/ effects on vulnerable groups. It was confirmed that data at a lower spatial scale would be looked into for health profiles to provide greater recognition of pockets of deprivation and health inequalities. In terms of monitoring, suggestions included using community engagement feedback and local monitoring via Green Controlled Growth, Employment Strategy, Health and Wellbeing Strategy and the Luton 2040 Vision.</p>

13.4.9 Stakeholder engagement will continue as the Proposed Development progresses and will include further meetings with the health and community working group to discuss results of the PEIR and next steps for the ES.

13.5 Methodology

Overview

- 13.5.1 This section outlines the methodologies employed for assessing the likely significant effects on health and community from the construction and operation of the Proposed Development. Further details of the methodology can be found in **Appendix 13.4** Methodology for Health and Community Assessments in Volume 3 to this PEIR. The supporting evidence base for the assessment of health effects can be found in **Appendix 13.5** Evidence Review for Health Assessment, in Volume 3 to this PEIR.
- 13.5.2 The assessment identifies the impacts (beneficial and adverse, direct and indirect, during construction and operation) of the Proposed Development on health determinants, community resources and residential properties. The health and community effects resulting from these impacts of the Proposed Development are defined as follows:
- a. Health effects have been identified when an environmental, social, or economic factor that influences health and wellbeing (a 'health determinant') is impacted, and the number of people exposed to this change is considered sufficient to cause a change in health at population level. Further information on population health is available in the document TheKingsFund (Nov 2018) (Ref. 13.26).
 - b. Impacts on community resources, and the resultant effects on the people ('receptors') using those resources, have been identified as community effects.
- 13.5.3 The assessment methodology for health and community effects is applicable to both the construction and operational phases of the Proposed Development. The methodology is akin to that used in a stand-alone HIA and is based on HIA guidance provided by HUDU, WHIASU and the IAIA. It is based on a wider model of health that looks at potential impacts on the social determinants of health.

Relationship of assessment to other EIA topics

- 13.5.4 The assessment methodology for health and community effects has drawn on significant residual effects identified in other EIA topic assessments in order to identify impacts on health determinants and community resources.
- 13.5.5 The health assessment assesses neighbourhood quality, which is determined by the character and attractiveness of the public realm within a neighbourhood. A neighbourhood quality effect occurs where there are two or more significant impacts on the physical environment i.e., noise, air quality, landscape, visual and light and traffic and transport impacts. When these environmental factors are altered, people's level of satisfaction with their living environment may change, which in turn may affect their wellbeing. This is a slightly different approach to that used in the community assessment which requires two or more residual significant effects.

- 13.5.6 The community assessment contains an assessment of in-combination effects. The assessment of in-combination effects on community receptors draws from the findings of other assessment topics, taking into account professional judgement about the sensitivity of the individual receptor to the predicted effect. An in-combination community effect occurs where two or more residual significant effects from air quality, traffic and transport, noise, and vibration, or visual or light impact occur on specific community receptors.

Baseline methodology

Health baseline

- 13.5.7 The health assessment considers the effects on the population within the study area arising from impacts of the Proposed Development on relevant health determinants. In order to understand the current demographic, social and health characteristics of the population, baseline data for the health assessment has been obtained from the following principal sources of data and is summarised and referenced in **Section 15.7**:
- a. 2011 Census;
 - b. The English Index of Multiple Deprivation 2019;
 - c. Office for National Statistics;
 - d. Public Health England Local Authority Health Profiles;
 - e. Mental Health and Wellbeing Joint Strategic Needs Assessment; and
 - f. information from consultation with technical and community stakeholders.
- 13.5.8 Baseline health data for the local neighbourhood and wider study area has aimed to look at the same indicators. However, in some instances data for indicators at the two spatial scales was not available so different indicators have been used. For local neighbourhood baseline conditions, mental health data at ward level was not available; however, corresponding National Health Service (NHS) CCG data has been used to provide an overview of mental health baseline within the local neighbourhood area.

Community baseline

- 13.5.9 The community assessment has considered effects arising from impacts on the following community resources and the receptors (people) that use them:
- a. residential properties;
 - b. schools;
 - c. community facilities;
 - d. open spaces and PRow; and
 - e. leisure and recreation facilities.
- 13.5.10 The baseline of community resources has been identified from the following principal sources of data:

- a. OS Address Base Data which contains information about the type of property to which the address relates to (e.g. dwelling, school, place of worship etc.);
- b. search engine mapping features;
- c. information from local strategies and policies; and
- d. information from consultation with community stakeholders and relevant feedback received from public consultation on the Proposed Development.

13.5.11 A series of surveys of open spaces and recreational routes have been undertaken to verify the baseline of community resources, and to ascertain quality and usage. These were undertaken throughout 2019 (from April to November) prior to any changes in usage resulting from the Covid-19 lockdowns. Results of the open space surveys have been used to determine significance and in particular receptor sensitivity by providing further details on use of the space. Further details of the methodology for undertaking open space surveys and the results can be found in **Appendices 13.1 and 13.2** in Volume 3 to this PEIR.

Future baseline

13.5.12 The approach to defining future baseline is described in **Section 5.4 of Chapter 5 Approach to the Assessment**. The future baseline considered for health and community is described in **Section 13.7** of this chapter.

Construction assessment methodology

13.5.13 The health and community assessment is largely qualitative in nature. For health effects arising from operational noise, the effects will be quantified in the ES. See the Operational assessment methodology at the end of this section for information on quantitative assessment of noise related health effects.

Significance criteria

13.5.14 The approach for defining significance in the health and community assessment considers the magnitude of impact and the sensitivity of receptors.

Magnitude of impact

13.5.15 The magnitude of an impact on a health determinant and/or community resource has been assessed on a scale of high, medium, low, and very low. **Table 13.8** provides guidance on the criteria used to determine the magnitude of impact. This guidance has been applied using professional judgement.

Table 13.8: Guidelines for the assessment of magnitude of health and community impacts

Magnitude	Guidelines for magnitude of impact on health determinants	Guidelines for magnitude of impact on community resources
High	A substantial change to a health determinant, with two or more of the following characteristics:	An impact that has the potential to result in loss or be substantially disruptive (positively or negatively) to

Magnitude	Guidelines for magnitude of impact on health determinants	Guidelines for magnitude of impact on community resources
	<ul style="list-style-type: none"> • assessed as ‘major’ by relevant environmental topics (where applicable*); • likely to be perceived by the population as a substantial change; • has the potential to affect the occurrence of acute or chronic mental or physical illness; • a high level of exposure would occur over a wide geographical area and/or be likely to affect a large number of people (e.g. over 500); • long term duration or permanent (judgements on timescales are dependent on nature of impact). 	<p>the way in which a resource or receptor is currently used.</p> <p>Usually has a long term or permanent impact on the baseline conditions (judgements on timescales are dependent on nature of impact).</p>
Medium	<p>A change to a health determinant, with two or more of the following characteristics:</p> <ul style="list-style-type: none"> • assessed as ‘moderate’ by relevant environmental topics (where applicable*); • likely to be perceived by the population as a noticeable change; • has the potential to improve / reduce mental wellbeing or quality of life, or exacerbate / alleviate symptoms of existing illness; • a medium level of exposure would occur over a relatively localised area and/or be likely to affect a moderate-large number of people (e.g. 100-500); • Medium to long-term duration. 	<p>An impact that has the potential to be considerably disruptive (positively or negatively) to the way in which a resource or receptor is currently used.</p> <p>Usually has a medium to long term impact on the baseline conditions, but likely to be reversible</p>
Low	<p>A modest change to a health determinant, with two or more of the following characteristics:</p> <ul style="list-style-type: none"> • assessed as ‘minor’ by relevant environmental topics (where applicable*); 	<p>An impact that has the potential to noticeably change (positively or negatively) the way in which a resource or receptor is currently used, but the overall purpose of the resource is unchanged.</p>

Magnitude	Guidelines for magnitude of impact on health determinants	Guidelines for magnitude of impact on community resources
	<ul style="list-style-type: none"> likely to be perceived by the population as a modest change; has the potential to lower or raise wellbeing in terms of levels of comfort and contentment; a low level of exposure would cover a small area and/or affect a small number of people (e.g. fewer than 100); short to medium term duration. 	Usually has a short to medium term impact on the baseline conditions, but likely to be reversible.
Very Low	<p>A minor change to a health determinant, with two or more of the following characteristics:</p> <ul style="list-style-type: none"> likely to be perceived as a small change by some members of the population; occurs over a localised area; has the potential to lower or raise wellbeing in terms of levels of comfort and contentment; affects a small number of individuals. 	<p>Anticipated to make little or no difference or no discernible change to the way a receptor can use a resource.</p> <p>An impact that is very short term in nature and completely reversible.</p>

*Note that other EIA topics' assessment results are not always relevant to the health assessment. For example, a 'major' effect identified by a topic for an individual receptor would not necessarily constitute a major change to a health determinant. However, other topic assessments may assist with judgements made about the magnitude of impacts. Professional judgement is required when using information from other topics in the health assessment.

Sensitivity of receptors

13.5.16 For the health assessment, sensitivity is defined by the vulnerability of the population to potential health and wellbeing impacts. This takes into account demographic, health and social factors as described in the baseline.

13.5.17 For the community assessment, sensitivity of receptors (people using community resources) has been determined by the extent to which the individuals have the capacity to experience the effect without a substantial loss or gain. Factors considered when assessing receptor sensitivity will include personal circumstances and ability to access alternatives.

13.5.18 **Table 13.9** sets out guidelines for defining the sensitivity of the population and receptors.

Table 13.9: Guidelines for the assessment of sensitivity.

Sensitivity	Guidelines on sensitivity of population (for health assessment)	Guidelines on sensitivity of receptors (for community assessment)
High	Affected population includes a higher than national average proportion of groups who are more likely to experience health effects as a result of the impact in question by virtue of their socio-demographic or health status.	Receptors who are at risk and have little or no resilience to the impact either through personal circumstance or an inability to access alternatives or no alternative resources provided locally.
Medium	Affected population includes an average or close to average proportion of groups who are more likely to experience health effects as a result of the impact in question by virtue of their socio-demographic or health status.	Receptors who have limited resilience to the impact either through personal circumstance or a restricted ability to access alternatives or a shortage of alternative resources provided locally.
Low	Affected population includes a below average proportion of vulnerable or disadvantaged groups who are more likely to experience health effects as a result of the impact in question by virtue of their socio-demographic or health status.	Receptors who have average resilience or some slight restrictions on resilience to the impact either through personal circumstance or a slightly restricted ability to access alternatives.
Very Low	Not applicable (no population is considered more likely to experience health effects as a result of the impact in question by virtue of their socio-demographic or health status).	Receptors that generally have adequate capacity to experience impacts without incurring a significant effect. Many comparable and accessible alternative options exist within the relevant catchment area

Significant effects

13.5.19 The matrix used for the assessment of the significance of effects for the health and community assessment is provided in **Table 13.10**.

Table 13.10: Health and community effects matrix.

Magnitude of impact	Guidelines on sensitivity of receptors / population			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Negligible

Magnitude of impact	Guidelines on sensitivity of receptors / population			
	High	Medium	Low	Very low
Very Low	Minor	Minor	Negligible	Negligible

13.5.20 As a general rule, major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement has also been applied and the conclusions described in the assessment.

Operational assessment methodology

13.5.21 The assessment methodology for health and community effects described in the Construction assessment methodology above is applicable to both the construction and operational phases of the Proposed Development. The assessment is largely qualitative in nature. For health effects arising from operational aircraft noise, the effects will be quantified in the ES, as described below.

Health assessment: Quantitative assessment of noise related effects

13.5.22 It is possible to quantify the effects on health resulting from long-term exposure of a population to aircraft noise, using established exposure-response relationships for specific health outcomes. The Department for Transport's WebTAG assessment method (Ref. 13.27) will be used to evaluate the health effects (measured by Disability Adjusted Life Years (DALYs)) arising from increased aircraft noise. The quantitative assessment and the results of the WebTAG and DALYs assessment are not presented as part of this PEIR but will be presented as part of the ES when final demand forecasts are confirmed. An assessment of sensitivity to noise will also be undertaken using the 2018 World Health Organisation European Noise Guideline (Ref. 13.28) methodology as agreed with PHE. The proposed methodology is presented in **Appendix 13.4** in Volume 3 to this PEIR.

13.6 Assumptions and limitations

13.6.1 This section provides a description of the assumptions and limitations to the health and community assessment.

13.6.2 Assumptions underpinning the health and community assessment are as follows:

- a. Over the timescale of the Proposed Development's delivery, the baseline profile of affected communities may change. Where forecasts are available, such as for population growth and age profile, this information will be taken into account in the assessment of population sensitivity. Where forecasts are not available the assessment will be based on current information. Any forecasts used will be clearly explained, justified and verified with the relevant consultation bodies.
- b. The community profiles in the baseline **Section 13.7** were informed by publicly available data and consultation and stakeholder engagement.
- c. The community and health assessments have been based on the residual significant effects identified by other topics i.e. after mitigation measures, such as replacement open space, engine run-up bay acoustic screening, and landscape planting, have been taken into account. It is assumed that mitigation measures proposed by other topics will be as effective as intended.
- d. Proposed improvements to WVP consented as part of the New Century Park (NCP) planning permission (notably the improvements to Wigmore Pavilion, installation of new play facilities and construction of a new skate park), alongside the removal of any existing vegetation necessary to facilitate these works, would be undertaken under that planning permission alongside or in advance of works to deliver the replacement open space during construction for Phase 1.
- e. All works to deliver the replacement open space are assumed to be undertaken during construction for Phase 1, with areas made available for use by the public before the end of 2025.
- f. The new Airport Access Road (AAR) providing access to the east of the airport (previously referred to as the Century Park Access Road) is not required in full until the construction of the new terminal in Phase 2 of the Proposed Development.
- g. Luton Borough public footpaths FP29 and FP38 and public bridleways BW28 and BW37 would be stopped-up to facilitate the Proposed Development during construction for Phase 2a.
- h. A surfaced path to be delivered within the replacement open space in Phase 1, between Luton Borough footpath FP38 and the junction with public footpath Kings Walden 043 west of the mature hedgerow on the ridgeline of Winch Hill, would be formally adopted as a public footpath during construction for Phase 2a.
- i. A section of public footpath Kings Walden 041 would be upgraded to a multi-user track within the replacement open space during construction for

Phase 1, between the junction with public footpath Kings Walden 043 and the existing field entrance off Darley Road (south of Green Acres) and would be formally adopted as a public bridleway during construction for Phase 2b. The section between Winch Hill Road and the field entrance off Darley Road (south of Green Acres) remaining as a public footpath.

- j. A surfaced path to be constructed as a multi-user track within the replacement open space during construction for Phase 1, located east of the coniferous plantation woodland and leading south from public footpath Kings Walden 043 to the edge of the replacement open space, would be formally adopted as a public bridleway during construction for Phase 2b.
- k. A section of public footpath Kings Walden 043 within the replacement open space, between the junction with public footpath Kings Walden 041 and the proposed multi-user track to be delivered east of the coniferous plantation woodland would be upgraded to a multi-user track during construction for Phase 1 and formally adopted as a public bridleway during construction for Phase 2b.
- l. A new multi-user track would be delivered between the replacement open space and Luton Borough bridleway BW37 during construction for Phase 2b, to the east of the proposed Fuel Storage Facility (Work No. 4c.01) and Water Treatment Plant (Work No. 4d) and west of Winch Hill Wood and would be afforded bridleway status.
- m. Connectivity along the retained section of Luton Borough bridleway BW37, leading west from the junction with Winch Hill Road (south of Winch Hill Wood) to junction with new multi-user track would be restored during construction for Phase 2b.

13.6.3 Limitations relating to the health and community assessment are as follows:

- a. The preliminary assessment is largely qualitative in nature, the assessment of health effects arising from total exposure to operational aircraft noise has been assessed qualitatively in this PEIR and will be assessed quantitatively in the ES.
- b. Likely health and community effects have been assessed based on information that is available applying the assessment criteria set out in **Section 13.5**.
- c. The health assessment is supported by a review of published research relating to each of the identified health determinants, using the most up to date and credible sources. This evidence review is provided in **Appendix 13.5** in Volume 3 to this PEIR. The evidence for health effects ranges from strong, where this is well supported by research evidence, to weak, where evidence is sparse or conflicting. Consequently, professional judgement is necessary to assess the likely health effects.
- d. The health assessment is based on the findings of other topic assessments included in this PEIR such as **Chapter 7** Air Quality, **Chapter 11** Economics and Employment, **Chapter 14** Landscape and Visual, **Chapter 16** Noise, and **Chapter 18** Traffic and Transport.

Therefore, the assumptions and limitations relevant to those topics may also apply.

- e. The baseline conditions (**Section 13.7**) use some data from the 2011 Census, which despite being ten years old at the time of this assessment, provides the most full and reliable dataset. Data from the 2021 Census data was not available at the time of preparing this chapter.
- f. Baseline health data for local neighbourhood and wider study area has aimed to look at the same indicators however, in some instances data for indicators at the two spatial scales was not available so different indicators have been used to provide context for the assessment.
- g. Community effects resulting from impacts on individual residents or individual facility users, including equalities impacts or compensation measures has not been assessed in this chapter. Equalities impacts are set out in the **Draft Equalities Impact Assessment**. Compensation proposals are described in the **Draft Compensation Policies and Measures** document published as part of statutory consultation.

Reasonable Worst Case

- 13.6.4 **Chapter 5** Approach to the Assessment describes the general approach adopted to ensure that a reasonable worst case is assumed in this assessment including the use of parameters, accounting for uncertainty, and incorporating flexibility in design and demand forecasts.
- 13.6.5 Assumptions on worst case as outlined under **Chapter 7** Air Quality, **Chapter 11** Economics and Employment, and **Chapter 16** Noise and vibration will also apply to the assessment of health and community effects.

13.7 Baseline conditions

13.7.1 This section provides a description of the existing baseline for the health and community assessment. Existing baseline conditions for health and community are provided for the local neighbourhood and wider study area. This section also includes vulnerable groups prevalent within the wider study area and future baseline conditions as a result of other factors and developments in proximity to the airport. **Figure 13.1** Health and Community Study Areas provided in Volume 4 to this PEIR shows the local neighbourhoods included in the study area and may help visualise the existing conditions within this area.

Existing conditions

Local neighbourhood area

Central Airport Area

Health

13.7.2 There is no resident population within the Central Airport Area.

Community

13.7.3 The Central Airport Area contains the airport, London Luton Airport Business Park, a range of airport production and maintenance businesses, light commercial and industrial businesses, and a small number of community resources. The Central Airport Area contains most of the infrastructure works directly related to the operation of the Proposed Development. The study area is within the Wigmore unitary authority ward and within the Luton Borough Council administrative area.

13.7.4 WVP is located to the north east of the airport and within the boundary of the Main Application Site. The WVP is comprised of recreational facilities, large open spaces, and areas of mixed density woodland. Land further to the east of WVP is currently in agricultural use and is proposed to be used for the replacement open space for WVP.

13.7.5 WVP is designated as a District Urban Park in the Luton Green Space Strategy Review (2014) (Ref. 13.29). WVP is of high quality, and is comprised of large open fields, areas of mixed density vegetation, footpaths and bridleways, a dedicated skate park, a large children's play area and picnic benches. Wigmore Allotments are located within the park.

13.7.6 There are five recreational routes within the Central Airport Area which are likely to be affected by the Proposed Development as shown on **Figure 13.2** in Volume 4 of this PEIR:

- a. Kings Walden 041 public footpath, which borders Darley Road and Eaton Green Road, and also partially serves as a section of the Chiltern Way long distance footpath;
- b. Kings Walden 043 public footpath, which crosses the ridgeline of Winch Hill and connects between Eaton Green Road and Winch Hill Road;

- c. King's Walden 052 public bridleway, which connects between Coleman's Road (near Breachwood Green) and Eaton Green Road, and partially serves as a section of the Chiltern Way long distance footpath;
- d. Undesignated footpath within WVP, which follows the eastern edge of the existing airfield and southeast boundary of WVP; and
- e. Public footpaths FP29 and FP38 and public bridleways BW28 and BW37, which follow the mature hedgerow to the south east of WVP and east of the airfield between Eaton Green Road and Winch Hill Road.

- 13.7.7 Prospect House Day Nursery is located on Prospect Way in proximity to the airport. The nursery caters for young children aged between 3 months to 5 years and serves a catchment in the Luton and Harpenden area. The nursery is purpose built, offering indoor facilities and outdoor play areas. The nursery is located within the north east of the Main Application Site, an area which is currently characterised by light industrial and commercial airport uses.
- 13.7.8 Ace Sandwich Bar is located on Percival Way in proximity to the airport. The café provides takeaway and dine in services. It is open from 7am to 2/3pm on Monday to Friday and from 8am to 2pm on Saturday and Sunday. It caters for local workers (airport workers and taxi drivers) as well as people using the airport.

North of the Airport

Health

- 13.7.9 The wards of Wigmore and Crawley, to the north of the airport, have a lower population density compared to the rest of Luton but not England (Ref. 13.30 – Ref 13.31). The 2019 age profile of the wards is young compared with the national average, with a higher proportion of the population aged under 18, and a lower proportion of population aged 65+ (Ref. 13.30 – 13.31). The proportion of the population from ethnic minorities in the wards is higher than the England average of 14.6%, at 28.8% in Crawley and 17.1% in Wigmore (Ref. 13.30 – 13.31).
- 13.7.10 Wigmore has low levels of overall deprivation compared to Luton and England levels (Ref. 13.32). It performs considerably better than the England average in terms of households experiencing income deprivation and has lower rates of unemployment and economic inactivity when compared to the national rates (Ref. 13.30). This is not true for Crawley, which has medium levels of overall and income deprivation (Ref. 13.31). The rates of unemployment and economic inactivity in Crawley are in line with the national rates. The prevalence of depression within NHS Luton Clinical Commissioning Group (CCG) is lower than in England (Ref. 13.33).
- 13.7.11 Within Wigmore and Crawley, 72% and 69% respectively of all property is privately owned, which is greater than the percentage for England (63%). The percentage of properties 'privately rented' within the wards is in line with the national average at 17%. However, the percentage of 'socially rented' properties within Wigmore (12%) and Crawley (14%) is below the English average (18%) (Ref. 13.34).

- 13.7.12 The PHE 2019 Health profile (Ref. 13.30) shows that the health of people in Wigmore is in line with England, and life expectancy is higher for both genders. Rates of child poverty, older people in poverty, hospital stays for self-harm, and mortality rates for under 75, from all causes, are all better than the national average. The ward performed worse than England for emergency hospital admissions (all causes, all ages). According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than in England (Ref. 13.30).
- 13.7.13 The PHE 2019 Health profile (Ref. 13.31) shows that the health of people in Crawley is broadly in line with England. Rates of child poverty¹, older people in poverty, and life expectancy were in line with the England average. The ward performed worse than England in rates of mortality (under 75, from all causes), emergency hospital admissions (all causes, all ages), and child obesity. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than in England (Ref. 13.31).

Community

- 13.7.14 The area north of the airport is residential and suburban in nature. The study area is within the Wigmore and Crawley unitary authority wards and within the Luton Borough Council administrative area. The wards are built up and suburban in nature, characterised by detached and semi-detached housing. The wards are served by a range of educational, medical, community, sport, and leisure facilities.

South and East of the Airport

Health

- 13.7.15 The wards (Caddington and Hitchwood, Offa and Hoo) which lie within this local neighbourhood area, have a lower population density compared to the rest of England (Ref. 13.35 – Ref 13.36). The 2019 age profile of the wards indicates an older population compared with the national average, with a lower proportion of the population aged under 18, and a higher proportion of the population aged 65+ (Ref. 13.35 – 13.36). The proportion of population from ethnic minorities in the wards, at 4% for both wards, is lower than the England average of 14.6% (Ref. 13.35 – 13.36).
- 13.7.16 Both wards have low levels of overall deprivation compared to national levels (Ref. 13.32). The wards perform considerably better than England in terms of households experiencing income deprivation and have lower rates of unemployment and economic inactivity when compared to the national rates (Ref. 13.35 – 13.36). The prevalence of depression within NHS Bedfordshire CCG is in line with England whereas the prevalence of depression within NHS East and North Hertfordshire CCG is lower than England (Ref. 13.37 – Ref. 13.38).
- 13.7.17 Within Caddington, 81% of properties are privately owned which is greater than the average for England (63%). The percentage of properties privately owned

¹ Poverty is both a cause and a consequence of poor health. Poverty increases the chances of poor health.

within Hitchwood, Offa and Hoo is in line with the average for England (63%). Within Caddington, 9% of properties are 'privately rented' which is below the English average (17%) whereas in Hitchwood, Offa and Hoo, 17% of properties are 'privately rented' which is in line with the English average (17%). Within Caddington, 9% of properties are 'socially rented' which is below the English average (18%). Within Hitchwood, Offa and Hoo 20% of properties are 'socially rented' which is greater than the English average (Ref. 13.34).

- 13.7.18 The PHE 2019 Health profile (Ref. 13.35) shows that the health of people in Caddington is broadly in line with England. For example, rates of mortality (all causes, under 75) and life expectancy are in line with England. The ward performs better than England in rates of child poverty, older people in poverty, and child obesity. Rates of emergency hospital admissions (all causes, all ages) are worse than rates in England. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was on par with the England average (Ref. 13.35).
- 13.7.19 The PHE 2019 Health profile (Ref. 13.36) shows that the health of people in Hitchwood, Offa and Hoo is broadly in line with England. For example, rates of mortality (all causes, under 75), child obesity, and life expectancy are in line with England. However, rates of child poverty, older people in poverty, hospital stays for self-harm, mortality rates (under 75, from all causes), and emergency hospital admissions (all causes, all ages) are better than average. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than the England average (Ref. 13.35).

Community

- 13.7.20 The area south and east of the airport is largely agricultural and rural in nature. The study area is within the Caddington and Hitchwood, Offa and Hoo unitary authority wards within the Central Bedfordshire Council and North Hertfordshire District Council administrative areas, respectively, which also marks the Green Belt boundary to the east of Luton.
- 13.7.21 The area further east of WVP is accessed via Darley Road to the north and Winch Hill Lane, a rural road running through the area of Winch Hill to the east. A small number of residential properties are located within the area including in Kings Walden and Darleyhall which contains the Fox Inn public house. Two dwellings called 'Old Winch Hill Cottages' are adjacent to the Proposed Development boundary, to the east of the Main Application Site. The dwellings are isolated and rural in setting, being surrounded by agricultural fields. The dwellings are served by Winch Hill Lane which runs between Darley Road to the north and Dane Street to the south. Winch Hill House is also located off the same lane.
- 13.7.22 A network of recreational routes is in the area which partially sits within the area of the Proposed Development. Two public footpaths (King's Walden 041 and King's Walden 052) form part of the Chiltern Way which is a promoted long-distance footpath located to the northeast of the Proposed Development. The Chiltern Way passes through agricultural fields to the east of the airport and is part of a 134-mile circular walking route which traverses from Hitchin in the

north east through the Chilterns and Buckinghamshire to Henley in the south west. The North Chiltern Trail is another promoted long distance footpath, which follows the same route through the east of Luton.

- 13.7.23 The area south of the airport is accessed from Dane Street and Chiltern Green Road from the east and the B653 Lower Harpenden Road from the west. Someries Castle is located approximately 250m south of the Main Application Site boundary. The building is designated as a Scheduled Monument and is regarded as one of the first brick buildings in England. Six residential properties are located in the immediate vicinity of Someries Castle: 'The Lodge', '80 Someries Cottages', '81 Someries Cottages', 'No 1 Someries Farm House', 'No 2 Someries Farm House' and 'No 3 Someries Farm House'. A light industrial business premises is located adjacent to the dwellings. Four residential properties are located further to the east on Dane Street: '2 Dane Street Cottages', '4 Dane Street Cottages', 'House East, Dane Street Farm' and 'Dane Street Farm West'. Two residential properties are located further to the west, off the B653: '65 Someries Arch' and '66 Someries Arch'.

West of the Airport

Health

- 13.7.24 Farley ward has a lower population density, but South ward has a higher population density when compared to the Luton average, but not the England average (Ref. 13.39 – 13.40). The 2019 age profile of the ward indicates a younger population than the national average, with a higher proportion of the population aged under 18, and a lower proportion of population aged 65+ (Ref. 13.39 – 13.40). The proportion of population from ethnic minorities in the wards is much greater than the England average of 14.6%, at 37.7% for Farley and 39.7% for South ward (Ref. 13.39 – Ref 13.40).
- 13.7.25 Both wards have high levels of overall deprivation compared to the Luton and England (Ref. 13.32). The wards perform considerably worse than England in terms of households experiencing income deprivation and have higher rates of unemployment and economic inactivity when compared to the national rates (Ref. 13.39 – 13.40). The prevalence of depression within NHS Luton CCG is lower than in England (Ref. 13.33).
- 13.7.26 The most common property tenure within the wards is 'rented'. Within South and Farley, 71% and 52% respectively of all properties are 'rented', which is greater than the England average (35%). Within South and Farley, 49% and 24% of properties are 'privately rented' which is greater than the English average at 17%. The number of 'Socially rented' properties is also greater than the English average of 18%, at 23% and 28% for South and Farley respectively (Ref. 13.34).
- 13.7.27 The PHE 2019 Health profile (Ref. 13.39) shows that the health of people in South is generally worse than the England average. The ward performs worse than England in life expectancy for males, child poverty, older people in poverty, mortality (under 75, from all causes), emergency hospital admissions (all causes, all ages), incidence of lung cancer, hospital stays for self-harm, and child obesity. According to the 2011 Census, the percentage of people who

reported having a limiting long-term illness or disability was lower than the England average (Ref. 13.39).

- 13.7.28 The PHE 2019 Health profile (Ref. 13.40) shows that the health of people in Farley is generally worse than in England. The ward performs worse than England in terms of life expectancy (both genders), child poverty, older people in poverty, mortality (under 75, from all causes), emergency hospital admissions (all causes, all ages), incidence of all cancers, and child obesity. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was higher than in Luton but similar to the England average (Ref. 13.40).

Community

- 13.7.29 The area west of the airport is of mixed characteristics and comprises land uses including residential, commercial, retail and leisure. The study area is within the South and Farley unitary authority wards and within the Luton Borough Council administrative area. Residential areas are a mix of purpose-built flats, terraced housing and semi-detached housing. The wards are served by a range of educational, medical, community, sport and leisure facilities.
- 13.7.30 The Lea Valley Walk is a PRoW located to the west of the airport. The Lea Valley Walk is a dedicated track for pedestrians and cyclists and is a well-used route between Luton and Harpenden. The Lea Valley Walk forms part of the Sustrans National Cycle Route 6.

Wider area health baseline

- 13.7.31 The wider area includes the town of Luton to the north-east of the airport and the surrounding areas of Hertfordshire, Central Bedfordshire, and Buckinghamshire. Immediately west of Luton is the town of Dunstable. Luton and Dunstable are densely populated towns, surrounded by rural and predominantly agricultural areas including the Green Belt and the Chilterns Area of Outstanding Natural Beauty. Based on Office for National Statistics mid-2019 population estimates (Ref. 13.41), the Luton and Dunstable area has a combined total population of approximately 243,852. The areas to the west and south of the airport are rural and comprised of villages within the Central Bedfordshire Council administrative area. The areas further east are rural and comprised of villages within the North Hertfordshire District Council administrative area including the town of Stevenage, located 14 miles to the east with a population of around 87,845 (Ref. 13.41).
- 13.7.32 The demographic, social and health characteristics of the population in the wider area are described below. For a description of the broad economic and employment conditions of Luton and the three counties of Central Bedfordshire, Hertfordshire and Buckinghamshire see **Chapter 11** Economics and Employment.

Luton

- 13.7.33 The 2019 age profile of Luton is young compared with the national average, with a higher proportion of the population aged under 18, and a lower proportion

of the population aged 65+ (Ref. 13.42). The proportion of the population from ethnic minorities in 2011 was also higher than the England average (Ref. 13.42).

- 13.7.34 Luton has high levels of overall deprivation and was ranked 41st most deprived out of 317 local authorities in 2019 (Ref. 13.32). Of the seven deprivation domains, Luton has highest deprivation in barriers to access and housing, income deprivation affecting older people and crime. It also performs worse than England in terms of households experiencing income deprivation and has high rates of unemployment and economic inactivity when compared to the national average (Ref.. 13.42).
- 13.7.35 The rate of statutory homelessness is 4.5 per 1000 households in Luton which is higher than the rate in England (2.4 per 1000 households) (Ref. 13.42). Further, according to the Central Bedfordshire and Luton SHMA, lower quartile rent prices have increased across all property sizes in Luton since 2013/14, suggesting that demand exceeds supply (Ref. 13.43).
- 13.7.36 The PHE 2019 Health profile (Ref. 13.42) for Luton states that the health of people in Luton is generally worse than the England average. The health profile identifies Luton as performing worse than the England average in some key health indicators including life expectancy, mortality rate (under 75, from all causes), physically active adults, childhood and adult obesity, and smoking prevalence. Further, Luton has a higher rate of unemployment, violent crime, statutory homelessness, and children in low-income families compared to England suggesting it performs poorly in these wider determinants of health. The borough performs better than the England average for the number of people killed or seriously injured on the roads and suicide rates. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than the England average (Ref. 13.42). The Mental Health and Wellbeing profile (Ref. 13.44) for Luton shows that the borough scores better than the English average for recorded prevalence of depression and anxiety (aged 18+, GP Patient Survey).

Central Bedfordshire

- 13.7.37 Central Bedfordshire is a unitary authority situated to the west and south of Luton and contains part of the South and East of the Airport neighbourhood study area. The 2019 age profile of Central Bedfordshire is broadly in line with the age profile of England (Ref. 13.45). The proportion of population from ethnic minorities in 2011 was lower than in England (Ref. 13.45).
- 13.7.38 Central Bedfordshire has medium levels of overall deprivation and was ranked 138th most deprived out of 317 local authorities in 2019 (Ref. 13.32). It performs considerably better than England in terms of households experiencing income deprivation and has lower rates of unemployment and economic inactivity when compared to the national rates (Ref. 13.45).
- 13.7.39 The rate of statutory homelessness is 1.4 per 1000 households which is lower than the rate in England (2.4 per 1000 households) (Ref. 13.45). However, according to the Central Bedfordshire and Luton SHMA, lower quartile rent

prices have increased across all property sizes in Central Bedfordshire since 2013/14, suggesting that demand exceeds supply (Ref. 13.43).

- 13.7.40 The PHE 2019 Health Profile (Ref. 13.45) shows that the health of people in Central Bedfordshire is generally better than the England average, and life expectancy is higher for both genders. Rates of statutory homelessness, children (under 16) in low-income families, violent crime, mortality (under 75, from all causes), adult and child obesity and the percentage of people in employment are better than average. The borough performs worse than the England average for the number of people killed or seriously injured on the roads and on rate of dementia diagnosis (aged 65 and over). According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than in England (Ref. 13.45). The Mental Health and Wellbeing profile (Ref. 13.46) for Central Bedfordshire shows that the borough scores better than the English average for recorded prevalence of depression and anxiety (aged 18+, GP Patient Survey), which is similar to Luton.

Hertfordshire

- 13.7.41 Hertfordshire is a county situated to the east of Luton and contains part of the south and east neighbourhood study area, as well as part of the wider study area. The 2019 age profile of Hertfordshire is broadly in line with the age profile of England (Ref. 13.47). The proportion of population from ethnic minorities in 2011 was lower than in England (Ref. 13.47).
- 13.7.42 Hertfordshire has medium levels of overall deprivation and was ranked 135th most deprived out of 317 local authorities in 2019 (Ref. 13.32). It performs considerably better than England in terms of households experiencing income deprivation and has lower rates of unemployment and economic inactivity when compared to the national rates (Ref. 13.47). The rate of statutory homelessness is in line with England (2.4 per 1000 households) (Ref. 13.47).
- 13.7.43 The PHE 2019 Health Profile (Ref. 13.47) shows that the health of people in Hertfordshire is generally better than the England average, and life expectancy is higher for both genders. Rates of statutory homelessness, children (under 16) in low-income families, violent crime, mortality (under 75, from all causes), physically active adults, adult and child obesity and the percentage of people in employment are all better than average. The borough performs considerably worse than the England average for rate of diabetes diagnosis. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than in England (Ref. 13.47). The Mental Health and Wellbeing profile (Ref. 13.48) for Hertfordshire shows that the borough scores better than the English average for recorded prevalence of depression and anxiety (aged 18+, GP Patient Survey), which is similar to Luton.

Buckinghamshire

- 13.7.44 Buckinghamshire is a county situated to the west of Central Bedfordshire and is included in the wider study area. The 2019 age profile of Buckinghamshire is broadly in line with the age profile of England (Ref. 13.49). The proportion of

population from ethnic minorities in 2011 is broadly in line with England (Ref. 13.49).

- 13.7.45 Buckinghamshire has medium levels of overall deprivation and was ranked 145th most deprived out of 317 local authorities in 2019 (Ref. 13.32). It performs considerably better than England in terms of households experiencing income deprivation and has lower rates of unemployment and average rates economic inactivity when compared to the national rates (Ref. 13.49). The rate of statutory homelessness is 1.8 per 1000 households which is lower than the rate in England (2.4 per 1000 households) (Ref. 13.49).
- 13.7.46 The PHE 2019 Health Profile (Ref. 13.49) shows that the health of people in Buckinghamshire is generally better than the England average and life expectancy is higher for both genders. Children (under 16) in low-income facilities, violent crime, mortality (under 75, from all causes), physically active adults, adult and child obesity and the percentage of people in employment are all better than average. According to the 2011 Census, the percentage of people who reported having a limiting long-term illness or disability was lower than in England (Ref. 13.49). The Mental Health and Wellbeing profile (Ref. 13.50) for Buckinghamshire shows that the borough scores better than the English average for prevalence of depression and anxiety (aged 18+, GP Patient Survey), which is similar to Luton.

Vulnerable Groups

- 13.7.47 Based on the characteristics of the community described above, **Table 13.11** summarises the disadvantaged and/or vulnerable groups present. It should be noted that the most disadvantaged and/or vulnerable groups are those that exhibit a number of characteristics, for example, children living in poverty. The groups that have been identified as applicable to this assessment are those that are identified as having the potential to be differentially affected by the Proposed Development. The prevalence of these groups in the wider baseline area locations is described in relation to the national average. Where data is not available for the prevalence of a particular vulnerable group, unknown has been used throughout the table to indicate its absence.

Table 13.11: Vulnerable groups and subgroups in the study area

Vulnerable groups	Vulnerable sub-groups	Prevalence within Luton	Prevalence within Central Bedfordshire	Prevalence within Hertfordshire	Prevalence within Buckinghamshire
Age related groups	Children and young people	Above average	Average	Average	Average
	Older people	Below average	Average	Average	Average
Income related groups	People on low income	Above average	Below average	Below average	Below average
	Economically inactive	Above average	Below average	Below average	Average

Vulnerable groups	Vulnerable sub-groups	Prevalence within Luton	Prevalence within Central Bedfordshire	Prevalence within Hertfordshire	Prevalence within Buckinghamshire
	Unemployed	Above average	Below average	Below average	Below average
Groups who suffer discrimination or other social disadvantage	People with physical or learning disabilities/difficulties	Below average	Below average	Below average	Below average
	Refugee groups	Unknown	Unknown	Unknown	Unknown
	People seeking asylum	Unknown	Unknown	Unknown	Unknown
	Single parent families	Unknown	Unknown	Unknown	Unknown
	Religious groups	Unknown	Unknown	Unknown	Unknown
	Lesbian and gay and transgender people	Unknown	Unknown	Unknown	Unknown
	Black and minority ethnic groups	Above average	Below average	Below average	Average
Geographical groups	People living in areas known to exhibit poor economic and/or health indicators	Above average	Average	Average	Average

In summary, of the locations included in the wider area baseline, Luton has the greatest prevalence of vulnerable groups. Compared to the national average, it has an above average prevalence of children and young people, people on low income, economically inactive and unemployed people. It also has an above average prevalence of black and ethnic minority groups and people living in areas known to exhibit poor economic and/or health indicators. Compared to the national average, all other locations included in the wider area baseline (Central Bedfordshire, Hertfordshire, and Buckinghamshire) either have an average or below average prevalence of vulnerable groups.

Future baseline

- 13.7.48 In the absence of the Proposed Development, there is likely to be a change to the future baseline conditions as a result of other factors and developments in proximity to the airport. These are the conditions that will prevail 'Without Development' in place. The 'Without Development' scenario is used, where appropriate, as a comparator for the assessed case, to show the effect of the Proposed Development against an appropriate reference point. The approach to defining future baseline and the developments identified for consideration are described in **Section 5.4** of **Chapter 5** Approach to the Assessment of this PEIR.

New Century Park

- 13.7.49 The land on which the Proposed Development will be constructed overlaps with the proposed NCP development site (planning application ref. 17/02300/EIA) which was granted planning permission on 29 June 2021 following the signing of the Section 106 agreement. The NCP development incorporates business, commercial, light industrial units, an access road and improvements to WVP.
- 13.7.50 The Proposed Development supersedes much of the development consented as NCP although the improvements to WVP will continue to be delivered through the NCP planning permission. This includes a number of improvements to the northern part of the park, including:
- a. a refurbished Wigmore Pavilion;
 - b. new junior and senior play areas; and
 - c. a new skate park.
- 13.7.51 These improvements are expected to be implemented by the end of 2023 and are therefore part of the future baseline for assessing WVP. They will be retained as part of the Proposed Development.
- 13.7.52 The proposed provision of replacement open space consented through the NCP planning permission will no longer be provided and will instead be excavated and occupied by works consented through the DCO. Replacement open space is provided as part of the Proposed Development to the east of the existing greenspace at WVP and this will be implemented in Phase 1, as described in **Chapter 4** of Volume 2 to this PEIR. Further details of this are discussed in **Section 13.9**.

13.8 Embedded and good practice mitigation measures

- 13.8.1 This section describes the embedded and good practice mitigation for health and community that has been incorporated into the Proposed Development design or assumed to be in place before undertaking the assessment. A definition of these classifications of mitigation and how they are considered in the EIA is provided in **Chapter 5** Approach to the Assessment of this PEIR.
- 13.8.2 All embedded and good practice mitigation measures identified by other topics have been taken into account in this preliminary assessment. Embedded and good practice mitigation measures of particular relevance to the health and community assessment are contained in the following chapters in Volume 2 of this PEIR: **Chapter 7** Air Quality, **Chapter 11** Economics and Employment, **Chapter 14** Landscape and Visual, **Chapter 16** Noise and Vibration, **Chapter 18** Traffic and Transport, and **Appendix 5.2** Light Obtrusion Assessment, and **Appendix 4.1** the Draft Code of Construction Practice (CoCP) in Volume 3 of this PEIR.

Embedded

- 13.8.3 Key measures particularly relevant to health and community effects are summarised below with the topic in which they are identified in brackets:
- a. use of the new Airport Access Road (AAR) to provide routes for operational road traffic and construction traffic, away from sensitive receptors (**Chapter 7** Air Quality);
 - b. the future designs include a fuel pipeline serving Proposed Development which will reduce the number of heavy goods vehicles (HGVs) delivering fuel to Proposed Development, and the related emissions (**Chapter 7** Air Quality);
 - c. mitigation measures in line with the ICAO Balanced Approach to Aircraft Noise Management and the London Luton Airport Noise Action Plan 2019-2023 adopted to reduce aircraft noise as far as reasonably practicable (**Chapter 16** Noise and Vibration);
 - d. measures to remove ground noise impacts, including new building infrastructure to screen receptors to the north; minimising distances between the runway and Terminal 2 stands to minimise noise emissions from taxiing aircraft; repositioning of engine run-up bay and provision of enhanced noise screening; quieter power sources for aircrafts at stands (**Chapter 16** Noise and Vibration);
 - e. planting of hedgerows, woodland, screening vegetation and grassland within replacement open space (**Chapter 14** Landscape and Visual);
 - f. creation of informal surfaced paths and upgrading of existing ProWs and recreational routes through improved surfacing and signage in replacement open space (**Chapter 14** Landscape and Visual);
 - g. the design of the Proposed Development retains the existing entrance and eastern part of WVP and integrates it into a new area of replacement

- open space, to be provided over a larger area to the east of the existing park (**Chapter 14** Landscape and Visual);
- h. all landscape-based mitigation to be managed and maintained in accordance with the Draft Landscape and Biodiversity Management Plan (LBMP) provided as **Appendix 8.1** in Volume 3 of this PEIR.
 - i. the construction strategy and design process seek to minimise disruption to ongoing airport operations (**Chapter 11** Economics and Employment);
 - j. the future operational scenarios for the airport have been designed to minimise disruption to local businesses (**Chapter 11** Economics and Employment);
 - k. development of the **Draft Employment and Training Strategy** for the construction and operational phases to maximise employment opportunities and upskilling for hard-to-reach groups, the employed, young people and those in the local and wider study area;
 - l. where practicable, the Proposed Development will be designed to avoid or reduce adverse effects on other road and public transport users through measures that are targeted at encouraging greater use of those modes of travel that have less environmental impact e.g. extending the Luton DART (described in **Chapter 2**) to the new terminal (**Chapter 18** Traffic and Transport); and
 - m. implementation of a Travel Plan to minimise the impact of transport on the local roads and the environment. This will mainly relate to staff working on site rather than passengers, but the emphasis will be on encouraging the use of other modes of transport, such as walking, cycling and public transport for local journeys (**Chapter 18** Traffic and Transport).

Good Practice

13.8.4 Key measures particularly relevant to health and community effects during construction are summarised below:

- a. the lead contractor will prepare a construction-specific community engagement plan for the construction operations of the Proposed Development, as detailed in **Appendix 4.1** the Draft Code of Construction Practice (CoCP). The plan will provide the overall approach to community engagement and a detailed guide to the enquiries and complaints procedure; and
- b. measures to minimise dust emissions (e.g. phased working), noise emissions (e.g. limiting the time equipment is used) and visual impacts (e.g. well designed and maintained temporary hoarding and fencing) and light impacts (e.g. confinement of task lighting and orientation of site floodlights away from dwellings) to both local businesses and residents will be implemented as detailed in **Chapter 7** Air Quality, **Chapter 14** Landscape and Visual, and **Chapter 16** Noise and Vibration and **Section 6.5** Site lighting of the Draft CoCP (**Appendix 4.1**).

13.9 Preliminary assessment

13.9.1 This section presents the results of the preliminary assessment of likely significant effects with the embedded and good practice mitigation measures, described in the previous section, in place.

13.9.2 A summary of the assessment of effects is provided in **Table 13.15** and **Table 13.16** in **Section 13.14**. Significant effects are discussed in further detail in this section.

All Phases

All phases – Health assessment

Perception and uncertainty

13.9.3 There is a significant health effect during all phases relating to the health determinant of ‘Perception and uncertainty’ (about the construction and operation of the Proposed Development).

13.9.4 Communities close to the airport have been and will continue to be affected by the planning, construction and operation of the Proposed Development. This includes effects on mental wellbeing arising from concern about potential adverse effects. Public concern is likely to be highest during the planning and construction stages, when there is most uncertainty about the impacts of the Proposed Development.

13.9.5 An analysis of public consultation feedback received during the 2019 Statutory Consultation revealed concerns relating to perception and uncertainty which may give rise to a range of feelings such as stress, worry and uncertainty including:

- a. concerns over existing and potential future increase in noise pollution, in particular night-time noise and impacts on noise levels in schools;
- b. concerns about increased traffic in the local area and impacts on journey times, safety and air quality (it is noted that the findings of the transport assessment finds that there will be no significant traffic impacts);
- c. concerns over the potential health effects of air pollution (it is noted that the air quality assessment finds that the Proposed Development will have no significant impact on air quality during construction and operation);
- d. concerns that the proposals do not go far enough to mitigate impacts on communities in the surrounding areas; and
- e. perception that greater consideration should be given to increases in greenhouse gas emissions as a direct threat to human health.

13.9.6 Public consultation will provide information which may help to reduce uncertainty and stress. However, it is likely that some people’s mental wellbeing within the affected communities will be impacted adversely by concerns related to the Proposed Development. This is considered to be an adverse impact of medium magnitude on a population of medium sensitivity, resulting in a **moderate adverse** temporary effect on mental wellbeing, which is **significant**.

It is noted that the current evidence linking perception and uncertainty to health and wellbeing effects (**see Appendix 13.5**) is considered to be weak.

- 13.9.7 Sensitivity is likely to be generally higher in the local neighbourhood/Luton area due to its proximity to the Proposed Development and its existing sociodemographic status including higher levels of deprivation, lower levels of income and poorer health outcomes, which can result in lower resilience and reduced access to financial and other resources that enable people to adapt to changes.

Construction Effects

Construction effects – Health assessment

Employment and income

- 13.9.8 A significant health effect has been identified during all construction phases of the Proposed Development in relation to the health determinant of 'Employment and income' (construction related employment).
- 13.9.9 The Economics and Employment assessment presented in **Chapter 11** Economics and Employment Volume 2 of this PEIR reports that, based on the estimated labour requirements to construct the Proposed Development, it is anticipated that the total direct employment requirement during construction would be 1,610 person years of employment, equivalent to 623 full time permanent jobs provided over the course of the construction programme. These are likely to range from unskilled and low skilled jobs to technical and managerial roles.
- 13.9.10 The extent of health effects will depend on who is able to, and chooses to, take up the opportunities for construction employment and training. Contractors generally appoint skilled and managerial staff from their existing workforce and recruit at a regional or national level. Luton is within commuting distance of large parts of London and the South east, and it is assumed that skilled workers and managers will commute from these areas. The uptake of construction jobs by people living close to the airport is likely to be predominantly in lower skilled roles.
- 13.9.11 Where secure employment is taken up by local people who are currently unemployed, in low paid or insecure employment, and/or with low skill levels, this may result in a beneficial effect on income, skills, and long-term employment prospects. The Applicant has developed a **Draft Employment and Training Strategy** for the construction phase, which includes objectives and initiatives to maximise construction and operation related opportunities and upskilling for local people, including hard to reach groups and those currently unemployed. The **Draft Employment and Training Strategy** includes an initiative to explore targets for apprenticeships and other training and employment opportunities through the procurement of the construction of the Proposed Development. Tendered contracts can stipulate targets for appointed lead contractor firms. Liaison will be undertaken with existing education bodies in advance of the construction programme to advise on future skills requirements that can tailor with the construction skills forecast.

- 13.9.12 For people whose wellbeing is currently compromised by their employment status, there is strong evidence (**see Appendix 13.5**) to suggest that better employment may result in health and wellbeing benefits ranging from increased self-esteem to physical health benefits associated with improved access to healthier lifestyle choices.
- 13.9.13 In addition to direct employment, a further estimated 3,110 person years of employment would be created as a result of additional demand for goods and services through the construction industry supply chain, and through expenditure in the local economy by construction workers.
- 13.9.14 In terms of overall employment and income, the construction of the Proposed Development would result in a net health and wellbeing benefit as a result of construction employment opportunities for local people. The increase in direct and indirect construction related employment opportunities is considered to represent a beneficial impact of high magnitude on a population of medium sensitivity, resulting in a **moderate beneficial** temporary effect, which is **significant**.
- 13.9.15 Above average levels of unemployment in Luton mean that, subject to uptake of opportunities such as apprenticeships, these communities would have a high potential to gain from the employment and training opportunities and associated beneficial effects on health and wellbeing.

Access to services

- 13.9.16 A significant effect has been identified as a result of the demolition of Prospect House Day Nursery to make way for the new AAR providing access to the east of the airport (previously referred to as the Century Park Access Road) during Phase 2a.
- 13.9.17 The demolition will result in the loss of a purpose-built childcare facility that caters for around 80 children between the ages of 3 months to 5 years. The facility is currently rated 'Good' by OFSTED. There are no alternative childcare facilities within 1.5km of the existing facility. The nursery caters for children from a diverse range of ethnic backgrounds with staff speaking a variety of languages.
- 13.9.18 Discussions are taking place with the nursery to find a suitable site for relocation, and a potential replacement site has been identified. However, no agreement has been reached at this stage.
- 13.9.19 The loss of the nursery, with no alternative provision in place, is considered to represent an adverse impact of medium magnitude on a population with high sensitivity due to the age of the user group comprised of babies and young children and the lack of alternative facilities nearby. This would result in a **major adverse** permanent effect on mental health and wellbeing, which is **significant**.

Construction effects – Community assessment

Wigmore Valley Park

- 13.9.20 Although the impact on WVP is not deemed to be a significant effect, this has been considered in this section as it represents an important community resource.
- 13.9.21 As part of the Proposed Development, an area of WVP will be lost and open space of a greater area will be provided to the east of the existing green space at WVP, south of Darley Road (as shown on **Figure 14.11** in Volume 4 of this PEIR). The replacement open space would be delivered in Phase 1, prior to the main excavation works commencing, and excavation would take place to the south of the replacement open space. This will provide greater opportunity for the landscape mitigation proposed within the replacement open space to establish, improve habitat connectivity, frame people's views and help screen change beyond its limits. Residential and recreational receptors to the north of the Main Application Site would therefore be screened from the works.
- 13.9.22 The existing area of open space at WVP covers an area of 41.6ha, this includes a mixture of land defined as 'District Urban Park and Garden' (of 35.5 ha) and 'Natural and Semi-Natural Greenspace' (Ref. 13.10). The replacement open space provided as part of the Proposed Development will be at least 48.3ha in size.
- 13.9.23 The replacement open space would retain the existing main entrance into WVP, adjoining Wigmore Hall and Wigmore Pavilion, and would incorporate several of the enhanced facilities proposed in this area as part of NCP (i.e. the improved skate park and play facilities and the refurbished Wigmore Pavilion).
- 13.9.24 The replacement open space would focus on the establishment of natural habitats, delivering areas of meadow grassland, native shrub planting, broadleaf woodland, and mixed-species hedgerows with hedgerow trees, as well as several surfaced footpaths to upgrade connections to the surrounding rights of way network. The replacement open space will be delivered entirely within the road network and nearer to the existing communities it serves; to minimise earthworks activities near the more frequently used parts of the replacement area of parkland; to protect more of the existing scrub and woodland vegetation on Winch Hill; and to ensure valued archaeological and habitat features are not impacted by construction activities.
- 13.9.25 A range of users will be encouraged to make use of the replacement open space. These users have been identified through the open space surveys² (further details can be found in **Appendices 13.1 to 13.3**) which provide information on the number and types of usage which includes but is not limited to: families, teenagers, school groups, the elderly, walkers, joggers, plane-spotters, cyclists, dog walkers, skaters and horse riders. The proposals would accommodate appropriate signage and facilities to help support these various

² User count surveys, user questionnaires and a quality assessment were undertaken as part of the community impact assessment at WVP to inform the assessment of the impact of the Proposed Development on the park.

user groups. It is envisaged that the replacement open space would deliver additional opportunities for unstructured or natural play and would also include some additional recreational facilities, the specific nature of which is still to be determined but could potentially include additional picnicking facilities, play equipment, gym equipment or trim-trail measures.

- 13.9.26 Once the replacement park is open, part of the existing park will be taken for construction of the main works of the Proposed Development (as shown on **Figure 14.12** in Volume 4 of this PEIR). Several features will be retained but some of the semi-improved grassland, tall ruderal herb and scrub vegetation in the west of the park will be lost. The loss will be fully mitigated by:
- the enhancement of existing facilities, such as the upgrading of existing footpaths and new signage;
 - the provision of a larger area of publicly accessible open space (as mentioned in **Table 13.12** and shown on **Figure 14.11** in Volume 4 of this PEIR); and
 - the continuation of accessibility to the park through the existing main entrance and within the replacement open space through the upgrading of existing rights of way and new surfaced paths which further improve public accessibility.
- 13.9.27 Until the landscape matures it may not be as attractive for users (see **Chapter 14 Landscape and Visual**) and users may be subject to visual impacts associated with the construction of the Proposed Development, although from a community perspective no significant in-combination effects have been identified. The park would retain many of the mature trees and much of hedgerow vegetation that defines the east and south east boundary of the existing WVP. It would encompass several other important landscape features within the surrounding area, including a section of mature hedgerow on Winch Hill.
- 13.9.28 In summary, the Proposed Development involves an enhancement of the parkland and open space with the provision of a larger area, which retains key facilities built as part of the NCP development to the north and will remain fully accessible to the public throughout the construction period. The impact of the closure and re-provision of WVP represents a low magnitude beneficial impact on a receptor of medium sensitivity which will result in a **minor beneficial** permanent effect for users of the park, which is **not significant**.

Prospect House Day Nursery

- 13.9.29 As part of the Proposed Development, the construction of the AAR in Phase 2a will require the demolition of Prospect House Day Nursery on Prospect Way. There are no alternative comparable childcare facilities within 1.5km of the existing facility. Discussions are taking place with the nursery to find a suitable site for relocation, and a potential replacement site has been identified, however no agreement has been reached at this stage. The loss of the nursery, with no alternative provision in place, represents an impact of high magnitude on a community resource with high sensitivity due to the lack of nearby comparable alternatives. This results in a **major adverse** effect which is **significant**.

Operational effects

Operational effects – Health assessment

Employment and income

- 13.9.30 A significant health effect has been identified during all phases of the proposed development in relation to the health determinant of ‘Employment and income’ (operational related employment).
- 13.9.31 The Economic and Employment assessment (**Chapter 11**) reports the number of jobs which will be directly supported by the Proposed Development, as shown in **Table 13.12**. These jobs will have indirect and induced effects which will support a total of 23,100 jobs by 2043 for the Three Counties sub-region of Bedfordshire, Buckinghamshire and Hertfordshire and a total of 16,565 jobs by 2043 for Luton. Jobs range from air traffic control to aircraft cleaning and from hotel and tourist services sector to freight and warehousing.

Table 13.12: Employment Growth with the Proposed Development

Job Growth		2027	2039	2043
Direct Employment		11,800	13,400	15,400
Direct, Indirect and Induced Employment	Three Counties	17,800	20,100	23,100
	Luton	12,700	14,400	16,600

- 13.9.32 The extent of beneficial health effects will depend on who is able to, and chooses to, take up the opportunities for operation related employment and training. People who are currently unemployed or in low paid or insecure employment, and/or with low skill levels are likely to benefit the most, both in terms of employment and income prospects, and health and wellbeing. The Applicant has developed a **Draft Employment and Training Strategy** for the construction and operational phases, which includes objectives and initiatives to maximise operation related opportunities and upskilling for local people, including hard to reach groups and those currently unemployed in the local and wider study area. For people whose wellbeing is currently compromised by their employment status, there is strong evidence (**see Appendix 13.5**) to suggest that the employment opportunities presented by the Proposed Development may result in health and wellbeing benefits ranging from increased self-esteem to physical health benefits associated with improved access to healthier lifestyle choices.
- 13.9.33 The increase in operation related opportunities, combined with the Applicant’s commitment to developing the **Draft Employment and Training Strategy**, are considered to represent a beneficial impact of high magnitude on a population of medium sensitivity resulting in a **moderate beneficial** permanent health effect, which is **significant**.

- 13.9.34 Above average levels of unemployment in Luton mean that, subject to uptake of opportunities such as apprenticeships, these communities would potentially have the most to gain from the employment and training opportunities and associated beneficial effects on health and wellbeing.

Air Quality

- 13.9.35 There is a strong body of evidence that can be used to quantify the effect on respiratory health of a change in exposure to air pollutants. Concentration-response functions (CRFs) have been established through multiple epidemiological studies carried out in large populations, typically tens of thousands. When applying these CRFs, the accuracy of the result increases with increasing size of the population exposed, degree of change in concentration of air pollutants, and the duration of exposure.
- 13.9.36 The Committee on the Medical Effects of Air Pollutants (COMEAP) has identified relative risk values for chronic mortality associated with long-term exposure to PM_{2.5} and NO₂ of 1.06 and 1.023 per 10 µg/m³ (Ref. 13.52, 13.53). These values represent changes in risk rate of 6% and 2.3% respectively, for a 10µg/m³ change in annual average pollutant concentration. Since there is no minimum threshold for the onset of health effects from exposure to PM_{2.5} and NO₂, these values apply to changes in concentration at any level and are not related to the EU limit values referred to in the air quality assessment (**Chapter 7**). It should be noted that, when calculated separately and added together, the total is likely to give an over-estimate of the impact due the difficulty in disaggregating the effects of individual pollutants. A 5µg/m³ change in annual average pollutant concentration is generally considered to be the lowest level at which a statistically significant change in mortality can be detected in a large population.
- 13.9.37 The outputs of the air quality modelling do not allow changes in overall population exposure to pollutant concentrations to be quantified, but the findings of the air quality assessment give an indication of the likely scale of change.
- 13.9.38 As described in the air quality assessment (**Chapter 7**), during Phase 1 of the Proposed Development, annual mean NO₂ concentrations predicted at 479 sensitive human receptors resulted in a predicted negligible magnitude of change for 478 receptors. A slight adverse impact was identified at one receptor on the Dunstable Road (A505), at the Poynters Road Roundabout on the eastern outskirts of Luton, with a 0.9µg/m³ increase in annual mean NO₂ concentrations. Changes to annual mean PM₁₀ and PM_{2.5} are predicted to be negligible at all receptors
- 13.9.39 During Phase 2a, annual mean NO₂ concentrations predicted at 479 sensitive human receptors resulted in a negligible magnitude of change. The maximum predicted increase in annual mean NO₂ concentration was 1.5µg/m³ on Dane Street, south of the airport. Changes to annual mean PM₁₀ and PM_{2.5} are predicted to be negligible at all receptors.
- 13.9.40 During Phase 2b, annual mean NO₂ concentrations predicted at 479 sensitive human receptors resulted in a predicted negligible magnitude of change for 478 receptors and a slight adverse impact at one receptor on Dane Street, south of

the airport, with a 3.0µg/m³ increase in annual mean NO₂ concentration. Changes to annual mean PM₁₀ and PM_{2.5} are predicted to be negligible at all receptors.

- 13.9.41 The results of the air quality assessment indicate that both the size of the population exposed to changes in air quality, and the magnitude of change in pollutant concentrations, is likely to be small and well below the level at which effects on respiratory health could be accurately quantified. Therefore, while individual residents at the affected properties may experience a change in air quality, there would be no detectable impact on respiratory health in the population. The effect of changes in population exposure to air pollutants is assessed as a very low magnitude adverse impact on a receptor of medium sensitivity, which will result in a **minor adverse** permanent effect, which is **not significant**.

Aircraft noise

- 13.9.42 A significant health effect has been identified during assessment Phase 2a and 2b in relation to the health determinant of 'aircraft noise'. A qualitative assessment of aircraft noise has been undertaken for this PEIR and a quantitative assessment of health effects from aircraft noise will be undertaken and reported in the ES.
- 13.9.43 The noise assessment (**Chapter 16**) identified that during Phase 2a and 2b, the population experiencing a daytime noise level above Significant Observed Adverse Effect Level (SOAEL) are predicted to experience a residual **moderate adverse** aircraft noise effect. The receptors which are predicted to experience noise level above SOAEL include Someries receptors (night-time only), Lye Hill, Breachwood Green (including Breachwood Green JMI School for night-time only), Bendish, Strathmore Avenue in Luton, and Surrey Street Primary School.
- 13.9.44 Various embedded and good practice mitigation measures will be implemented including the ICAO Balanced Approach to Aircraft Noise Management, London Luton Airport Noise Action Plan 2019- 2023, **Draft Compensation Policies and Measures**, and new quieter aircraft which are detailed in **Section 16.8**.
- 13.9.45 The changes to aircraft noise exposure due to increased aircraft movements are considered to represent medium magnitude impact on a receptor of medium sensitivity resulting in a **moderate adverse** effect on physical and mental health in the population under the flight path, which is **significant**.
- 13.9.46 Physical and mental health outcomes associated with aircraft noise include annoyance, sleep disturbance, children's learning, mental health, and cardiovascular health. The extent to which different groups within the community will be affected will vary. Noise sensitive individuals, shift workers, socio-economically disadvantaged individuals, people with existing ill health, children and the elderly are particularly vulnerable to noise and may be disproportionately affected by changes in aircraft noise.

Operational effects – Community assessment

- 13.9.47 There are no significant effects on community resources during operation.

Sensitivity Analysis

- 13.9.48 There are certain known scenarios or risks that may occur that could influence the conclusions of the core assessment. These scenarios and the general approach to considering them in this assessment are described in **Section 5.4 of Chapter 5** Approach to the Assessment.
- 13.9.49 **Table 13.13** provides a qualitative assessment of any likely changes to the conclusions of the assessment reported in this chapter, in the event that that scenario or risk is realised.

Table 13.13: Qualitative Sensitivity Analysis

Sensitivity scenario	Potential impact and change (in the health determinant)	Likely effect
1. 19 mppa application	The increase in capacity from 18 mppa (currently assessed) to 19 mppa would result in small changes to the assessment of impacts on air quality and employment and would not change the assessment of noise impacts.	The changes in potential impacts are small, and overall, there would be no change to the assessment of health and community effects.
2. Faster Growth	The faster growth would increase noise effects in phase 1 but would not be significant. The faster growth scenario would result in comparable noise effects for Phase 2a and Phase 2b. There would be small changes to the air quality assessment, but the effect would not be significant.	The changes in potential impacts are small and overall, there would be no change to the assessment of health and community effects.
3. Slower Growth	There would be a reduced impact on air quality from the traffic generated by the proposal and a reduced noise impact. Changes to employment would be small.	No change to assessment of health and community effects
4. A321neo noise does not improve	Although more people will be affected by adverse levels of noise in future, there will be a difference in population affected by changes in noise in both the DN and DS scenarios. There would be no change to the assessment of noise impacts.	No change to assessment of health and community effects
5. Next generation aircraft in future years	This scenario would result in a reduced impact on air quality.	The effect on health would remain as not significant.

Sensitivity scenario	Potential impact and change (in the health determinant)	Likely effect
Faster growth scenario and A321 neo noise does not improve	This scenario would result in an increase in noise effects in Phase 1 from negligible to minor adverse but there would be no change to Phase 2a or 2b.	The changes in potential impacts are small, and overall, there would be no change to the assessment of health and community effects.

13.10 Additional mitigation

13.10.1 This section describes the mitigation measures identified as a result of the assessment process, that are proposed in addition to those already considered to be in place as described in **Section 13.8** Embedded and good practice mitigation measures. These are proposed to reduce or mitigate the effects on health and community as a result of the construction and operation of the Proposed Development.

Design

13.10.2 There are no effects related to the design of relevance to health and community and therefore no additional mitigation is required.

Construction

Prospect House Day Nursery

13.10.3 The Applicant is continuing to engage with owners and operators of a number of facilities, including Prospect House Day Nursery and Ace Sandwich Bar to identify reasonably practicable measures to help mitigate the likely effects identified in this assessment. This engagement is focused on finding and agreeing alternative sites which are of a comparable size, quality and accessibility in order to relocate these facilities.

Operation

Aircraft noise

- 13.10.4 As outlined in **Chapter 16** Noise and vibration, the following additional mitigation would be applied to reduce noise effects on receptors:
- a. depending on the nature and extent of the impact, operational management measures that are not covered in the Luton Airport Noise Action Plan 2019-2023(LLNAP) may be adopted to control noise as far as reasonably practicable. These measures are covered in the Draft Operational Noise Management Plan (ONMP) provided as **Appendix 16.9** in Volume 3 of this PEIR.
 - b. A noise envelope will be established with the aim to protect communities whilst enabling the airport to operate efficiently and allow it to grow in accordance with the limits defined by the Noise Envelope consented through the DCO. The Noise Envelope will provide certainty to the industry and communities about how noise will be managed to comply with government policy, balancing growth and noise reduction for the long-term.
 - c. The current noise insulation scheme offered by the airport covers properties within the 63 dB $L_{Aeq,16h}$ and 55 dB $L_{Aeq,8h}$ noise contours. Consequently, all properties identified as experiencing a likely significant noise effect due to the Proposed Development will be eligible for noise insulation and provision of noise insulation can help avoid significant effects. As part of the expansion proposals, the noise insulation scheme

will be updated. The updated noise insulation scheme improves on the current scheme by adopting government proposals set out in Aviation 2050. Details on the proposed noise insulation scheme and a new discretionary property compensation scheme are presented in the **Draft Compensation Policies and Measures** document published for statutory consultation.

Community Fund

- 13.10.5 The Applicant intends to introduce a fund aimed specifically at tackling adverse effects of airport expansion not addressed by mitigation already included elsewhere in the Proposed Development. The Applicant is calling this **Community First**. The purpose of **Community First** is to provide a source of funds for local authorities surrounding the airport to be used in ways to enhance the distribution of the benefits of our proposals for those who live around the airport or who would be affected by its expansion. Further details are provided in the **Draft Compensation Policies and Measures** document.

13.11 Residual effects

- 13.11.1 This section provides an assessment of the significant effects reported in **Section 13.9** after the additional mitigation measures described in **Section 13.10** are considered in place. The additional mitigation measures identified in **Section 13.10** cover both significant and not significant effects identified in **Section 13.14**. Therefore, the assessment of residual effects relating to the effects which are not significant are reported in **Section 13.14**.

Construction

Construction effects – Health assessment

Employment and income

- 13.11.2 No mitigation required. Effects remain as **moderate beneficial**, as reported in **Section 13.9**

Perception and uncertainty

- 13.11.3 No additional mitigation identified. Effects remain as reported in **Section 13.9**

Access to Services

- 13.11.4 If suitable alternative premises are found for the Prospect House Day Nursery, provided that the alternative facility is of a comparable size, quality, and accessibility, then effects would reduce to **moderate adverse**, but would remain **significant**. If no suitable alternative premises are found, effect remains as **major adverse**, as reported in **Section 13.9**.

Construction effects – Community assessment

Wigmore Valley Park

- 13.11.5 No mitigation required. Effects remain as **minor beneficial**, as reported in **Section 13.9**

Prospect House Day Nursery

- 13.11.6 If suitable alternative premises are found for the Prospect House Day Nursery, then effects would reduce to minor adverse and not significant provided that the alternative facility is of a comparable size, quality, and accessibility. If a less suitable alternative premises is found, then the effect would reduce to **moderate adverse**, but would remain **significant**. If no suitable alternative premises are found, effect remains as **major adverse**, as reported in **Section 13.9**.

Operational

Operational effects – Health assessment

Employment and income

- 13.11.7 No mitigation required. Effects remain as **moderate beneficial**, as reported in **Section 13.9**

Aircraft noise

- 13.11.8 The residual noise effects reported in **Chapter 16** of this PEIR are considered in this assessment therefore the effect remains as **moderate adverse**, as reported in **Section 13.9**.

Operational effects – Community assessment

- 13.11.9 There are no significant effects on community resources reported in **Section 13.9**.

13.12 In-combination climate change effects

- 13.12.1 This section provides a preliminary assessment of potential changes to the findings of the health and community assessment, taking into account the predicted future conditions as a result of climate change, known as In-combination Climate Change Impacts (ICCI).
- 13.12.2 This assessment has been undertaken using the methodology and climate change predictions described in **Chapter 9** Climate Change Resilience of this PEIR. The results are provided in **Table 13.14**.
- 13.12.3 The only ICCI relevant to the health and community assessment is the potential for increased heat risk amongst vulnerable members of the population and users of WVP. This is due to the combination of a possible likely increase in high summer temperatures, humid weather and heatwaves during the construction period of 2025-2041 and the closure of WVP due to construction works required for the Proposed Development and the re-provision of open green space. This has been assessed to lead to a potential loss of shade provision and cooling effect from the existing mature trees and vegetation for users of the park. Vulnerable members of the population such as young children, elderly people and those with existing health conditions are more likely to be at risk. However, given the transient nature of users and the element of choice in using the WVP, it is considered that users requiring more shade will not use the park during those hottest periods or will seek out shadier spots within the park.
- 13.12.4 This likelihood of the ICCI has been assessed as 'unlikely' and of low consequence and therefore it is not assessed to be significant. Given this, no additional mitigation measures have been proposed, but it reinforces the need for the replacement open space and planting to be of high quality and to be provided as soon as possible in order that the shading and cooling function of WVP can be maintained and enhanced.

Table 13.14: Health and community in-combination climate change impacts

Climate hazard	Likely ICCI	Consequence of ICCIs considering embedded environmental measures/good practice	Significance of ICCI effects
Increased occurrence of high summer temperatures, humidity and heatwaves	Potential increase in heat risk for vulnerable members of population due to partial loss of WVP, and the consequent decrease in shade provision and cooling effect from the existing mature trees and vegetation.	The replacement open space will provide a greater area of open green space, but it will take time for the new trees and planting to mature and provide comparable levels of shade and cooling to	Negligible Not significant

Climate hazard	Likely ICCI	Consequence of ICCIs considering embedded environmental measures/good practice	Significance of ICCI effects
	Likelihood of ICCI occurring is 'unlikely'.	the existing area of open space.	

13.13 Monitoring

13.13.1 Monitoring of health outcomes is not proposed due to practical difficulties in obtaining accurate health data for the population in the study area and attributing any changes in observed health outcomes to the Proposed Development. Accurately identifying changes in the health status of a population resulting from a specific intervention requires a large-scale study that is not proportionate in the context of an EIA. However, precursors to health effects will be monitored, including air quality, noise, local employment and apprenticeships. These monitoring measures are described within the relevant aspect chapters in this PEIR.

Construction monitoring

13.13.2 Precursors to health effects including changes to air quality, noise, local employment and apprenticeships will be monitored during construction as part of the CoCP. Monitoring procedures are set out in the Draft CoCP provided as **Appendix 4.2** in Volume 3 of this PEIR.

Operational monitoring

13.13.3 Procedures to monitor the precursors to health effects are set out in **Chapter 7** Air Quality, **Chapter 11** Economics and Employment, and **Chapter 16** Noise and vibration.

13.13.4 The **Draft Green Controlled Growth** document provided as part of statutory consultation describes limits on key environmental effects such as air quality, noise and carbon. This will include local monitoring and reporting of these, with community involvement in the proposed management body. It will still however, not be possible to accurately identify changes in the health status of the populations arising from these changes.

13.14 Preliminary assessment summary

- 13.14.1 **Table 13.15** provides a summary of the identified impacts, mitigation and likely effects of the Proposed Development on health and community. Additional mitigation and how it will be secured are described and its efficacy shown by the reported residual effect.

Table 13.15: Health preliminary assessment summary

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
All phases							
<p><i>All phases (2025-2041)</i></p> <p>Planning and construction of the Proposed Development</p> <p>(Wider Area)</p>	<p>Best practice construction management measures in Draft CoCP.</p> <p>Community engagement strategy as set out in Draft CoCP.</p>	<p>Adverse impact on 'Perception and uncertainty'.</p> <p>Public concern and uncertainty during the planning and construction stages about the construction and operational effects of the Proposed Development.</p>	<p>Medium (all phases)</p>	<p>Medium (all phases).</p> <p>Consultation feedback has identified concerns related to the potential effects of the Proposed Development on the lives of people in the community.</p> <p>Sensitivity is likely to be higher in the local/Luton area due to higher levels of deprivation and poorer health outcomes.</p>	<p>Moderate adverse temporary effect (all phases) on mental wellbeing associated with increased stress and anxiety.</p>	<p>None proposed</p>	<p>Moderate adverse (all phases)</p> <p>Significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
Construction							
<p><i>All phases (2025-2041)</i></p> <p>Closure and reprovision of WVP</p> <p>(Central Airport Area)</p>	<p>Enhancement of existing facilities.</p> <p>Functionality and access to open space will be maintained.</p> <p>Provision of a larger area of publicly accessible open space.</p>	<p>Change to the character of the park. Accessibility and function will not change. The Park will continue to provide access to green space, recreation and physical activity for the Wigmore population. No impact on health determinant of 'Access to open space, recreation and physical activity'.</p>	No impact	N/A	No health effects identified	None proposed	No health effects identified
<p><i>All phases (2025-2041)</i></p> <p>Impact on users of undesignated footpath</p>	<p>Best practice construction management measures in Draft CoCP for landscape and noise.</p>	<p>Beneficial impact on 'Access to open space, recreation and physical activity'.</p> <p>The undesignated footpath will be</p>	Low	Low	Minor beneficial permanent effect from Phase 2a as a result of higher quality parks		<p>Minor beneficial</p> <p>Not significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p>within WVP and public footpaths FP29 and FP38 and public bridleways BW28 and BW37</p> <p>(Central Airport Area and South and East of Airport)</p>	<p>Community engagement strategy as set out in Draft CoCP.</p> <p>Creation of informal surfaced paths and upgrading of existing PROW, included in design and Draft Landscape and Biodiversity Management Plan (LBMP).</p>	<p>permanently stopped up to facilitate the Proposed Development and there will be no direct replacement of this route.</p> <p>Public footpaths FP29 and FP38 and public bridleways BW28 and BW37 will remain accessible during Phase 1 and will be stopped-up to facilitate the Proposed Development during construction for Phase 2a. Additional footpaths and bridleways will be provided as part of the replacement open space during Phase 1. There are considered to be no</p>			<p>improving access to open space recreation and physical activity.</p> <p>Greatest benefits would be to those with mobility issues including the elderly, those with disabilities and parents with buggies who would benefit from the higher quality routes.</p>		

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
		adverse effects during Phase 2a because higher quality, accessible alternatives will be available for users. At Phase 2b, connectivity between FP38 and BW37 through the replacement open space will be restored and there will be a number of higher quality, accessible alternative recreational routes for users to access in the area.					
All phases (2025-2041) Direct employment	A Draft Employment and Training Strategy has been	Beneficial impact on 'Employment and income' . Construction related employment	High Direct employment of 1,610 person years	Medium Levels of economic inactivity are higher than the	Moderate beneficial temporary effect (All phases) on mental and	None proposed	Moderate beneficial (all phases) Significant

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
t of 1,610 person years Indirect employment of 3,110 person years. (Wider Area)	developed to maximise opportunities and upskilling for local people, including hard to reach groups and those currently unemployed.	opportunities have the potential to improve income and employment status of some people from the study area.	Phase 1: 2025-2027: 200 person years of employment per annum. Phase 2: 2033-2036: 940 person years of employment per annum. Phase 3: 2037-2040: 470 person years of employment per annum.	national average in Luton, but lower than average at the wider study area level.	physical health associated with increased income, skills and/or job security for those local people securing construction related employment.		
All phases (2025-2041) Direct displacement	None proposed.	Adverse impact on 'Employment and income' . Potential long-term impacts on	Low (all phases) Displacement of businesses is assessed	Low (all phases) These businesses are considered to	Minor adverse permanent effect on mental and	Compensation to be provided to enable businesses to relocate.	Minor adverse Not significant

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
nt of businesses within New Century Park and President and Percival Way. (Wider Area)		employment status for some individuals.	as minor adverse in Chapter 11 Economics and Employment. It is estimated that around 350 jobs may be displaced.	be adaptable to change and able to find alternative accommodation locally, therefore unlikely to result in the local loss of employment.	physical wellbeing.		
All Phases (2025- 2041) Environmental impacts resulting from the construction of the Proposed development	Best practice construction management measures in Draft CoCP. Community engagement strategy as set out in Draft CoCP	Impacts on 'Neighbourhood quality' . Changes to environmental conditions affecting the perceived quality of the living environment and sense of place.	No impact Any construction impacts from noise, air quality, landscape, visual and light and traffic and transport to be mitigated through	Medium Residential receptors exist along the northern edge of Eaton Green Road	No impact	N/A	N/A

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
(North of the Airport area)			CoCP measures				
<p><i>All phases (2025-2041)</i></p> <p>Presence of the construction workforce within the local community. 1,410 workers estimated to be on site at the peak in 2035.</p> <p>(Wider Area)</p>	<p>Best practice construction management measures in Draft CoCP.</p> <p>Community engagement strategy as set out in Draft CoCP.</p>	<p>Adverse impact on ‘Social capital’.</p> <p>The introduction of the temporary construction workforce into the community may affect levels of community cohesion and trust and influence behaviours such as the use of local community facilities.</p>	<p>Low (All phases)</p> <p>Assumed that approx. 40% of construction workers would be home based and live within commuting distance (60-minute drive), so would not need to use services and facilities in the area.</p>	<p>Low</p> <p>Luton is a diverse urban area with a high population turnover and therefore its population is unlikely to be sensitive to the introduction of new people into the area.</p>	<p>Minor adverse temporary effect on mental wellbeing (2025-2041).</p>	<p>None proposed</p>	<p>Minor adverse (2025-2041)</p> <p>Not significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All phases (2025-2041)</i></p> <p>Presence of construction workforce within the local community. 1,410 workers estimated to be on site at the peak in 2015.</p> <p>(Wider Area)</p>	<p>Best practice construction management measures in Draft CoCP.</p> <p>Community engagement strategy as set out in Draft CoCP.</p>	<p>Adverse impact on 'Housing market'.</p> <p>The introduction of a temporary construction workforce may increase demand within the local housing rental market, potentially affecting prices and reducing access to affordable housing for local people.</p>	<p>Low (all phases)</p> <p>Assumed that approx. 40% of construction workers would be home based and live within commuting distance (60-minute drive), so would not require local accommodation. Some demand would also be met by other types of accommodation such as B&B.</p>	<p>Medium across the study area, but sensitivity may be higher in the Luton area as the proportion of people in private rented accommodation is above average and levels of homelessness are high. In the Central Beds area, lower quartile rent prices have increased across all property sizes since 2013/14, suggesting that demand exceeds supply.</p>	<p>Minor adverse temporary effect (all phases) on mental wellbeing. The greatest impact is likely to be on tenants in receipt of housing benefits and those on the lowest pay who may find increased competition for private rented accommodation.</p>	<p>None proposed</p>	<p>Minor adverse (all phases)</p> <p>Not Significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All phases (2025-2041)</i></p> <p>Additional demand for healthcare services due to the presence of construction workforce</p> <p>(Wider Area)</p>	<p>Best practice construction management measures in Draft CoCP.</p> <p>Community engagement strategy as set out in Draft CoCP.</p>	<p>Impact on 'access to services.</p> <p>The construction workforce has the potential to increase the demand for local primary care and A&E, placing additional pressure on these services and affecting access for the local population.</p>	<p>Very low magnitude</p> <p>Workers in rented housing will be accounted for in existing funding, based on population size. Any increase in population will be limited by the availability of additional accommodation such as B&Bs.</p> <p>Temporary workers are unlikely to register with local GPs. It is also</p>	<p>Medium</p>	<p>Minor adverse temporary impact on access to healthcare services.</p>	<p>None proposed</p>	<p>Minor adverse (all phases)</p> <p>Not Significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
			assumed that additional demand for A&E and minor injury services will be reduced by on-site occupational health provision.				
<p><i>All phases (2025-2041)</i></p> <p>Increased traffic generated by the expanded airport and changes to highway network</p>	<p>Proposed Highway Intervention works.</p> <p>Construction Traffic Management Plan.</p>	<p>Adverse impacts on ‘Social capital’ and ‘Access to services’</p> <p>Increased journey times may deter people from travelling to access services and facilities, or to visit friends and family.</p>	<p>Very low (all phases)</p> <p>Traffic and transport assessment assesses all impacts as low or very low</p>	<p>Very low (all phases)</p>	<p>Negligible effect (all phases)</p>	<p>None proposed</p>	<p>Negligible (all phases)</p> <p>Not significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
(Wider Area)							
<p><i>All phases (2025-2041)</i></p> <p>Changes in traffic movements , including increased HGVs</p> <p>(Wider area)</p>	<p>Proposed Highway Intervention works.</p> <p>Construction Traffic Management Plan.</p>	<p>Adverse impact on 'physical activity' with changes deterring active travel and reducing levels of physical activity</p>	<p>Very low (all phases)</p> <p>Traffic and transport assessment assesses all impacts as low or very low.</p>		<p>Negligible effect (all phases).</p> <p>All impacts will be mitigated through implementation of the embedded mitigation measures.</p>	<p>None proposed</p>	<p>Negligible (all phases)</p> <p>Not significant</p>
<p><i>Phase 2a onwards</i></p> <p>Demolition of Prospect House Day Nursery to make way for the new AAR</p>	<p>None practicable</p>	<p>Adverse impact on 'Access to Services' resulting from loss of an OFSTED 'Good' rated, purpose built childcare facility</p>	<p>Medium</p>	<p>High</p> <p>Due to the nature of the users being babies and young children and the lack of alternative</p>	<p>Major adverse permanent effect on a vulnerable group (young people) with potential effects on wellbeing.</p>	<p>Discussions are taking place with the nursery to find a suitable site for relocation however, no agreement</p>	<p>Major Adverse</p> <p>Significant</p> <p>If a suitable site for relocation</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
				facilities nearby.		has been reached at this stage.	is found this may reduce to Moderate adverse.
Operation							
<p><i>All phases (2025-2041)</i></p> <p>Increased aircraft movements</p> <p>(Wider Area)</p>	<p>Best practice measures for managing aircraft noise effects of Proposed Development e.g., ICAO Balanced Approach, London Luton Airport Noise Action Plan 2019-2023 and an acoustically screened engine run-up bay.</p>	<p>Adverse impact on ‘Access to open space, recreation and physical activity’ due to increase in aircraft noise on users of WVP.</p> <p>Reduction in the amenity value of the park, potentially deterring people from using the park for recreation and physical activity.</p>	Low	<p>Low – as the WVP is an area where the users are more transient and therefore considered less sensitive as a receptor than occupants of a residential property.</p>	<p>Minor adverse permanent effect on physical and mental health (amenity/annoyance)</p>	None proposed	<p>Minor adverse</p> <p>Not significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All phases (2025-2041)</i></p> <p>Increased aircraft movements and changes in aircraft noise exposure in the population under the flight path</p> <p>(North of the Airport, South and East of the Airport, West of the Airport)</p>	<p>Best practice measures for managing aircraft noise effects of Proposed Development e.g., ICAO Balanced Approach, London Luton Airport Noise Action Plan 2019-2023 and an acoustically screened engine run-up pen.</p> <p>Draft Compensation Policies and Measures (i.e., noise insulation,</p>	<p><i>Phase 1:</i> Daytime noise between LOAEL and SOAEL – negligible adverse impact on ‘Aircraft noise’</p> <p>Daytime noise above SOAEL - minor adverse impact on ‘Aircraft noise’</p> <p>Night-time noise between LOAEL and SOAEL – minor adverse impact on ‘Aircraft noise’</p> <p>Night-time noise above SOAEL - minor adverse impact on ‘Aircraft noise’</p>	<p><i>Phase 1:</i> Daytime noise between LOAL and SOAEL – Very low</p> <p>Daytime noise above SOAEL -Low</p> <p>Night-time noise between LOAEL and SOAEL – Low</p> <p>Night-time noise above SOAEL - Low</p>	<p><i>All phases:</i> Medium</p> <p>Receptors are judged as medium sensitivity as areas will include an average prevalence of children and young people, and people living in areas known to exhibit poor economic and / or health indicators.</p>	<p><i>Phase 1:</i> Minor adverse permanent not significant effect on physical and mental health for all impacts identified in Phase 1.</p>	<p>Noise Envelope</p>	<p><i>Phase 1:</i> Minor adverse Not significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
	voluntary acquisition, hardship scheme)	<p><i>Phase 2a + 2b:</i> Daytime noise between LOAEL and SOAEL – minor adverse impact on ‘Aircraft noise’</p> <p>Daytime noise above SOAEL – moderate adverse impact on ‘Aircraft noise’</p>	<p><i>Phase 2a + 2b:</i> Daytime noise between LOAEL and SOAEL – Low</p> <p>Daytime noise above SOAEL – Medium</p>		<p><i>Phase 2a + 2b:</i> Minor adverse permanent not significant effect on physical and mental health for daytime noise between LOAEL and SOAEL.</p> <p>Moderate adverse permanent significant effect on physical and mental health for daytime noise above SOAEL.</p>		<p><i>Phase 2a + 2b:</i> Minor adverse Not significant</p> <p>Moderate adverse Significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All phases (2025-2041)</i></p> <p>Emissions of air pollutants from sources on and off the airport, including aircraft engines, ground support equipment and increased road traffic.</p> <p>(Wider Area)</p>	<p>Embedded mitigation includes use of the Airport Access Road to route road traffic away from sensitive receptors and a new fuel pipeline reducing HGV movements. Good practice will reduce road transport movements, incentivise electric vehicles and monitor air quality.</p>	<p><i>Phase 1:</i> Slight adverse impact on NO₂ at one receptor. Negligible impacts on PM₁₀ and PM_{2.5} at all receptors.</p> <p><i>Phase 2b:</i> Slight adverse impact on NO₂ at four receptors. Negligible impacts on PM₁₀ and PM_{2.5} at all receptors.</p>	<p><i>All phases:</i> Very low magnitude of increase in population exposure to air pollutants.</p>	<p><i>All phases:</i> Medium</p> <p>Receptors are judged as medium sensitivity as areas will include an average prevalence of children and young people, and people living in areas known to exhibit poor economic and / or health indicators.</p>	<p><i>All phases:</i> Minor adverse permanent not significant effect on respiratory health.</p>	None	<p><i>All phases:</i> Minor adverse Not significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All phases (2025-2041)</i></p> <p>15,400 direct jobs by 2043.</p> <p>16,600 indirect and induced jobs in Luton by 2043</p> <p>23,100 indirect and induced jobs in the Three Counties sub-region by 2043.</p> <p>(Wider Area)</p>	<p>A Draft Employment and Training Strategy has been developed to maximise opportunities and upskilling for local people, including hard to reach groups and those currently unemployed.</p>	<p>Beneficial impact on 'Employment and income'.</p> <p>Operation related employment opportunities have the potential to improve the income of local people with relevant skills, but it is anticipated that a proportion of jobs will go to people outside the study area. Jobs taken up by people in the Luton area are likely to be mainly in lower skilled roles, with lower pay and potentially less favourable working conditions than skilled and managerial roles.</p>	<p>Medium (all phases)</p> <p>11,800 jobs in 2027, growing to 13,400 by 2039 and on to 15,400 jobs by 2043.</p>	<p>Medium</p> <p>Levels of economic inactivity are higher than the national average in Luton, but lower than average at the wider study area level.</p>	<p>Moderate beneficial permanent effect (all phases) on mental and physical health associated with increased income, skills and/or job security for those local people securing operation related employment.</p>	<p>None proposed</p>	<p>Moderate beneficial (all phases)</p> <p>Significant</p>

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
All phases (2025- 2041) Increased traffic generated by the expanded airport and changes to highway network (Wider Area)	Extension of Luton DART system to serve the new terminal. Proposed Highway Intervention works. Travel Plan (for the airport operations).	Adverse impacts on 'Social capital' and 'Access to services' . Due to increased journey times detering people from travelling.	Very low (Phases 1 and 2a) and low for Phase 2b	Very low (all phases) as traffic is mainly routed away from the densely populated urban areas of Luton.	Negligible effect.	None proposed	Negligible (all phases) Not significa nt
<i>All Phases (2025- 2041)</i> Changes to the physical environmen t resulting from	None identified	Impacts on 'Neighbourhood quality' . Changes to environmental conditions affecting the perceived quality of the living environment and sense of place.	No impact Topic assessments for noise, air quality, landscape and visual, light, and traffic and transport	Medium Residential receptors exist along the northern edge of Eaton Green Road	No impact	N/A	N/A

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
operation of the Proposed developme nt (North of the Airport area)			have not identified two or more significant impacts on the physical environment.				
<i>All phases (2025- 2041)</i> Increase in operational workforce (Wider Area)		Impact on ‘Housing market’ . The increase in the operational workforce may increase demand within the local housing market, potentially affecting prices and reducing access to affordable housing for local people.	Low It is estimated that approximately 4,500 new dwellings will be required within the wider Study Area by 2043, as a result of individuals and their dependants moving to the area to fill	Medium across the study area, but sensitivity may be higher in the Luton area. Sensitivity may vary between private owned and private rental sectors.	Minor adverse Potential for effect on mental wellbeing resulting from increased pressure on housing supply. The greatest impact is likely to be on those tenants in receipt of	None proposed	Minor adverse

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
			additional jobs created at the airport. The economics and employment assessment (Chapter 11) concludes that following a review of relevant local plans the local housing market is considered to have the capacity to meet potential demand for accommodation.		housing benefits and those on the lowest pay who may find it harder to afford housing.		
<i>All phases (2025-2041)</i>		Impact on ‘ access to healthcare services ’	No impact Any increase in population,	N/A	No impact Any increase in population,	N/A	No impact

Impact	Embedded/ Good Practice Mitigation and how secured	Impact on health determinant(s)	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
Increase in operational workforce <i>(Wider Area)</i>		The increase in the operational workforce has the potential to increase the demand for local primary care and A&E, placing additional pressure on these services.	will be limited by the availability of housing.		and associated impacts on healthcare provision will be limited by the availability of housing.		

Table 13.16: Community preliminary assessment summary

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
Construction						
<p><i>All Phases</i></p> <p>Closure and re-provision of WVP and impact on users</p> <p>(Central Airport Area)</p>	<p>Access maintained to existing park during construction of replacement open space and parkland. Replacement open space and facilities to be delivered in Phase 1.</p> <p>Best practice construction management measures e.g., community liaison personnel to communicate timings of changes to access to park, as set out in the Draft CoCP.</p> <p>Community engagement</p>	<p>Low</p> <p>Enhancement of facilities with overall gain in parkland provision.</p>	<p>Medium</p> <p>User count surveys from 2019 indicate that the park is well used for a variety of outdoor sports and recreational activities. The Park is well maintained and there are no comparable and accessible alternatives nearby.</p>	<p>Minor beneficial permanent effect – Access maintained throughout construction with overall gain in parkland provided and enhancement of facilities. Works to deliver the replacement area of open space will be undertaken in Phase 1.</p>	<p>None proposed</p>	<p>Minor beneficial – Replacement parkland.</p> <p>Not significant</p>

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
	<p>strategy as set out in Draft CoCP.</p> <p>Informal footpaths and upgrading of recreational routes.</p>					
<p><i>Phase 2a</i></p> <p>Demolition of Prospect House Day Nursery due to the AAR</p> <p>(Central Airport Area)</p>	None practicable	<p>High</p> <p>Permanent loss</p>	<p>High</p> <p>The nursery is well used and there are no alternative comparable childcare facilities within 1.5km of the existing facility. Users of the facility will find it more difficult to respond to change.</p>	Major adverse effect, significant.	<p>Discussions are taking place with the nursery to find a suitable site for relocation and a potential replacement site has been identified, however no agreement has been reached at this stage.</p>	<p>Major adverse effect</p> <p>Significant</p> <p>If suitable alternative premises are found, then effect would reduce to minor adverse and not significant provided that the alternative facility is of a comparable size, quality, and accessibility. If a less suitable</p>

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
						alternative premises is found, then the effect would reduce to moderate adverse, but would remain significant.
<p><i>Phase 2a</i></p> <p>Demolition of Ace Sandwich Bar due to the AAR</p> <p>(Central Airport Area)</p>	<p>None practicable</p>	<p>High</p> <p>Permanent loss</p>	<p>Very low</p> <p>Many comparable and accessible alternatives within the area. Users of the facility can easily respond to change.</p>	<p>Minor adverse effect, not significant.</p>	<p>Discussions are taking place with the cafe to find a suitable site for relocation however no agreement has been reached at this stage.</p>	<p>Minor adverse effect</p> <p>Not significant</p> <p>If suitable alternative premises are found, then effect would reduce to negligible provided that the alternative facility is of a comparable size, quality, and accessibility.</p>

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All Phases</i></p> <p>Impact on users of PRow Kings Walden 043</p> <p>(Central Airport Area)</p>	<p>Works in accordance with Draft CoCP. Redirection and upgrading of footpath Kings Walden 043 to a bridleway. Additional proposed footpaths with improved signage within replacement open space (see mitigation proposed in Chapter 14 Landscape and Visual.</p> <p>Best practice construction management measures will be in place, including community liaison personnel to communicate timings of changes</p>	<p>Low</p> <p>Redirection and upgrading of footpath to a bridleway.</p>	<p>Very low</p> <p>There are a number of comparable alternative routes nearby. User count surveys from 2019 indicate low usage of the route.</p>	<p>Minor beneficial permanent effect - Within land take for Proposed Development (replacement open space). Diverted and upgraded to a multi-user track in Phase 1 to ensure it remains accessible to the public and connected to the wider network of PRow east of the airport (access will be maintained along the existing alignment until the diversion is operational). Footpath to be upgraded to bridleway during Phase 2b.</p>	<p>None proposed</p>	<p>Minor beneficial</p> <p>Not significant</p>

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
	to access to PRow, as set out in the Draft CoCP.					
<p><i>All Phases</i></p> <p>Impacts on users of undesignated footpath within WVP and public footpaths FP29 and FP38 and public bridleways BW28 and BW37</p> <p>(Central Airport Area and South and East of Airport)</p>	<p>Works in accordance with Draft CoCP. Additional proposed footpaths with improved signage within replacement open space (see mitigation proposed in Chapter 14 Landscape and Visual. Users will be able to access the diverted and upgraded Kings Walden 043 and Kings Walden 041.</p> <p>Best practice construction management measures will be in place, including community liaison</p>	<p>Low</p> <p>Additional footpaths provided within replacement open space.</p>	<p>Low</p> <p>There are a number of comparable alternative routes nearby. User count surveys from 2019 indicate higher usage compared to nearby surrounding routes.</p>	<p>Minor beneficial permanent effect - Within land take for Proposed Development. Undesignated footpath will be permanently stopped up to facilitate the Proposed Development and there will be no direct replacement of this route.</p> <p>Public footpaths FP29 and FP38 and public bridleways BW28 and BW37 will remain accessible during Phase 1 and will be stopped-up to facilitate the Proposed Development</p>	<p>None proposed</p>	<p>Minor beneficial</p> <p>Not significant</p>

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
	<p>personnel to communicate timings of changes to access to PRow, as set out in the Draft CoCP.</p>			<p>during construction for Phase 2a. Additional footpaths and bridleways will be provided as part of the replacement open space during Phase 1. There are considered to be no effects during Phase 2a because higher quality, accessible alternatives will be available for users. At Phase 2b, connectivity between FP38 and BW37 through the replacement open space will be restored and there will be a number of higher quality accessible alternative recreational routes for users to access in the area.</p>		

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
<p><i>All Phases</i></p> <p>Impact on users of PRoW Kings Walden 041 (between Eaton Green Road and Darley Road, section not part of Chiltern Way long distance footpath)</p> <p>(Central Airport Area)</p>	<p>Works in accordance with Draft CoCP. Upgrading of Kings Walden 041 to bridleway and incorporated into replacement open space. Additional proposed footpaths with improved signage within replacement open space (see mitigation proposed in Chapter 14 Landscape and Visual. Best practice construction management measures will be in place, including community liaison personnel to communicate timings of changes</p>	<p>Low</p> <p>Redirection and upgrading of footpath to a bridleway.</p>	<p>Very low</p> <p>There are a number of comparable alternative routes nearby. User count surveys from 2019 indicate low usage of the route.</p>	<p>Minor beneficial permanent effect - Within land take for Proposed Development (replacement open space). Diverted and upgraded to a multi-user track in Phase 1 to ensure it remains accessible to the public and connected to the wider network of PRoW east of the airport (access will be maintained along the existing alignment until the diversion is operational). Footpath to be upgraded to bridleway during construction for Phase 2b.</p>	<p>None proposed</p>	<p>Minor beneficial</p> <p>Not significant</p>

Impact	Embedded/Good Practice Mitigation and how secured	Magnitude	Receptor Sensitivity	Description of effect and significance	Additional Mitigation and how secured	Residual Effect
	to access to PRow, as set out in the Draft CoCP.					
Operation						
No effects on community resources during operation.						

13.15 Completing the assessment

13.15.1 The following activities will be undertaken to complete the assessment, the results of which will be presented in the ES:

- a. The quantitative assessment of health effects from noise impacts and the associated WebTAG and DALYs assessments are not presented as part of this PEIR but will be presented as part of the ES; and
- b. An assessment of change in exposure predicted to occur as a result of the Proposed Development will be presented as part of the ES. The changes in pollutant concentrations where the population would be exposed will be assessed by identifying the number of properties exposed to changes within bands based on a percentage of the relevant annual mean standards.

COMPETENT EXPERTS

Topic	Role	Company	Qualifications/competencies/experience of author
Health	Technical Reviewer	Ove Arup & Partners	BSc (Hons) Environmental Conservation and Management, Nottingham Trent University PG Dip Environmental Monitoring and Assessment, London Southbank University Member of the Institute of Environmental Management and Assessment (MIEMA) Chartered Environmentalist (CEnv) Over 20 years of experience project managing Environmental Impact Assessments (EIAs) and Health Impact Assessments (HIAs).
Health	Topic Lead and Author	Ove Arup & Partners	MSc Environmental Assessment and Management – Oxford Brookes University BSc (Hons) Geography – Royal Holloway College, University of London Full Member, Institute of Environmental Science (MIEnvSc) Over 19 years of experience project managing EIAs and HIAs.
Health	Sub-author	Ove Arup & Partners	MPH BSc (Hons) Associate Member, Institute of Environmental Science Consultant, 2.5 years of experience
Community	Technical Reviewer	Ove Arup & Partners	BA(Hons) Town Planning – University of Manchester RTPI Chartered Town Planner Over 25 years of experience managing infrastructure projects including EIAs and community impact assessments.
Community	Topic Lead and Author	Ove Arup & Partners	MSc Spatial Planning – University College London LLB(Hons) Law – University of Leeds RTPI Chartered Town Planner Ten years' experience undertaking and managing the preparation of EIAs and community impact assessments.
Community	Sub-author	Ove Arup & Partners	MSc Urban and Regional Planning - University of Birmingham

Topic	Role	Company	Qualifications/competencies/experience of author
			BA Geography - University College London RTPI Chartered Town Planner Three years' experience.

GLOSSARY AND ABBREVIATIONS

Term	Definition
A321neo	A specific type of aircraft. A member of the Airbus A320 family of short to medium range, narrow-body, commercial passenger twin engine jet airliners
AAR	Airport Access Road - previously referred to as the Century Park Access road
ANPS	Airports National Policy Statement
AOA	Airports Operations Area
AQA	Air Quality Assessment
CCA	Civil Aviation Authority
CCG	Clinical Commissioning Group
CoCP	Code of Construction Practice
COMEAP	Committee on the Medical Effects of Air Pollutants
CRF's	Concentration response functions
CSR	Corporate social responsibility
DALYs	Disability Adjusted Life Years
Luton DART	Direct Air-Rail Transit - A double-shuttle fully-automated people mover system to connect travellers from Luton Airport Parkway station to the terminal at London Luton Airport
DCO	Development Consent Order
DoPH	Director of Public Health
EIA	Environmental Impact Assessment
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
ES	Environmental Statement
ETS	Employment and Training Strategy
EqIA	Equalities Impact Assessment
EU	European Union
FEGP	Fixed electrical ground power
FRA	Flood Risk Assessment
FTE	Full time equivalent
GP	General Practitioner
Ha	Hectares
Health Determinant	The economic and social conditions that influence individual and group differences in health status.
HGV	Heavy Goods Vehicles

HIA	Health Impact Assessment
HUDU	Healthy Urban Development Unit
IAIA	International Association of Impact Assessment
ICAO	International Civil Aviation Organisation
ICCI	In-combination Climate Change Impacts
Index of Multiple Deprivation	Indices of multiple deprivation (IMD) are widely-used datasets within the UK to classify the relative deprivation (essentially a measure of poverty) of small areas. Multiple components of deprivation are weighted with different strengths and compiled into a single score of deprivation.
LBC	Luton Borough Council
LBMP	Landscape and Biodiversity Management Plan
Luton Rising	A trading name for London Luton Airport Limited
LLNAP	Luton Airport Noise Action Plan 2019-2023
LOAEL	Lowest observed adverse effect level
the airport	London Luton Airport
NHDC	North Herts District Council
NO ₂	Nitrogen Dioxide
NHS	National Health Service
NPPF	National Planning Policy Framework
NSIP	Nationally Significant Infrastructure Project
OFSTED	Office for Standards in Education, Children's Services and Skills
ONMP	draft Operational Noise Management Plan
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PHE	Public Health England now known as UK Health Security Agency and Office for Health Improvement and Disparities
PM2.5	Particulate Matter
PRoW	Public Rights of Way
SHMA	Strategic Housing Market Assessment
SOAEL	Significant Observed Adverse Effect Level - This is the level above which significant adverse effects on health and quality of life occur.
Three counties area	Defined as Bedfordshire, Buckinghamshire and Hertfordshire
TOKKO	Luton based youth charity
µg/m ³	Micrograms per cubic metre

Vulnerable groups	Individuals who are made vulnerable by the situations and environments they are exposed to (as opposed to any inherent weakness or lack of capacity). This includes groups of people who may be more likely to be exposed to a change in a health determinant, or to experience health effects as a result of exposure.
Ward	A ward is a primary unit of English electoral geography for borough and district councils. It is also a geographical scale at which demographic and health data is collected.
WebTAG	Web-based Transport Analysis Guidance
Wellbeing	Wellbeing refers to positive psychological health
WHIASU	Wales Health Impact Assessment Support Unit
WVP	Wigmore Valley Park

REFERENCES

- Ref 13.1 UK Government. (2017). The Infrastructure Planning (Environmental Impact Assessment) Regulations.
- Ref 13.2 UK Government. (2021). National Planning Policy Framework.
- Ref 13.3 UK Government. (2018). Aviation 2050: The future of UK aviation, consultation document.
- Ref 13.4 Central Bedfordshire Council. (2018). Local Plan 2015 – 2035.
- Ref 13.5 Luton Borough Council. (2020). Luton’s Population Wellbeing Strategy 2019-2024.
- Ref 13.6 Luton Borough Council. (2020). Luton 2020 – 2040: A place to thrive.
- Ref 13.7 Ministry of Housing, Communities and Local Government. (2019). The Oxford- Cambridge Arc: Government ambition and joint declaration between Government and local partners.
- Ref 13.8 Luton Borough Council. (2017). Local Plan 2011 – 2031.
- Ref 13.9 North Hertfordshire Council. (2017). North Hertfordshire Local Plan 2011 – 2031.
- Ref 13.10 Luton Borough Council. (2015). Luton Green Spaces Strategy Review.
- Ref 13.11 Luton Borough Council. (2011). Luton Local Transport Plan 3 2011 – 2026.
- Ref 13.12 UK Government. (2018). Airport National Policy Statement.
- Ref 13.13 International Association for Impact Assessment. (2021). Human health: Ensuring a high level of protection.
- Ref 13.14 Public Health England. (2020). Health Impact Assessment in spatial planning: A guide for local authority public health and planning teams.
- Ref 13.15 NHS London Healthy Urban Development Unit (HUDU). (2019). Healthy Urban Planning Checklist and Rapid Health Impact Assessment Tool.
- Ref 13.16 Hertfordshire County Council. (2019). Position Statement: Health Impact Assessment.
- Ref 13.17 Central Bedfordshire and Luton Borough Council. (2018). Central Bedfordshire and Luton Strategic Housing Market Assessment.
- Ref 13.18 Institute of Environmental Management and Assessment. (2017). Health in Environmental Assessment, a primer for a proportionate.
- Ref 13.19 Luton Borough Council. (2020). Luton’s Joint Strategic Needs Assessment.
- Ref 13.20 Welsh Health Impact Assessment Support Unit (WHIASU). (2012). Health Impact Assessment: A practical guide.
- Ref 13.21 National Mental Wellbeing Impact Assessment Collaborative (2011). Mental Wellbeing Impact Assessment Toolkit.
- Ref 13.22 Douglas MJ, Higgins M, Austin H, Armour G, Jepson R, Thomson H, Hurley F. (2018). Health and Transport: A Guide. Scottish Health and Inequalities Impact Assessment Network.
- Ref 13.23 EM Watch. Electromagnetic Radiation Health and Safety Substation Risk Factors.
- Ref 13.24 European Agency for Safety and Health at Work. (2013). EU Directive 2013 – 35 Electromagnetic Fields.
- Ref 13.25 Health and Safety Executive. (2016). The Control of Electromagnetic Fields at Work Regulations.
- Ref 13.26 TheKingsFund (Nov 2018). A vision for population health: Towards a healthier future.
- Ref 13.27 UK Government. (2019). Transport Analysis WEBTAG Guidance.
- Ref 13.28 World Health Organisation. (2018). Environmental Noise Guidelines for the European Region.
- Ref 13.29 Luton Borough Council. (2017). Luton Local Plan (2011 – 2031).
- Ref 13.30 Public Health England. Local Authority Health Profile for Wigmore.
- Ref 13.31 Public Health England. Local Authority Health Profile for Crawley.
- Ref 13.32 Office for National Statistics. (2019). English Index of Multiple Deprivation.
- Ref 13.33 Public Health England. Local Authority Health Profiles for NHS Luton CCG.
- Ref 13.34 Office for National Statistics. 2011 Census. Tenure – Households (QS405EW).
- Ref 13.35 Public Health England. Local Authority Health Profile for Caddington.
- Ref 13.36 Public Health England. Local Authority Health Profile for Hitchwood, Offa and Hoo.
- Ref 13.37 Public Health England. Local Authority Health Profile for NHS Bedfordshire CCG
- Ref 13.38 Public Health England. Local Authority Health Profile for NHS East and North Hertfordshire CCG
- Ref 13.39 Public Health England. Local Authority Health Profile for South.
- Ref 13.40 Public Health England. Local Authority Health Profile for Farley.
- Ref 13.41 Office for National Statistics. (2020). Mid-2019 Population Estimates.
- Ref 13.42 Public Health England. Local Authority Health Profile for Luton.

Ref 13.43 Central Bedfordshire and Luton Borough Council. (2018). Central Bedfordshire and Luton Strategic Housing Market Assessment

Ref 13.44 Public Health England. Mental Health and Wellbeing JSNA for Luton.

Ref 13.45 Public Health England. Local Authority Health Profile for Central Bedfordshire.

Ref 13.46 Public Health England. Mental Health and Wellbeing JSNA for Central Bedfordshire.

Ref 13.47 Public Health England. Local Authority Health Profile for Hertfordshire.

Ref 13.48 Public Health England. Mental Health and Wellbeing JSNA for Hertfordshire.

Ref 13.49 Public Health England. Local Authority Health Profile for Buckinghamshire.

Ref 13.50 Public Health England. Mental Health and Wellbeing JSNA for Buckinghamshire.

Ref 13.52 Committee on the Medical Effects of Air Pollutants (2018). Statement on quantifying mortality associated with long-term average concentrations of fine particulate matter (PM2.5)

Ref 13.53 Committee on the Medical Effects of Air Pollutants (2018). Associations of long-term average concentrations of nitrogen dioxide with mortality