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**London Luton Airport Expansion Development Consent
Order 202x**

**5.01 ENVIRONMENTAL STATEMENT CHAPTER 21: IN-
COMBINATION AND CUMULATIVE EFFECTS ASSESSMENT**

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Contents

	Page
21 In-combination and Cumulative Effects	1
21.1 Introduction	1
21.2 In-combination effects assessment	2
21.3 Cumulative effects assessment	19
Glossary and Abbreviations	92
References	94

Tables

Table 21.1: Main in-combination assessment Scoping Opinion comments and how addressed in the ES

Table 21.2: In-combination effects assessment process

Table 21.3: Environmental aspect interactions

Table 21.4: Summary of identified residual environmental effects upon human residential receptors.

Table 21.5: Summary of identified residual environmental effects upon all road vehicle users.

Table 21.6: Main Cumulative Effects Assessment Scoping Opinion comments and how addressed in the ES

Table 21.7: CEA Stage 1 - Categorisation by unit size, application and development type, and distance

Table 21.8: 'Other development' Tiers for inclusion in CEA

Table 21.9: Environmental topics CEA ZOI

Table 21.10: Assessment of Cumulative effects

21 IN-COMBINATION AND CUMULATIVE EFFECTS

21.1 Introduction

21.1.1 This chapter reports the assessment of likely significant in-combination and cumulative effects of the Proposed Development.

21.1.2 In-combination effects are those which may be a result of the combined action of different environmental impacts from the Proposed Development upon the same receptor(s) (also referred to as intra-project effects). Cumulative effects are those which may occur due to the ‘cumulation’ or combined action of a number of different projects and developments (hereby referred to as ‘other developments’), cumulatively with the Proposed Development, on the same receptor(s) (also referred to as inter-project effects).

21.1.3 Effects can be considered additive (the interaction of similar impacts upon a receptor leads to a sum of greater impacts) or synergistic (the interaction of differing impacts on a receptor leading to further non-linear impacts). For example, increased noise from two different sources affecting one receptor (additive) or air quality and visual impacts affecting the same human receptor (synergistic).

21.1.4 The requirement to consider in-combination and cumulative effects is set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the IP EIA Regulations) (Ref. 21.1), Regulation 5(2)(e) requires the consideration of ‘interactions’:

“the interaction between the factors [population and human health; biodiversity; land, soil, water, air and climate; material assets, cultural heritage and landscape].”

21.1.5 Paragraph 5 (e) of Schedule 4 of the IP EIA Regulations describes cumulative effects as:

“the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.”

21.1.6 The Airports National Planning Statement (ANPS) (Ref. 21.2) at Paragraphs 4.14-4.15 reiterates the need for combined effects and cumulative effects to be considered within the EIA and presented within an Environmental Statement (ES), stating:

“When considering significant cumulative effects, any environmental statement should provide information on how the effects of an applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been granted, as well as those already in existence if they are not part of the baseline).

The Examining Authority should consider how significant cumulative effects, and the interrelationship between effects, might as a whole affect the environment, even though they may be acceptable when considered on an individual basis or with mitigation measures in place.”

- 21.1.7 A range of public sector and industry led guidance is available on cumulative effects assessment (CEA), however, at present there is no single agreed industry standard method. Consequently, the approach to in-combination and cumulative effects assessments varies between applications. The approach followed for this in-combination assessment is detailed from **paragraph 21.2.11** and the approach followed for this CEA is detailed from **paragraph 21.3.13**.
- 21.1.8 The following sections consider each of these types of effects, in-combination (**Section 21.2**) and cumulative (**Section 21.3**), in turn, and identify likely significant effects, the assessment methodologies and assessment conclusions.
- 21.1.9 As defined in **Chapter 4** of this ES [**TR020001/APP/5.01**], the Proposed Development would deliver additional capacity incrementally to meet the forecast growth in demand and assets and facilities would be delivered only when they are required. For the purposes of assessment only, three **assessment phases** are considered and are referred to throughout this ES as assessment Phase 1, assessment Phase 2a and assessment Phase 2b.

21.2 In-combination effects assessment

Overview

- 21.2.1 In-combination effects are caused by the interaction of different effects from activities associated with the Proposed Development.
- 21.2.2 The assessment of in-combination effects involves determination of whether any of the individual environmental aspect effects resulting from the Proposed Development, which may or may not be significant in their own right, could combine to create further effects that are significant on individual common receptors. For example, impacts on a particular scheduled monument due to changes in air quality, noise and vibration, landscape and visual and lighting could result in a significant effect.
- 21.2.3 To prevent duplication, signposting is used in this chapter to clearly identify aspects and interactions which have not been considered further in this assessment as they have already been exhaustively considered in the ES by technical specialists.
- 21.2.4 A number of common receptor types were identified across aspect assessments (**Chapters 6 to 20** of this ES [**TR020001/APP/5.01**]) with the potential to experience in-combination effects. These included:
- a. Human residential;
 - b. Human health;
 - c. Sensitive community facilities;
 - d. Non-residential/commercial/business facilities (including farm holdings);
 - e. Ecology;
 - f. Built heritage;
 - g. Water bodies and features; and

h. Travellers (vehicle users, pedestrians, cyclists, public transport users).

21.2.5 Non-residential/commercial/business facilities, ecology, built heritage, and waterbodies and features have not been assessed further in this in-combination assessment as interactions of different aspect effects upon these receptors are provided in detail in **Chapter 6** Agricultural land quality and farm holdings, **Chapter 11** Economics and employment, **Chapter 8** Biodiversity, **Chapter 10** Cultural Heritage, and **Chapter 20** Water Resources of this ES [TR020001/APP/5.01] respectively.

21.2.6 No interactions of effects were identified upon receptors assessed in **Chapter 17** Soils and Geology [TR020001/APP/5.01], and **Chapter 19** Waste and Resources [TR020001/APP/5.01] assessments. Therefore, receptors identified in **Chapter 17** and **Chapter 19** were not considered further in this in-combination effects assessment.

21.2.7 In Combination Climate Impacts (ICCI), greenhouse gases, health and community, and major accidents and disasters are excluded from this in-combination assessment for the following reasons:

- a. **Chapter 9** Climate Change Resilience of this ES [TR020001/APP/5.01] - The ICCI focusses on how effects identified by all the topic assessments may be exacerbated by the future projected changes to climate variables. Therefore, the ICCI comprises an in-combination effects assessment with climate change, the results of which are reported as part of that assessment.
- b. **Chapter 12** Greenhouse Gases of this ES [TR020001/APP/5.01] - The global atmosphere is a receptor unique to the greenhouse gases assessment. Therefore, greenhouse gases have not been included in the in-combination assessment.
- c. **Chapter 13** Health and Community of this ES [TR020001/APP/5.01] – In-combination effects of different environmental effects (as identified by all aspect assessments) on the population (human health) and sensitive community receptors is an inherent part of the Health and Community assessment and is reported as part of that assessment.
- d. **Chapter 15** Major Accidents and Disasters (MA&D) of this ES [TR020001/APP/5.01] – the MA&D assessment considers all identified MA&D consequences from all topic assessments and focuses on very low likelihood, large magnitude effects which, if unmitigated, could result in a significant MA&D effect. Therefore, the consideration of in-combination effects is inherent to the assessment of MA&D hazards and is reported as part of that assessment.

21.2.8 The methodology (from **paragraph 21.2.11** below) provides further detail on how common receptor types were assessed and/or discounted.

Stakeholder engagement

21.2.9 The Planning Inspectorate issued its Scoping Opinion on 9 May 2019, a copy of which can be found on the Planning Inspectorate's website, or **Appendix 1.3** of this ES [TR020001/APP/5.05]. The Scoping Opinion includes comments from

the Planning Inspectorate and various prescribed consultation bodies, relevant statutory undertakers and Section 43¹ consultees. The comment relevant to the in-combination and cumulative assessment is presented in **Table 21.1** together with an explanation of how that comment has been addressed within this ES. Responses to all comments received during scoping are presented in **Appendix 1.4** of this ES [TR020001/APP/5.02].

Table 21.1: Main in-combination assessment Scoping Opinion comments and how addressed in the ES

Scoping Opinion ID	Scoping Opinion comment	How it is addressed
4.16.1	Greenhouse gasses will not be considered in the in-combination or cumulative effects assessment as all relevant emissions will be considered in that assessment, and the global atmosphere is the receptor. The Inspectorate agrees with this approach and is content that significant cumulative effects from GHG emissions can be assessed the Climate Change aspect chapter.	This has been acknowledged and effects of the greenhouse gas assessment are presented within Chapter 12 Greenhouse Gases of this ES [TR020001/APP/5.01].

21.2.10 The **Consultation Report** submitted as part of the application for development consent [TR020001/APP/6.01] and [TR020001/APP/6.02] contains a full account of the previous statutory consultation process and issues raised in feedback. This includes those in relation to the in-combination and cumulative effects assessments.

Methodology

21.2.11 There is no standardised methodology for the assessment of in-combination effects. The approach applied to this assessment has been based upon guidance such as:

- a. The European Commission (1999) Guideline for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (Ref. 21.3);
- b. The European Commission 2017 Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU (Ref. 21.4); and
- c. Methods of Environmental and Social Impact Assessment, 2018 (Ref. 21.5).

21.2.12 The assessment of potential in-combination effects for the Proposed Development is based on a screening exercise to identify the potential in-combination effects, and where they are considered within the ES. Where

¹ Section 43 of the Planning Act 2008 defines local authority stakeholders who are invited to respond to the request for a scoping opinion within 28days regarding the information provided.

potential in-combination effects are not assessed within **Chapters 6 to 20** of this ES [TR020001/APP/5.01] they have been considered within this chapter. The receptor-led stepped process for the in-combination assessment is outlined in **Table 21.2**.

Table 21.2: In-combination effects assessment process

Step	Description
Step 1: Identify and categorise receptors	Identify all topic sensitive receptors and categorise by receptor type, refer to column 1 of Table 21.3 .
Step 2: Identify impacts	Identify potential topic impacts associated with sensitive receptor(s)/ receptor types (refer to columns 2-16 of Table 21.3).
Step 3: Screen receptors and associated impacts	Undertake screening exercise to determine which receptor types will be taken through to the in-combination assessment (refer to final column of Table 21.3). Items are screened out from further assessment if: <ul style="list-style-type: none"> a. there is no aspect impact overlap upon a receptor type (for example, no temporal or spatial overlap); b. interactions upon a receptor type are already covered within an aspect chapter intrinsically; or c. impacts are identified as 'negligible' ('minor' effects which may not be considered significant individually will still be captured as they have the potential to combine to create an in-combination effect).
Step 4: Assess in-combination effects	Undertake a qualitative assessment on receptor groups screened in for further assessment of in-combination effects, based on professional judgement of specialists.
Step 5: Report findings	Outcomes of the qualitative assessment reported and shared within the ES, refer to paragraphs 21.2.14 to 21.2.27 .

Significance

21.2.13 The in-combination assessment is unique as often the interaction of impacts is difficult to quantify, therefore difficult to attribute significance. Narrative has been used within the assessment to describe the possible changes to the magnitude of impacts and therefore potential effects, based on professional judgement, and relevant topic assessment methodology. Significance may be attributed where significant effects identified in aspect assessments are combined and further exacerbated.

Summary of in-combination effects

21.2.14 **Table 21.3** presents a matrix of the receptor types identified through the aspect chapters, and highlights where these receptor types are common across aspect assessments and may be subject to in-combination impact interactions.

Table 21.3: Environmental aspect interactions

Receptor types	Air quality	Traffic and transport	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Temporal overlap	Spatial overlap	Approach to assessment of interactions
Human (residential)	Y	N	Y	N	N	N	N	N	N	Y	N	N	Yes	Yes	Impacts to human residential receptors are included in this in-combination effects chapter.
Human health	Y	Y	Y	Y	Y	N	Y	N	N	Y	N	Y	Yes	Yes	Interactions between air quality, traffic and transport, noise and vibration, economics and employment, and landscape and visual upon human health have been detailed in Chapter 13 Health and Community [TR020001/APP/5.01] .
Sensitive community facilities	Y	Y	Y	N	N	N	Y	N	N	Y	N	N	Yes	Yes	Interactions between air quality, traffic and transport, noise and vibration, economics and employment, and landscape and visual upon sensitive community facilities have been detailed in Chapter 13 Health and

Receptor types	Air quality	Traffic and transport	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Temporal overlap	Spatial overlap	Approach to assessment of interactions
															Community [TR020001/APP/5.01] .
Non-residential, Commercial / business facilities (including farm holdings)	N	N	Y	N	N	N	Y	Y	N	Y	N	N	Yes	Yes	Interactions between noise and vibration, visual impacts have been detailed in Chapter 11 Economics and Employment [TR020001/APP/5.01] and not considered further in this in-combination effects chapter. Noise and air quality effects upon agricultural land holdings have been considered in Chapter 6 Agricultural land quality and farm holdings of this ES [TR020001/APP/5.01] and are therefore not considered in this in-combination effects chapter.
Ecological receptors	Y	N	Y	N	N	N	N	N	Y	N	N	N	Yes	Yes	Interactions between air quality and noise and vibration effects upon ecological

Receptor types	Air quality	Traffic and transport	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Temporal overlap	Spatial overlap	Approach to assessment of interactions
															receptors are detailed in Chapter 8 Biodiversity of this ES [TR020001/APP/5.01] and are therefore not considered in this in-combination effects chapter.
Built heritage features	Y	N	Y	N	N	N	N	N	N	Y	Y	N	Yes	Yes	Interactions between air quality, noise and vibration, landscape and visual effects upon built heritage features are detailed in Chapter 10 Cultural Heritage of this ES [TR020001/APP/5.01] and are therefore not considered in this in-combination effects chapter.
Water bodies / features	N	Y	N	N	Y	N	N	N	N	N	N	N	Yes	Yes	Interactions between traffic and transportation effects upon water features are detailed in Chapter 20 Water Resources of the ES [TR020001/APP/5.01] and are

Receptor types	Air quality	Traffic and transport	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Temporal overlap	Spatial overlap	Approach to assessment of interactions
															therefore not considered in this in-combination effects chapter.
All travellers (vehicle users, pedestrians, cyclists, public transport users)	N	Y	N	N	N	N	N	N	N	Y	N	N	Yes	Yes – road vehicle users No – PRow users, cyclists and rail users.	Impacts to road vehicle users are included in this in-combination effects chapter. Due to a lack of spatial overlap in identified traffic and transport and visual effects, Public Rights of Way (PRow) users, cyclists and rail public transport users are not considered further in this in-combination chapter.

- 21.2.15 **Table 21.4 to Table 21.5** present the qualitative assessment of those receptor groups which have the potential to be subject to combined impacts. Receptor groups screened into further assessment are:
- a. human residential receptors; and
 - b. road vehicle users.
- 21.2.16 The summary of individual effects, description of potential combined effect along with duration and scale, any required mitigation and overall residual effect are outlined.
- 21.2.17 Where it is considered that the combination of impacts may increase the overall impact magnitude, the resulting effect has been assigned based on the professional judgement of the relevant topic specialists and in accordance with significance criteria set out in **Table 5.7** and **Table 5.8, Chapter 5 Approach to the Assessment of the ES [TR020001/APP/5.01]**.

Human residential receptors

Table 21.4: Summary of identified residual environmental effects upon human residential receptors.

Environmental Aspect	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
Air quality	<p><u>Assessment Phase 1, 2a and 2b</u> Effects upon human receptors (at 601 human receptors) as a result of construction dust and construction traffic are considered to be negligible, not significant.</p> <p>Not considered further.</p>	<p><u>Assessment Phase 1, 2a and 2b</u></p> <ul style="list-style-type: none"> a. Modelled annual NO₂ – all locations except H299 and H44 (refer to Figure 7.3a of this ES [TR020001/APP/5.03]) - negligible, not significant b. Changes to annual mean PM₁₀ and PM_{2.5} – negligible, not significant c. Odour effects – not significant <p>Not considered further.</p> <p><u>Assessment Phase 2a, and 2b</u></p> <ul style="list-style-type: none"> a. Modelled annual NO₂ concentrations at H299 (Dane Street) and H44 (located at Winch Hill, east of the airport) – slight adverse, not significant.
Noise and vibration	<p><u>Assessment Phase 1, 2a and 2b</u> Effects upon human residential receptors as a result of construction noise are considered to be not significant, with no exceedances of Significant Observed Adverse Effect Level (SOAEL).</p> <p>Of these: Eight locations GR14-21 (refer to Figure 16.4 of this ES [TR020001/APP/5.03]) north of Eaton Green Road (16-36 properties) predicted to experience</p>	<p><u>Assessment Phase 1</u></p> <ul style="list-style-type: none"> a. Day and night time air noise - negligible to minor adverse effect upon residential properties, not significant. b. Day and night time ground noise – negligible to minor adverse, not significant effect upon residential properties. c. Surface access noise - effect upon residential properties is not significant.

Environmental Aspect	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
	<p>above Lowest Observed Adverse Effect Level (LOAEL) and below SOAEL during assessment Phase 1.</p> <p>Four locations GR15-18 north of Eaton Green Road (7 receptors) predicted to experience above LOAEL and below SOAEL during assessment Phase 2a.</p> <p>Effects to human receptors as a result of construction traffic are considered to be negligible, not significant.</p> <p><u>Assessment Phase 1, 2a and 2b</u></p> <p>Effect of vibration upon all residential receptors – below LOAEL, not significant except GR18 during assessment Phase 1 (12 properties) – above LOAEL below SOAEL, not significant</p>	<p><u>Assessment Phase 2a</u></p> <ul style="list-style-type: none"> a. <i>Day and night time air noise</i> – negligible to minor adverse, not significant effect upon residential properties b. <i>Day and night time ground noise</i> – negligible to minor adverse, not significant effect upon residential properties. c. <i>Surface access noise</i> - effect upon residential properties. Properties (approximately 55) are located close to Crawley Green Road, between Vauxhall Way and Hedley Rise Minor adverse, not significant effects (with noise insulation). Devon Road, Tea Green and Stony Lane minor adverse, not significant. <p><u>Assessment Phase 2b</u></p> <ul style="list-style-type: none"> a. <i>Air noise</i> – minor adverse, not significant (day time) to moderate adverse, significant (night time) upon residential properties b. <i>Day and night time ground noise</i> – negligible to minor adverse, not significant effect upon residential properties. c. <i>Surface access noise</i> - effect upon some residential properties in the vicinity of Tea Green Stony Lane is moderate/major adverse, significant. Effect on remaining residential properties is not significant.

Environmental Aspect	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
Visual	<p><u>Assessment Phase 1</u> Residents of Wandon End, residents of Winch Hill House, people in Darleyhall, people in Tea Green Negligible, not significant. Not considered further.</p> <p>Residents of Winch Hill Cottages, people in South Wigmore, on people in Breachwood Green, The Heath and Lye Hill – Minor adverse, not significant</p> <p><u>Assessment Phase 2a and 2b</u> Residents of Wandon End, residents of Winch Hill House, residents of Winch Hill Cottages, people in Breachwood Green, The Heath and Lye Hill and people in Tea Green - Minor adverse, not significant</p> <p>People in South Wigmore, and people in Darleyhall - Moderate adverse, significant</p>	<p>Impact on people in Breachwood Green, The Heath and Lye Hill (max, aircraft movements and design year as defined in Chapter 14 Landscape and visual [TR020001/APP/5.01]). Negligible, not significant. Not considered further.</p> <p>Impact on residents of Wandon End, residents of Winch Hill, residents of Winch Hill Cottages, people in South Wigmore, people in Darleyhall, people in Tea Green (max. aircraft movements and design year). Minor adverse, not significant</p>

- 21.2.18 The construction of the Proposed Development, after the application of standard and appropriate mitigation measures (as described in the Code of Construction Practice (CoCP) provided in **Appendix 4.2** of this ES **[TR020001/APP/5.02]**), is expected to result in residual effects ranging from minor adverse (not significant) to moderate adverse (significant) (see **Table 21.4**) due to construction noise and vibration, and visual impacts at human (residential) receptors. Air quality effects were identified as negligible, and therefore not considered further.
- 21.2.19 Human residential receptors are considered to have a medium sensitivity to change. It is predicted that construction noise will be experienced concurrently with visual impacts from the Proposed Development at individual residential receptors, particularly in South Wigmore and to the east of the airport. Construction effects will be temporary and localised in nature, therefore, the magnitude of change due to combined impacts will be low. It is expected that measures within the CoCP would prevent synergistic adverse in-combination effects upon the same receptors beyond those determined by individual aspect assessments. As such, the overall, in-combination effects during construction upon human (residential) receptors are expected to be **minor adverse** and **not significant**.
- 21.2.20 The changes in operational air noise associated with the Proposed Development has the potential to have a significant effect upon human (residential) receptors due to exceedances in the SOAEL (as defined in **Chapter 16** of this ES **[TR020001/APP/5.01]**). This would impact upon those human (residential) receptors in close proximity to the Proposed Development and/or under the flight path. Further, residential receptors at Tea Green are also expected to be significantly affected by increases in road traffic noise as a result of increased traffic on Stony Lane. All other individual noise effects upon human (residential) receptors are considered negligible to minor adverse and not significant.
- 21.2.21 Air noise impacts experienced by residents under the flight path (as identified in **Chapter 16** of this ES **[TR020001/APP/5.01]**) would likely occur simultaneously to changes to their visual amenity in locations in proximity to the airport (residents of Winch Hill, residents of Winch Hill Cottages, people in South Wigmore, people in Darleyhall). It is therefore considered that there is the potential for in-combination effects to those human (residential) receptors in close proximity to the Proposed Development who are also under the flight path. Overall, residential receptors are considered to have a medium sensitivity to change. Whilst some combined effects will arise as outlined above, the overall magnitude of change itself, beyond individual aspect reported effects, is expected to be low as households with the potential to experience moderate adverse, significant air noise effects are eligible for noise insulation secured in **Draft Compensation Policies, Measures and Community First [TR020001/APP/7.10]** and likely to experience effects during night time hours when landscape views are not visible. As such, the overall in-combination effects during operation upon human (residential) receptors are expected be **minor adverse** and **not significant**.

- 21.2.22 Moderate/major adverse, significant traffic noise effects predicted to be experienced in Tea Green are likely to occur concurrently with minor adverse, not significant visual amenity effects. These have the potential to lead to a medium magnitude of change and therefore a **moderate adverse, significant** in-combination effect. Tea Green has been identified as part of the **Transport Assessment [TR020001/APP/7.02]** as a location potentially requiring traffic management which will be monitored as the Proposed Development is delivered, and where necessary opportunities for parking controls, traffic management and calming measures investigated and funded. There were no other identified spatial interactions between surface noise and landscape effects.
- 21.2.23 Health and community construction and operational effects (likely to be experienced by the occupants of the residential receptors) in these areas have been detailed in **Chapter 13 Health and Community** of this ES **[TR020001/APP/5.01]**.

Road vehicle users

Table 21.5: Summary of identified residual environmental effects upon all road vehicle users.

Environmental Aspect	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
Traffic and transport	<p>Traffic effects upon travellers in relation to the construction of the Proposed Development are considered not significant.</p>	<p><u>Assessment Phase 1</u> Severance – no significant effect. Driver stress – no change, no significant effect. Driver delay – 21 junctions, no significant effect. Meeting of New Airport Way, Airport Way and Percival Way minor adverse, not significant Collision and safety – no significant effects. Public transport users – Coach users no significant effect.</p> <p><u>Assessment Phase 2a</u> Severance – minor adverse, not significant - President Way and Eaton Road Link. Minor beneficial - Percival Way. Remainder of road links identified - negligible, not significant. Driver stress – minor adverse, not significant (A1081) Driver delay – minor beneficial, not significant (A1081) slip road. Remainder negligible not significant. Collision and safety – minor beneficial not significant Eaton Green Road/Frank Lester. Remainder negligible, not significant. Public transport users – Coach users no significant effect.</p>

Environmental Aspect	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
		<p>Assessment Phase 2b</p> <p>Severance - minor adverse (Airport Way, Airport Access Road (AAR)) – minor beneficial (Percival Way and Eaton Green Road), not significant</p> <p>Driver stress - minor adverse, not significant (President Way)</p> <p>Driver delay - no significant effect.</p> <p>Collision and safety – moderate beneficial, significant (Eaton Green Road with Frank Lester Way)</p> <p>Public transport users – Coach users no significant effect.</p>
Landscape and visual	<p><i>Visual effects to users of various roads</i></p> <p>Darley Road, Vauxhall Way and Half Moon Lane (assessment Phase 1, 2a and 2b), Eaton Green Road and Winch Hill Road (assessment Phase 1), Kimpton Road and Airport Way (assessment Phase 1 and 2b), New Airport Way (assessment Phase 2b): Minor adverse, not significant</p> <p>Eaton Green Road and Winch Hill Road (assessment Phase 2a and 2b), Kimpton Road and Airport Way (assessment Phase 2a), New Airport Way (assessment Phase 1 and 2a): Moderate adverse, significant</p>	<p><i>Visual effects to users of various roads</i></p> <p>Half Moon Lane - Negligible. Not considered further.</p> <p>Darley Road (design year as defined in Chapter 14 Landscape and visual [TR020001/APP/5.01]): Minor beneficial, not significant</p> <p>Darley Road (max aircraft movements) Eaton Green Road, Winch Hill Road, Vauxhall Way, Kimpton Road and Airport Way, New Airport Way, (max aircraft movements and design year): Minor adverse, not significant</p>

- 21.2.24 The construction of the Proposed Development, after the application of standard and appropriate mitigation measures (as described in the CoCP provided in **Appendix 4.2** of this ES [TR020001/APP/5.02]), is expected to result in residual effects ranging from minor adverse (not significant) to moderate adverse (significant) due to construction traffic and transportation and visual impacts upon road vehicle users.
- 21.2.25 Road vehicle users are considered to have a low sensitivity to change. It is predicted that construction traffic impacts (severance, driver stress, driver delay, collision and safety impacts, and impacts to public transport users) will be experienced concurrently with visual impacts from the Proposed Development at various locations. Construction effects will be transient, temporary and localised in nature, therefore, magnitude of change due to combined impacts will be low. It is expected that measures within the CoCP would prevent synergistic adverse in-combination effects upon the same receptors beyond those determined by individual aspect assessments. As such, the overall, in-combination effects during construction upon road vehicle users are expected to be **minor adverse** and **not significant**.
- 21.2.26 Adverse effects as a result of the operation of the Proposed Development have been identified to road vehicle users as a result of visual impacts (minor adverse, not significant to moderate adverse significant), and to receptors identified within the traffic and transport assessment (minor adverse effects, not significant).
- 21.2.27 Minor adverse, not significant traffic and transportation effects such as driver delay, stress and severance to road travellers are predicted to be experienced predominantly along Airport Access Road, Airport Way, New Airport Way, Presidents Way, and Eaton Green Road due to the operation of the Proposed Development. Users of Eaton Green Road, Airport Way and New Airport Way may simultaneously experience minor adverse, not significant visual effects. These effects experienced in combination would result in a low magnitude change due to their transient nature as travellers pass through the area in an existing urban setting. As such **minor adverse, not significant** in-combination effect to road travellers during the operation of the Proposed Development are anticipated.

21.3 Cumulative effects assessment

Overview

21.3.1 The Planning Inspectorate Advice Note 17 (AN17)(Ref. 21.6) defines a four-stage approach for undertaking a CEA:

- a. Stage 1: Establish the Nationally Significant Infrastructure Project's (NSIP's) Zone of Influence (ZOI) and identify long list of 'other development';
- b. Stage 2: Identify shortlist of 'other development' for CEA;
- c. Stage 3: Information gathering; and
- d. Stage 4: Assessment.

21.3.2 The CEA for the Proposed Development has adopted this four stage approach and Stages 1 to 4 are described further in methodology (from **paragraph 21.3.13**).

Stakeholder engagement

21.3.3 The Planning Inspectorate issued its Scoping Opinion on 9 May 2019, a copy of which can be found on the Planning Inspectorate's website or in **Appendix 1.3** of the ES **[TR020001/APP/5.05]**. The Scoping Opinion includes comments from the Planning Inspectorate and various prescribed consultation bodies, relevant statutory undertakers and Section 43 consultees. The main comments relevant to the cumulative assessment are presented in **Table 21.6** together with an explanation of how and where that comment has been addressed within the ES. Responses to all comments received during scoping are presented in **Appendix 1.4** of the ES **[TR020001/APP/5.02]**.

Table 21.6: Main Cumulative Effects Assessment Scoping Opinion comments and how addressed in the ES

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
4.16.2	If exclusion criteria are to be used in the identification of the long list of other developments at Stage 1, then these must be clearly stated and justified. Consideration needs to be given to the potential for non-significant effects of a number of projects or developments contributing to an overall significant effect.	Exclusion criteria used during Stage 1 of the Cumulative Effects Assessment have been described and justified in Section 21.3 . Other developments have been screened based on nature, temporal and spatial scope, scale and density, and availability of information as described in Stage 2 in Section 21.3 .
4.16.3	Table 21-2 of the Scoping Report notes that the transport and traffic assessment, based on surface	The list of other developments included within the surface access modelling is broadly aligned with

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
	<p>access modelling, is inherently cumulative as it includes employment and housing development projections. The Applicant should ensure that the list of other developments (including Local Plan allocations) that are taken into account within the Cumulative Effects Assessment are aligned with the traffic modelling.</p>	<p>that for the EIA. There is however a primary focus on the employment and housing developments (greater than 100 jobs or more than 250 dwellings respectively), i.e. those likely to contribute a large volume of road traffic. The identified developments for the surface access modelling, and a factor for natural growth, have been incorporated into both VISSIM traffic simulation software for modelling and strategic modelling upon which the Traffic and Transport, Air Quality, and Noise assessments are based.</p> <p>Further information regarding the criteria for other developments identified is provided in the Transport Assessment [TR020001/APP/7.02] submitted as part of the application for development consent.</p> <p>Appendix 21.1 [TR020001/APP/5.02] identifies which of the other developments included on the long list have also been included in the traffic modelling.</p>
4.16.4	<p>The Applicant should interrogate assumptions made in surface access modelling to ensure that these are up to date and include relevant other developments. The Applicant should make effort to agree the model or models for the cumulative assessment of transport and transportation with relevant consultation bodies.</p>	<p>Extensive consultation with highway authorities has been undertaken regarding the Transport Assessment [TR020001/APP/7.02] and model, as reported in Chapter 18 Traffic and Transportation of the ES [TR020001/APP/5.01]. Full details of the transport modelling and the assumptions made are available within the Transport Assessment [TR020001/APP/7.02].</p>
4.16.5	<p>The Inspectorate agrees that climate change resilience is only considered in respect of the Proposed Development, and that cumulative</p>	<p>This has been acknowledged. No further action required.</p>

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
	effects with other developments will not be included in the ES.	
4.16.6	The Inspectorate expects that the ZOI will extend to encompass other land within agricultural holdings affected by the proposed development, that may also be affected by other development, such that the cumulative impact on agricultural holdings of the proposed development and other developments can be assessed.	The assessment of the likely significant effects of the Proposed Development on agricultural holdings is provided in Chapter 6 Agricultural Land Quality and Farm Holdings of the ES [TR020001/APP/5.01] . The ZOI included adjacent agricultural holding where potentially significant effect where identified. The assessment of cumulative impacts on agricultural land with other developments is provided in Table 21.10 .
4.16.7	The proposed 1.5km ZOI is not justified in the Scoping Report but appears to be based on potential effects on species. It is not clear why the ZOI set within the Biodiversity chapter (Chapter 17) has not been applied, which extends up to 10km for statutory designated sites (up to 30km for those designated for bat and bird species). At 1.5km the cumulative ZOI is likely to omit consideration of cumulative effects on designated sites in the wider area. The Inspectorate advises that the ZOI should reflect that proposed in the Biodiversity assessment.	The study areas of 10km and 30km referenced to in the Scoping Opinion Response (Appendix 1.4 [TR020001/APP/5.02]) are not ZOIs. Study areas and ZOIs for the Biodiversity assessment differ in size. This is explained further in Section 8.5 of Chapter 8 Biodiversity of the ES [TR020001/APP/5.01] , describing study areas and ZOI for each habitat and species and providing justification for the ZOI employed in the CEA. Cumulative impacts on biodiversity are considered (where applicable - i.e. where potential impact pathways (routes by which a change in activity can lead to an effect) are present to receptors) in relation to all ZOIs listed in Chapter 8 Biodiversity of this ES [TR020001/APP/5.01] (including those for statutory and non-statutory designated nature conservation sites). The ZOI for the Proposed Development has been increased from 1.5km to 2km as a result of the air quality assessment. The 1.5km

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
		<p>previously used was the maximum ZOI for a mobile ecological receptor, in this case barn owl/red kite, that could reasonably be considered to be impacted by the Proposed Development. However, the detailed air quality assessment has reported some impacts on locally designated ecological sites, therefore, the ZOI has been extended to the non-statutory designated nature conservation sites study area of 2km from the Main Application Site.</p> <p>This is a result of air quality effects on ecological sites only which employs traffic data and is therefore inherently cumulative.</p>
4.16.8	<p>The Inspectorate considers that minor applications or allocations within 1km of the red line boundary should be included in the CEA. The Applicant should make effort to agree with relevant consultation bodies the applications and allocations to be taken into account in the CEA and should also consider whether it is relevant to include applications submitted more than five years ago where these may lead to significant cumulative effects.</p>	<p>The search area for 'minor' applications has been extended from the originally proposed 200m to 500m from the Main Application Site and Hitchin Off-site Highways Interventions. It was determined that developments of this scale beyond 500m would be unlikely to result in significant cumulative effects with the Proposed Development.</p> <p>Criteria and relevant applications and allocations were shared with consultation bodies as described in paragraphs 21.3.4 to 21.3.9. No objections were received regarding amendment of search area to 500m.</p>
4.16.9	<p>The screening of the long list of other developments for inclusion and exclusion should use criteria which is explicitly defined in the ES. Those criteria not already covered by the bullet points in section 21.4.21 should in addition be clearly stated.</p>	<p>Detail regarding the screening criteria is provided in Stage 2 (from paragraph 21.3.27).</p>
4.16.10	<p>As set out in the AN17, where new 'other development' comes forward following the stated assessment cut-off date, the Examining Authority may</p>	<p>The search for other developments included in the CEA was frozen three months ahead of the submission of the application for</p>

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
	<p>request additional information during the Examination in relation to effects arising from such development. The Applicant should be aware of the potential need to conduct further assessments and provide more information.</p>	<p>development consent to ensure a robust and appropriate assessment. This means that any other developments which may arise in the planning system after this date may not be captured as part of the assessment. Should the Examining Authority identify further other developments, the Applicant is aware additional assessment may be required.</p>
<p>4.16.11</p>	<p>The assessment should take into account the cumulative effects of the proposed development together with the expansion of other airports, in the South East. The ES should consider cumulative impacts where significant effects could occur, including impacts to the Chilterns AONB.</p>	<p>For the purposes of the CEA, proposed development at other airports in the South East has been considered in Step 1 i.e. establishing whether the construction and/or operation of the proposed development at other airports in the South East is likely to occur within the ZOI of the Proposed Development. The assessment includes Stansted, Heathrow, Gatwick and London City airports. The maximum extent of the core ZOI for the Proposed Development is defined by the noise and vibration air noise study area, the affected road network and the 10km buffer area from the Main Application Site defined by Major Accidents and Disasters assessment (see Figure 21.1 of this ES [TR020001/APP/5.03]). The core ZOI identified by the Heathrow proposals and an assumed ZOI was applied to each of the other airports (Gatwick, Stansted and London City) identified there would be no overlap with the core ZOIs for the Proposed Development (Figures 20.1 and 20.2 of the ES [TR020001/APP/5.03]). Therefore, cumulative effects with other airport expansion in the South East is not considered further.</p>

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
		<p>The exceptions are:</p> <ul style="list-style-type: none"> a. the assessment of Greenhouse Gas emissions which has considered the Proposed Development in the context of the wider UK aviation sector projections, and therefore, already reports a cumulative assessment in Chapter 12 Greenhouse Gases of the ES [TR020001/APP/5.01]; b. the waste and resources assessment wider ZOI intercepts with the Heathrow wider ZOI for waste. <p>As explained in Chapter 4 The Proposed Development of the ES [TR020001/APP/5.01], a review of airspace in the south east of England is ongoing by the Civil Aviation Authority and yet to be completed. If there are anticipated to be any cumulative effects between Luton and other airports in the southeast, potential cumulative impacts for airspace up to 7,000ft will be assessed through the Airspace Change Proposals. This will be the subject of a separate consultation exercise by the airport operator, LLAOL, following the Civil Aviation Authority (CAA) airspace change procedure (CAP1616), in due course.</p>

21.3.4 Aylesbury Vale District Council (AVDC) comments appended to the Scoping Opinion requested the extension of the air quality 15km x 15km ZOI to 25km x 25km for the CEA. It was not deemed proportionate to the cumulative assessment to extend the air quality ZOI for all developments as the distance from the Proposed Development and smaller scale of other developments in other planning regimes are unlikely to result in significant effects, as evidenced by the air quality assessment results reported in the 2019 and 2022 PEIR's. However, taking this comment into account, the NSIP search area was extended from 15km to 25km from the Main Application Site (**Table 21.7**) to identify any NSIPs which may interact with the Proposed Development. This

identified Millbrook Power which was considered further in the Stages 1 to 4 presented from **paragraph 21.3.13**. AVDC's response also requested the inclusion of East West Rail for consideration which was also included in the Stages 1 to 4 presented from **paragraph 21.3.13**.

- 21.3.5 The Chilterns Conservation Board requested the inclusion of other major developments: HS2, housing and employment growth of Aylesbury into a Garden Town, the expansion of housing at nearby Hemel Hempstead, future development to the west of Luton housing, and the Oxford to Cambridge Expressway. These were also considered and included (see 'Stage 1' from **paragraph 21.3.13** and 'Stage 2' from **paragraph 21.3.27**).
- 21.3.6 The screening criteria and outline approach employed to identify the long list of other developments in the CEA was presented to Luton Borough Council (LBC), North Herts District Council (NHDC), Central Bedfordshire Council (CBC) and Hertfordshire County Council (HCC) in a meeting on the 20 October 2021. The long list of identified other developments was provided to these Local Planning Authorities (LPAs)(LBC, NHDC, CBC and HCC) for comment prior to that meeting. Comments received during the meeting queried whether Stevenage Borough Council was included within the search and whether enough information was now available on the Oxford - Cambridge Arc to be included under Tier 3 (for Tier definitions see **Table 21.8**) developments in the CEA. It was clarified that Stevenage Borough Council was beyond the 5km search radius applied for all development types other than NSIPs, therefore excluded from the CEA. The Oxford -Cambridge Arc is an area of five counties recognised by the government for their economic, place-making, connectivity and environmental potential (Ref. 21.7), however no specific development is identified within this definition, therefore it has been excluded from the CEA. The Oxford to Cambridge Expressway development was included as detailed in **paragraph 21.3.5**.
- 21.3.7 NHDC responded via email to the long list provided and requested the addition of three developments (13/02000/1, 16/03155/1, and 18/02722/FP) and allocations (LG1, GA1&2, CD1, CD2, CD3, HT2, LG19 and LG21). The developments and allocations have been considered in the long list **Appendix 21.1** of this ES [**TR020001/APP/5.02**].
- 21.3.8 Comments provided during statutory consultation in 2022 by East Hertfordshire requested the addition of a residential development on land east of Stevenage (3/19/0118/OUT) which was included in the assessment. A request was also raised by Chilterns Conservation Board to add the boundary of the AONB to figures which has been provided in **Figure 21.2** of this ES [**TR020001/APP/5.03**].
- 21.3.9 An update of the long list and shortlist of other developments was presented to LBC, NHDC, CBC, HCC and Dacorum in November 2022. CBC responded with a request for the consideration of three additional developments (17/05679/OUT, 19/00469/OUT, and 21/05254/OUT) and allocations (SE1, SA1, HAS07, H1(19)) which have been considered in the long list **Appendix 21.1** of this ES [**TR020001/APP/5.02**].

- 21.3.10 In January 2023, the Applicant was notified of a proposal for a 106ha new solar farm development at Wandon End (hereafter 'Wandon End Solar'), adjacent to the Main Application Site. A planning application for Wandon End Solar was submitted to both LBC (22/01657/FUL) and NHDC (22/03231/FP) and validated in January 2023. Information regarding this development was not available at the time of freezing the screening for identification of a long list of 'other developments', as described in Stage 1 from **paragraph 21.3.11**, therefore has not been considered. It is acknowledged that due to the scale and proximity of Wandon End Solar proposals, it will need to be assessed and an update will be provided during the next stage of the DCO process.

Baseline

- 21.3.11 The existing environmental conditions identified by each technical aspect assessment of this ES (**Chapters 6 to 20 [TR020001/APP/5.01]**) have been considered as the baseline for this CEA.

Existing airport related developments at the airport

- 21.3.12 There are a number of airport related developments which have consent or are in the planning system and awaiting consent (see **Section 2.4 of Chapter 2** Site and Surroundings of the ES **[TR020001/APP/5.01]**). Where not in the future baseline (as described in **Chapter 5** Approach to the Assessment of the ES **[TR020001/APP/5.01]**), these developments are considered in the same manner as other developments identified as part of the CEA process.

Stage 1: Identify ZOI and establish long list

Identify long list of 'other developments'

- 21.3.13 A screening exercise was undertaken to identify potential 'other developments' to create a long list for consideration within the CEA. Local authority planning portals were used to search for current planning applications, and local development plans, policies and programmes were reviewed to determine present and future potential interactions with the Proposed Development.
- 21.3.14 The screening exercise utilised a set of temporal, spatial and development sizing screening criteria, as outlined in **Table 21.7**, based on experience from EIAs of other major infrastructure projects.
- 21.3.15 This search included projects/developments submitted five years prior to the commencement of the environmental assessment process in 2018 (i.e. applications submitted since 2013). This temporal limit was used as most consented developments typically require commencement within three to five years of receiving permission.

Table 21.7: CEA Stage 1 - Categorisation by unit size, application and development type, and distance

Development		Housing unit (no)	Housing land (ha)	Non-residential – sqm	Non-residential – ha	Distance from Main Application Site boundary
Nationally Significant Infrastructure Projects		All	All	All	All	25km
Transport and Works Act Orders Mineral and Waste EIA application Transport allocations in non-statutory plans e.g. Local Transport Plans		All	All	All	All	5km
Applications or Allocations	Large Scale major	200+	4+	10,000+	2+	5km
	Small Scale major	10-199	0.5-4	1,000-10,000	1-2	1km
	Minor	1-9	Less than 0.5	Less than 1,000	Less than 1	500m and 500m from Off-site Highways Interventions
Note: Off-site planting excluded from search criteria						

- 21.3.16 The use of these criteria ensured proportionality, limiting the search so that only developments which could have the potential to lead to significant cumulative effects were identified and included in the CEA. Other relevant developments identified by statutory stakeholders during the course engagement on the EIA (as discussed in **paragraphs 21.3.4 to 21.3.9**) were also added for consideration.
- 21.3.17 The Planning Inspectorate’s Scoping Opinion requested amendments to the search area for minor developments to be extended from 200m to 1km. The search was extended to 500m from the Main Application Site and Off-site Highways Interventions to gather more information regarding local minor developments, however, was not extended to the full 1km as it was deemed that developments of this scale beyond 500m are unlikely to lead to significant environmental effects in combination with the Proposed Development. This approach was shared with consultees during the 2019 and 2022 statutory consultation and no further comments were raised.
- 21.3.18 The search area for NSIPs was extended from the originally proposed 15km to 25km in response to a comment raised in the Scoping Opinion by AVDC.

- 21.3.19 **Figure 21.3** of the ES [TR020001/APP/5.03] details the search areas described in **Table 21.7**.
- 21.3.20 The results of the screening exercise were then categorised into three ‘tiers’ based on the level of detail likely to be available about them, as outlined in Planning Inspectorate AN17 (Ref. 21.6); **Table 21.8** defines these tiers.

Table 21.8: ‘Other development’ Tiers for inclusion in CEA

Tier	‘Other development’
Tier 1	under construction; permitted application(s), whether under the PA2008 or other regimes, but not yet implemented; or submitted application(s) whether under the PA2008 or other regimes but not yet determined;
Tier 2	projects on the Planning Inspectorate’s Programme of Projects where a scoping report has been submitted.
Tier 3	on the Planning Inspectorate’s Programme of Projects where a scoping report has not been submitted; identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited; or identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

- 21.3.21 The Planning Inspectorate’s AN17 recommends that ‘Other developments’ categorised within Tier 1 and 2 should be included within the CEA. Where possible, Tier 3 developments should be included also, however, recognising the potential limitations associated with the availability of information for these developments.
- 21.3.22 **Appendix 21.1** of the ES [TR020001/APP/5.02] details the long list of ‘other developments’ and allocations to be considered as part of the CEA, categorised into their respective Tiers.
- 21.3.23 The screening search has been updated as necessary over the course of the EIA and frozen three months ahead of the submission of the development consent application. It is recognised that further developments may be identified by the Planning Inspectorate, which may require further consideration during the examination period.

Identify ZOI

- 21.3.24 Following identification of ‘other developments’ from the screening exercise, the ZOI for each environmental assessment topic, in line with the Planning Inspectorate’s AN17 (Ref. 21.6), has been defined. These have been defined based on the predicted extent of impacts associated with the Proposed Development and accepted industry guidance and relevant standards

appropriate for each aspect assessment as defined in **Chapters 6 to Chapter 20** of this ES [TR020001/APP/5.01].

21.3.25 The ZOI for each environmental assessment topic is documented in **Table 21.9** and shown **Figures 21.1** and **21.2** of this ES [TR020001/APP/5.03].

Table 21.9: Environmental topics CEA ZOI

Environmental Topics	Zone of Influence
Air quality	15km x 15km domain centred on the Airport and within 200m of the defined ARN.
Traffic and transportation	The traffic and transport assessment has been based on surface access modelling which is inherently cumulative as it includes employment and housing development projections. This element has therefore not been progressed further in the CEA.
Climate change resilience	This assessment considers potential impacts of climate change on the Proposed Development itself only. This element has therefore not been progressed further in the CEA.
GHG	Gases are not geographically bound, but rather globally distributed. This element has therefore not been progressed further in the CEA.
Noise and vibration	The ZOI is based on the combined Study Areas of the noise and vibration assessment, which includes air noise, construction noise and vibration, ground noise, and surface access noise study areas (as defined in Chapter 16 Noise and Vibration [TR020001/APP/5.01] and shown on Figure 21.1 [TR020001/APP/5.03]).
Soils and geology	250m from the boundary of the Main Application Site for risk of potential land contamination. 2km from the boundary of the Main Application Site for potential contamination to groundwater.
Water resources	Developments within a 5km radius of the Main Application Site depending on the hydraulic connectivity with water receptors affected by the Proposed Development.
Waste and resource	Waste management sites and other construction projects within Bedfordshire, Hertfordshire and Buckinghamshire.
Economics and employment	Principally the 'Three Counties' of Bedfordshire, Hertfordshire and Buckinghamshire.
Health and community	No topic specific ZOI, dependent on the spatial distribution of likely impacts identified by other disciplines.
Agriculture	Agricultural land required for construction within the Main Application Site; agricultural field margins required for landscape mitigation planting; and agricultural land required

Environmental Topics	Zone of Influence
	to construct Off-site Highway Interventions to the west of Junction 10 of the M1 and immediately to the north of Half Moon Lane.
Biodiversity	Up to 2km depending on species, where interactions with other effects or developments may occur.
Landscape and visual	5km from Main Application Site boundary, plus the full extent of any character areas that may be affected within that envelope; land in Hitchin within 250m of Work No. 6e (k), (l) and (m); and, for considering effects on tranquillity, additional land within the Chilterns Area of Outstanding Natural Beauty AONB where aircraft would be below 7,000ft (see Figures 14.14 to 14.17 of this ES [TR020001/APP/5.03]).
Cultural heritage	2km from the Main Application Site boundary. A wider study area, beyond the 2km, has been defined informed by the Zone of Theoretical Visibility and noise contour data.
Major accidents and disasters	Dependent on the spatial distribution of likely impacts. Up to a maximum of 10km from the Main Application Site boundary.

21.3.26 For the purposes of the CEA the ZOI has been split into a 'Core ZOI' and a 'Wider ZOI' which are shown in **Figures 21.1** and **21.2** of the ES [TR020001/APP/5.03] respectively. The Core ZOI reflects the majority of topic assessment's maximum geographical area where likely significant effects may occur. Whereas the Wider ZOI applies only to Waste and Resources and Economics and Employment assessments.

Stage 2: Identify short list

21.3.27 The long list of 'Other developments' presented in **Appendix 21.1** of the ES [TR020001/APP/5.02], including those identified by the process described in this chapter and any additional identified by stakeholders following consultation, was subsequently screened based on the potential for significant cumulative effect against a series of further inclusion and exclusion criteria to compile a more proportionate short list of 'other development' for consideration within the CEA.

21.3.28 These criteria, following guidance outlined in AN17, included the following:

- a. Any overlap in temporal scope of construction between the Proposed Development and the 'Other development' that may mean they interact. Where 'Other development' is expected to be constructed before commencement of construction of the Proposed Development, effects arising from them are considered as part of the future baseline rather than forming part of the CEA.
- b. The scale and nature of the 'Other development', for instance whether the scale and nature of the 'Other development' identified in the ZOI is likely to interact with the Proposed Development. Only those that have an EIA (or other suitable environmental detail to base an assessment on)

are considered of a scale that could interact with the Proposed Development.

- c. Any other factors, for instance nature and/or capacity of the receiving environment that would make a significant cumulative effect with 'Other development' more or less likely.

- 21.3.29 Professional judgement has been used in the development and application of the inclusion and exclusion criteria, and relevant planning authorities and statutory consultees were consulted as appropriate.
- 21.3.30 Local development plans, policies and programmes were reviewed to determine present and future potential interactions with the Proposed Development. This information was limited, however identified emerging developments relevant to the EIA.
- 21.3.31 Following the application of this criteria, the short list subject to further CEA is presented in **Appendix 21.2** of the ES [TR020001/APP/5.02]. All those on the short list are considered to be of such a nature and proximity to the Proposed Development to have the potential to generate significant cumulative effects when considered in context with the Proposed Development.
- 21.3.32 Should applications for 'Other developments' be submitted after the submission of the application for the Proposed Development, these necessarily should include this Proposed Development in an assessment of the cumulative effects for their development.

Stage 3: Information gathering

- 21.3.33 Following the identification of the short list, collection of environmental information associated with the identified 'Other developments' was required to allow a robust assessment of any likely cumulative effects.
- 21.3.34 Information sourced from planning portals and project websites included:
- a. proposed design and location;
 - b. proposed programme of construction, operation and decommissioning; and
 - c. environmental assessments that set out baseline data and effects arising from the 'Other development'.
- 21.3.35 This search was frozen three months ahead of the submission of the development consent application, to allow technical assessment of the cumulative effects.
- 21.3.36 A summary of the key environmental issues associated with each development is provided in **Appendix 21.2** of the ES [TR020001/APP/5.02], and a Gantt chart showing project timescales in **Appendix 21.3** of the ES [TR020001/APP/5.02].

Stage 4: Assessment

21.3.37 For each aspect assessment, the short list of 'Other developments' presented in **Appendix 21.2** of the ES [TR020001/APP/5.02] has been reviewed to identify those within their ZOI. A review has then been undertaken of each 'Other development' within these ZOI to assess whether significant cumulative effects may arise or not. **Table 21.10** reports the CEA only for those 'other developments' each aspect considered had the potential to lead to cumulative effects.

Significance criteria

21.3.38 There is no standard prescriptive method for assessing cumulative effects and the extent to which the effects of other developments can be assessed depends on the level of information available about the other developments. Such effects are, therefore, assessed by professional judgment, although matrices are used where appropriate and where enough information regarding the 'Other development' exists. Where environmental assessment information regarding 'Other development' is not available or is uncertain, the assessment is necessarily qualitative.

21.3.39 The same significance criteria for each independent environmental aspect as outlined in **Chapters 6 to 20** [TR020001/APP/5.01] has been used where applicable. If not suitable or preferred, the generic significance criteria described in **Chapter 5** [TR020001/APP/5.01] has been employed.

21.3.40 Where a significant adverse cumulative effect is identified, mitigation measures are proposed by the environmental topic for implementation to reduce the residual effect.

Potential significant effects

21.3.41 Cumulative effects are identified at an individual aspect level and reported in **Table 21.10**. **Table 21.10** provides a summary containing the effect of the Proposed Development upon receptors identified by the aspect assessments (**Chapters 6 to 20** of this ES [TR020001/APP/5.01]), the assessment of cumulative effects of 'other developments' and their significance, any proposed mitigation measures and the residual cumulative effects. The residual cumulative effects column describes whether the identified effect of the Proposed Development remains as identified or is changed when considered cumulatively with 'other developments'.

21.3.42 **Table 21.10** is documented in line with recommendations from AN17 Appendix 2, supported by further detail provided in the short list presented in **Appendix 21.2** of the ES [TR020001/APP/5.02].

Table 21.10: Assessment of Cumulative effects

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Agricultural Land Quality and Farm Holdings				
Subgrade 3a agricultural land	Moderate adverse (assessment Phase 1) rising to Major adverse (assessment Phases 2a and 2b), significant.	The North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development would result in further permanent loss of land in Subgrade 3a (high sensitivity) during assessment Phase 1 of the Proposed Development. These changes are however judged not to result in any additional direct or indirect impacts on Best Most Versatile (BMV) agricultural land considered in Chapter 6 Agricultural land quality and farm holdings of this ES [TR020001/APP/5.01].	None applicable	Remains Moderate adverse (assessment Phase 1), significant rising to Major adverse (assessment Phases 2a and 2b), significant
Subgrade 3b agricultural land	Minor adverse (assessment Phases 1, 2a and 2b), not significant	The North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development would result in further permanent loss of land in Subgrade 3b (medium sensitivity) during assessment Phase 1 of the Proposed Development. These changes are however judged not to result in any additional direct or indirect impacts on lower quality agricultural land considered in Chapter 6 Agricultural land quality and farm holdings of this ES [TR020001/APP/5.01].	None applicable	Remains Minor Adverse (assessment Phase 1), not significant
Soil resources (topsoil and subsoil)	Minor adverse (assessment Phase 1) rising to Major adverse (assessment Phases 2a and 2b), significant	The North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development would result in the clearance and soil-stripping of further soil resources during assessment Phase 1 of the Proposed Development. It is assumed that these works would be undertaken in accordance with the good practice set out in Defra's 'Code of Practice for the Sustainable Management and Use of Soil on Construction Sites.' These changes are judged not to result in any additional direct or indirect impacts on soil resources considered in Chapter 6 Agricultural land quality and farm holdings in this ES [TR020001/APP/5.01].	Outline Soil Management Plan (Appendix 6.6 of this ES [TR020001/APP/5.02])	Remains Minor adverse (assessment Phase 1, not significant rising to Major adverse (assessment Phases 2a and 2b), significant
Agricultural holding	Negligible/Minor adverse (assessment Phases 1, 2a and 2b)	The North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development require land that is currently farmed to be taken out of agricultural use and may result in new effects on farm holdings. These changes are however judged not to result in any additional direct or indirect impacts on the agricultural	None applicable	Remains Negligible/Minor adverse (assessment Phases 1, 2a and 2b), not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		holdings considered in Chapter 6 Agricultural land quality and farm holdings of this ES [TR020001/APP/5.01].		
Air Quality				
Human receptors within 350m from the boundary of dust generating activity and 50m from the routes used by construction vehicles, up to 500m from the construction site entrance.	Construction dust – negligible effect, not significant	Appendix 21.2 of this ES [TR020001/APP/5.02] provide the details of which developments have a possible temporal overlap. It is assumed that these projects would be undertaken in accordance with their own suite of dust control and mitigation measures, following best practice guidance. Therefore, there would be no permanent cumulative effect.	Construction dust management. Application of best practice mitigation measures secured through the CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).	Remains Negligible effect, not significant
Human receptors within 200m of the affected road network (ARN), and below the aircraft flightpath (the modelled flightpath up to an altitude of 457m, in the study area.	Increased emissions to air from airport sources and from road traffic (combined construction and operational traffic) at human receptors – negligible to slight adverse effect, not significant	Appendix 21.2 of this ES [TR020001/APP/5.02] provide the details of which developments have a possible temporal overlap and further details on which have been included in the strategic transport modelling and is therefore embedded in the air quality assessment reported in Chapter 7 Air Quality of this ES [TR020001/APP/5.01]. Therefore, the conclusions already account for the cumulative effects from these developments and there would be no permanent cumulative effect.	Use of the AAR and A1081 to the M1 and not using roads near to receptors. Secured through construction traffic controls in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]) and the Outline Construction Traffic Management Plan (Appendix 18.3 of this ES [TR020001/APP/5.02]) and Outline Operational Air Quality Plan (Appendix 7.5 of this ES [TR020001/APP/5.02]) measures.	Remains Negligible to slight adverse effect, not significant
Biodiversity				
Wigmore Park CWS	Habitat loss - Site being compensated through replacement open space and habitat creation through the phases. Temporary minor adverse residual effect during construction while additional habitat creation areas establish, rising to a negligible effect following maturation (assessment Phases 1 and 2a), which is not significant The overall long term effect on this county	Green Horizons Park (17/02300/EIA) identifies Wigmore Park CWS as a receptor that will be affected by the development. The development will result in habitat loss during construction, plus indirect effects during construction and operation. However, with mitigation, the assessment concluded no significant residual effects, and no cumulative effect is anticipated.	Habitat provision in design and additional habitat creation. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	No cumulative effect is anticipated. Remains: Habitat loss - Site being compensated through replacement open space and habitat creation through the phases. Temporary minor adverse residual effect during construction rising to a negligible effect following maturation (assessment Phase 1 and assessment Phase 2a), which is not significant. The overall long term effect on this county value site during construction equates to a negligible effect in the long term (assessment Phase 2b), which is not significant.

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	<p>value site during construction equates to a negligible effect, which is not significant (assessment Phase 2b)</p> <p>Surface water runoff, and increase lighting during operation on the remaining area prior to start of assessment Phase 2a - Minor adverse effect (assessment Phase 1) which is not significant.</p>			<p>Surface water runoff, and increase lighting during operation on the remaining area prior to start of assessment Phase 2a - Minor adverse effect, (assessment Phase 1) which is not significant.</p>
<p>Winch Hill Wood CWS / LWS/ ancient woodland</p>	<p>Habitat loss (removal of small number of trees for arboricultural reasons only) - Negligible effect during construction (assessment Phase 1)</p> <p>Habitat isolation and degradation, indirect effects from dust, noise and pollution, changes to hydrological conditions. Temporary minor adverse effect, leading to a negligible effect following implementation of management and maturation of habitat creation (assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Lighting, drainage – Minor adverse effect during assessment Phase 2a and 2b operation which is not significant.</p>	<p>None of the identified other developments will have an effect on this receptor therefore no cumulative effect is anticipated. The air quality assessment employs traffic data and is therefore inherently cumulative.</p>	<p>Habitat provision in design to improve connectivity of habitat. Management of Winch Hill Wood CWS/LWS/ancient woodland to improve condition.</p> <p>Appropriate lighting and drainage design. No additional mitigation required. Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).</p>	<p>No cumulative effect is anticipated. Remains: Habitat loss (removal of small number of trees for arboricultural reasons only) – Negligible effect (assessment Phase 1), which is not significant.</p> <p>Habitat isolation and degradation, indirect effects from dust, noise and pollution, changes to hydrological conditions. Temporary minor adverse effect, leading to a negligible effect following implementation of management and maturation of habitat creation (assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Lighting, drainage – Minor adverse effect during assessment Phase 2a and 2b operation which is not significant.</p> <p>Air quality – Minor adverse effect during assessment Phase 1, 2a and 2b operation which is not significant. Until woodland management within the Outline LBMP (Appendix 8.2 of this ES</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	<p>Air quality - Minor adverse effect during assessment Phase 1, 2a and 2b operation which is not significant. Until woodland management within the Outline LBMP (Appendix 8.2 of this ES [TR020001/APP/5.02]) shows improvement of the woodland in the long term and becomes negligible which is not significant.</p>			<p>[TR020001/APP/5.02] shows improvement of the woodland in the long term and becomes negligible which is not significant. The air quality assessment employs traffic data and is therefore inherently cumulative.</p>
Dairyborn Scarp DWS	<p>Indirect impacts during construction – dust deposition, pollution events – Minor adverse effect (assessment Phase 1, assessment Phase 2b), which is not significant.</p> <p>Habitat Loss - Temporary minor adverse effect, leading to a negligible effect following maturation of replacement habitat (assessment Phase 2a), which is not significant.</p> <p>Air quality – Minor adverse effect during assessment Phase 1, 2a and 2b operation which is not significant.</p>	<p>Hayward Tyler (20/00147/OUT) identifies Dairyborn Scarp DWS as a potential receptor within its assessment but conclude no significant residual effects on this DWS and no cumulative effect is anticipated.</p> <p>Green Horizons Park (17/02300/EIA) identifies Dairyborn Scarp DWS as a receptor that will be directly affected by the development, however the Airport Access Road that would have resulted in partial habitat loss during construction of Green Horizons Park is now part of this Proposed Development. Therefore, habitat loss of Dairyborn Scarp DWS would no longer have a cumulative effect during construction. With mitigation, the assessment concluded no significant residual effects from indirect effects during operation and no cumulative effect is anticipated.</p>	<p>Habitat provision in design. Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Indirect impacts during construction - dust deposition, pollution events – Minor adverse effect (assessment Phase 1, assessment Phase 2b), which is not significant.</p> <p>Habitat loss – Temporary minor adverse effect, leading to a negligible effect which is not significant, following maturation of replacement habitat (assessment Phase 2a).</p> <p>Air quality - Minor adverse effect during assessment Phase 1, 2a and 2b operation which is not significant. The Air Quality assessment employs traffic data and is therefore inherently cumulative.</p>
Luton Parkway Verges DWS	<p>Indirect impacts during construction - dust deposition, pollution events - Minor adverse (assessment Phase 1,</p>	<p>Green Horizons Park (17/02300/EIA) and Hayward Tyler (20/00147/OUT) identify Luton Parkway Verges DWS within their assessments as a potential receptor. These developments all concluded no significant residual</p>	<p>Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). Habitat creation as part of the embedded and additional mitigation for the Proposed</p>	<p>No cumulative effect is anticipated. Remains: Indirect impacts during construction - dust deposition, pollution events – Minor adverse effect (assessment</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	<p>assessment Phase 2a), which is not significant.</p> <p>Habitat Loss (unless can be avoided in detailed design stage or replaced in situ following construction) - Temporary minor adverse effect, following maturation of replacement habitat (away from DWS) (assessment Phase 2a), which is not significant.</p> <p>Potential for shading impacts and trampling to any remaining areas of DWS – With mitigation negligible residual effect for trampling, which is not significant. However, no mitigation can be provided for the potential shading effect which remains a minor adverse effect (assessment Phase 2a onwards), which is not significant.</p> <p>Air quality - Minor adverse effect during assessment Phase 1, 2a and 2b operation which is not significant</p>	<p>effects on this receptor and no cumulative effect is anticipated.</p>	<p>Development. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Phase 1, assessment Phase 2a), which is not significant.</p> <p>Habitat Loss (unless can be avoided in detailed design stage or replaced in situ following construction) - Temporary minor adverse effect, following maturation of replacement habitat (away from DWS) (assessment Phase 2a), which is not significant.</p> <p>With mitigation negligible residual effect for trampling to any remaining areas of the DWS, which is not significant. However no mitigation can be provided for the potential shading effect which remains a minor adverse effect (assessment Phase 2a onwards), which is not significant.</p> <p>Air quality - Minor adverse effect during assessment Phase 1, 2a and 2b operation which is not significant. The Air Quality assessment employs traffic data and is therefore inherently cumulative.</p>
<p>Kidney and Bull Woods CWS / Ancient Woodland</p>	<p>Air quality - Minor adverse effect during assessment Phase 1, 2a and 2b operation, which is not significant.</p>	<p>Newlands Park, Luton (20/01589/OUTEIA) identifies Kidney and Bull Woods CWS / Ancient Woodland as a potential receptor within their assessment as it is 65m east. As a CoCP (Appendix 4.2 of the ES [TR020001/APP/5.02] will be implemented during the construction period, and mitigation measures will be implemented during operation no significant effects on Kidney and Bull Woods CWS are anticipated once</p>	<p>Implementation of Outline Operational Air Quality Plan (Appendix 7.5 of this ES [TR020001/APP/5.02]) measures. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Air quality - Minor adverse effect during assessment Phase 1, 2a and 2b operation, which is not significant. The Air Quality assessment employs traffic data</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>this development is operational, and no cumulative effect is anticipated with the Proposed Development.</p> <p>Hayward Tyler 1 Kimpton Road (20/00147/OUT) identifies Kidney and Bull Woods CWS / Ancient Woodland as a potential receptor within their assessment as it is 1.1km to the south. However, no significant residual effects on this CWS are anticipated, and no cumulative effect is anticipated.</p>		<p>and is therefore inherently cumulative.</p>
<p>Ancient Woodlands, other Wildlife Sites, and ancient and veteran trees as listed in Table 8.17 in Chapter 8 Biodiversity [TR020001/APP/5.01] – all of which fall within 2km of the Main Application Site and/or 200m of the ARN.</p>	<p>Air quality - No significant effect</p>	<p>Chapter 8 of this ES [TR020001/APP/5.01] states that given the features of these ancient woodland and wildlife sites and the distances from the Proposed Development it is not anticipated that the construction or operation of the Proposed Development will result in any significant effects upon them. In addition, the air quality assessment which employs traffic data, and is therefore inherently cumulative, also shows no significant effect.</p> <p>As such these sites would not experience a cumulative effect when considered with any of the 'other development' identified.</p>	<p>Implementation of Outline Operational Air Quality Plan (Appendix 7.5 of this ES [TR020001/APP/5.02]) measures.</p>	<p>Remains Air quality - No significant effect</p>
<p>Broadleaved Semi-Natural and Broadleaved Plantation</p>	<p>Loss of broadleaved semi-natural woodland Temporary negligible effect, which is not significant, rising to a minor beneficial effect following maturation of replacement habitat (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on broadleaved semi-natural woodland Minor adverse effect (all assessment Phases), which is not significant.</p> <p>Loss of broadleaved plantation woodland Temporary negligible effect, which is not</p>	<p>East West Rail Bicester to Bedford improvements, Caddington Golf Club (CB/20/01833/MW), Land West of Bidwell (CB/15/00297/OUT), Land on northern edge of Houghton Regis (12/03613/OUT), Land South and North West of Cockernhoe and East of Wigmore (17/00830/1), Land West of Cockernhoe (16/02014/1), Land Adjacent to Caddington Road and Newlands Road (17/00590/FUL) identify woodland as a receptor within their assessments. However, none of these developments would impact on the same areas of woodland as the Proposed Development. With mitigation, the assessments for these developments concluded no significant residual effects on woodland and no cumulative effect is anticipated.</p>	<p>Habitat creation and provision in design. Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Loss of broadleaved semi-natural woodland Temporary negligible effect, which is not significant, rising to a minor beneficial effect following maturation of replacement habitat (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on broadleaved semi-natural woodland Minor adverse effect (all assessment Phases), which is not significant.</p> <p>Loss of broadleaved plantation woodland Temporary negligible effect, which is not significant, rising to a minor beneficial effect following maturation of replacement habitat (assessment Phase 1, assessment</p>

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	<p>significant, rising to a minor beneficial effect following maturation of replacement habitat (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on plantation woodland - Negligible effect (all assessment Phases), which is not significant.</p>			<p>Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on plantation woodland - Negligible effect (all assessment Phases), which is not significant.</p>
Scrub	<p>Habitat loss – Temporary negligible residual effect while habitats establish, which is not significant, rising to a minor beneficial effect within the open space and the habitat creation areas, which is not significant. Indirect impacts during construction (dust deposition, pollution events) on scrub - Negligible effect (all assessment Phases), which is not significant.</p>	<p>Green Horizons Park (17/02300/EIA) identifies scrub will be affected and lost due to this development. However, with mitigation, the assessment concluded no significant residual effects.</p> <p>East West Rail Bicester to Bedford improvements: Transport and Works Act order identified potential fragmentation of habitats including scrub. Planning Application states requirement for mitigation and compensation to avoid, reduce or remedy interests of ecological importance. Land Adjacent to Caddington Road and Newlands Road (17/00590/FUL), Land at Caleb Close Luton (17/01040/FUL), Power Court Luton (20/01587/OUTEIA), Land on northern edge of Houghton Regis (12/03613/OUT), Land West of Bidwell, Houghton Regis (CB/15/00297/OUT) Caddington Golf Club, Chaul End Road, Caddington (CB/20/01833/MW), and Prologis Park (22/00195/FUL) all confirmed the habitats on site ed dense continuous and/or scattered scrub. However, none of these developments would impact on the same areas of scrub due to the distances between them and the Proposed Development, therefore, no cumulative effect is anticipated.</p>	<p>Habitat creation and provision in design. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Habitat loss – Temporary negligible residual effect while habitats establish, which is not significant, rising to a minor beneficial effect within the open space and the habitat creation areas, which is not significant. Indirect impacts during construction (dust deposition, pollution events) on scrub - Negligible effect (all assessment Phases), which is not significant.</p>
Hedgerows	<p>Potential damage to retained hedgerows – Temporary minor adverse residual effect while replacement habitats establish,</p>	<p>Land Adjacent to Caddington Road and Newlands Road (17/00590/FUL), Land at Caleb Close Luton Bedfordshire (17/01040/FUL), Power Court Luton (20/01587/OUTEIA), Land Adjacent Junction 10 to 10A M1 Newlands Road (20/01588/OUTEIA), Newlands Park, Luton (20/01589/OUTEIA), Land West of Cockernhoe / Land East</p>	<p>Habitat creation and provision in design. Enhancement of over 7.5km of hedgerows within the wider landscape to restore hedgerow network and their ecological corridors. The other developments would not</p>	<p>No cumulative effect is anticipated. Remains: Potential damage to retained hedgerows – Temporary minor adverse residual effect while replacement habitats establish,</p>

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	<p>which is not significant, rising to a minor beneficial effect following maturation (assessment Phase 1), which is not significant.</p> <p>Habitat loss - Temporary minor adverse effect, which is not significant, rising to a minor beneficial effect following maturation of replacement and enhanced habitats (assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on hedgerows - Minor adverse effect (all assessment Phases), which is not significant.</p>	<p>of Copthorne (16/02014/1), Land South and North West of Cockernhoe And East of Wigmore (17/00830/1), , Land on northern edge of Houghton Regis (12/03613/OUT), Land West of Bidwell (CB/15/00297/OUT), Caddington Care Village (CB/18/04602/OUT), Caddington Golf Club (CB/20/01833/MW) Land At Cooters End Lane And Ambrose Lane Harpenden (5/2022/1862) identify hedgerows as a receptor within their assessments. However, none of these developments would impact on the same hedgerows due to the distances between them and the Proposed Development. With mitigation, the assessments for these developments concluded no significant residual effects on hedgerows, therefore no cumulative effect is anticipated.</p>	<p>result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>which is not significant, rising to a minor beneficial effect following maturation (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Habitat loss - Temporary minor adverse effect, which is not significant, rising to a minor beneficial effect following maturation of replacement and enhanced habitats (assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on hedgerows - Minor adverse effect (all assessment Phases), which is not significant.</p>
<p>Semi-improved grassland (Neutral and Poor)</p>	<p>Habitat loss - Temporary negligible effect, which is not significant, rising to a minor beneficial effect following establishment of replacement habitat (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on semi-improved grassland - Negligible effect (all assessment Phases), which is not significant.</p>	<p>Power Court Luton (20/01587/OUTEIA), Land West of Cockernhoe / Land East of Copthorne (16/02014/1), Land South and North West of Cockernhoe and East of Wigmore (17/00830/1) and Land West of Bidwell (CB/15/00297/OUT) identify semi-improved grassland within their assessments as a potential receptor. However, none of these developments would impact on the same areas of grassland due to the distances between them and the Proposed Development. The assessments for these developments concluded no significant residual effects on semi-improved grassland, therefore no cumulative effect is anticipated.</p>	<p>Habitat creation and provision in design. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains:</p> <p>Habitat loss - Temporary negligible effect, which is not significant, rising to a minor beneficial effect following establishment of replacement habitat (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on semi-improved grassland - Negligible effect (all assessment Phases), which is not significant.</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Calcareous grassland	<p>Habitat loss – Minor adverse effect level (assessment Phase 1 and assessment Phase 2a), which is not significant.</p> <p>Temporary negligible residual effect while habitats establish, rising to a minor beneficial effect, after 5-10 years, and habitat creation (assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on calcareous grassland - Minor adverse effect (all assessment Phases), which is not significant.</p>	<p>Green Horizons Park (17/02300/EIA) identifies calcareous grassland within Wigmore Valley Park CWS as a receptor that will be affected by the development. The development will result in habitat loss during construction, plus indirect effects during construction and operation. However, with mitigation, the assessment concluded no significant residual effects. Part of New Wigmore Valley Park to be converted to calcareous grassland. With mitigation, the assessment concluded no significant residual effect.</p> <p>Land Adjacent Junction 10 to 10A M1 Newlands Road (North Site) (20/01588/OUTEIA) recognises lowland calcareous grassland will be built on. Due to mitigation and habitat connectivity there will be no significant effects from the loss of these habitats.</p> <p>Therefore, no cumulative effect is anticipated.</p>	<p>Habitat provision in design including mitigation/ enhancement, plus creation of bare chalk slopes.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated.</p> <p>Remains: Habitat loss – Minor adverse effect level (assessment Phase 1 and assessment Phase 2a), which is not significant.</p> <p>Temporary negligible residual effect while habitats establish, which is not significant., rising to a minor beneficial effect, after 5-10 years, and habitat creation (assessment Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on calcareous grassland - Minor adverse effect (all assessment Phases), which is not significant.</p>
Arable- including field margins and arable plants	<p>Habitat loss - Temporary minor adverse effect, which is not significant., reducing to a negligible effect following establishment of replacement habitat (assessment Phase 1 and assessment Phase 2a), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on arable and field margins - Negligible effect (all assessment Phases), which is not significant.</p>	<p>East West Rail Bicester to Bedford improvements, Land Adjacent Junction 10 to 10A M1 Newlands Road (20/01588/OUTEIA), Land West of Cockernhoe / Land East of Copthorne (16/02014/1), Land South and North West of Cockernhoe and East of Wigmore (17/00830/1), Land on northern edge of Houghton Regis (12/03613/OUT), Land West of Bidwell (CB/15/00297/OUT) and Green Horizons Park Airport Way - Century Park Luton (17/02300/EIA) identify arable land as a receptor within their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects.</p> <p>The Land on northern edge of Houghton Regis development (12/03613/OUT) will result in the loss of arable land which supports an arable plant assemblage considered to be of district value, resulting in a residual significant adverse effect. However, this development is approximately 10km north west of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p> <p>The Land West of Bidwell development (CB/15/00297/OUT) will result in the loss of dwarf spurge within arable land,</p>	<p>Habitat creation and provision in design.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated.</p> <p>Remains: Habitat loss – Temporary minor adverse effect, which is not significant., reducing to a negligible effect following establishment of replacement habitat (assessment Phase 1 and assessment Phase 2a), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on arable and field margins - Negligible effect (all assessment Phases), which is not significant.</p>

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		<p>resulting in a slight-moderate adverse effect. The cumulative impact assessment identified that the loss of dwarf spurge would contribute to a significant impact at a district/local level. However, this development is approximately 10km from the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p>		
Ancient and Veteran Trees	<p>Damage/loss of potential future veteran trees - The value of veteran trees cannot be replicated therefore a minor adverse residual effect will remain, (All phases), which is not significant, Indirect impacts during construction (dust deposition, pollution events) on ancient and veteran trees - Minor adverse effect (all assessment Phases), which is not significant.</p>	<p>Green Horizons Park (17/02300/EIA) makes reference to mature and over-mature trees. Mitigation measures during construction and operation are considered sufficient to ensure there are no significant residual effects.</p> <p>Land South and North West of Cockernhoe and East of Wigmore (17/00830/1) identified veteran trees as local value. Concluded Moderate Beneficial long-term impacts on veteran through creation of new habitats.</p>	<p>Habitat retention and provision in design. Also re-coppicing and translocating the one veteran tree which would be lost. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Damage/loss of potential future veteran trees - Minor adverse residual effect will remain (All phases), which is not significant, Indirect impacts during construction (dust deposition, pollution events) on ancient and veteran trees - Minor adverse effect (all assessment Phases), which is not significant.</p>
Ponds	<p>Loss of habitat – Even with habitat creation in assessment Phase 1, by assessment Phase 2a there will be a net loss of ponds, however the majority of those lost comprise soakaways and fire training pools of limited biodiversity value, and those created and managed within the design will be wildlife ponds. Therefore, the residual effect will be negligible for assessment Phase 2a onwards, which is not significant.</p>	<p>Caddington Care Village (CB/18/04602/OUT), Caddington Golf Club, Chaul End Road, Caddington (CB/20/01833/MW) and Land on northern edge of Houghton Regis (12/03613/OUT) identified ponds on site. However, these developments are approximately 3km, 4km and 10km from the Proposed Development respectively, and therefore, due to the distance, no cumulative impacts are anticipated.</p> <p>Green Horizons Park (17/02300/EIA), Land Adjacent to Caddington Road and Newlands Road Luton (17/00590/FUL) identified ponds within close proximity of the developments. Mitigation measures for the effects during construction and on operation are considered sufficient to ensure there are no significant residual effects.</p> <p>East West Rail Bicester to Bedford improvements: Transport and Works Act order has a positive effect on this habitat with the expected creation of 33 new ponds.</p> <p>Therefore, no cumulative effect is anticipated.</p>	<p>Habitat provision in design and ongoing management (see Outline Landscape and Biodiversity Management Plan (LBMP) provided as Appendix 8.2 in this ES [TR020001/APP/5.02]). The other developments would not result in additional ecological effects. As such, additional mitigation is not required</p>	<p>No cumulative effect is anticipated. Remains: Loss of habitat – Even with habitat creation in assessment Phase 1, by assessment Phase 2a there will be a net loss of ponds, however the majority of those lost comprise soakaways and fire training pools of limited biodiversity value, and those created and managed within the design will be wildlife ponds. Therefore, the residual effect will be negligible for assessment Phase 2a onwards, which is not significant.</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Orchids	<p>Loss of orchid plants - Temporary minor adverse effect, reducing to a negligible effect in the longer term during construction (assessment Phase 1 and assessment Phase 2a), which is not significant.</p> <p>Recreational pressure - Negligible effect during operation, which is not significant.</p>	<p>None of the other identified developments will have an effect on this receptor, therefore, no cumulative effect is anticipated.</p>	<p>Habitat provision in design and ongoing management (see Outline LBMP, Appendix 8.2 of this ES [TR020001/APP/5.02]). Translocation of turfs from areas lost. No additional mitigation required.</p>	<p>No cumulative effect is anticipated. Remains: Loss of orchid plants - Temporary minor adverse effect, reducing to a negligible effect in the longer term during construction (assessment Phase 1 and assessment Phase 2a), which is not significant.</p> <p>Recreational pressure - Negligible effect during operation, which is not significant.</p>
Badger	<p>Loss of habitat and outlier setts and disturbance of retained setts - Temporary minor adverse effect, which is not significant, reducing to negligible effect following habitat establishment (assessment Phase 1), which is not significant.</p> <p>Loss of habitat and setts (outlier setts and subsidiary setts) disturbance of retained setts including main setts. Temporary minor adverse effect, which is not significant, reducing to negligible effect following habitat establishment (assessment Phase 2a), which is not significant.</p> <p>Loss of habitat and disturbance of retained setts –</p>	<p>East West Rail Bicester to Bedford improvements, Green Horizons Park (17/02300/EIA), Land West of Cockernhoe / Land East of Copthorne, Land South and North West of Cockernhoe and East of Wigmore (17/00830/1), Land on northern edge of Houghton Regis (12/03613/OUT), Land West of Bidwell (CB/15/00297/OUT) identify badger as a receptor within their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects. Therefore, no cumulative effect is anticipated.</p>	<p>Habitat retention and creation. Off-site strengthening of 'green corridors' in the form of hedgerows and grassland creation will provide connections to off-site foraging opportunities. Closure and disturbance of setts will be secured in advance under a development licence from Natural England with associated method statements.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Loss of habitat and outlier setts and disturbance of retained setts - Temporary minor adverse effect, which is not significant, reducing to negligible effect following habitat establishment (assessment Phase 1), which is not significant.</p> <p>Loss of habitat and setts (outlier setts and subsidiary setts) disturbance of retained setts including main setts. Temporary minor adverse effect, which is not significant, reducing to negligible effect following habitat establishment (assessment Phase 2a), which is not significant.</p> <p>Loss of habitat and disturbance of retained setts – Temporary negligible effect, which is not significant., earlier phases habitat creation will have matured, leading to minor beneficial effect in the long term (assessment Phase 2b), which is not significant.</p> <p>Disturbance (disturbance through noise, lighting and recreational</p>

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	<p>Temporary negligible effect, which is not significant, earlier phases habitat creation will have matured, leading to minor beneficial effect in the long term (assessment Phase 2b), which is not significant.</p> <p>Disturbance (disturbance through noise, lighting and recreational pressure) - Negligible effect (Operation assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>			<p>pressure) - Negligible effect (Operation assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>
Bats	<p>Loss and disturbance of foraging habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p> <p>Disturbance (all assessment Phases) to and loss of roosts (assessment Phase 2a and assessment Phase 2b) - Negligible effect during Construction and Operation (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p>	<p>The Green Horizons Park development (17/02300/EIA) is likely to impact the same bat population as it falls within the boundary of the Proposed Development. The assessment confirmed that bat roosts will be retained, and a large proportion of foraging habitat will also be retained, resulting in a minor adverse effect. Lighting could have a long-term, moderate adverse effect on the local bat population without mitigation. However, with mitigation the assessment concluded that proposed development will not have a significant residual effect on bats. Therefore, no cumulative effect is anticipated.</p> <p>Land Adjacent to Caddington Road and Newlands Road (17/00590/FUL), Land at Caleb Close Luton Bedfordshire (17/01040/FUL), Car Park Taylor Street Luton (19/00925/FUL), Power Court Luton Bedfordshire (20/01587/OUTEIA), Land Adjacent Junction 10 to 10A M1 Newlands Road (20/01588/OUTEIA), Land West of Cockernhoe / Land East of Copthorne (16/02014/1), Land on northern edge of Houghton Regis (12/03613/OUT), Land West of Bidwell (CB/15/00297/OUT), Caddington Golf Club (CB/20/01833/MW), Hayward Tyler 1 Kimpton Road (20/00147/OUT), Land South and North West of Cockernhoe And East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe (17/00830/1), and Newlands Park (20/01589/OUTEIA) identify bats as a receptor in their assessments. There is potential for overlaps in foraging</p>	<p>Habitat provision in design and ongoing management (see Outline LBMP, Appendix 8.2 of this ES [TR020001/APP/5.02]). Off-site strengthening of 'green corridors' in the form of hedgerows and grassland creation will provide connections to off-site foraging opportunities.</p> <p>Additional mitigation including cowls in appropriate areas will further reduce light spill.</p> <p>Provision of artificial roost sites. Mitigation for disturbance to bat roosts to be carried out under a licence from Natural England.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains:</p> <p>Foraging/commuting bats - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p> <p>Roosting bats - Negligible effect during Construction and Operation (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p>

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		<p>range. However, with mitigation, the assessments for these developments concluded no significant residual effects. Therefore, no cumulative significant residual effects are anticipated.</p> <p>Land At Cooters End Lane and Ambrose Lane Harpenden (land to the North West of Harpenden) (5/2022/1862) identify foraging bats as a potential receptor in their scoping report. However, this development is approximately 4.5km south of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p> <p>The '2 Seymour Avenue and land rear of 2-12 Seymour Avenue' development (20/00785/FUL) is approximately 1km from the Proposed Development, Eaton Green Road petrol station (22/00837/FUL) is 150m north, Land off Kimpton Road (22/00278/FUL) which is 500m west, Land off Waller Avenue (22/00990/FUL) 5km north west, Pirton Road (21/03451/FP) adjacent to highways intervention all have no ecology information submitted with these applications, or state that ecology is scoped out. Due to distance and/or scale of these developments, cumulative effects are considered unlikely.</p> <p>Prologis Park (22/00195/FUL) which is 600m west of the Proposed Development, scopes biodiversity out within the Scoping Report. This is supported within the Scoping Opinion, and is due to not having anticipated significant effects, including on bats though disturbance during construction and operation. Therefore, no cumulative significant residual effects are anticipated.</p> <p>There is a lack of detailed information on foraging and commuting bats and the location of roost sites in relation to the 'East West Rail Bicester to Bedford Improvements' development. The residual effect on bats during construction and operation is unconfirmed. However, this development is approximately 24km from Proposed Development, so no cumulative effects are anticipated. The developments are unlikely to impact on the same bat population.</p>		
Riparian mammals (otter and water vole)	Indirect impacts (pollution) - Minor adverse effect (assessment Phase 1 and assessment Phase 2a), which is not significant.	Land on northern edge of Houghton Regis (12/03613/OUT) development identifies water vole as a potential receptor. However, the assessment for this development concluded that there is very unlikely to be a significant residual effect water vole.	Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	No cumulative effect is anticipated. Remains: Indirect impacts (pollution) - Minor adverse effect (assessment Phase 1 and assessment Phase 2a), which is not significant.

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		<p>Prologis Park (22/00195/FUL) which is 600m west of the Proposed Development, scopes biodiversity out within the Scoping Report. This is supported within the Scoping Opinion, and is due to not having anticipated significant effects, including on otters within the River Lea though direct harm and disturbance during construction and operation. Therefore, no cumulative significant residual effects are anticipated.</p>		
<p>Other mammals (e.g., brown hare and hedgehog)</p>	<p>Loss of habitat - Minor beneficial effect (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>	<p>Land on northern edge of Houghton Regis (12/03613/OUT) identifies brown hare as a receptor, however the assessment concludes no significant residual effect on this species.</p> <p>Land at Caleb Close Luton Bedfordshire (17/01040/FUL) and Hayward Tyler 1 Kimpton (20/00147/OUT) identify hedgehog as a receptor in their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects. Therefore, no cumulative effect is anticipated.</p>	<p>Habitat provision in design and ongoing management (see Outline LBMP, Appendix 8.2 of this ES [TR020001/APP/5.02]). Off-site strengthening of 'green corridors' in the form of hedgerows and grassland creation will provide connections to off-site foraging opportunities.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Loss of habitat – Minor beneficial effect (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>
<p>Breeding birds</p>	<p>Damage/ disturbance - Negligible effect (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Habitat loss - Temporary minor adverse effect, which is not significant., rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a), which is not significant.</p> <p>Temporary negligible effect, which is not significant, earlier phases habitat creation will have matured, leading to minor beneficial effect in the</p>	<p>Green Horizons Park (17/02300/EIA), Land West of Cockernhoe / Land East of Copthorne (16/02014/1) identify breeding birds as a receptor within their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects.</p> <p>187-189 Waller Avenue (22/00990/FUL) ecological appraisal identified breeding birds as a potential receptor. However, this development is approximately 5km north west of the Proposed Development and therefore, due to distance, no cumulative impacts are anticipated.</p> <p>Prologis Park (22/00195/FUL) which is 600m west of the Proposed Development, scopes biodiversity out within the Scoping Report. This is supported within the Scoping Opinion, and is due to not having anticipated significant effects, including on nesting birds though direct harm and disturbance during construction and operation. Therefore, no cumulative significant residual effects are anticipated.</p> <p>Land At Cooters End Lane and Ambrose Lane Harpenden (land to the North West of Harpenden) (5/2022/1862) identify breeding birds as a potential receptor in their scoping report. However, this development is approximately 4.5km south of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p>	<p>Habitat provision in design and ongoing management (see Outline LBMP, Appendix 8.2 in this ES [TR020001/APP/5.02]). Off-site strengthening of 'green corridors' in the form of hedgerows and grassland creation will provide connections to off-site foraging opportunities.</p> <p>Nest box provision appropriate for species present on retained trees/ structures.</p> <p>Suitable timings of works/ nesting bird checks.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Damage/ disturbance - Negligible effect (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Habitat loss - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a), which is not significant.</p> <p>Temporary negligible effect, which is not significant, earlier phases habitat creation will have matured, leading to minor beneficial effect in the long term (assessment Phase 2b), which is not significant.</p> <p>Bird strike - Negligible effect (assessment Phase 1, assessment Phase 2a</p>

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	<p>long term (assessment Phase 2b), which is not significant.</p> <p>Bird strike - Negligible effect during operation (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>	<p>The Land on northern edge of Houghton Regis development (12/03613/OUT) assessment concludes that in terms of in combination with other planned developments in the area, cumulative effects of the development are expected to be limited to farmland birds and arable plants. However, this development is approximately 10km north west of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p> <p>The Land West of Bidwell development (CB/15/00297/OUT) assessment concludes that the cumulative effect on ground nesting birds will contribute to a significant impact at a local/district level. However, this development is approximately 10km north west of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p>		<p>and assessment Phase 2b), which is not significant.</p>
Wintering birds	<p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Disturbance - Negligible effect (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>	<p>The Land West of Bidwell development (CB/15/00297/OUT) identifies over wintering birds as a receptor within its assessment. However, with mitigation, the assessment concluded no significant residual effects.</p> <p>The Land on northern edge of Houghton Regis development (12/03613/OUT) assessment concludes that in terms of in combination with other planned developments in the area, cumulative effects of the development are expected to be limited to farmland birds and arable plants. However, this development is approximately 10km north-west of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p>	<p>The habitat creation area to the east of the replacement open space will include neutral and calcareous grassland habitat creation. The outer areas (to avoid the runway and flight lines) of these fields will be managed, in accordance with bird strike minimisation measures, to establish rough grassland strips to provide suitable cover and foraging for farmland bird species. Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Loss of habitat - Temporary minor adverse effect, which is not significant., rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Disturbance - Negligible effect (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>
Schedule 1 birds	<p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1,</p>	<p>Power Court (20/01587/OUTEIA) and Land West of Cockernhoe / Land East of Copthorne (16/02014/1) identify Schedule 1 birds as a receptor within their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects. Therefore, no cumulative effect is anticipated.</p>	<p>Habitat provision in design. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Loss of habitat – Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a), which is not significant.</p>

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	<p>assessment Phase 2a), which is not significant.</p> <p>Temporary negligible effect, which is not significant., earlier phases habitat creation will have matured, leading to minor beneficial effect in the long term (assessment Phase 2b), which is not significant.</p> <p>Disturbance - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Construction and operation assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>			<p>Temporary negligible effect, which is not significant., earlier phases habitat creation will have matured, leading to minor beneficial effect in the long term (assessment Phase 2b), which is not significant.</p> <p>Disturbance - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Construction and operation assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>
Reptiles	<p>Loss of habitat - Minor beneficial (with habitat replacement) (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p> <p>Injury/killing - Negligible effect (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p>	<p>East West Rail Bicester to Bedford improvements, Green Horizons Park (17/02300/EIA), Land Adjacent to Caddington Road and Newlands Road (17/00590/FUL), Newlands Park (20/01589/OUTEIA), Bute Street Shoppers Car Park (21/01115/EIASCRC) and Caddington Golf Club (CB/20/01833/MW) identify reptiles as a receptor within their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects. Therefore, no cumulative effect is anticipated.</p> <p>187-189 Waller Avenue (22/00990/FUL) ecological appraisal identified reptiles as a potential receptor. However, this development is approximately 5km north-west of the Proposed Development and therefore, due to distance, no cumulative impacts are anticipated.</p>	<p>Habitat creation in design and ongoing management (see Outline LBMP, Appendix 8.2 of this ES [TR020001/APP/5.02]). Provision of hibernacula/log piles.</p> <p>Translocation of slow worms (and grass snake if present) to suitable retained habitat during site clearance within the Main Application Site.</p> <p>Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains:</p> <p>Loss of habitat - Minor beneficial (with habitat replacement) (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p> <p>Injury/killing - Negligible effect (assessment Phase 1, assessment Phase 2a, assessment Phase 2b), which is not significant.</p>
Amphibians	<p>Killing/ injury - Temporary minor adverse effect, which is not significant, reducing</p>	<p>Land West of Cockernhoe / Land East of Copthorne (16/02014/1), Land at Caleb Close Luton (17/01040/FUL) and Hayward Tyler 1 Kimpton (20/00147/OUT) identify amphibians as a receptor within their assessments. However,</p>	<p>Habitat provision within design including cluster of small wildlife ponds. Further suitable habitat creation and appropriate management (see Outline LBMP,</p>	<p>No cumulative effect is anticipated. Remains:</p> <p>Killing/ injury - Temporary minor adverse effect,</p>

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	<p>to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Loss of habitat - Temporary minor adverse effect (assessment Phase 1 and assessment Phase 2a), which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant</p>	<p>with mitigation, the assessments for these developments concluded no significant residual effects.</p> <p>The East West Rail Bicester to Bedford improvements assessment concluded that the development could have a significant beneficial effect on amphibians through habitat creation. This development is however approximately 24km north-west of the Proposed Development and therefore there is no potential for a cumulative effect.</p>	<p>Appendix 8.2 of this ES [TR020001/APP/5.02]). Provision of hibernacula/log piles.</p> <p>Translocation of animals to suitable replacement habitat.</p> <p>Implementation of measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>which is not significant, reducing to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant</p> <p>Loss of habitat - Temporary minor adverse effect (assessment Phase 1 and assessment Phase 2a), which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant</p>
Invertebrates	<p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Injury/ killing - Minor adverse (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>	<p>Green Horizons Park (17/02300/EIA), Land at Caleb Close (17/01040/FUL), Hayward Tyler (20/00147/OUT), Newlands Park (20/01589/OUTEIA), Bute Street Shoppers Car Park (21/01115/EIASC), Land South and North West of Cockernhoe and East of Wigmore (17/00830/1) identify invertebrates as a receptor within their assessments. However, with mitigation, the assessments for these developments concluded no significant residual effects.</p> <p>The assessment for Land on northern edge of Houghton Regis (12/03613/OUT) concludes that the development could have a significant beneficial effect for invertebrates including worm. However, this development is approximately 10km north-west of the Proposed Development and therefore, due to the distance, no cumulative impacts are anticipated.</p>	<p>Habitat creation in design and ongoing management, and enhancement through management of wider 'green corridor' network of hedgerows and trees (see Outline LBMP, Appendix 8.2 in this ES [TR020001/APP/5.02]).</p> <p>Provision of log piles and retention of dead wood. Translocation of birds-foot trefoil turfs during the orchid translocation for the benefit of dingy skipper.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains:</p> <p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p> <p>Injury/ killing - Minor adverse (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>
Roman Snail	Loss of habitat - Temporary minor adverse effect, which is	The Green Horizons Park (17/02300/EIA) assessment concludes that no live snails or whole shells were observed during survey and there was no evidence of current	Habitat management to maintain existing unsuitable habitat as a deterrent/barrier to enter the Proposed	No cumulative effect is anticipated. Remains:

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	<p>not significant, rising to negligible effect following habitat establishment (assessment Phase 2a), which is not significant.</p> <p>Injury/ killing - Negligible during Construction and Operation (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>	<p>occupancy. Due to the lack of evidence of the species on Site, absence was considered likely. Reported communications with the Luton Council Ecologist on 4 July 2017 [REDACTED]. The assessment for this development concluded no likely significant residual effects on Roman snail. Therefore, no cumulative effect is anticipated.</p>	<p>Development [REDACTED] (see Outline LBMP, Appendix 8.2 in this ES [TR020001/APP/5.02]).</p> <p>Provision and management of suitable replacement terrestrial habitat within landscape design, [REDACTED].</p> <p>Translocation of Roman snails to suitable remaining habitat during site clearance (if required) [REDACTED] under a Natural England conservation licence agreed in advance.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (assessment Phase 2a), which is not significant.</p> <p>Injury/ killing - Negligible during Construction and Operation (assessment Phase 1, assessment Phase 2a and assessment Phase 2b), which is not significant.</p>
Japanese knotweed	<p>Spread - Minor beneficial, which is not significant.</p>	<p>The Power Court Luton (20/01587/OUTEIA) identifies Japanese knotweed as a receptor within its assessment. However, with mitigation, the assessment for this development concluded no significant residual effects. Therefore, no cumulative effect is anticipated.</p>	<p>Specialist treatment and/or removal. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>No cumulative effect is anticipated. Remains: Spread – Minor beneficial, which is not significant.</p>
Cultural Heritage				
Luton Hoo Registered Park and Garden (RPG)	<p>Moderate adverse, significant (assessment Phase 2a and Operation)</p>	<p>The Green Horizons Park development at Century Park (17/02300/EIA) would introduce further built components into views from within the park, resulting in discernible change to the park's historic landscape setting. The development would not affect the ability to appreciate the RPG and, in combination with the Proposed Development, is unlikely to result in an increase to the significant of effect predicted for the Proposed Development, which is moderate adverse.</p> <p>The development comprising the erection of an eight-storey hotel (20/00646/FUL) is located on the western edge of the airport in a site occupied by an existing hotel (the courtyard by the Marriott). The development would introduce another built component into the site, but this change would be barely discernible in views from the edge of Luton Hoo RPG. The development would not result in any additional impacts to Luton Hoo RPG in combination with the Proposed Development.</p> <p>The Newlands Park development (20/01588/OUTEIA) would be partially visible in views through the woodland on the western edge of the park. This would introduce discernible</p>	<p>These other developments would not result in additional cultural heritage effects. As such, additional mitigation is not required.</p>	<p>Remains Moderate adverse (assessment Phase 2a and Operation) (Significant)</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>change to the park's historic landscape setting, but would not affect the ability to appreciate the park's designed landscape and, in particular, designed views from the Luton Hoo house to the east towards the River Lea would not be changed.</p> <p>The development would not result in any additional impacts to Luton Hoo RPG in combination with the Proposed Development.</p> <p>The Newland Park development (20/01589/OUTEIA) would not be visible in views from the western edge of the park, and would not introduce change into the park's designed landscape, or the appreciation thereof.</p> <p>The development would not result in any additional impacts to Luton Hoo RPG in combination with the Proposed Development.</p> <p>The proposed development at Prologis Park and Windmill Road, Luton (22/00559/EIASCP) would replace office buildings and manufacturing facilities with new commercial warehouse units and replacement offices. The development would not introduce change into the setting of Luton Hoo RPG and would not affect its heritage significance.</p> <p>The Heritage and Townscape assessment submitted to support proposals for the construction of 1,000 residential units at Kimpton Road, Luton (20/00147/OUT) confirm that the scale of the proposals would be visible in distant views from Luton Hoo but would not result in impacts to its heritage significance.</p>		
Someries Castle	Minor adverse (assessment Phase 1 and assessment Phase 2a)	<p>The Green Horizons Park development at Century Park (17/02300/EIA) would result in no additional impacts to Someries Castle due to the intervening airfield plateau, shielding the asset from the development.</p> <p>The heritage assessment submitted to support proposals for development at Prologis Park and Windmill Road, Luton (22/00559/EIASCP) concluded the Proposed Development would have a neutral effect on Someries Castle.</p>	These other developments would not result in additional cultural heritage effects. As such, additional mitigation is not required.	Remains Minor adverse (assessment Phase 1 and assessment Phase 2a) (Not significant)
Wandon End Farmhouse	Moderate adverse (assessment Phases 1, 2a and 2b)	Outline planning application with all matters reserved for the construction of up to 1,400 new dwellings (17/00830/1) would result in the loss of agricultural land to the west of Wandon End which contributes to the wider agricultural setting of Wandon End farmhouse. The loss of land would not affect the associative relationship between the farmhouse and Wandon End House, nor would it affect the farmland which defines the assets' immediate settings or their heritage value.	This development would not result in additional cultural heritage effects. As such, additional mitigation is not required.	Remains Moderate adverse (assessment Phases 1, 2a and 2b) (Significant)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>As such the impact would be no greater than that recorded for the Proposed Development.</p> <p>The development would not result in any additional impacts to Wandon End Farmhouse in combination with the Proposed Development.</p>		
Wandon End House	Moderate adverse (assessment Phases 1, 2a and 2b)	<p>Outline planning application with all matters reserved for the construction of up to 1,400 new dwellings (17/00830/1) would result in the loss of agricultural land to the west of Wandon End which contributes to the wider agricultural setting of Wandon House. The loss of land would not affect the associative relationship the house has with Wandon End farmhouse, nor would it affect the farmland which defines the assets immediate settings or their heritage value. As such the impact would be no greater than that recorded for the Proposed Development and would not result in any additional impacts to cultural heritage assets in combination with the Proposed Development.</p>	This development would not result in additional cultural heritage effects. As such, additional mitigation is not required.	Remains Moderate adverse (assessment Phases 1, 2a and 2b) (Significant)
Economics and Employment				
Employment	<p>Construction Major Beneficial (Significant)</p> <p>Operation Major Beneficial (Significant)</p>	<p>During construction and once operational, the following developments all have the potential to have an impact on employment:</p> <ul style="list-style-type: none"> a. HS2; b. Heathrow Expansion; c. Green Horizons Park (17/02300/EIA); d. Power Court (20/01587/OUTEIA); e. Mixed-use application in Cockernhoe (16/02014/1); f. Newlands Park (20/01588/OUTEIA); g. Houghton Regis North 1 (12/03613/OUT); h. Houghton Regis North (Land West of Bidwell) (CB/15/00297/OUT); and i. Gresley Way Stevenage (Land East of Stevenage) (EOS1) (3/19/0118/OUT). <p>As in all instances the impacts are assessed as a beneficial effect, the cumulative impact of the Proposed Development and these schemes on employment in both construction and operation remains major beneficial and significant.</p>	No additional mitigation required.	Remains Major beneficial (Significant)
Gross Value Added (GVA)	<p>Construction Major Beneficial (Significant)</p> <p>Operation Major Beneficial (Significant)</p>	<p>During construction and once operational, the following developments all have the potential to have an impact on GVA:</p> <ul style="list-style-type: none"> a. Power Court (20/01587/OUTEIA); b. Mixed-use application in Cockernhoe (16/02014/1); c. Newlands Park (20/01588/OUTEIA); d. Houghton Regis North 1 (12/03613/OUT); e. Houghton Regis North (CB/15/00297/OUT); and 	No additional mitigation required.	Remains Major Beneficial (Significant)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>f. Gresley Way Stevenage (Land East of Stevenage) (EOS1) (3/19/0118/OUT).</p> <p>As in all instances the impact is assessed as a beneficial effect, the cumulative impact of the Proposed Development and these schemes on GVA remains major beneficial and significant.</p>		
Business/employment Displacement	Construction Minor Adverse (Not significant)	During construction, employment and business displacement within the sections of the HS2 route whose impact area overlaps with the wider ZOI for the Proposed Development is assessed as either negligible or minor adverse, and hence not significant. Therefore, the cumulative impact of the Proposed Development and HS2 on displacement remains minor adverse and not significant.	No additional mitigation required.	Remains Minor Adverse (Not significant)
Health and Community				
Health				
<i>All assessment Phases</i>				
Wider Area	Adverse impact on 'Perception and uncertainty' and moderate adverse temporary (significant) effect on mental wellbeing associated with increased stress and anxiety during the planning and construction stages of the Proposed Development.	There is a potential for a cumulative impact of the Proposed Development and the Green Horizons Park (17/02300/EIA) and Mixed Use (Ref. 17/00830/1) developments to adversely impact upon 'perception and uncertainty'. It is considered that it will remain as a moderate adverse temporary (significant) effect on mental wellbeing.	<p>Best practice construction management measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).</p> <p>Community engagement strategy as set out in CoCP.</p>	Remains Moderate adverse Significant
<i>Construction</i>				
Central Airport Area and South and East of Airport	Beneficial impact on 'Access to open space, recreation and physical activity' and a minor beneficial permanent (not significant) health effect (from 2031) due to creation of informal surfaced paths and upgrading of existing Public Rights of Way (PRoW).	The Central Airport Area and South and East of Airport would experience the changes to be brought about by the Proposed Development in combination with the Green Horizons Park development (Ref. 17/02300/EIA). However, as the Green Horizons Park development will not directly impact the footpaths and bridleways, there is no cumulative effect.	<p>Best practice construction management measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]) for landscape and noise.</p> <p>Community engagement strategy as set out in CoCP.</p> <p>Creation of informal surfaced paths and upgrading of existing PRoW, included in design and Outline LBMP (Appendix 8.2 of this ES [TR020001/APP/5.02]).</p>	Remains Minor beneficial Not significant
Wider Area	Beneficial impact on 'Employment and	The following developments all have the potential to have an impact on employment:	The Employment and Training Strategy [TR020001/APP/7.05] has	Remains Moderate beneficial

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	income' due to direct and indirect job opportunities. This will result in moderate beneficial temporary mental and physical (significant) health effect associated with increased income, skills and/or job security for those local people securing construction related employment.	<ul style="list-style-type: none"> a. HS2; b. Heathrow Expansion; c. Green Horizons Park (17/02300/EIA); d. Power Court (20/01587/OUTEIA); e. Mixed-use application in Cockernhoe (16/02014/1); f. Newlands Park (20/01588/OUTEIA); g. Houghton Regis North 1 (12/03613/OUT); and h. Houghton Regis North (Land West of Bidwell) (CB/15/00297/OUT) <p>The cumulative impact of the Proposed Development and the other developments listed above remains as a beneficial impact on 'employment and income' and a moderate beneficial temporary mental and physical (significant) health effect.</p>	been developed to maximise opportunities and upskilling for local people, including hard to reach groups and those currently unemployed.	Significant
Wider Area	Adverse impact on 'Employment and income' and minor adverse permanent (not significant) effect on mental and physical wellbeing due to displacement of businesses located within Green Horizons Park and President Way.	Employment and business displacement within the sections of the HS2 route whose impact area overlaps with the wider ZOI for the Proposed Development is assessed as either negligible or minor adverse, and hence not significant. Therefore, the cumulative impact of the Proposed Development and HS2, on health, remains minor adverse and not significant.	Compensation to be provided to enable businesses to relocate.	Remains Minor adverse Not significant
Wider Area	Adverse impact on 'Social capital' and minor adverse temporary (not significant) effect on mental wellbeing due to introduction of temporary construction workforce into the community which may affect levels of community cohesion and trust and influence behaviours such as the use of local community facilities.	The Wider Area may experience changes to be brought about by the Proposed Development in combination with works associated with the Green Horizons Park (17/02300/EIA) and Mixed Use (17/00830/1) development. The cumulative effects of the Proposed Development and these schemes on social capital is considered to remain unchanged, due to the low sensitivity of the population.	Best practice construction management measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). Community engagement strategy as set out in CoCP.	Remains Minor adverse Not significant
Wider Area	Adverse impact on 'Housing market' and minor adverse temporary (not significant) effect on	The following committed developments comprise the development of residential dwellings: <ul style="list-style-type: none"> a. Residential development on land adjacent to Caddington Road and Newlands Road (Ref. 17/00590/FUL); 	Best practice construction management measures in CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).	Remains Minor adverse Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	<p>mental wellbeing due to introduction of temporary construction workforce into the community increasing demand on the rental market potentially affecting prices and reducing access to affordable housing for local people.</p>	<ul style="list-style-type: none"> b. Residential development on Caleb Close (Ref. 17/01040/FUL); c. Residential development on Rothesay Road (Ref. 20/00135/FUL); d. Mixed – use development on Park Street (Ref. 19/01104/OUT); e. Residential development on Seymour Avenue (Ref. 20/00785/FUL); f. Residential development on Taylor Street (Ref. 19/00925/FUL); g. Residential development on Chapel Street (Ref. 19/00889/FUL); h. Residential development on Cumberland Street (Ref. 20/00281/FUL); i. Residential development on Hitchin Road (Ref. 19/01363/FUL); j. Residential development on Old Bedford Road (Ref. 19/01358/FUL); k. Residential development on Alma Street (Ref. 20/00514/FUL); l. Residential development on Burr Street (Ref. 20/00567/FUL); m. Mixed – use development on Hayward Tyler (Ref. 20/00147/OUT); n. Mixed – use development on Cumberland Street (Ref. 17/01764/FUL); o. Residential development on George Street (Ref. 20/00133/FUL); p. Residential development on Burr Street (Ref. 21/00306/FUL); q. Mixed – use development on Bute Street (Ref. 21/01115/EIASCRC); r. Residential development on land west of Cockernhoe / land east of Copthorne Cockernhoe (Ref. 16/02014/1); s. Mixed – use development on land south and north of Cockernhoe and east of Wigmore (Ref. 17/00830/); t. Residential development on land on the northern edge of Houghton Regis (Ref. 12/03613/OUT); u. Mixed – use development on land west of Bidwell (Ref. CB/15/00297/OUT); and v. Residential development on Cotswold Farm Business Park (Ref. CB/18/04602/OUT). 	<p>Community engagement strategy as set out in CoCP.</p>	

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>w. Residential development on land opposite Whitbread House, Flowers Way, Luton (Ref: 22/00195/FUL)</p> <p>x. Residential development at Cumberland Street, Luton (Ref: 22/00278/FUL)</p> <p>y. Residential development at land to the rear of Luton Retail Park, Kimpton Road, Luton (Ref: 22/00990/FUL)</p> <p>z. Residential development at 1 Pirton Rd, Hithchin (Ref: 21/0354/FP)</p> <p>aa. Residential development 4.5km south (Ref: 5/2022/1862)</p> <p>The cumulative impact of the other developments listed above will be to provide additional accommodation within the study area, a proportion of which are likely to be private rented. These schemes may also place additional demand on the private rented sector of the housing market resulting from construction workers requiring accommodation. Due to the different time frames for construction of the developments listed above, it is not anticipated that this demand for construction worker accommodation will all occur at the same time. It is concluded that the health effects resulting from impacts on the housing market due to demand from construction workers remains as minor adverse.</p>		
Wider Area	Adverse impact on 'Social capital' and 'Access to services' due to increased traffic generated by the expanded airport and changes to highway network. Negligible adverse (not significant) effect on health.	The Transport Assessment is inherently cumulative as transport modelling requires the inclusion of committed developments in the future baseline. As a result, there will be no change in this effect.	<p>Proposed Highway Intervention works.</p> <p>Outline Construction Traffic Management Plan (Appendix 18.3 of this ES [TR020001/APP/5.02]).</p> <p>Outline Construction Workers Travel Plan (Appendix 18.4 of this ES [TR020001/APP/5.02]).</p>	<p>Remains Negligible adverse</p> <p>Not significant</p>
Wider area	Adverse impact on 'Physical activity' due to changes in traffic movements deterring active travel and reducing physical activity. Negligible adverse (not significant) effect on health.	The Transport Assessment is inherently cumulative as transport modelling requires the inclusion of committed developments in the future baseline. As a result, there will be no change in this effect.	<p>Proposed Highway Intervention works.</p> <p>Outline Construction Traffic Management Plan (Appendix 18.3 of this ES [TR020001/APP/5.02]).</p> <p>Outline Construction Workers Travel Plan (Appendix 18.4 of this ES [TR020001/APP/5.02]).</p>	<p>Remains Negligible adverse</p> <p>Not significant</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Users of Prospect House Day Nursery	Adverse impact on 'Access to services' resulting from loss of an OFSTED 'Good' rated, purpose built childcare facility. With a commitment, secured via a Section 106 agreement, to provide a replacement facility for Prospect House Nursery, of a comparable size, quality, and accessibility, to meet future capacity requirements as ascertained by confirmatory assessment prior to closure, the residual effect would be minor adverse, and not significant.	Facilities are replaced prior to closure following confirmation of capacity requirements; therefore, no cumulative effect is anticipated.	Discussions will continue and confirmatory assessment of capacity requirements prior to closure will ensure appropriate replacement facilities.	Remains Minor adverse. Not significant.
<i>Operation</i>				
Wider Area	Adverse impact on 'Access to open space, recreation and physical activity' due to increase in aircraft noise on users of WVP. Reduction in the amenity value of the park, potentially deterring people from using the park for recreation and physical activity. Minor adverse permanent effect on physical and mental health (amenity/annoyance).	The other developments are judged to not materially change the effect on Wigmore Valley Park with regard to access to open space, recreation and physical activity, therefore the cumulative effect remains as minor adverse.	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.	Remains Minor adverse Not significant
Wider Area	Adverse impact on 'Aircraft noise' due to changes to aircraft noise exposure in the	No other developments will create additional air traffic. Consequently, there would be no permanent cumulative effect.	Best practice measures for managing aircraft noise effects of Proposed Development e.g., ICAO Balanced Approach, LLAL Noise Action Plan	Remains Moderate adverse Significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	population under the flight path for a number of receptors during phases 2a and 2b. This is assessed as resulting in a moderate adverse (significant) effect on physical and mental health in the population under the flight path.		2019-2023 and an acoustically screened engine run-up pen. Compensation Proposals (i.e., noise insulation, voluntary acquisition, hardship scheme).	
Wider Area	Adverse impact on air quality from sources within the airport and increased road traffic. Minor adverse on respiratory health for a small number of receptors.	Developments with a possible temporal overlap have been included in the strategic transport modelling, and are therefore embedded in the Air Quality assessment. Therefore, the conclusions already account for the cumulative effects from these developments and there would be no permanent cumulative effect.	Outline Operational Air Quality Plan measures (Appendix 7.5 of this ES [TR020001/APP/5.02])	Remains Minor adverse Not significant
Wider Area	Beneficial impact on 'Employment and income'. Moderate beneficial permanent (significant) effect (all assessment Phases) on mental and physical health associated with increased income, skills and/or job security for those local people securing operation related employment.	During operation, the following developments all have the potential to have an impact on employment: a. HS2; b. Heathrow Expansion; c. Green Horizons Park (17/02300/EIA); d. Power Court (20/01587/OUTEIA); e. Mixed-use application in Cockernhoe (16/02014/1); f. Newlands Park (20/01588/OUTEIA); g. Houghton Regis North 1 (12/03613/OUT); and h. Houghton Regis North (Land West of Bidwell) (CB/15/00297/OUT). The cumulative impact of the Proposed Development and the other development listed above will have a beneficial impact on 'employment and income' which will remain a moderate beneficial permanent mental and physical (significant) health effect.	The Employment and Training [TR020001/APP/7.05] has been developed to maximise opportunities and upskilling for local people, including hard to reach groups and those currently unemployed.	Remains Moderate beneficial Significant
Wider Area	Adverse impacts on 'Social capital' and 'Access to services due to increased journey times deterring people from travelling. Negligible (not significant) effect on health.	The Transport Assessment [TR020001/APP/7.02] is inherently cumulative as transport modelling requires the inclusion of committed developments in the future baseline. As a result, there will be no change in this effect.	Extension of Luton DART system to serve the new terminal. Proposed Highway Intervention works. Framework Travel Plan [TR020001/APP/7.13] .	Remains Negligible adverse Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Wider Area	Adverse impact on 'Housing market' due to the increase in operational workforce. Mental wellbeing effects resulting from increased pressure on housing supply. Minor adverse (not significant)	<p>The following committed developments comprise the development of residential dwellings:</p> <ul style="list-style-type: none"> a. Residential development on land adjacent to Caddington Road and Newlands Road (Ref. 17/00590/FUL); b. Residential development on Caleb Close (Ref. 17/01040/FUL) c. Residential development on Rothesay Road (Ref. 20/00135/FUL); d. Mixed – use development on Park Street (Ref. 19/01104/OUT) e. Residential development on Seymour Avenue (Ref. 20/00785/FUL); f. Residential development on Taylor Street (Ref. 19/00925/FUL); g. Residential development on Chapel Street (Ref. 19/00889/FUL); h. Residential development on Cumberland Street (Ref. 20/00281/FUL); i. Residential development on Hitchin Road (Ref. 19/01363/FUL); j. Residential development on Old Bedford Road (Ref. 19/01358/FUL); k. Residential development on Alma Street (Ref. 20/00514/FUL); l. Residential development on Burr Street (Ref. 20/00567/FUL); m. Mixed – use development on Hayward Tyler (Ref. 20/00147/OUT); n. Mixed – use development on Cumberland Street (Ref. 17/01764/FUL); o. Residential development on George Street (Ref. 20/00133/FUL); p. Residential development on Burr Street (Ref. 21/00306/FUL); q. Mixed – use development on Bute Street (Ref. 21/01115/EIASCRC); r. Residential development on land west of Cockernhoe / land east of Cophorne Cockernhoe (Ref. 16/02014/1); s. Mixed – use development on land south and north of Cockernhoe and east of Wigmore (Ref. 17/00830/); t. Residential development on Bancroft (Ref. 20/00193/FP); 	n/a	<p>Remains Minor Adverse</p> <p>Not significant</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<ul style="list-style-type: none"> u. Residential development on land on the northern edge of Houghton Regis (Ref. 12/03613/OUT); v. Mixed – use development on land west of Bidwell (Ref. CB/15/00297/OUT); and w. Residential development on Cotswold Farm Business Park (Ref. CB/18/04602/OUT). x. Residential development on land opposite Whitbread House, Flowers Way, Luton (Ref: 22/00195/FUL) y. Residential development at Cumberland Street, Luton (Ref: 22/00278/FUL) z. Residential development at land to the rear of Luton Retail Park, Kimpton Road, Luton (Ref: 22/00990/FUL) aa. Residential development at 1 Pirton Rd, Hithchin (Ref: 21/0354/FP) bb. Residential development 4.5km south (Ref: 5/2022/1862) <p>The cumulative impact of the schemes listed above will have a beneficial impact on the 'housing market', through increased supply of housing.</p>		
Wider area	Adverse impact on 'access to services', specifically access to local primary care and A&E, due to the increase in operational workforce. Minor adverse (not significant).	<p>Development at Power Court Luton (Ref: 20/01587/OUTEIA) includes provision for a health centre.</p> <p>This other development would provide increased healthcare capacity within Luton, which would reduce the sensitivity of the existing healthcare provision which is currently over capacity. This would be a beneficial impact. However, the exact nature of the provision is currently unclear therefore magnitude of change cannot be determined.</p>	n/a	Remains Minor adverse Not significant.
Community				
<i>Construction</i>				
Wigmore Valley Park	<p>Minor beneficial permanent effect, not significant (All assessment Phases)</p> <p>Closure and re-provision of part of Wigmore Valley Park. Access maintained to existing park during construction of</p>	<p>This receptor may experience the changes to be brought about by the Proposed Development in combination with works associated with the Green Horizons Park development (Ref. 17/02300/EIA). The Green Horizons Park development may introduce construction activities associated with the delivery of improved facilities at Wigmore Valley Park, which may be evident in combination with the Proposed Development in construction assessment Phase 1. The other developments are however judged to not materially change the effect on Wigmore Valley Park.</p>	<p>The other developments are assessed not to result in additional effects on this receptor. It is accordingly determined that no additional mitigation is required.</p>	<p>Remains Minor beneficial – Replacement parkland.</p> <p>Not significant</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	replacement open space and facilities to be delivered in assessment Phase 1. Overall gain in parkland provided and enhancement of facilities.			
Prospect House Day Nursery	<p>Demolition of nursery due to AAR in assessment Phase 2a.</p> <p>With a commitment, secured via a Section 106 agreement, to provide a replacement facility for Prospect House Day Nursery, of a comparable size, quality, and accessibility, to meet future capacity requirements as ascertained by confirmatory assessment prior to closure, the residual effect would be minor adverse, and not significant.</p>	Receptor is replaced before being permanently lost in assessment Phase 2a so no additional effects.	Discussions will continue and confirmatory assessment of capacity requirements prior to closure will ensure appropriate replacement facilities.	<p>Remains Minor adverse.</p> <p>Not significant.</p>
Ace Sandwich Bar	<p>Minor adverse effect, not significant. (assessment Phase 2a)</p> <p>Demolition of sandwich bar due to AAR.</p>	Receptor is permanently lost in assessment Phase 2a so no additional effects.	Receptor is permanently lost in assessment Phase 2a so no additional effects.	<p>Remains Minor adverse effect</p> <p>Not significant</p>
Impact on users of PRow Kings Walden 043	<p>Negligible permanent effect, not significant. (All assessment Phases)</p> <p>Diversion and upgrading of PRow.</p>	This receptor would experience the changes to be brought about by the Proposed Development in combination with the Green Horizons Park development (17/02300/EIA). However, as the Green Horizons Park development will not directly impact PRow Kings Walden 043, there is no material change to the effect.	The other developments are assessed not to result in additional effects on this receptor. It is accordingly determined that no additional mitigation is required.	<p>Remains Negligible</p> <p>Not significant</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Impacts on users of undesignated footpath within WVP and public footpaths FP29 and FP38 and public bridleways BW28 and BW37	<p>Minor beneficial permanent effect, not significant. (All assessment Phases)</p> <p>Undesignated footpath will be permanently stopped. Public footpaths FP29 and FP38 and public bridleways BW28 and BW37 stopped up during assessment Phase 2a. Additional footpaths and bridleways will be provided as part of the replacement open space. Connectivity partly restored in assessment Phase 2b.</p>	<p>This receptor would experience the changes brought about by the Proposed Development in combination with the New Century Park development (17/02300/EIA). However, as the New Century Park development will not directly impact the footpaths and bridleways, there is no material change to the effect.</p>	<p>The other developments are assessed not to result in additional effects on this receptor. It is accordingly determined that no additional mitigation is required.</p>	<p>Remains Minor beneficial</p> <p>Not significant</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) and bridleway Kings Walden 052 (between Darley Road and Colmore Road).	<p>Negligible permanent effect, not significant. (All assessment Phases)</p> <p>Diversion and upgrading of PRow and bridleway.</p>	<p>This receptor would experience the changes brought about by the Proposed Development in combination with the Green Horizons Park development (17/02300/EIA). However, as the Green Horizons Park development will not directly impact PRow Kings Walden 041 and bridleway Kings Walden 052, there is no material change to the effect.</p>	<p>The other developments are assessed not to result in additional effects on this receptor. It is accordingly determined that no additional mitigation is required.</p>	<p>Remains Negligible</p> <p>Not significant</p>
<i>Operation</i>				
No effects on community resources during operation				
Landscape and Visual				
<p>The Cumulative Landscape and Visual Impact Assessment adopts a two-stage process (See Appendix 14.1 of this ES [TR020001/APP/5.02]). The first stage assesses the 'total effects' (i.e. the total combined effects of past, present and future 'other development' proposals together with the Proposed Development against the existing baseline). In order to identify the contributing effects that would only occur due to the presence of the Proposed Development within the 'total effects', a second stage is undertaken. This second stage therefore identifies the 'additional effects' (i.e. assuming past, present and future 'other development' proposals are already present within the existing baseline, then identifying the additional effects due to the Proposed Development). An example of an additional effect would be where the removal of vegetation associated with 'other development' proposals would result in additional visibility effects due to the presence of Proposed Development.</p>				

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Where no 'total effects' (stage 1) are considered likely, the subsequent 'additional effects' (stage 2) assessment is not required and has not been carried out. The Residual Cumulative Effects column below either records the 'additional effect' or states if the effect remains as determined in Chapter 14 Landscape and Visual of this ES [TR020001/APP/5.01], where no additional effect is assessed.				
Landscape				
The landform East of the airport	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)	The Proposed Development may occur cumulatively with localised level changes in the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These changes are judged not to materially increase the total magnitude of impact at any of the assessment phases. The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)
The mixed ancient deciduous and plantation woodlands East of the airport	Moderate adverse, significant (assessment Phases 1 and 2a) reducing to Minor adverse, not significant (assessment Phase 2b) then Minor beneficial, not significant (maximum passenger capacity and Design Year)	The Proposed Development may occur cumulatively with a small degree of loss proposed to facilitate an access road in the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These changes are however judged not to materially increase the total magnitude of impact at any of the assessment phases. The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Moderate adverse, significant (assessment Phases 1 and 2a) reducing to Minor adverse, not significant (assessment Phase 2b) then Minor beneficial, not significant (maximum passenger capacity and Design Year)
The mature remnant hedgerows and hedgerow trees East of the airport	Minor adverse, not significant (assessment Phase 1) and Minor beneficial, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)	The Proposed Development may occur cumulatively with other changes in the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These changes are however judged not to materially increase the total magnitude of impact at any of the assessment phases. The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) and Minor beneficial, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)
The irregular arable field patterns East of the airport	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year)	The Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and Land West of Cockernhoe / Land East of Cophorne Cockernhoe would result in further 'irreversible' loss of arable farmland. As this typology is common locally, this additional loss to arable farmland is however judged not to materially affect the cumulative magnitude of impact.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
The parkland of Wigmore Valley Park	Major adverse, not significant (assessment Phase 1) reducing to Moderate adverse, significant (assessment Phases 2a and 2b) then Minor adverse, not significant (maximum passenger capacity and Design Year).	<p>The Green Horizons Park development would deliver changes within Wigmore Valley Park which may be experienced cumulatively with the Proposed Development in construction phase 1 (including the removal of vegetation, improvements to Wigmore Pavilion, construction of new play facilities and a new skate park, construction of new surfaced paths and the re-surfacing of the car parking area). The Green Horizons Park development would also introduce additional construction activities and built form which will be visible and audible beyond the replacement open space from construction assessment Phase 2a.</p> <p>The combined impact of the Proposed Development and changes within Wigmore Valley Park to be brought about by the Green Horizons Park development are judged to increase the total magnitude of impact on this receptor in construction phase 1 to High adverse. The additional construction activities and built form is also judged to increase the total magnitude of impact on this receptor in construction assessment Phase 2b to Medium adverse.</p> <p>These increases to the total magnitude of impact on this receptor are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Major adverse , significant (assessment Phase 1) reducing to Moderate adverse, significant (assessment Phases 2a and 2b) then Minor adverse, not significant (maximum passenger capacity and Design Year).
The narrow winding lanes and associated hedge banks East of the airport	Negligible adverse, not significant (assessment Phase 1) and Negligible beneficial, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>The Proposed Development may occur cumulatively with changes resulting from the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and the Land West of Cockernhoe / Land East of Copthorne Cockernhoe development. These changes are however judged not to materially increase the total magnitude of impact at any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) and Negligible beneficial, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
The outlying cottages and scattered farmsteads East of the airport	No effect (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year)	The other developments are assumed not to materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains no effect (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
The network of PRow East of the airport	Moderate beneficial, significant (assessment Phase 1) changing to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)	The other developments are assumed not to materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Moderate beneficial, significant (assessment Phase 1) changing to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)
Luton Borough Landscape Character Assessment (LBLCA) Area 4c - Lea Valley Lower	Negligible adverse, not significant (assessment Phase 1) and Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)	<p>The Proposed Development may be experienced cumulatively with works to be delivered as part of the East of Luton Study at Windmill Road/ Kimpton Road and A505 Gipsy Lane/ Parkway Road and may occur cumulatively with development at 00559/EIASCP, 22/00278/FUL and the Power Court development.</p> <p>The works to be delivered as part of the East of Luton Study within this Landscape Character Area (LCA) are contained within the highway boundary and are judged not to materially increase the total magnitude of landscape impact at any of the assessment phases. The Power Court development is located to the far north of the LCA and may be perceived cumulatively with Work No. 6e(i), but would not be perceived cumulatively with the multi-storey car park (Work No. 4g) and is judged similarly not to materially increase the total magnitude of landscape impact at any of the assessment phases. The developments at 00559/EIASCP and 22/00278/FUL would be seen cumulatively with Work No. 6e(a) but is judged not to materially increase the total magnitude of landscape impact at any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) and Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)
LBLCA Area 13 - Wigmore Rural	Moderate adverse, significant (assessment Phase 1) rising to Major adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)	The Green Horizons Park development would deliver changes within Wigmore Valley Park which may be experienced cumulatively with the Proposed Development in construction assessment Phase 1 and would introduce additional construction activities and built form which would be visible and audible within this LCA in construction assessment Phases 2a and 2b. These changes are however judged not to materially increase the total magnitude of landscape impact at any of the assessment phases.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Moderate adverse, significant (assessment Phase 1) rising to Major adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
LBLCA Area 14 – Luton Airport	Minor adverse, not significant (assessment Phases 1, 2a, 2b and maximum passenger capacity) reducing to Negligible adverse, not significant (Design Year)	The Proposed Development may occur cumulatively with Green Horizons Park development. These developments are however judged not to materially increase the total magnitude of impact at any of the assessment phases. The other developments are assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b and maximum passenger capacity) reducing to Negligible adverse, not significant (Design Year)
LBLCA Area 16 – Luton South Industrial	Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor adverse (assessment Phase 2b, maximum passenger capacity and Design Year).	The Proposed Development may occur cumulatively with the proposed works to be delivered as part of the East of Luton Study at the A505 Vauxhall Way/ Eaton Green Road, Kimpton Road/ Vauxhall Way and Vauxhall Way Widening. It is judged that these other developments may increase the 'total' magnitude of landscape impact on this receptor in construction assessment Phase 1 from Negligible to Medium adverse. The other development's activities are assessed to potentially increase the significance of 'total' landscape effect in construction assessment Phase 1 to Moderate adverse. However, as the Proposed Development would not introduce any construction activities within this LCA in this phase, it is assessed that there would be no 'additional' cumulative effects due to the presence of the Proposed Development.	The Proposed Development would not introduce any construction activities within this LCA in assessment Phase 1. Therefore, the Proposed Development would not result in any 'additional' landscape effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor adverse (assessment Phase 2b, maximum passenger capacity and Design Year).
LBLCA Area 22 – Stockwood Park	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Hertfordshire Landscape Character Assessment (HLCA) Area 200 – Peters Green Plateau	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
HLCA Area 201 – Kimpton and Whiteway Bottom	Minor adverse, not significant (assessment Phases 1, 2a and 2b) changing to Minor beneficial, not significant (maximum passenger capacity and Design Year)	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a and 2b) changing to Minor beneficial, not significant (maximum passenger capacity and Design Year)
HLCA Area 202 – Breachwood Green Ridge	Minor adverse, not significant (assessment Phase 1) changing to Minor beneficial, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The Proposed Development may occur cumulatively with changes resulting from the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and the Land West of Cockernhoe / Land East of Copthorne Cockernhoe development. It is judged that these other developments would increase the 'total' magnitude of landscape impact at all phases from Low to Medium adverse. These other developments are assessed to increase the significance of 'total' landscape effect at all phases to Moderate adverse. These other developments are however judged not to increase the sensitivity of this LCA to the type of development proposed, or to change the magnitude of impact that would result from the Proposed Development. It is therefore assessed that there would be no 'additional' cumulative effects due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' landscape effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) changing to Minor beneficial, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
HLCA Area 203 – Whitwell Valley	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
HLCA Area 211 – Offley and St. Paul's Walden	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Central Bedfordshire District Landscape Character Assessment (CBDLCA) Area 11B	Negligible adverse, not significant (assessment Phase 1) rising to Minor Adverse, not significant (assessment Phases 2a, 2b, maximum	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor Adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
– Caddington / Slip End Chalk Dipslope	passenger capacity and Design Year).			
CBDLCA Area 11C – Luton Hoo Chalk Dipslope	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
CBDLCA Area 12C – Slip End Chalk Valley	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The works to be delivered as part of the East of Luton Study at New Airport Way/ M1 Junction 10 would directly impact this LCA in construction phase 1. These works are however assumed to be contained within the highway boundary and are accordingly determined not to materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
CBDLCA Area 12D – Lea Chalk Valley	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
The townscape of Hitchin	No effect (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The Proposed Development may occur in cumulation with changes from the residential development (10 flats) development at 21/03541/FP however it is accordingly assessed not to materially impact this receptor. The other developments are accordingly assessed not to increase the significance of total landscape effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains No effect (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
The aesthetic or perceptual characteristics of the landscape within the Chilterns AONB	Minor adverse, not significant (assessment Phase 1 and 2a) rising to Moderate adverse, significant (assessment Phase 2b, maximum passenger capacity and Design Year).	NSIP and TCPA applications for Heathrow, Gatwick and Stansted are outside the Cumulative LVIA scope. It is therefore judged that there would be no change in the total magnitude of impact. The other developments are assessed not to increase the significance of total landscape effects in any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1 and 2a) rising to Moderate adverse, significant (assessment Phase 2b, maximum passenger capacity and Design Year).
Visual				

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Visitors to Wigmore Valley Park	Moderate adverse, significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor may experience the changes brought about by the Proposed Development cumulatively with works associated with the Green Horizons Park development; and in succession with highway works proposed at the southern edge of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development.</p> <p>These other developments would result in further loss of existing vegetation and the removal of some buildings that are discernible from within the park. These other developments would also introduce further visible built form that would be evident in views experienced by this user group beyond embedded mitigation planting from construction assessment Phase 2a. The Green Horizons Park development may also introduce construction activities associated with the delivery of improved amenity facilities at Wigmore Valley Park, which may be evident cumulatively with the Proposed Development in construction assessment Phase 1.</p> <p>These other developments are judged to increase the 'total' magnitude of visual impact on this receptor to Medium to high adverse in construction assessment Phase 2b and to Medium adverse at the Design Year.</p> <p>These other developments are assessed to increase the significance of 'total' visual effect on this receptor in construction assessment Phase 2b to Major adverse.</p> <p>The other developments are however judged to not materially increase visibility to the Proposed Development and are accordingly assessed not to result in any 'additional' visual effects on this receptor due to the presence of the Proposed Development.</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Moderate adverse, significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Visitors to Someries Castle and grounds	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of Winsdon Hill	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor may experience the changes brought about by the Proposed Development cumulatively with proposed built form at Green Horizons Park in construction assessment Phase 2 and cumulatively with other developments located within the lower lying townscape to the west of the airport, including:</p> <ul style="list-style-type: none"> a. Power Court; b. 22/00195/FUL; c. 22/00211/FUL; d. 22/00278/FUL; 	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>e. 22/00559/EIASCP; f. Land north of Kimpton Road; and g. 18/01244/FUL.</p> <p>All other developments would be an appreciable distance away and are considered not to materially alter the overall balance of features and elements that comprise the existing view. It is therefore judged that there would be no increase in the total magnitude of visual impact.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>		
Visitors to Luton Hoo Memorial Park	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Raynham Recreation Ground and Community Centre	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a) rising to Moderate adverse, significant (assessment Phase 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a) rising to Moderate adverse, significant (assessment Phase 2b, maximum passenger capacity and Design Year).
Users of the area of greenspace next to Polzeath Close	Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).	This receptor may experience the changes from the works to be delivered as part of the East of Luton Study, notably the widening of the A505 and junction improvements at Kimpton Road. However, other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).
Users of Powdrills Field	Negligible adverse, not significant (assessment	The other developments would not materially impact views experienced by this receptor. The other developments are	The other developments are assessed not to result in additional visual effects	Remains Negligible adverse, not significant (assessment Phase 1)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	on this receptor. It is accordingly determined that no additional mitigation is required.	rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Stockwood Park	Negligible adverse, not significant (assessment Phases 1 and 2a) rising to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).	This receptor may experience the changes brought about by the Proposed Development in succession with glimpsed views of the Newlands development. This other development is judged to increase the 'total' magnitude of visual impact for all assessment phases to Low adverse. This other development is judged to increase the significance of 'total' visual effect in construction assessment Phases 1 and 2a to Minor adverse. This other development would not however increase visibility to the Proposed Development and is accordingly assessed not to result in 'additional' visual effects on this receptor due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phases 1 and 2a) rising to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).
Users of Stopsley Common	No effect (assessment Phase 1) rising to Negligible adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	The other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains No effect (assessment Phase 1) rising to Negligible adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Residents and users of Luton Hoo hotel and parkland	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	Other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Residents of Wandon End	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with the Green Horizons Park development and the proposed access road into the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. Residents of Ivy Cottage may additionally experience the Proposed Development in succession with proposed built form within Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These other developments are judged to increase the 'total' magnitude of visual impact experienced by this receptor in construction assessment Phases 1 and 2a to Medium to High adverse and in construction assessment Phase 2b to Medium	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>adverse. Operational stage impacts would remain unchanged.</p> <p>These other developments are assessed to increase the significance of 'total' visual effect in construction assessment Phases 1, 2a and 2b to Moderate adverse. These other developments would not however increase visibility to the Proposed Development and is accordingly assessed not to result in 'additional' visual effects on this receptor due to the presence of the Proposed Development.</p>		
Residents of Winch Hill House	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor may experience the changes to be brought about by the Proposed Development cumulatively with glimpsed views to the Green Horizons Park development. This cumulative development is however judged not to increase the total magnitude of visual impact for any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Residents of Winch Hill Cottages	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>None of the other developments are judged to materially impact this receptor. The other developments are assessed to not increase the significance of total visual effect at any of the assessment phases.</p> <p>As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
People in South Wigmore	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes to be brought about by the Proposed Development cumulatively with the Green Horizons Park development. This other development is judged to increase the 'total' magnitude of visual impact on this receptor at assessment Phase 2a and when operating at maximum passenger capacity and at the Design Year to Medium adverse.</p> <p>The other developments are assessed to increase the significance of 'total' visual effect when operating at maximum passenger capacity and at the Design Year to Moderate adverse. The other developments would however not increase visibility to the Proposed Development and are accordingly assessed not to result in 'additional' visual effects on this receptor due to the presence of the Proposed Development (i.e. over and above the total visual effects identified).</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
People in Darleyhall	Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment	This receptor may experience the changes to be brought about by the Proposed Development cumulatively with the Green Horizons Park development, with construction activities and built form potentially visible alongside the Proposed Development from assessment Phase 2b.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a,

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	Phases 2a, 2b, maximum passenger capacity and Design Year).	This cumulative development is however assessed not to materially increase the total magnitude of visual impact for any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		2b, maximum passenger capacity and Design Year).
People in Breachwood Green, The Heath and Lye Hill	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes to be brought about by the Proposed Development cumulatively with the Green Horizons Park development, with construction activities and built form anticipated to be visible alongside the Proposed Development from assessment Phase 2b. This cumulative development is however assessed not to materially increase the total magnitude of visual impact for any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
People in Tea Green	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with the Green Horizons Park development, which may be discernible in glimpsed views from construction assessment Phase 2a; and the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, which would comprise a more prominent change in the foreground of views experienced by this receptor. These other developments are judged to increase the total magnitude of visual impact in assessment Phases 1, 2a and 2b to High adverse and at when operating at maximum passenger capacity and at the Design Year to Medium adverse. These other developments are assessed to increase the significance of total visual effect in assessment Phases 2a and 2b to Major adverse and in assessment Phase 1, when operating at maximum passenger capacity and at the Design Year to Moderate adverse. The other developments would not however increase visibility to the Proposed Development and are accordingly assessed not to result in additional visual effects on this receptor due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Users of Wigmore Hall Conference Centre	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity) reducing to Minor adverse, not significant (Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development cumulatively with the Green Horizons Park development, with construction activities and built form anticipated to be visible alongside the Proposed Development in assessment Phase 2a.</p> <p>This cumulative development is judged to increase the total magnitude of visual impact when operating at maximum passenger capacity and at the Design Year to Medium adverse.</p> <p>The other developments are assessed to increase the significance of total visual effect at the Design Year to Moderate adverse. The other developments would not however increase visibility to the Proposed Development and are accordingly assessed not to result in additional visual effects on this receptor due to the presence of the Proposed Development.</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity) reducing to Minor adverse, not significant (Design Year).
Users of the Chiltern Way Cycle Route	Minor adverse, not significant (assessment Phases 1, 2a, 2b and maximum passenger capacity) changing to Minor beneficial, not significant (Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in succession with highway works proposed as part of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, where adjoining the proposed replacement open space on Darley Road; cumulatively with built form proposed as part of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, where travelling along Brick Kiln Lane; and sequentially with built form proposed as part of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, when travelling along Lower Road, Brick Kiln Lane and Chalk Hill.</p> <p>This receptor would also experience the Proposed Development cumulatively with built form proposed as part of the Green Horizons Park development from assessment Phase 2a.</p> <p>The views in succession to the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development would diminish following the establishment of embedded mitigation planting within the replacement open space and those cumulatively would diminish following the construction of proposed buildings and establishment of screening vegetation embedded into the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development proposals.</p> <p>The cumulative change from buildings proposed as part of the Green Horizons Park development would be largely screened by the embedded and additional mitigation</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b and maximum passenger capacity) changing to Minor beneficial, not significant (Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>measures that are included as part of the Proposed Development.</p> <p>These other developments are judged to increase the total magnitude of visual impact experienced by this receptor in assessment Phases 1 and 2a to High adverse and in assessment Phase 2b to Medium adverse.</p> <p>The other developments are assessed to increase the significance of total visual effect in construction phases 1, 2a and 2b to Moderate adverse. The other developments would not however increase visibility to the Proposed Development and are accordingly assessed not to result in additional visual effects on this receptor due to the presence of the Proposed Development (over and above the total visual effects identified).</p>		
Users of Darley Road	Minor adverse, not significant (assessment Phases 1, 2a, 2b and maximum passenger capacity) changing to Minor beneficial, not significant (Design Year).	<p>This receptor would experience the changes to be brought about by the Proposed Development in succession, and in small part combination, with the highway works proposed as part of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, to the north of the proposed replacement open space. This receptor may also experience the Proposed Development cumulatively with built form proposed as part of the Green Horizons Park development in assessment Phase 2b. The other developments are judged to increase the total magnitude of visual impact experienced by this receptor in construction phase 1 to Low to medium adverse.</p> <p>The other developments are assessed to increase the significance of total visual effect at assessment Phase 1 to Moderate adverse. The other developments would not however increase visibility to the Proposed Development and are accordingly assessed not to result in additional visual effects on this receptor due to the presence of the Proposed Development.</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1 2a, 2b and maximum passenger capacity) changing to Minor beneficial, not significant (Design Year).
Users of Eaton Green Road	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a and 2b) then reducing to Minor adverse, not significant (maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in succession with works to be delivered as part of the East of Luton Study at the junction with Vauxhall Way.</p> <p>This receptor would also experience changes to be brought about by the Proposed Development cumulatively with built development proposed as part of the Green Horizons Park development from assessment Phase 2a.</p> <p>These other developments are judged to increase the total magnitude of visual impact in assessment Phase 1 to Low to Medium adverse, at assessment Phase 2b to Medium to high adverse and when operating at maximum passenger capacity to Medium adverse. These other developments are however</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a and 2b) then reducing to Minor adverse, not significant (maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
Users of Winch Hill Lane	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in succession with glimpsed views to the highway works proposed as part of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and cumulatively with proposed built development at the Green Horizons Park development. These other developments are however judged not to materially increase the total magnitude of visual impact at any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Vauxhall Way	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development cumulatively with changes to be delivered as part of the East of Luton Study at the junction of the A505 Kimpton Road/ Vauxhall Way; and in frequently sequential views with works to be delivered as part of the East of Luton Study associated with the Vauxhall Way widening.</p> <p>Works associated with the East of Luton Study would result in the removal of some existing vegetation evident in views experienced by this receptor. It is nonetheless judged that these changes would not result in a material increase to the total magnitude of visual impact experienced by this receptor at any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of Kimpton Road and Airport Way	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor adverse, not significant (assessment Phases 2b, maximum	This receptor would experience the changes to be brought about by the Proposed Development cumulatively with the developments at 22/00559/EIAsCP and 22/00278/FUL and Land North of Kimpton Road. Changes to be delivered as part of the East of Luton Study associated with the widening of Vauxhall Way, notably at the junction with Kimpton Road, would also be evident in succession, and in part combination, with the Proposed Development in assessment Phase 2a.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse (assessment Phase 2a) then reducing to Minor adverse, not significant (assessment Phases 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	passenger capacity and Design Year).	It is judged that these changes would increase the total magnitude of visual impact experienced by this receptor at assessment Phase 1 to Medium adverse. The other developments are assessed to increase the significance of total visual effect at assessment Phase 1 to Moderate adverse. The other developments would not however increase visibility to the Proposed Development and are accordingly assessed not to result in additional visual effects on this receptor due to the presence of the Proposed Development.		
Users of New Airport Way	Moderate adverse, significant (assessment Phases 1 and 2a) reducing to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).	Other developments would not materially impact views experienced by this receptor. The other developments are accordingly assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Moderate adverse, significant (assessment Phases 1 and 2a) reducing to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).
Users of Luton Borough public footpath FP39 to the East of Wigmore	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity) reducing to Negligible adverse, not significant (Design Year)	This receptor would experience the changes to be brought about by the Proposed Development in succession with views towards the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, which would be discernible in sequential views across much of its length. This development is judged to increase the total magnitude of visual impact in all phases to Medium adverse and when operating at maximum passenger capacity or at the Design Year to Low to medium adverse. The other developments are assessed to increase the significance of total visual effect during assessment Phases 1, 2a and 2b to Moderate adverse and when operating at the Design Year to Minor adverse. The other developments would not however increase visibility to the Proposed Development and are accordingly assessed not to result in 'additional' visual effects on this receptor due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity) reducing to Negligible adverse, not significant (Design Year)
Users of Luton Borough public footpaths FP29 and FP38 and public bridleways BW28 and BW37 to the south East of Wigmore Valley Park and to the East of the existing airfield	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (maximum passenger capacity and Design Year). *PRoW would be stopped up in phases	This receptor would experience the changes brought about by the Proposed Development cumulatively with the Green Horizons Park development and, once connectivity is restored along this route when operating at maximum passenger capacity or at the Design Year, in frequent sequential views towards the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These other developments are however judged not to materially increase	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	2a or 2b. Assessment not undertaken during these phases.	the total magnitude of visual impact at any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
Users of the Chiltern Way long distance footpath	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes to be brought about by the Proposed Development cumulatively with the Green Horizons Park development. It would also experience changes in succession and in frequent sequential views with the North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development and cumulatively, in succession and in frequent sequential views with the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, which would be present in the foreground and that would entirely screen the Proposed Development in views experienced by users of the Offley 002 part of this footpath upon completion.</p> <p>These other developments are judged to increase the total magnitude of visual impact experienced by this receptor in assessment Phase 1 to High adverse, in assessment Phases 2a and 2b to Medium to high adverse and when operating at maximum passenger capacity or at the Design Year to Medium adverse.</p> <p>The other developments are assessed to increase the significance of total visual effect in assessment Phases 1, 2a and 2b to Major adverse and when operating at maximum passenger capacity or at the Design Year to Moderate adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow to the West of Breachwood Green	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development cumulatively with the Green Horizons Park development. This cumulative development is however judged not to materially increase the total magnitude of visual impact at any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Users of footpaths Kings Walden 041, where not forming part of the Chiltern Way, and Kings Walden 043, which pass through the Main Application Site	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with Green Horizons Park and in succession and in frequent sequential views with the road junction proposed to the south of the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, until the embedded and additional planting matures. This cumulative development is judged to increase the total magnitude of visual impact in assessment Phases 1 and 2a to Medium adverse. The other developments are assessed to increase the significance of total visual effect in assessment Phase 1 to Moderate adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpaths near Lye Hill	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with glimpsed views to the Green Horizons Park development. This development is however judged not to materially increase the total magnitude of visual impact at any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpaths near Ley Green	No effect (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	All other developments would be screened by intervening vegetation and landform. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains No effect (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow south of the airport	Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	All other developments would be screened by intervening vegetation and/or landform. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of public footpath Hyde 4B, West of Someries Castle	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor	This receptor would experience the changes brought about by the Proposed Development cumulatively with aspects of works to be delivered as part of the East of Luton Study, the developments at 22/00559/EIASCP, 22/00278/FUL and Land North of Kimpton Road. These other developments would only be visible to the westernmost extremity of this footpath where adjoining New Airport Way. These other developments	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phase 2a) then reducing to Minor adverse, not significant (assessment Phase 2b,

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).	are judged to increase the total magnitude of visual impact in assessment Phase 1 to Medium adverse. The other developments are assessed to increase the significance of total visual effect in assessment Phase 1 to Moderate adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.		maximum passenger capacity and Design Year).
Users of the Lea Valley Cycle Route nr. Park Street	Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	None of the other developments are judged to materially impact this receptor. The other developments are assessed to not increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpath Offley 026, West of Cockernhoe	No effect (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with the Land West of Cockernhoe / Land East of Cophorne Cockernhoe development, which would be present in the foreground and that would entirely screen the Proposed Development from this receptor upon completion. This other development is judged to increase the total magnitude of visual impact experienced by this receptor in all phases to Medium adverse. The other developments are assessed to increase the significance of total visual effect in all phases to Major adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains No effect (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpath St Pauls Walden 024, nr. Bendish	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with the Green Horizons Park development and to an extent with the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These other developments are however judged not to materially increase the total magnitude of visual impact at any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Users of footpath Offley 003, West of Tea Green	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a and assessment Phase 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development cumulatively with the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development, which would be present in the foreground and that would entirely screen the Proposed Development from this receptor upon completion.</p> <p>This development is judged to increase the total magnitude of visual impact experienced by this receptor in assessment Phases 1 to High adverse, in assessment Phases 2a and 2b to Medium to high adverse and when operating at maximum passenger capacity or at the Design Year to Medium adverse.</p> <p>The other developments are assessed to increase the significance of total visual effect in assessment Phases 1, 2a and 2b to Major adverse and when operating at maximum passenger capacity or at the Design Year to Moderate adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a and assessment Phase 2b, maximum passenger capacity and Design Year).
Users of footpaths East of Tea Green	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development cumulatively with glimpsed views of the Green Horizons Park development and the Land South and North West of Cockernhoe and East of Wigmore (Stubbocks Walk) Brick Kiln Lane Cockernhoe development. These other developments are judged to increase the magnitude of visual impact in assessment Phase 1 to Low to medium adverse.</p> <p>The other developments are judged to increase the significance of total visual effect in assessment Phase 1 to Minor adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.</p>	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpath Kings Walden 010	Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development cumulatively with glimpsed views to the Green Horizons Park development. This cumulative development is however judged not to materially increase the total magnitude of visual impact at any of the assessment phases.</p> <p>The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.</p>	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Minor adverse, not significant (assessment Phase 1) rising to Moderate adverse, significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Users of PRow on or adjoining the flight path East of Breachwood Green	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	All other developments would be screened by intervening vegetation and/or landform. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow on or adjoining the flight path nr. Caddington	Negligible adverse, not significant (assessment Phases 1 and 2a) rising to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).	None of the other developments are judged to materially impact this receptor. The other developments are assessed to not increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains negligible adverse, not significant (assessment Phases 1 and 2a) rising to Minor adverse, not significant (assessment Phase 2b, maximum passenger capacity and Design Year).
Users of PRow within the AONB	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with glimpsed views to the Green Horizons Park development and may experience views in succession with other developments. These other developments are however judged not to materially increase the total magnitude of visual impact at any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow within the AONB	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development cumulatively with glimpsed views to the Green Horizons Park development and may experience views in succession with other developments. These other developments are however judged not to materially increase the total magnitude of visual impact at any of the assessment phases. The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity and Design Year).
People in southeast Hart Hill and southwest Wigmore	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum	This receptor would experience the changes brought about by the Proposed Development cumulatively with the redevelopment of new sales building along Eaton Green Road and works to widen Vauxhall Way, associated with the East of Luton Study. These other developments are however judged not to materially increase the total magnitude of visual impact at any of the assessment phases.	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Remains negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	passenger capacity and Design Year).	The other developments are assessed not to increase the significance of total visual effect at any of the assessment phases. As no 'total effects' are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
Users of Capability Green Business Park	Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes to be brought about by the Proposed Development in succession with Land North of Kimpton Road development, 22/00559/EIASCP and 22/00278/FUL. These other developments are judged to increase the magnitude of total visual impact in construction phase 1 to Low adverse. The other developments are assessed to increase the significance of total visual effect in assessment Phase 1 to Minor adverse. The other developments are however considered not to increase visibility to the Proposed Development, no additional effects are therefore anticipated due to the presence of the Proposed Development.	The Proposed Development would not result in any 'additional' visual effects on this receptor (over and above the 'total effects' identified). It is accordingly determined that no additional mitigation is required.	Remains Negligible adverse, not significant (assessment Phase 1) rising to Minor adverse, not significant (assessment Phase 2a, 2b, maximum passenger capacity and Design Year).
Major Accidents and Disasters				
During construction: Construction personnel; Existing airport users and workers; During operation: Existing airport users and workers;	Vulnerability of the Proposed Development to contamination or release of hazardous substances from off-site sources. During construction: TifALARP (not significant) During operation: TifALARP (not significant)	All Other Developments located within the ZOI for this MA&D hazard (2km radius of the Main Application Site, Off-site Highway Interventions and construction traffic routes) are considered to have a potential to introduce contamination or release hazardous substances outside the Main Application Site. Most of these developments are urban developments of residential, commercial or mixed use, except for ID No. 42 which involves highways works. None of these developments include activities posing a new or increased potential for the release of hazardous substances during their operation, e.g. they do not propose to store substantial quantities of hazardous substances on-site. Any risk of release of hazardous substances from these other developments would be associated with construction activities. However, these schemes will be constructed in accordance with granted consents and relevant legislative requirements, similar to those described for the Proposed Development within Section 15.8 of Chapter 15 Major Accidents and Disasters of the ES [TR020001/APP/5.01] , e.g. measures set out within a CoCP or equivalent would be implemented during their construction. Therefore, it is considered unlikely that the other developments would result in a significant risk of contamination or release of hazardous substances.	No additional mitigation required.	No cumulative effects, the risk would remain TifALARP (not significant) during both construction and operation.
Construction and operation: Motorised and non-motorised users of	Impacts on road safety caused by the construction and operational traffic of the	Increase in traffic flows with other developments has been accounted for within the traffic and transport assessment presented in Chapter 18 of the ES [TR020001/APP/5.01] . The assessment concludes that there are no significant	No additional mitigation required.	Not significant (see Chapter 18 Traffic and Transport of the ES).

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
routes used by the traffic associated with the Proposed Development; Properties.	Proposed Development cumulatively with Other Developments.	effects with regards to collisions and safety and the transport of hazardous loads.		
Noise and Vibration				
Residential, auditoria, concert halls, theatres, sound recording, broadcast studios, places of worship, courts, lecture theatres, museums, schools, colleges, libraries, hospitals and hotels	Construction noise Not significant	Cumulative construction noise is restricted to developments that are within approximately 600 m of the Main Application Site. Cumulative developments within this distance are: Green Horizons, 181-193 Park Street, Former Honda Site Cumberland Street, Courtyard By Marriott London Luton Airport, Hayward Tyler 1 Kimpton Road, Prudence Place Proctor Way and Land South And North West Of Cockernhoe And East Of Wigmore. The number of other developments in proximity to the Main Application Site means that cumulative construction noise effects of an adverse nature may occur at sensitive receptors. The degree of potential cumulative noise effect is dependent on the location of the receptor relative to the Main Application Site and other cumulative along with the intensity of construction activity taking place on each site. It is expected that other developments will adopt Best Practicable Means to manage the impact of construction noise, which will be controlled to set limits. Consequently, it is considered unlikely that cumulative construction noise will result in a temporary significant effect.	Best practice construction noise management measures detailed in the CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). Section 61 consent to be obtained	Remains Not significant
Residential, auditoria, concert halls, theatres, sound recording, broadcast studios, places of worship, courts, lecture theatres, museums, schools, colleges, libraries, hospitals and hotels	Construction vibration Not significant	On-site other developments (Green Horizons Park and Prudence Place Proctor Way) have the potential to result in cumulative construction vibration effects. The level of construction vibration calculated for each phase of the Proposed Development is sufficiently low that, if a significant effect was to occur, it would be solely as a result of construction induced vibration from a cumulative development. Consequently, it is considered unlikely that cumulative construction vibration will result in a temporary significant effect.	Best practice construction vibration management measures detailed in the CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]). Section 61 consent to be obtained	Remains Not significant
Residential, auditoria, concert halls, theatres, sound recording, broadcast studios, places of worship, courts, lecture theatres, museums, schools, colleges, libraries, hospitals and hotels	Construction traffic noise Negligible – Not significant	Cumulative construction traffic effects may occur if other developments (as identified for construction noise) construction traffic use the same public highways to access their respective sites. It should be noted that Proposed Development traffic will access the Main Application Site via roads that experience high density traffic flows. Consequently, it would require a substantial number of heavy vehicles to increase road traffic noise levels. During the peak Proposed Development construction traffic period, construction traffic is calculated as increasing road traffic noise by 0.5 dB. An increase in noise of 1 dB represents a	Construction traffic management measures detailed in the CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]).	Remains Negligible

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>Minor Adverse increase in noise and would require approximately double the heavy vehicle traffic associated with the Proposed Development during the peak period. This occurrence is considered highly unlikely so cumulative temporary construction traffic effects are considered to be not significant.</p>		
<p>Residential, auditoria, concert halls, theatres, sound recording, broadcast studios, places of worship, courts, lecture theatres, museums, schools, colleges, libraries, hospitals and hotels</p>	<p>Air noise</p> <p>Significant effects for 3,250 people avoided by noise insulation</p>	<p>The assessment of aircraft noise considers the impact of aircraft within the Lowest Observable Adverse Effect Level (LOAEL) and up to an altitude of 4,000 feet. For aircraft activity below 4,000 feet, there are no cumulative effects with other airports as aircraft associated with other UK airports are above 4,000 feet in Luton airspace. Potential cumulative effects for airspace outside the LOAEL and up to 7,000ft will be assessed through the Airspace Change Proposals if there are anticipated to be any cumulative impacts between Luton and Heathrow.</p>	<p>Noise insulation scheme to compensate worst-affected properties. Noise Envelope to ensure predictable growth and to share benefits of new technology with communities.</p>	<p>Remains Significant effects for 3,250 people avoided by noise insulation</p>
<p>Residential, auditoria, concert halls, theatres, sound recording, broadcast studios, places of worship, courts, lecture theatres, museums, schools, colleges, libraries, hospitals and hotels</p>	<p>Surface access traffic noise</p> <p>Significant adverse effects for some properties on Crawley Green Road and Stony Lane</p>	<p>Cumulative developments that meet the threshold for Strategic traffic modelling have been included in transport modelling and included in the assessment of surface access noise.</p> <p>Section 16.7 of Chapter 16 of the ES [TR020001/APP/5.01] includes an assessment of long-term changes in road traffic noise from 2027 to 2043, which includes the effect of cumulative development traffic.</p> <p>The vast majority (96%) of residential buildings and non-residential noise sensitive receptors within the calculation area would experience a negligible (0.1 - 2.9 dB) increase in both daytime and night-time surface access noise levels from 2027 to 2043, in the absence of the Proposed Development. This is due to the general growth in traffic over time and the reasonable worst-case assumption that electrification of the fleet would not change road traffic noise levels.</p> <p>Some minor increases in surface access noise are predicted for residential properties on Stony Lane in the Tea Green area as a result of expected increases in traffic. Absolute volumes of traffic remain relatively low however, close to the lower limit of validation for the Calculation of Road Traffic Noise methodology, and therefore such predicted increases in surface access noise levels should be treated with caution.</p> <p>Approximately 4% of residential buildings and 3% of non-residential noise sensitive receptors within the study area are predicted to experience a negligible (0.1 - 2.9 dB) decrease in daytime surface access noise levels from 2027 to 2043 in the absence of the Proposed Development. These decreases are primarily expected in the vicinity of junction 11 of the M1 where traffic speeds are expected to fall as traffic volume increases.</p>	<p>A Sustainable Transport Strategy, detailed in the Surface Access Strategy [TR020001/APP/7.12] and Framework Travel Plan [TR020001/APP/7.13] Low noise road surface on the AAR.</p>	<p>Remains Significant adverse effects for some properties on Crawley Green Road and Stony Lane</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Soils and Geology				
Human receptors – construction workers/adjacent site users during the construction phase	Exposure of construction workers and adjacent residential areas and users of the airport and commercial areas to contaminants in dusts, vapours and gases, from landfill material/Made Ground through a number of exposure routes e.g. skin contact, inhalation, ingestion. Minor adverse (not significant)	<p>Potential effect on human health from potentially contaminated soils due to earthworks and construction associated with:</p> <ul style="list-style-type: none"> a. Proposed highway works by LBC as part of the East Luton Study. The potential for generation of contaminated dust within 250m of the Main Application Site and Off-Site Highway Interventions as a result of soil handling or clearance works. b. Residential units at 1 Kimpton Road application number 20/00147/OUT. This is within 250m of two Off-site Highway Interventions. The development will bring in additional high sensitivity receptors within 250m of Off-site Highway Interventions and the potential for generation of contaminated dust as a result of soil handling or clearance works during construction of the development. c. Proposed erection of a hotel, at the airport, application number 20/00646/FUL. The development will bring in additional high sensitivity receptors within 250m of the new AAR and existing airport land and the potential for generation of contaminated dust/ vapours and gases as a result of soil handling or clearance works during construction of the development. d. Proposed conversion of office building to residential, at the airport, application number 20/00020/COM. The development will bring in additional high sensitivity receptors to within 250m of the new AAR and existing airport land. e. Proposed conversion of office building to residential, at the airport application number 17/00830/1. The development will bring in additional high sensitivity receptors to within 250m of Area B. f. Redevelopment of the petrol filling station at 91 Eaton Green Road, including demolition works and decommissioning and removal of underground fuel tanks and pipework. There is a potential for generation of contaminated dust/vapours as a result of soil handling and excavation of underground fuel tanks and pipework. g. Proposed construction of residential units at 1 Pirton Road application number 21/0354/FP. This is adjacent an Off-site Highway Intervention. The development will bring in additional high sensitivity receptors within 250m of the Off-site Highway Intervention and also the 	Implementation of construction environmental management measures set out in the Outline Remediation Strategy (Appendix 17.5 of this ES [TR020001/APP/5.02]) and CoCP Appendix 4.2 to the ES [TR020001/APP/5.02], including appropriate PPE, dampening down of dusts, odour suppression and monitoring against investigation and action levels, will reduce the potential magnitude of impact from contaminants, which could affect human health receptors. Co-ordination and regular liaison meetings with other high-risk construction sites or activities within 500m of the Application Site. This would ensure dust/vapour mitigation and management plans are co-ordinated.	Remains Minor Adverse (not significant)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>potential for generation of contaminated dust/vapours as a result of soil handling or clearance works during construction of the residential development.</p> <p>h. Proposed construction of commercial units at Kimpton Road, application number 22/00278/FUL. This is within 250m of an Off-site Highway Intervention. The development will bring in additional low sensitivity receptors within 250m of the Off-site Highway Intervention and also the potential for generation of contaminated dust/vapours as a result of soil handling or clearance works during construction of the commercial units.</p> <p>i. Proposed construction of residential units and office space at 181 to 193 Park Street, application number 19/01104/OUT. This is within 250m of an Off-site Highway Intervention. The development will bring in additional high sensitivity receptors within 250m of the Off-site Highway Intervention and also the potential for generation of contaminated dust/vapours as a result of soil handling or clearance works during construction of the development.</p> <p>There is the potential for a cumulative effect due to the temporal and spatial overlap of the projects. There would be no permanent cumulative effect.</p>		
Waste and Resources				
Construction – non-hazardous waste - Landfill void capacity in the non-hazardous waste Study Area (Bedfordshire (including LBC and CBC), Buckinghamshire and Hertfordshire.	Slight, not significant	As part of their planning function, Waste Planning Authorities (WPAs) are required to ensure that enough land is available to accommodate facilities for the treatment of all waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas; and Minerals Planning Authorities (MPAs) are similarly required to ensure an adequate supply of minerals, sufficient to meet the needs of national and regional supply policies, and local development needs. In preparing their waste management strategies, the WPAs already take into account waste generation at the regional and sub-regional scale, since these are the figures which are then used for determining the need for waste facilities. The estimates of future landfill void capacity (which is used to evaluate the effects of the Proposed Development) already takes into account the cumulative effects of waste generated by other developments, and hence a separate cumulative impact assessment is not required for waste.	Mitigation proposed for the Proposed Development and other developments include applying the waste hierarchy, the use of Site Waste Management Plans, Material Management Plans and Operational Waste Strategies (where applicable). No additional mitigation is required.	Remains Slight, not significant
Construction non-hazardous waste - Landfill void capacity in the hazardous waste Study Area (South East region, East of England region, East Midlands region)	Slight, not significant			Remains Slight, not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
Construction resources - national consumption for the key construction materials.	Slight, not significant	It is therefore not necessary or feasible for each development within the region to, in effect, duplicate the function of the WPA as part of the EIA process.		Remains Slight, not significant
Operation – non-hazardous waste - Landfill void capacity in the non-hazardous waste Study Area (Bedfordshire (including LBC and CBC), Buckinghamshire and Hertfordshire.	Slight, not significant	Furthermore, only limited waste and resources information is available for some of the other developments, and these are deemed to be relatively small in scale e.g. residential development and will not require large quantities of construction materials or generate large quantities of construction waste and operational waste. Where waste and resources information is available for projects the quantities of waste are relatively small in the national or regional context. Larger projects e.g. <ul style="list-style-type: none"> a. HS2 stated in Volume 3 Route-wide effects dated November 2013 that “<i>The likely residual significant effects from construction will be:</i> <ul style="list-style-type: none"> i. <i>negligible in relation to inert waste landfill capacity;</i> ii. <i>moderate adverse in relation to non-hazardous waste landfill capacity; and</i> iii. <i>moderate adverse in relation to hazardous waste landfill capacity.”</i> b. HS2 stated “<i>the likely residual significant effects associated with operation of the Proposed Scheme will be negligible.</i>” c. HS2 stated “<i>the draw-down of non-hazardous waste landfill void space as a result of the Proposed Scheme will occur over a period of several years and is unlikely to drawdown projected capacity to an extent where there is an immediate, significant need for additional non-hazardous waste landfill capacity to be made available in these areas.</i>” d. HS2 stated that hazardous surplus excavated material generated “<i>will be predominantly within the first two years of construction (i.e. 2017 and 2018).</i>” e. Heathrow states “<i>It is proposed that waste will not be the subject of a separate topic chapter in the EIA, as the effects of any waste related development will be addressed as part of the appropriate environmental topics and associated strategies.</i>” f. Heathrow in the Airport Expansion Consultation Document states “<i>the preliminary assessment concludes that the Project is considered to have a significant negative effect on waste treatment and disposal capacity</i>”. However, the Heathrow Preliminary Environmental Impact Report is not available online. 		Remains Slight, not significant
Operation non-hazardous waste - Landfill void capacity in the hazardous waste Study Area (South East region, East of England region, East Midlands region)	Slight, not significant			Remains Slight, not significant
Operation resources - national consumption for the key construction materials.	Slight, not significant			Remains Slight, not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
		<p>Since the quantities of construction materials required and the quantity of waste generated by the Proposed Development will result in no likely significant effects, and the timescales for some of the other large project waste generation do not align there are not expected to be any cumulative waste and resources impacts as a result of the Proposed Development together with the identified other developments in the surrounding area.</p>		
Water Resources and Flood Risk				
Chalk aquifer	<p>assessment Phase 1 - Construction Minor adverse effect Not significant</p> <p>assessment Phases 2a and 2b – Construction Minor adverse effect Not significant</p> <p>assessment Phases 2a and 2b – Operation Minor adverse effect Not significant</p>	<p>The Green Horizons Park (17/02300/EIA), 1 Kimpton Road (20/00147/OUT), Power Court (20/01587/OUTEIA), Petrol Filling Station Eaton Green Road (22/00837/FUL) and the mixed use application in Cockernhoe (17/00830/1) all have the potential to have an adverse impact on the underlying chalk aquifer, a high value receptor.</p> <p>During construction, the Proposed Development will result in a minor adverse effect on the aquifer during assessment Phase 1, 2a and 2b following remediation works. This is a precautionary assessment balancing the low beneficial effect of removing potentially polluting matter contained within the existing land fill and the low adverse effect of potential pollution during construction.</p> <p>During operation, the Proposed Development will result in a minor adverse impact on the aquifer during assessment Phases 2a and 2b (worse case) due to potential changes in groundwater quality as a result of discharge of effluent from the water treatment plant to the underlying aquifer.</p> <p>As the aquifer is a high value receptor, cumulatively with the Proposed Development, the cumulative impact of these additional developments and the Proposed Development on the aquifer is minor adverse (not significant) during construction and operation.</p> <p>Minor adverse is the lowest result from the assessment methodology for a high value receptor, but in this instance means 'No measurable impact on WFD status class and/or the future WFD objective at a waterbody scale'. As such there would be no deterioration of the water body.</p>	<p>The planning application documentation for the committed developments identified outline planning conditions specified by the Environment Agency to mitigate the potential significant adverse impacts of the developments on the underlying aquifer. The planning conditions specified will be applied during construction and operation.</p> <p>The implementation of the Outline Remediation Strategy (Appendix 17.5 of this ES [TR020001/APP/5.02]) during construction will result in a beneficial effect on the aquifer as a result of the Proposed Development.</p> <p>The implementation of the Drainage Design Statement (DDS) (Appendix 20.4 of this ES [TR020001/APP/5.02]) for the Proposed Development during operation will ensure that there are no significant effects on the underlying chalk aquifer.</p>	<p>assessment Phase 1 - Construction Remains Minor adverse effect Not significant</p> <p>assessment Phases 2a and 2b – Construction Remains Minor adverse effect Not significant</p> <p>assessment Phases 2a and 2b – Operation Remains Minor adverse effect Not significant</p>
Flood risk receptors	<p>assessment Phases 1, 2a and 2b - Construction Minor adverse effect (for high and medium value receptors)</p>	<p>The East Luton Study includes a series of highway works proposed by Luton Borough Council (LBC) which have the potential to impact upon surface water flood risk and fluvial flood risk associated with the River Lee. The Flood Risk Assessment (Appendix 20.1 of this ES [TR020001/APP/5.02]) has accounted for the potential impacts of the highways work on fluvial and surface water</p>	<p>The CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]) outlines the requirements for the management of flood risk as a result of the highways works during construction.</p>	<p>Remains Minor adverse effect (for high and medium value receptors) Not significant</p> <p>Remains Negligible effect (for low value receptors)</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List [TR020001/APP/5.02] with the Proposed Development	Proposed mitigation applicable to Proposed Development including any apportionment	Residual cumulative effects
	<p>Not significant</p> <p>Negligible effect (for low value receptors)</p> <p>Not significant</p> <p>assessment Phases 1, 2a and 2b - Operation</p> <p>Minor adverse effect (for high and medium value receptors)</p> <p>Not significant</p> <p>Negligible effect (for low value receptors)</p> <p>Not significant</p>	<p>flood risk cumulatively with the Proposed Development as part of the future baseline; therefore no cumulative effect anticipated.</p>	<p>The design of the highway works will incorporate appropriate drainage measures to ensure no significant impacts on flood risk during operation.</p>	<p>Not significant</p> <p>assessment Phases 1, 2a and 2b - Operation</p> <p>Remains Minor adverse effect (for high and medium value receptors)</p> <p>Not significant</p>
<p>River Lee</p>	<p>assessment Phases 1, 2a and 2b – Operation</p> <p>Minor adverse effect</p> <p>Not significant</p> <p>assessment Phases 1, 2a and 2b – Operation</p> <p>Minor adverse effect</p> <p>Not significant</p>	<p>The East Luton Study includes a series of highway works proposed by LBC. The highway works are assumed to be delivered, and present and operational at the time of traffic modelling and therefore their potential cumulative impact on water quality has been accounted for inherently in the assessment of the Proposed Development included in the ES.</p> <p>The new development submitted for scoping opinion (22/00559/EIASCP) is located adjacent to the River Lee and therefore would result in a potential cumulative impact on water quality during construction and operation. However, the new development is expected to be constructed and operated in line with Environment Agency, Thames Water and Lead Local Flood Authority requirements for water quality therefore would not change the overall effect of the Proposed Development on the River Lee during operation.</p>	<p>The CoCP (Appendix 4.2 of this ES [TR020001/APP/5.02]) outlines the requirements for appropriate management and disposal of potentially polluted runoff during construction.</p> <p>The design of the highway works will incorporate appropriate pollution prevention measures to ensure no significant impacts on water quality in the River Lee during operation.</p>	<p>assessment Phases 1, 2a and 2b – Operation</p> <p>Remains Minor adverse effect</p> <p>Not significant</p> <p>assessment Phases 1, 2a and 2b – Operation</p> <p>Remains Minor adverse effect</p> <p>Not significant</p>

Mitigation and enhancement measures

- 21.3.43 Proposed mitigation measures, further to embedded mitigation measures, are identified in **Table 21.10**.

Residual effects

- 21.3.44 Residual effects are as identified in **Table 21.10**.

Assumptions and limitations

- 21.3.45 This assessment has been undertaken based on the collation and evaluation of publicly available documentation provided on LPA and developer websites.
- 21.3.46 As part of the CEA, it has been assumed that information provided by third parties, including publicly available information and databases are correct and complete at the time of publication. A limitation to the CEA is that the status of other developments is dependent on available information; however, often progress or changes to other developments are not reported, and therefore may not be captured by this assessment.
- 21.3.47 The search for other developments included in the CEA was frozen three months ahead of the submission of the application for development consent to ensure a robust and appropriate assessment. This means that any other developments which may arise in the planning system after this date may not be captured as part of the assessment. Should the Examining Authority identify further other developments, additional assessment may be required.

GLOSSARY AND ABBREVIATIONS

Term	Definition
AAR	Airport Access Road
ANPS	Airports National Planning Statement
AONB	Area of Outstanding Natural Beauty
AVDC	Aylesbury Vale District Council
BMV	Best and Most Versatile
CBC	Central Bedfordshire Council
CBDLCA	Central Bedfordshire District Landscape Character Assessment
CEA	Cumulative Effects Assessment
CoCP	Code of Construction Practice
CWS	County Wildlife Site
dB	Decibels
DDS	Drainage Design Strategy
DWS	District Wildlife Site
EIA	Environmental Impact Assessment
ES	Environmental Statement
GHG	Greenhouse gas
HCC	Hertfordshire County Council
HLCA	Hertfordshire Landscape Character Assessment
ICCI	In Combination Climate Impacts
IP EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
km	Kilometre
LBC	Luton Borough Council
LBLCA	Luton Borough Landscape Character Assessment
LCA	Landscape Character Area
LOAEL	Lowest Observed Adverse Effect Level
LVIA	Landscape and Visual Impact Assessment
MA&D	Major Accidents and Disasters
NHDC	North Hertfordshire District Council
NO ₂	Nitrogen Dioxide
NSIP	Nationally Significant Infrastructure Project
PEIR	Preliminary Environmental Impact Assessment
PM _{2.5}	Particulate Matter 2.5 micrometers or smaller in diameter
PM ₁₀	Particulate Matter 10 micrometers or smaller in diameter

Term	Definition
PRoW	Public Rights of Way
Section 43	Section 43 of the Planning Act 2008 defines local authorities for the purposes of consultation.
SOAEL	Significant Observed Adverse Effect Level
SSSI	Site of Special Scientific Interest
VISSIM	Verkehr In Städten – SIMulations Modell (Traffic in cities - simulation model) – microsimulation traffic modelling software
ZOI	Zone of Influence
Zone of Theoretical Visibility	A map, usually digitally produced, showing the areas of land within which, a development is theoretically visible.

REFERENCES

- Ref. 21.1 HMSO (2017); The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, Statutory Instrument No. 572
- Ref. 21.2 Department for Transport (2018), Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England, June 2018
- Ref. 21.3 The European Commission (1999) Guideline for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.
- Ref. 21.4 The European Commission 2017 Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU).
- Ref. 21.5 R. Therivel and G Wood (2018) Methods of Environmental and Social Impact Assessment, 4th Edition (Routledge, New York)
- Ref. 21.6 The Planning Inspectorate (2019) Advice Note Seventeen: Cumulative Effects Assessment
- Ref. 21.7 Department for Levelling Up, Housing & Communities (2021) Policy Paper: Oxford-Cambridge Arc