

Statutory Consultation 2022

Preliminary Environmental Information Report

Volume 2: Main Report

**Chapter 21: In-combination
and Cumulative Effects**

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21 IN-COMBINATION AND CUMULATIVE EFFECTS ASSESSMENT

21.1 Introduction

21.1.1 This chapter reports the preliminary assessment 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 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 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.
- 21.1.8 The following sections consider each of these types of effects, in-combination and cumulative, in turn, and identify likely significant effects, the proposed assessment methodology and preliminary assessment conclusions .
- 21.1.9 Due to the nature of these assessments requiring up to date information obtained up until the submission of the application for development consent and upon the completion of other topic assessments, only preliminary findings can be provided in this PEIR. Finalised assessments will be provided in full within the ES.

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 not be significant in their own right, could combine to create effects that are significant on individual common receptors. For example, impacts on the scheduled monument Someries Castle due to changes in air quality, noise and vibration, landscape and visual and lighting could result in a significant effect.
- 21.2.3 In Combination Climate Impacts (ICCI), greenhouse gases, health and community and major accidents and disasters are excluded from this in-combination assessment due to the following:
- a. **Chapter 9** Climate Change Resilience - 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 within **Chapter 9** Climate Change Resilience.
 - b. **Chapter 12** Greenhouse Gases - The global atmosphere is a receptor unique to the greenhouse gases assessment. Therefore, greenhouse gases will not be included in the in-combination assessment.
 - c. **Chapter 13** Health and Community – In-combination effects of different environmental effects (as identified by all aspect assessments) on the population and 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 – 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.

Stakeholder engagement

21.2.4 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** in Volume 3 of this PEIR. 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 in-combination and cumulative assessment are presented in **Table 21.1** together with an explanation of how that comment has been addressed within this PEIR. Final responses to all comments received during Scoping will be provided in an appropriate format in the ES.

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

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 PEIR.

21.2.5 During statutory consultation, between 16 October and 16 December 2019, comments were received from various interested parties and stakeholders. Responses to these comments are provided in the **2019 Statutory Consultation Feedback Report** published as part of statutory consultation.

Methodology

21.2.6 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).

21.2.7 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 PEIR. Where potential in-combination effects are not assessed within **Chapters 6 to 20** of the PEIR 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 topic impact overlap upon a receptor group; b. interactions upon a receptor group are already covered within a topic chapter intrinsically, i.e. air quality impacts upon ecological receptors are already covered in the Chapter 8 Biodiversity; 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 PEIR, refer to paragraphs 21.2.9 to 21.2.21 .

Significance

21.2.8 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 topic identified significant effects are combined and further exacerbated.

Summary of in-combination effects

- 21.2.9 **Table 21.3** presents a summary of the receptor types identified through the topic chapters, and highlights where these receptor types are common across aspect assessments and may be subject to impact interactions.
- 21.2.10 Assessments undertaken as part of aspect chapters (refer to **Chapters 6 to 20**) that already inherently consider impacts from other aspect chapters, for instance air quality impacts upon designated ecological receptors, have been clearly signposted in the aspect chapters of this PEIR. These are not further considered in the in-combination assessment within this chapter, this has been outlined and explained further in **Table 21.3** where this is the case.

Table 21.3: Environmental aspect interactions

Receptor groups	Air quality	Traffic and transport	Climate change resilience	Greenhouse gases	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Health and community	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Approach to assessment of interactions
Human (residential)	Y	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Impacts at a residential level are to be included in this in-combination effects chapter.
Sensitive facilities (i.e. schools, hospitals) / community facilities	Y	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	To be included in this in-combination effects chapter.
Commercial / business facilities (including farm holdings)	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	N	N	To be included in this in-combination effects chapter.
Ecological receptors	Y	N	N	N	Y	N	N	N	N	N	N	Y	N	N	N	These interactions are covered in Chapter 8 Biodiversity of Volume 2 of the PEIR and are therefore not considered in this in-combination effects chapter.

Receptor groups	Air quality	Traffic and transport	Climate change resilience	Greenhouse gases	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Health and community	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Approach to assessment of interactions
Built heritage features	Y	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	These interactions are covered in Chapter 10 Cultural Heritage in Volume 2 of the PEIR and are therefore not considered in this in-combination effects chapter .
Water bodies / features	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	These interactions are covered in Chapter 20 Water Resources in Volume 2 of the PEIR and are therefore not considered in this in-combination effects chapter .
Soil resources	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	No cross topic interaction. Effects upon soils as a receptor covered in Chapter 6 Agricultural land quality and land holdings in Volume 2 of the PEIR and are therefore not considered in this in-combination effects chapter. Effects within the Soils and Geology chapter are focused upon human health, with soil resources as a pathway, rather than soil resources as a receptor.

Receptor groups	Air quality	Traffic and transport	Climate change resilience	Greenhouse gases	Noise and vibration	Soils and geology	Water resources	Waste and resources	Economics and employment	Health and community	Agricultural land quality and farm holdings	Biodiversity	Landscape and visual	Cultural heritage	Major accidents and disasters	Approach to assessment of interactions
All travellers (vehicles, pedestrians, cyclists, public transport users)	N	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	To be included in this in-combination effects chapter
Roads / highway network	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	No cross topic interaction. Effects upon roads / highways network as a receptor covered in Chapter 18 Traffic and Transport in Volume 2 of the PEIR and are therefore not considered in this in-combination effects chapter .

- 21.2.11 **Table 21.4 to Table 21.7** present the qualitative assessment of those receptor groups which have the potential to be subject to combined impacts. Receptor groups screened into further assessment include:
- a. human (residential receptors);
 - b. sensitive facilities (i.e. schools, hospitals, community facilities);
 - c. commercial/business facilities (including farm holdings); and
 - d. all travellers (vehicles, pedestrians, cyclists, public transport users).
- 21.2.12 The summary of individual effects, description of potential combined effect along with duration and scale, any required mitigation and overall residual effect are outlined.
- 21.2.13 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.

Human residential receptors

Table 21.4: Summary of potential combined impacts upon human (residential) receptors

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
Air quality	<p><u>Phase 1, 2a and 2b</u> Effects to human health (at 477 human receptors) as a result of construction dust are considered to be negligible, not significant.</p> <p>Effects to human health (at 477 human receptors) as a result of construction traffic are considered negligible, not significant.</p>	<p><u>Phase 1</u></p> <ul style="list-style-type: none"> a. Modelled annual NO₂ concentrations - negligible at 478 human receptors and minor adverse at 1 human receptor (H133 shown in Figure 7.3a in Volume 4 of this PEIR), not significant b. Changes to annual mean PM₁₀ and PM_{2.5} – negligible, not significant c. Odour effects – negligible, not significant <p><u>Phase 2a</u></p> <ul style="list-style-type: none"> a. Modelled annual NO₂ concentrations – negligible, not significant at all 479 human receptors b. Changes to annual mean PM₁₀ and PM_{2.5} – negligible, not significant c. Odour effects – negligible, not significant <p><u>Phase 2b</u></p> <ul style="list-style-type: none"> a. Modelled annual NO₂ concentrations - negligible at 475 human receptors and slight adverse at 4 human receptors (H32, H44, H74, H299 shown in Figure 7.3a in Volume 4 of this PEIR), not significant

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
		b. Changes to annual mean PM ₁₀ and PM _{2.5} – negligible, not significant c. Odour effects – negligible, not significant
Noise and vibration	<p><u>Phase 1, 2a and 2b</u> Effects to human receptors as a result of construction noise and vibration are considered to be not significant, with no exceedances of SOAEL.</p> <p>Effects to human receptors as a result of construction traffic are considered to be negligible, not significant.</p>	<p><u>Phase 1</u></p> <ul style="list-style-type: none"> - <i>Air Noise</i> - negligible to minor adverse effect upon residential properties, not significant - <i>Ground noise</i> – negligible, not significant effect upon residential properties. - <i>Surface access noise</i> - effect upon residential properties is not significant. <p><u>Phase 2a</u></p> <ul style="list-style-type: none"> - <i>Air noise</i> – minor adverse, not significant effect upon residential properties - <i>Ground noise</i> – negligible, not significant effect upon residential properties. - <i>Surface access noise</i> - effect upon residential properties is not significant. <p><u>Phase 2b</u></p> <ul style="list-style-type: none"> - <i>Air noise</i> – minor adverse, not significant to moderate adverse, significant upon residential properties - <i>Ground noise</i> – minor beneficial to minor adverse, not significant effect upon residential properties.

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
		<p>- <i>Surface access noise</i> - effect upon some residential properties in the vicinity of Tea Green and Cockernhoe is significant. Effect on remaining residential properties is not significant.</p>
Visual	<p>Impact on residents of Wandon End – negligible (Phase 1), rising to minor adverse (Phase 2a and 2b), not significant.</p> <p>Impact on residents of Winch Hill House - negligible (Phase 1), rising to minor adverse (Phase 2a and 2b), not significant.</p> <p>Impact on residents of Winch Hill Cottages - minor adverse (Phase 1, 2a and 2b), not significant.</p> <p>Impact on people in South Wigmore - minor adverse (Phases 1), not significant, rising to moderate adverse (Phases 2a and 2b), significant</p> <p>Impact on people in Darleyhall - negligible adverse (Phase 1), not significant, rising to moderate adverse (Phase 2a and Phase 2b), significant</p>	<p>Impact on residents of Wandon End – minor adverse, not significant</p> <p>Impact on residents of Winch Hill House – minor adverse, not significant</p> <p>Impact on residents of Winch Hill Cottages – minor adverse, not significant</p> <p>Impact on people in South Wigmore - minor adverse, not significant</p> <p>Impact on people in Darleyhall - minor adverse, not significant</p> <p>Impact on people in Breachwood Green, The Heath and Lye Hill – negligible beneficial, not significant</p> <p>Impact of people in Tea Green - minor adverse, not significant</p>

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
	<p>Impact on people in Breachwood Green, The Heath and Lye Hill - minor adverse (Phases 1, 2a and 2b), not significant</p> <p>Impact on people in Tea Green - negligible adverse (Phase 1) rising to minor adverse (Phases 2a and 2b), not significant</p>	

21.2.14 The construction of the Proposed Development is considered to result in residual effects ranging from negligible, not significant, to moderate adverse, significant, across individual topic impacts for human (residential) receptors. During construction, the application of standard and appropriate mitigation measures (as described in the Draft Code of Construction Practice (CoCP) provided in **Appendix 4.2** in Volume 3 to this PEIR) is sufficient to help manage any individual residual effects upon human (residential) receptors to levels that are not significant, except in the instance of visual impact upon people in South Wigmore where a significant effect would still arise under Phase 2. Despite this, it is expected that when considering in-combination effects upon these same receptors that measures within the CoCP would be sufficient to ensure the overall in-combination effect would not increase the degree of effect beyond that determined by individual topics. Further, any in-combination effects felt would be minor, temporary and localised in nature. Overall, being residential, receptors are considered to have a medium sensitivity to change. Whilst there is some potential for combined effects to arise, it is expected that these would be limited and therefore the overall magnitude of change itself is expected to be very low. As such, the overall, in-combination effects during construction upon human (residential) receptors are expected to be **minor adverse** and **not significant**.

21.2.15 The operation of the Proposed Development is expected to result in residual effects ranging from negligible and not significant to moderate adverse and significant across individual topic impacts for human (residential) receptors. The increase 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**). 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 and Cockernhoe are also expected to be significantly affected by increases in road traffic noise as a result of increased traffic on Stony Lane and Chalk Hill. All other individual effects upon human (residential) receptors are considered negligible to minor adverse and not significant. Whilst not significant in their own right, taking for example impacts upon residents in Wandon End, Winch Hill House, and Winch

Hill Cottages, these would likely be impacted by both increases in air noise due to their proximity to the Proposed Development and/or flight path, and as assessed via the LVIA, changes to their visual amenity. 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. Overall, being 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 topic reported effects, is expected to be low. As such, the overall in-combination effects during operation upon human (residential) receptors are expected to be **minor adverse** and **not significant**.

Sensitive facilities

Table 21.5: Summary of potential combined impacts upon sensitive facilities (i.e. schools, hospitals) / community facilities)

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
Air quality	<p><u>Phase 1, 2a and 2b</u> Effects to sensitive facilities (four schools) as a result of construction dust are considered to be negligible, not significant.</p> <p>Effects to sensitive facilities (four schools) as a result of construction traffic are considered negligible, not significant.</p>	<p><u>Phase 1, 2a and 2b</u></p> <ul style="list-style-type: none"> a. Modelled annual NO₂ concentrations - negligible at all four schools included as sensitive receptors, not significant b. Changes to annual mean PM₁₀ and PM_{2.5} – negligible, not significant c. Odour effects – negligible, not significant
Noise and vibration	<p><u>Phase 1, 2a and 2b</u> Effects to sensitive facilities as a result of construction noise (and vibration are considered to be not significant, with no exceedances of SOAEL.</p>	<p><u>Phase 1</u></p> <ul style="list-style-type: none"> - <i>Air Noise</i> - negligible to minor adverse effect upon sensitive facilities, not significant - <i>Ground noise</i> – negligible, not significant effect upon sensitive facilities

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
	<p>Effects to sensitive facilities as a result of construction traffic are considered to be negligible and not significant.</p>	<ul style="list-style-type: none"> - <i>Surface access noise</i> – effect upon sensitive facilities is not significant. <p>Phase 2a</p> <ul style="list-style-type: none"> - <i>Air noise</i> – minor adverse, not significant effect upon sensitive facilities - <i>Ground noise</i> – negligible, not significant effect upon sensitive facilities - <i>Surface access noise</i> – effect upon sensitive facilities is not significant <p>Phase 2b</p> <ul style="list-style-type: none"> - <i>Air noise</i> – moderate adverse, significant to minor adverse, not significant upon sensitive facilities - <i>Ground noise</i> – minor beneficial to minor adverse, not significant effect upon sensitive facilities - <i>Surface access noise</i> – effect upon any sensitive facilities that may be present in the vicinity of Tea Green and Cockernhoe is significant. Effect on remaining sensitive facilities is not significant.
Landscape and visual	<p>Visual Impact on users of Raynham Community Centre - negligible (Phase 1) rising to minor adverse (Phase 2a), both not</p>	<p>Visual Impact on users of Raynham Community Centre - moderate adverse, significant (Phase 2b)</p>

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
	<p>significant, before rising to moderate adverse, significant (Phase 2b)</p> <p>Impact on users of Wigmore Hall Conference Centre - minor adverse, not significant (Phase 1) rising to moderate adverse, significant (Phases 2a and 2b)</p>	<p>Impact on users of Wigmore Hall Conference Centre - moderate adverse, significant (Phase 2b) reducing to minor adverse, not significant (Design Year).</p>

21.2.16 The construction of the Proposed Development is considered to result in residual effects ranging from negligible, not significant to moderate adverse, significant across individual topic impacts for sensitive facilities, such as schools, hospitals and community facilities. During construction, the application of standard and appropriate mitigation measures (as described in the Draft CoCP) helps to manage individual residual effects upon sensitive facilities, although in some instances this is not enough to prevent a significant effect being triggered. There are expected to be some significant effects as a result of the construction of the Proposed Development such as visual impact to visitors to Raynham Community Centre. However, an in-combination effect as a result of the construction of the Proposed Development is unlikely as other assessments that may impact such sensitive receptors (air quality and construction noise) conclude that impact to sensitive facilities at a broader level are not significant. It is also considered that any in-combination effect to sensitive facilities during construction would be minor, temporary and localised in nature, and the good practice mitigation already defined in the Draft CoCP would reduce in-combination impacts. As such no significant in-combination effect to sensitive facilities during construction of the Proposed Development are anticipated. Overall, being sensitive facilities, receptors are considered to have a medium sensitivity to change. Whilst there is some potential for combined effects to arise, it is expected that these would be very limited and therefore the overall magnitude of change itself is expected to be very low. As such, the overall in-combination effects during construction upon sensitive facilities are expected to be **minor adverse** and **not significant**.

21.2.17 The operation of the Proposed Development is expected to result in residual effects ranging from negligible and not significant to moderate adverse and significant across individual topic impacts for sensitive facilities. The increase in operational air noise associated with the Proposed Development has the potential to have a significant effect upon sensitive facilities due to exceedances in the SOAEL. This would impact upon those sensitive facilities in close proximity to the Proposed Development or under the flight path. Further, sensitive facilities that may be in the vicinity at Tea Green and Cockernhoe are also expected to be significantly affected by increases in road traffic noise as a

result of increased traffic on Stony Lane and Chalk Hill. Wigmore Hall Conference Centre will also receive a significant effect as result of visual intrusion. Other effects upon sensitive facilities are considered negligible to minor adverse and not significant. Whilst not significant in their own right, looking more broadly at impacts overall on sensitive facilities as a receptor group there is the potential for in-combination effects to arise as a result of changes to air quality, noise and visual amenity. It is therefore considered that there is the potential for in-combination effects to result to those sensitive facilities in close proximity to the Proposed Development. Overall, being sensitive facilities, receptors are considered to have a medium sensitivity to change. Whilst combined effects will arise as outlined above, the overall magnitude of change itself, beyond individual topic reported effects, is expected to be not more than of low magnitude. As such, the overall in-combination effects during operation upon sensitive facilities receptors are expected to be **minor adverse** and **not significant**.

Commercial / business facilities

Table 21.6: Summary of potential combined impacts upon commercial/business facilities (including farm holdings)

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
Noise and vibration	No commercial / business facilities explicitly reported within the construction noise assessment	No commercial / business facilities explicitly reported within the operational noise assessment. Hotels located in close proximity to the airport assumed to principally serve airport passengers and have been designed to suitably mitigate aircraft noise
Economics and employment	<p>Effects in respect to loss/displacement of businesses are minor adverse, not significant.</p> <p>Environmental effects arising from disturbance due to other environmental effects (noise, vibration, air quality, visual impacts, access interruption/isolation including employee access), unlikely these impacts will</p>	<p>Environmental effects arising from disturbance due to other environmental effects (noise, vibration, air quality, visual impacts, access interruption/isolation including employee access), unlikely these impacts will result in business displacement, no effect</p>

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
	result in business displacement, no effect .	
Agricultural holdings	Impact upon agricultural holdings, negligible, not significant	No operational impacts

- 21.2.18 The construction of the Proposed Development is considered to result in residual effects ranging from negligible to minor adverse which are not significant across individual topic impacts for business/commercial receptors. During construction, the application of standard and appropriate mitigation measures (as described in the Draft CoCP) is sufficient to help manage any individual residual effects upon business/commercial receptors to levels that are not significant. It is therefore expected that when considering in-combination effects upon this group of receptors that these measures would be sufficient to ensure the overall in-combination effect would not increase the degree of effect beyond that determined by individual topics. It is also highlighted that where individual effects are reported there is considered no overlap in specific business/commercial facilities. Any in-combination effects, should they arise, would be minor, temporary and localised in nature. Overall, being commercial/business facilities, receptors are considered to have a low sensitivity to change. Whilst combined effects have the potential to arise as outlined above, the overall magnitude of change itself, beyond individual topic reported effects, is expected to be not more than of very low magnitude. As such, the overall in-combination effects during construction upon business/commercial receptors are expected to be **negligible** at worst and **not significant**.
- 21.2.19 There are expected to be no effects upon business/commercial receptors during the operation of the Proposed Development. Environmental effects arising from disturbance due to other environmental effects as reported in the economics and employment assessment are already intrinsically in-combination and as such are discounted from further consideration. As such it is expected there would be **no in-combination effect** upon businesses / commercial receptors as a group as a result of the operation of the Proposed Development.

Travellers

Table 21.7: Summary of potential combined impacts upon all travellers (vehicles, pedestrians, cyclists, public transport users)

Topic	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>Severance - minor adverse – minor beneficial, not significant (Phase 2a and 2b) Driver stress - minor adverse, not significant (Phase 2a and 2b) Driver delay - minor adverse, not significant Pedestrian delay - minor adverse, not significant (Phase 2a) Pedestrian fear / intimidation - minor adverse, not significant (Phase 2a and 2b) Collision and safety - minor, not significant - moderate beneficial, significant (Phase 2a and 2b) Public transport users - minor adverse, not significant (Phase 2a and 2b)</p>
Landscape and visual	<p><i>Users of various Public Rights of Way (PRoW) / unnamed footpaths</i> no effect, not significant - moderate adverse, significant</p> <p><i>Users of various cycle routes</i> negligible, not significant - moderate adverse, significant</p>	<p><i>Users of various Public Rights of Way (PRoW) / unnamed footpaths</i> minor beneficial, not significant – moderate adverse, significant</p> <p><i>Users of various cycle routes</i> minor adverse, not significant – moderate adverse, significant</p>

Topic	Summary of individual residual environmental effects - Construction	Summary of individual residual environmental effects - Operation
	<i>Users of various roads</i> minor adverse, not significant - moderate adverse, significant	<i>Users of various roads</i> minor beneficial – minor adverse, not significant, significant

21.2.20 The construction of the Proposed Development is considered to result in residual effects ranging from no effect, not significant to moderate adverse, significant across individual topic impacts for traveller receptors. During construction, the application of standard and appropriate mitigation measures (as described in the Draft CoCP) helps to manage the majority of individual residual effects upon traveller receptors to levels that are not significant, albeit there are still significant effects reported such as those upon travellers using PRow, cycle routes and roads as a result of landscape and visual impacts. However, an in-combination effect as a result of the construction of the Proposed Development is unlikely as other assessments that may impact such sensitive receptors (traffic and transport) conclude that impact to traveller receptors at a broader level are not significant. It is also considered that any in-combination effect to traveller receptors during construction would typically be minor, temporary and localised in nature, and the good practice mitigation already defined in the Draft CoCP would control in-combination impacts. As such no significant in-combination effect to travellers during construction of the Proposed Development are anticipated. Overall, being travellers (vehicles, pedestrians, cyclists, public transport users), receptors are considered to have a low sensitivity to change. Whilst combined effects have the potential to arise as outlined above, the overall magnitude of change itself, beyond individual topic reported effects, is expected to be not more than of very low magnitude. As such, the Overall in-combination effects during construction upon travellers are expected to be **negligible** and **not significant**.

21.2.21 There are expected to be some significant effects as a result of the operation of the Proposed Development reported by individual topics, including significant visual impacts to PRow, footpaths and cycle routes. One junction (Eaton Green Road/Frank Lester Way) was also considered to have a Moderate Beneficial, significant effect for collision and safety. However, an in-combination significant effect as a result of the operation of the Proposed Development is unlikely as all other results concluded that impact to travellers was not significant and as such there is unlikely to be an overlap of effects. As such **no in-combination effects** to 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 (Ref. 21.6) defines a four stage approach for undertaking a CEA:

- a. Stage 1: Establish the NSIP’s (Nationally Significant Infrastructure Project) 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 below.

21.3.3 A finalised CEA will be reported in the ES, including a revised and updated list of all developments considered, therefore the analysis reported in this PEIR is subject to change.

Stakeholder engagement

21.3.4 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** in Volume 3 of this PEIR. 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 21.8** together with an explanation of how and where that comment has been addressed within this PEIR.

Table 21.8: Main Cumulative Environmental Assessment Scoping Opinion comments and how addressed in the PEIR

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 below 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 below.

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
4.16.3	<p>Table 21-2 of the Scoping Report notes that the transport and traffic assessment, based on surface 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>The list of other developments included within the surface access modelling is broadly aligned with 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 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 will be provided in the Transport Assessment to be submitted with the application for development consent.</p> <p>Appendix 21.1 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 and model, as reported in Chapter 18 Traffic and Transportation of this PEIR. Full details of the transport modelling and the assumptions made will be available within the Transport Assessment.</p>
4.16.5	<p>The Inspectorate agrees that climate change resilience is only considered in respect of the Proposed Development, and that cumulative effects with other developments will not be included in the ES.</p>	<p>This has been acknowledged. No further action required.</p>

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
4.16.6	The Inspectorate expects that the Zol 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.	A preliminary assessment of the likely significant effects of the Proposed Development on agricultural holdings is given in Chapter 6 Agricultural Land Quality and Farm Holdings in Volume 2 of this PEIR. The ZOI included adjacent agricultural holding where potentially significant effect where identified. A preliminary assessment of cumulative impacts on agricultural land with other developments is provided in Table 21.12 .
4.16.7	The proposed 1.5km Zol is not justified in the Scoping Report but appears to be based on potential effects on species. It is not clear why the Zol 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 Zol is likely to omit consideration of cumulative effects on designated sites in the wider area. The Inspectorate advises that the Zol should reflect that proposed in the Biodiversity assessment.	The study areas of 10km and 30km referenced to in the scoping opinion response 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 in Volume 2 of this PEIR, describing study areas and ZOI for each habitat and species and providing justification for the ZOI employed in the CEA. The study area for the biodiversity assessment considered a 10km radius for statutory designated sites, and 2km for non-designated sites from the Main Application Site. However, no statutory designated sites or non-designated sites were identified within these search areas. Therefore, the Biodiversity ZOI of 1.5km used in this CEA does reflect the ZOI proposed in the biodiversity assessment (Chapter 8) as advised in the scoping opinion.
4.16.8	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	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

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
	<p>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>significant cumulative effects with the Proposed Development. Efforts have been made to agree criteria and relevant applications and allocations to be taken into account in the CEA with consultation bodies. Further engagement with the LPAs will be taken ahead of the submission of the ES in an effort to agree the cumulative assessment criteria.</p> <p>Should LPAs identify other developments not previously listed (outside of the criteria identified), these will be added to the assessment and considered further.</p>
<p>4.16.9</p>	<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>Further detail regarding the screening criteria is provided in Stage 2 below and will be included in the ES.</p>
<p>4.16.10</p>	<p>As set out in the AN17, where new 'other development' comes forward following the stated assessment cut-off date, the Examining Authority may 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>The search for other developments to be included in the CEA will be frozen three months ahead of the submission of the ES 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.</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 preliminary 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</p>

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
		<p>occur within the ZOI of the Proposed Development. The preliminary assessment included Stansted, Heathrow, Gatwick and London City airports.</p> <p>The maximum extent of the core ZOI for the Proposed Development is a 15km x 15km area from the centre of the Main Application Site (identified in the Air Quality assessment). 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 (Figure 20.1 in Volume 4 of this PEIR). Therefore, cumulative effects with other airport expansion in the South East is not considered further.</p> <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 (in Volume 2 of this PEIR); b. the air noise ZOI has been omitted from this search, as this is dependent on the finalisation of air space change modelling and therefore yet to be defined by Heathrow. This will be revisited within the ES; and c. the waste and resources assessment wider ZOI intercepts with the Heathrow wider ZOI for waste.

Scoping Opinion ID	Scoping Opinion comment	How and where it is addressed
		<p>As explained in Chapter 4 The Proposed Development in Volume 2 of this PEIR, a review of airspace in the south east of England is ongoing and any changes are not scheduled to be finalised until 2024. This makes an assessment of any potential combined aircraft air noise effects from airport expansion projects across the region unfeasible due to uncertainties over the future routing of aircraft. However, a qualitative assessment may be undertaken based on the best available information about future airspace change and reported in the ES.</p>

- 21.3.5 Further comments from the Chilterns Conservation Board were also considered and included (see ‘Stage 1’ and ‘Stage 2’ below) which requested a wider search area, and other major developments such as HS2, housing developments, and the Oxford to Cambridge Expressway.
- 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 LPAs (LBC, NHDC, CBC and HCC) for comment prior to that meeting.
- 21.3.7 Comments received included queries around whether Stevenage Borough Council was included within the search (it was highlighted that this was beyond the 5km search radius) and clarification on whether enough information was now available on the Oxford - Cambridge Arc for inclusion under Tier 3 developments in the CEA, which it does not. NHDC responded to the long list provided and comments were considered in this assessment where appropriate.
- 21.3.8 This PEIR provides a description of the progress made in the CEA and how issues raised have been considered. Continued engagement will be sought with stakeholders, and final outcomes reported in the ES.

Baseline

- 21.3.9 The existing environmental conditions identified by each technical topic of this PEIR have been considered as the baseline for this CEA.

Existing airport related developments at the airport

21.3.10 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** in Volume 2 of this PEIR). Where not in the future baseline (as described in **Chapter 5 Approach to the Assessment** in Volume 2 of this PEIR), 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’

- 21.3.11 An initial 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.
- 21.3.12 The initial screening exercise utilised a set of temporal, spatial and development sizing screening criteria, as outlined in **Table 21.9**, based on experience from EIAs of other major infrastructure projects.
- 21.3.13 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 21.9: 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 Redline boundary
Nationally Significant Infrastructure Projects		All	All	All	All	15km
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

Development		Housing unit (no)	Housing land (ha)	Non-residential – sqm	Non-residential – ha	Distance from Redline boundary
	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

21.3.14 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 were also added for consideration.

21.3.15 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.

21.3.16 **Figure 21.3** in Volume 4 of this PEIR details the search areas described.

21.3.17 The results of the initial 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 Advice Note 17 (Ref. 21.6); **Table 21.10** defines these tiers.

Table 21.10: ‘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

Tier	‘Other development’
	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.

- 21.3.18 Advice Note 17 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.
- 21.3.19 **Appendix 21.1** in Volume 3 of this PEIR details the long list of ‘other developments’ and allocations to be considered as part of the CEA, categorised into their respective Tiers.
- 21.3.20 The initial screening search has been updated as necessary over the course of the PEIR and frozen during November 2021, three months ahead of the publication. This initial screening search will be updated during the EIA. It is recognised that further developments may be identified by the Planning Inspectorate, which may require further consideration during the examination period.

Identify ZOI

- 21.3.21 Following identification of ‘other developments’ from the initial screening exercise, the study area for each environmental assessment topic, referred to as a ZOI in line with AN17, 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.
- 21.3.22 The ZOI for each environmental assessment topic is documented in **Table 21.11** and shown **Figures 21.1** and **21.2** in Volume 4 of this PEIR.

Table 21.11: Environmental topics CEA ZOI

Environmental Topics	Zone of Influence
Air quality	15km x 15km domain centred on the Airport.
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.

Environmental Topics	Zone of Influence
	This element has therefore not been progressed further in the CEA.
Noise and vibration	The ZOI is based on the Study Area of the noise and vibration assessment, determined on the basis of the air traffic and surface access modelling, and subsequent noise modelling.
Soil and geology	250m from the boundary of the Main Application Site for risk of potential land contamination. 1km 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	Land within the boundary of the Proposed Development and other land in agricultural development affected by the Proposed Development.
Biodiversity	Up to 1.5km depending on species, where interactions with other effects or developments may occur.
Landscape and visual	5km from the perimeter of the Main Application Site, plus the full extent of any character areas that may be affected within that envelope; land in Hitchin within 250m of Works 6o, 6p and 6q; and, for considering effects on tranquillity, additional land within the Chilterns Area of Outstanding Natural Beauty) AONB where aircraft would be below 7,000ft.
Cultural heritage	2km from the boundary of the Main Application Site. Additional areas may be identified dependent on noise modelling.
Major accidents and disasters	Dependent on the spatial distribution of likely impacts. Up to a maximum of 10km from the boundary of the Main Application Site.

21.3.23 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** in Volume 4 of this PEIR 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

- 21.3.24 The long list of 'Other developments' presented in **Appendix 21.1** in Volume 3 of this PEIR, 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.
- 21.3.25 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.
- 21.3.26 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.
- 21.3.27 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.
- 21.3.28 Following the application of this criteria, the short list subject to further CEA is presented in **Appendix 21.2** in Volume 3 of this PEIR. 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.
- 21.3.29 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

- 21.3.30 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.
- 21.3.31 Information was sourced from planning portals and project websites on:
- a. proposed design and location information;
 - b. proposed programme of construction, operation and decommissioning; and
 - c. environmental assessments that set out baseline data and effects arising from the 'Other development'.
- 21.3.32 This search was updated and frozen in November 2021, three months ahead of the publication of PEIR, to allow technical assessment of the cumulative effects.
- 21.3.33 A summary of the key environmental issues associated with each development is provided in **Appendix 21.2** in Volume 3 of this PEIR, and a Gantt chart showing project timescales in **Appendix 21.3** in Volume 3 of this PEIR.

Stage 4: Assessment

- 21.3.34 For each aspect assessment, the short list of 'Other developments' presented in **Appendix 21.2** in Volume 3 of this PEIR, have 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 21.12** reports the CEA for each aspect.

Significance criteria

- 21.3.35 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.
- 21.3.36 The same significance criteria for each independent environmental aspect as outlined in **Chapters 6 to 20** has been used where applicable. If not suitable or preferred, the generic significance criteria described in **Chapter 5** has been employed.
- 21.3.37 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

- 21.3.38 Cumulative effects are identified at an individual aspect level and reported in **Table 21.12** providing a summary containing the cumulative effects identified,

their significance, any proposed mitigation measures and residual cumulative effects. **Table 21.12** is documented in line with recommendations from AN17 Appendix 2, supported by further detail provided in the short list presented in **Appendix 21.2** in Volume 3 of this PEIR.

Table 21.12: Assessment of Cumulative effects

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Agricultural Land Quality and Farm Holdings				
Subgrade 3a agricultural land	Moderate adverse (Phase 1) rising to Major adverse (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 Phase 1 of the Proposed Development. These changes are however judged not to result in any additional direct or indirect impacts on BMV agricultural land considered in Chapter 6 Agricultural land quality and farm holdings of this PEIR.	None applicable	Moderate adverse (Phase 1), significant rising to Major adverse (Phases 2a and 2b), significant
Subgrade 3b agricultural land	Minor adverse (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 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 PEIR.	None applicable	Minor Adverse (Phase 1), not significant
Soil resources (topsoil and subsoil)	Minor adverse (Phase 1) rising to Major adverse (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 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 Volume 3 of this PEIR.	Outline Soil Management Plan (Appendix 6.6)	Minor adverse (Phase 1), not significant rising to Major adverse (Phases 2a and 2b), significant
Agricultural holding	Negligible/Minor adverse (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 holdings considered in Chapter 6 Agricultural land quality and farm holdings of this PEIR.	None applicable	Negligible/Minor adverse (Phases 1, 2a and 2b), not significant
Air Quality				
Human receptors within 350m from the boundary of dust generating activity and 50m from the routes used by construction	Construction dust – negligible effect, not significant	Appendix 21.2 in Volume 3 of this PEIR 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 Draft CoCP.	Negligible effect, not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
vehicles, up to 500m from the construction site entrance. Ecological receptors within 50m from the boundary of dust generating activity and 50m from the routes used by construction vehicles, up to 500m from the construction site entrance.			Further measures advised will be secured through the Draft Air Quality Plan.	
Human and ecological receptors close to the airport and/or the affected road network (ARN), and below the aircraft flightpath (the modelled flightpath up to an altitude of 457m, in the study area.	Construction traffic - negligible effect, not significant	Appendix 21.2 in Volume 3 of this PEIR 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 . Therefore, the conclusions already account for the cumulative effects from these developments and there would be no permanent cumulative effect.	Use of the Airport Access Road (AAR) and A1081 to the M1 and not using roads near to receptors. Secured through construction traffic controls in Draft CoCP and the Construction Traffic Management Plan which is appended to the Draft CoCP.	Negligible effect, not significant
Human and ecological receptors close to the airport and/or 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 to receptors – negligible to minor adverse effect, not significant.	Appendix 21.2 in Volume 3 of this PEIR 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. Therefore, the conclusions already account for the cumulative effects from these developments and there would be no permanent cumulative effect.	Draft Air Quality Plan measures.	Negligible to minor adverse effect, not significant.
Human and ecological receptors close to the airport and/or 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 road traffic at receptors – negligible to minor adverse effect, not significant	Appendix 21.2 in Volume 3 of this PEIR 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. Therefore, the conclusions already account for the cumulative effects from these developments and there would be no permanent cumulative effect.	Draft Air Quality Plan measures.	Negligible to minor adverse effect, not significant.
Biodiversity				
Dallow Downs and Winsdon Hill CWS and now recently made a SSSI	n/a	Chapter 8 states that given the designating features of the sites and the distances from the Proposed Development that it is not anticipated that the construction or operation of the Proposed Development will result in any significant effects upon these sites. In addition the air quality	n/a	n/a

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
<p>Cowslip Meadow CWS and now recently made a SSSI</p> <p>Galley and Warden Hills SSSI</p> <p>Smithcombe, Sharpenhoe and Sundon Hills SSSI</p>		<p>assessment also shows no significant effect. As such these sites are not considered further within the CEA.</p>		
<p>Wigmore Park CWS</p>	<p>Habitat loss - Site being compensated through 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 (Phase 1 and Phase 2a), which is not significant..</p> <p>The overall long term effect on this county value site during construction equates to a negligible effect, which is not significant (Phase 2b)</p> <p>Surface water runoff, and increase lighting during operation on the remaining area prior to start of Phase 2a - Minor adverse effect (Phase 1) which is not significant.</p>	<p>New Century Park (17/02300/EIA) identifies 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 in the long term and 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>Habitat loss - Site being compensated through habitat creation through the phases. Temporary minor adverse residual effect during construction rising to a negligible effect following maturation (Phase 1 and Phase 2a), which is not significant.</p> <p>The overall long term effect on this county value site during construction equates to a negligible effect in the long term (Phase 2b), which is not significant.</p> <p>Surface water runoff, and increase lighting during operation on the remaining area prior to start of Phase 2a - Minor adverse effect, (Phase 1) which is not significant.</p>
<p>Winch Hill Wood CWS / LWS</p>	<p>Habitat loss - Negligible effect during construction (Phase 1)</p> <p>Habitat isolation and degradation, indirect effects from dust, noise and pollution, changes to hydrological conditions. Temporary minor adverse</p>	<p>None of the identified other developments will have an effect on this receptor therefore no cumulative effect is anticipated.</p>	<p>Habitat provision in design. No additional mitigation required.</p>	<p>Habitat loss – Negligible effect (Phase 1), which is not significant.</p> <p>Habitat isolation and degradation, indirect effects from dust, noise and pollution, changes</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	<p>effect, leading to a negligible effect following maturation of replacement habitat (Phase 2a and Phase 2b), which is not significant.</p> <p>Lighting, drainage – Minor adverse effect during Phase 2a and 2b operation which is not significant.</p> <p>Air quality - Minor adverse effect during Phase 1 operation which is not significant. Temporary moderate adverse effect during Phase 2a and 2b which is significant, until woodland management within the LBMP shows improvement of the woodland in the long term and becomes minor adverse which is not significant.</p>			<p>to hydrological conditions.</p> <p>Temporary minor adverse effect, leading to a negligible effect following maturation of replacement habitat (Phase 2a and Phase 2b), which is not significant.</p> <p>Lighting, drainage – Minor adverse effect during Phase 2a and 2b operation which is not significant.</p> <p>Air quality - Minor adverse effect during Phase 1 operation which is not significant. Temporary moderate adverse effect during Phase 2a and 2b which is significant, until woodland management within the LBMP shows improvement of the woodland in the long term and becomes minor adverse which is not significant.</p>
Dairyborn Scarp DWS	<p>Indirect impacts during construction - dust deposition, pollution events - Minor adverse effect (Phase 1, Phase 2b), which is not significant.</p> <p>Habitat Loss - Temporary minor adverse effect, leading to a negligible effect following maturation of replacement habitat</p>	<p>Hayward Tyler (20/00147/OUT) and Bartlett Square (18/00271/EIA) identify Dairyborn Scarp DWS as a potential receptor within their assessments, but conclude no significant residual effects on this DWS and no cumulative effect is anticipated.</p> <p>New Century Park (17/02300/EIA) identifies Wigmore Valley Park CWS 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 New Century Park is now part of this Proposed Development. Therefore habitat loss of Dairyborn Scarp DWS would no longer have a cumulative effect during construction. However, 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 Draft CoCP.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Indirect impacts during construction - dust deposition, pollution events – Minor adverse effect (Phase 1, 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</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	(Phase 2a), which is not significant.			replacement habitat (Phase 2a)
Luton Parkway Verges DWS	<p>Indirect impacts during construction - dust deposition, pollution events - Minor adverse (Phase 1, Phase 2a), which is not significant</p> <p>Potential for shading impacts and trampling – 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 (Phase 2a Operation) , which is not significant.</p>	<p>New Century Park (17/02300/EIA), Bartlett Square (18/00271/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 effects on this receptor and no cumulative effect is anticipated.</p>	<p>Implementation of measures in Draft CoCP. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Indirect impacts during construction - dust deposition, pollution events – Minor adverse effect (Phase 1, Phase 2a), which is not significant.</p> <p>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 (Phase 2a Operation), which is not significant.</p>
Kidney and Bull Woods CWS / Ancient Woodland	<p>Air quality - Minor adverse effect during Phase 1, 2a and 2b operation on the first 10m of the woodland from the road, 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 CEMP 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 this development is operational, and no cumulative effect is anticipated with the Proposed Development.</p> <p>Bartlett Square (18/00271/EIA) identifies Kidney and Bull Woods CWS / Ancient Woodland as a potential receptor within their assessment as it is 0.9km south west. 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 but conclude no significant residual effects on this CWS/AW, and no cumulative effect is anticipated.</p>	<p>Implementation of Draft Air Quality Plan measures. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Air quality - Minor adverse effect during Phase 1, 2a and 2b operation on the first 10m of the woodland from the road, which is not significant.</p>
Ancient Woodland comprising Chalk Wood, George Wood, Furzen Wood, Slaughters Wood, and Burnwell Wood – all of which fall within 200m of the ARN and/or flightpath	n/a	<p>Chapter 8 states that given the features of these ancient woodland sites and the distances from the Proposed Development that 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 also shows no significant effect. As such these ancient woodland sites are not considered further within the CEA.</p>	n/a	n/a

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Broadleaved Semi-Natural and Broadleaved Plantation	<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 (Phase 2a and 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 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 (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on plantation woodland - Negligible effect (all Phases), which is not significant.</p>	<p>The Rookery Pit Near Stewartby (Millbrook Power), 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 provision in design. Implementation of measures in Draft CoCP. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</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 (Phase 2a and 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 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 (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on plantation woodland - Negligible effect (all 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</p>	<p>New Century Park (17/02300/EIA) identifies scrub will be affected and loss 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.</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>Habitat loss – Temporary negligible residual effect while habitats establish, which is not significant, rising to a minor</p>

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	<p>within the open space and the habitat creation, which is not significant. Indirect impacts during construction (dust deposition, pollution events) on scrub - Negligible effect (all Phases), which is not significant.</p>	<p>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), Bartlett Square Hart House Business Centre Kimpton Road Luton (18/00271/EIA), Trade City, Luton (19/00882/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) and Caddington Golf Club, Chaul End Road, Caddington (CB/20/01833/MW) all confirmed the habitats on site included 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>beneficial effect within the open space and the habitat creation, which is not significant. Indirect impacts during construction (dust deposition, pollution events) on scrub - Negligible effect (all Phases), which is not significant.</p>
Hedgerows	<p>Potential damage to retained hedgerows – Temporary minor adverse residual effect while replacement habitats establish, which is not significant, rising to a minor beneficial effect following maturation (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 habitat (Phase 2a and Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on hedgerows - Negligible effect (all Phases), which is not significant.</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 of Copthorne (16/02014/1), Land South and North West of Cockernhoe And East of Wigmore (17/00830/1), 57 - 63 Bancroft (20/00193/FP), 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) 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>Habitat provision in design. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Potential damage to retained hedgerows – Temporary minor adverse residual effect while replacement habitats establish, which is not significant, rising to a minor beneficial effect following maturation (Phase 1, Phase 2a and 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 habitat (Phase 2a and Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on hedgerows - Negligible effect (all Phases), which is not significant.</p>
Semi-improved grassland (Neutral and Poor)	<p>Habitat loss - Temporary negligible</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</p>	<p>Habitat provision in design. The other developments would</p>	<p>Habitat loss - Temporary negligible</p>

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	<p>effect, which is not significant, rising to a minor beneficial effect following establishment of replacement habitat (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on semi-improved grassland - Negligible effect (all Phases), which is not significant.</p>	<p>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>not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>effect, which is not significant, rising to a minor beneficial effect following establishment of replacement habitat (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on semi-improved grassland - Negligible effect (all Phases), which is not significant.</p>
Calcareous grassland	<p>Habitat loss – Minor adverse effect level (Phase 1), which is not significant.</p> <p>With habitat creation, this negligible residual effect while habitats establish, rises to a minor beneficial effect after 5-10 years within the habitat creation (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 from previous phases within the habitat creation areas (Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on calcareous grassland - Minor adverse effect (all</p>	<p>New Century 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. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Habitat loss – Minor adverse effect level (Phase 1), which is not significant.</p> <p>With habitat creation, this negligible residual effect while habitats establish, which is not significant, rises to a minor beneficial effect after 5-10 years within the habitat creation (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 from previous phases within the habitat creation areas (Phase 2b), which is not significant.</p> <p>Indirect impacts during construction (dust</p>

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	Phases), which is not significant.			deposition, pollution events) on calcareous grassland - Minor adverse effect (all Phases), which is not significant.
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 (Phase 2a), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on arable and field margins - Negligible effect (all 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 Cophorne (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 New Century 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, 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>	Habitat provision in design. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	<p>Habitat loss – Temporary minor adverse effect, which is not significant., reducing to a negligible effect following establishment of replacement habitat (Phase 2a), which is not significant.</p> <p>Indirect impacts during construction (dust deposition, pollution events) on arable and field margins - Negligible effect (all Phases), which is not significant.</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,</p> <p>Indirect impacts during construction (dust deposition, pollution events) on ancient and veteran trees - Minor adverse effect (all Phases), which is not significant.</p>	<p>New Century 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 provision in design. Also re-coppicing and translocating the one veteran tree which would be lost.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Damage/loss of potential future veteran trees - Minor adverse residual effect will remain (All phases), which is not significant,</p> <p>Indirect impacts during construction (dust deposition, pollution events) on ancient and veteran trees - Minor adverse effect (all Phases), which is not significant.</p>

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Ponds	<p>Loss of habitat – Even with habitat creation in Phase 1, by Phase 2a there will be a net loss of ponds, the residual minor adverse effect for Phase 2a onwards remains, which is not significant. No loss of ponds in Phase 2b.</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>New Century 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. The other developments would not result in additional ecological effects. As such, additional mitigation is not required</p>	<p>Loss of habitat – Even with habitat creation in Phase 1, by Phase 2a there will be a net loss of ponds, the residual minor adverse effect for Phase 2a onwards remains, which is not significant. No loss of ponds in Phase 2b.</p>
Orchids	<p>Loss of orchid plants - Temporary minor adverse effect, reducing to a negligible effect in the longer term during construction (Phase 1 and Phase 2a), which is not significant.</p> <p>Recreational pressure - Negligible effect during operation (Phase 1), 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>Planting and Translocation. No additional mitigation required.</p>	<p>Loss of orchid plants - Temporary minor adverse effect, reducing to a negligible effect in the longer term during construction (Phase 1 and Phase 2a), which is not significant.</p> <p>Recreational pressure - Negligible effect during operation (Phase 1), 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 (Phase 1), which is not significant.</p> <p>Loss of habitat and outlier setts and disturbance of retained setts. Potential</p>	<p>East West Rail Bicester to Bedford improvements, New Century 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 creation and replacement of main badger sett (if loss unavoidable). The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<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 (Phase 1), which is not significant.</p>

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	<p>loss of main sett - Temporary minor adverse effect, which is not significant., reducing to negligible effect following habitat establishment (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 (Phase 2b), which is not significant.</p> <p>Disturbance (disturbance through noise, lighting and recreational pressure) - Negligible effect (Operation Phase 1, Phase 2a and Phase 2b), which is not significant.</p>			<p>Loss of habitat and outlier setts and disturbance of retained setts. Potential loss of main sett - Temporary minor adverse effect, which is not significant, reducing to negligible effect following habitat establishment (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 (Phase 2b), which is not significant.</p> <p>Disturbance (disturbance through noise, lighting and recreational pressure) - Negligible effect (Operation Phase 1, Phase 2a and Phase 2b), which is not significant.</p>
Bats	Loss of foraging habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 1, Phase 2a, Phase 2b), which is not significant.	The New Century 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.	Habitat provision in design. Provision of artificial roost sites. Mitigation for disturbance to bat roosts to be carried out under a licence from Natural England. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	Foraging/commuting bats - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 1, Phase 2a, 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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	Disturbance to and loss of roosts - Negligible effect during Construction and Operation (Phase 1, Phase 2a, Phase 2b), which is not significant.	<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 range. However, with mitigation, the assessments for these developments concluded no significant residual effects. Therefore, no cumulative significant residual effects 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. No ecology information submitted with this application. Due to distance and scale of this development cumulative effects are considered unlikely.</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>		Roosting bats - Negligible effect during Construction and Operation (Phase 1, Phase 2a, Phase 2b), which is not significant.
Riparian mammals (otter and water vole)	Indirect impacts (pollution) - Minor adverse effect (Phase 1), 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 Draft CoCP. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	Indirect impacts (pollution) - Minor adverse effect (Phase 1), which is not significant.
Other mammals (e.g., brown hare and hedgehog)	Loss of habitat - Minor beneficial effect (Phase 1, Phase 2a and Phase 2b), which is not significant.	<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>The Rookery Pit Near Stewartby, Bedfordshire (Millbrook Power), 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>	Provision of Habitat. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	Loss of habitat – Minor beneficial effect (Phase 1, Phase 2a and 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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Breeding birds	<p>Damage/ disturbance - Negligible effect (Phase 1, Phase 2a and 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 (Phase 1, 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 (Phase 2b), which is not significant.</p> <p>Bird strike - Negligible effect during operation (Phase 1, Phase 2a and Phase 2b), which is not significant.</p>	<p>New Century Park (17/02300/EIA), Land West of Cockernhoe / Land East of Copthorne (16/02014/1), 57 - 63 Bancroft Hitchin (20/00193/FP) identify breeding birds 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) 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>Provision of Habitat. Suitable timings of works/ nesting bird checks. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>Damage/ disturbance - Negligible effect (Phase 1, Phase 2a and 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 (Phase 1, 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 (Phase 2b), which is not significant.</p> <p>Bird strike - Negligible effect (Phase 1, Phase 2a and 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 (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Disturbance - Negligible effect (Phase 1, Phase 2a and 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>Implementation of measures in Draft CoCP. 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 (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Disturbance - Negligible effect (Phase 1, Phase 2a and Phase 2b), 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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Schedule 1 birds	<p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 1, 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 (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 Phase 1, Phase 2a and Phase 2b), which is not significant.</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.	Habitat provision in design. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	<p>Loss of habitat – Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 1, 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 (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 Phase 1, Phase 2a and Phase 2b), which is not significant.</p>
Reptiles	<p>Loss of habitat - Minor beneficial (with habitat replacement) (Phase 1, Phase 2a, Phase 2b), which is not significant.</p> <p>Injury/killing - Negligible effect (Phase 1, Phase 2a, Phase 2b), which is not significant.</p>	East West Rail Bicester to Bedford improvements, New Century Park (17/02300/EIA), The Rookery Pit Near Stewartby (Millbrook Power), Land Adjacent to Caddington Road and Newlands Road (17/00590/FUL), Newlands Park (20/01589/OUTEIA), Bute Street Shoppers Car Park (21/01115/EIASCR) 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.	Habitat provision in design and translocation of animals. Implementation of measures in Draft CoCP. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	<p>Loss of habitat - Minor beneficial (with habitat replacement) (Phase 1, Phase 2a, Phase 2b), which is not significant.</p> <p>Injury/killing - Negligible effect (Phase 1, Phase 2a, Phase 2b), which is not significant.</p>
Amphibians	Killing/ injury - Temporary minor adverse effect, which is not	Land West of Cockernhoe / Land East of Copthorne (16/02014/1), The Rookery Pit Near Stewartby (Millbrook Power), Land at Caleb Close Luton (17/01040/FUL) and Hayward Tyler 1 Kimpton (20/00147/OUT)	Habitat provision and translocation of animals. Implementation of measures in	Killing/ injury - Temporary minor adverse effect, which is

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	<p>significant, reducing to negligible effect following habitat establishment (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 1, Phase 2a and Phase 2b), which is not significant</p>	<p>identify amphibians as a receptor within their assessments. However, 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>Draft CoCP.</p> <p>The other developments would not result in additional ecological effects. As such, additional mitigation is not required.</p>	<p>not significant, reducing to negligible effect following habitat establishment (Phase 1, Phase 2a and Phase 2b), which is not significant</p> <p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 1, Phase 2a and 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 (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Injury/ killing - Minor adverse (Phase 1, Phase 2a and Phase 2b), which is not significant.</p>	<p>The Rookery Pit Near Stewartby (Millbrook Power), New Century Park (17/02300/EIA), Land at Caleb Close (17/01040/FUL), Trade City (19/00882/FUL), Hayward Tyler (20/00147/OUT), Newlands Park (20/01589/OUTEIA), Bute Street Shoppers Car Park (21/01115/EIASCRC), 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 provision.</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 (Phase 1, Phase 2a and Phase 2b), which is not significant.</p> <p>Injury/ killing - Minor adverse (Phase 1, Phase 2a and Phase 2b), which is not significant.</p>
Roman Snail	<p>Loss of habitat - Temporary minor adverse effect, which is not significant, rising to negligible effect following habitat establishment (Phase 2a), which is not significant.</p> <p>Injury/ killing - Negligible during Construction and Operation (Phase 1,</p>	<p>The New Century Park (17/02300/EIA) assessment concludes that no live snails or whole shells were observed during survey and there was no evidence of current 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 identified that Roman snail had been recorded within airport grounds, c. 300 m south of Dairyborn Scarp DWS, in July 2017. The assessment for this development concluded no likely significant residual effects on Roman snail. Therefore, no cumulative effect is anticipated.</p>	<p>Habitat management.</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 (Phase 2a), which is not significant.</p> <p>Injury/ killing - Negligible during Construction and Operation (Phase 1,</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	Phase 2a and Phase 2b), which is not significant.			Phase 2a and Phase 2b), which is not significant.
Japanese knotweed	Spread - Minor beneficial, which is not significant.	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.	Specialist treatment and/or removal. The other developments would not result in additional ecological effects. As such, additional mitigation is not required.	Spread – Minor beneficial, which is not significant.
Cultural Heritage				
Luton Hoo Registered Park and Garden (RPG)	Moderate adverse, significant (Phase 2a and Operation)	<p>The New Century Park development (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>Bartlett Square development (18/00271/EIA) is located south west of the airport near Luton Parkway Railway station. This limits views of the development and its operational phase would not introduce further views into the visual setting of Luton Hoo Grade II* registered park. The construction phase of the development may introduce new components into the visual setting from the northern edge of the park arising from the construction of the office, and hotel buildings. However this would be temporary and would be no greater than the impact reported for the Proposed Development.</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 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 (North) development (20/01588/OUTEIA) would be partially visible in views through the woodland on the western edge of the park. This would introduce discernible 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. The development would not result in any additional impacts to Luton Hoo RPG in combination with the Proposed Development.</p>	These other developments would not result in additional cultural heritage effects. As such, additional mitigation is not required.	Moderate adverse, significant (Phase 2a and Operation) (Significant)

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		<p>The Newland Park (South) 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>		
Somerles Castle	Minor adverse (Phase 1 and Phase 2a)	<p>The New Century Park development (17/02300/EIA) would result in no additional impacts to Somerles Castle due to the intervening airfield plateau, shielding the asset from the development.</p> <p>Bartlett Square development (18/00271/EIA) is located south west of the airport near Luton Parkway Railway station. This limits views of the development and its operational phase would not introduce further views into the visual setting of Somerles Castle, which is a scheduled monument. The construction phase may introduce new components into the view from the western edge of the asset in views north across the airport, arising from the construction of the office, hotel buildings and access road. However these would be temporary, not incongruous with the asset's existing views and would be no greater than the impact reported for the Proposed Development, which is assessed to be minor adverse.</p>	These other developments would not result in additional cultural heritage effects. As such, additional mitigation is not required.	Minor adverse (Phase 1 and Phase 2a) (Not significant)
Wandon End Farmhouse	Moderate adverse (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 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. As such the impact would be no greater than that recorded for the Proposed Development. The development would not result in any additional impacts to Wandon End Farmhouse in combination with the Proposed Development.</p>	This development would not result in additional cultural heritage effects. As such, additional mitigation is not required.	Moderate adverse (Phases 1, 2a and 2b) (Significant)
Wandon End House	Moderate adverse (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.	Moderate adverse (Phases 1, 2a and 2b) (Significant)
Economics and Employment				
Employment	Construction Major Beneficial (Significant)	<p>During construction and once operational, the following developments all have the potential to have an impact on employment:</p> <ol style="list-style-type: none"> HS2; Heathrow Expansion; 	No additional mitigation required.	Major beneficial (Significant)

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	Operation Major Beneficial (Significant)	<p>c. New Century 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. Millbrook Power; h. Bartlett Square (18/00271/EIA); i. Houghton Regis North 1 (12/03613/OUT); and j. Houghton Regis North (Land West of Bidwell) (CB/15/00297/OUT).</p> <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>		
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> <p>a. Power Court (20/01587/OUTEIA); b. Mixed-use application in Cockernhoe (16/02014/1); c. Newlands Park (20/01588/OUTEIA); d. Millbrook Power; e. Houghton Regis North 1 (12/03613/OUT); and f. Houghton Regis North (CB/15/00297/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>	No additional mitigation required.	Major Beneficial (Significant)
Business/employment Displacement	Construction Minor Adverse (Not significant)	<p>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.</p>	No additional mitigation required.	Minor Adverse (Not significant)
Health and Community				
Health				
<i>All 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	There is a potential for a cumulative impact of the Proposed Development and the New Century Park (Ref. 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 Draft CoCP.</p> <p>Community engagement strategy as set out in Draft CoCP.</p>	Moderate adverse Significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	construction stages of the Proposed Development.			
<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 New Century Park development (Ref. 17/02300/EIA). However, as the New Century Park development will not directly impact the footpaths and bridleways, there is no cumulative effect.	Best practice construction management measures in Draft CoCP for landscape and noise. Community engagement strategy as set out in Draft CoCP. Creation of informal surfaced paths and upgrading of existing PROW, included in design and Draft Landscape and Biodiversity Management Plan (LBMP).	Minor beneficial Not significant
Wider Area	Beneficial impact on 'Employment and 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.	The following developments all have the potential to have an impact on employment: <ul style="list-style-type: none"> a. HS2; b. Heathrow Expansion; c. New Century 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. Millbrook Power; h. Bartlett Square (18/00271/EIA); i. Houghton Regis North 1 (12/03613/OUT); and j. 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>	The Draft Employment and, Training Strategy has been developed to maximise opportunities and upskilling for local people, including hard to reach groups and those currently unemployed.	Moderate beneficial 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 New Century 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.	Minor adverse Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
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 New Century Park (Ref. 17/02300/EIA) and Mixed Use (Ref. 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 Draft CoCP. Community engagement strategy as set out in Draft CoCP.	Minor adverse Not significant
Wider Area	Adverse impact on 'Housing market' and minor adverse temporary (not significant) effect on 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.	The following committed developments comprise the development of residential dwellings: <ul style="list-style-type: none"> a. Mixed – use development on Latimer Road (Ref. 16/01102/FUL); b. Residential development on Dunstable Road (Ref. 16/01499/FUL); c. Mixed – use development on Flowers Way (Ref. 16/01649/FUL) d. Residential development on land adjacent to Caddington Road and Newlands Road (Ref. 17/00590/FUL); e. Residential development on Caleb Close (Ref. 17/01040/FUL); f. Residential development on Rothesay Road (Ref. 20/00135/FUL); g. Mixed – use development on Park Street (Ref. 19/01104/OUT); h. Residential development on Seymour Avenue (Ref. 20/00785/FUL); i. Residential development on Taylor Street (Ref. 19/00925/FUL); j. Residential development on Chapel Street (Ref. 19/00889/FUL); k. Residential development on Cumberland Street (Ref. 20/00281/FUL); l. Residential development on Hitchin Road (Ref. 19/01363/FUL); m. Residential development on Old Bedford Road (Ref. 19/01358/FUL); n. Residential development on Alma Street (Ref. 20/00514/FUL); o. Residential development on Burr Street (Ref. 20/00567/FUL); p. Mixed – use development on Hayward Tyler (Ref. 20/00147/OUT); q. Mixed – use development on Cumberland Street (Ref. 17/01764/FUL); r. Residential development on George Street (Ref. 20/00133/FUL); 	Best practice construction management measures in Draft CoCP. Community engagement strategy as set out in Draft CoCP.	Minor adverse Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		<p>s. Residential development on Burr Street (Ref. 21/00306/FUL);</p> <p>t. Mixed – use development on Bute Street (Ref. 21/0115/EIASCRC);</p> <p>u. Residential development on land west of Cockernhoe / land east of Cophorne Cockernhoe (Ref. 16/02014/1);</p> <p>v. Mixed – use development on land south and north of Cockernhoe and east of Wigmore (Ref. 17/00830/);</p> <p>w. Residential development on Bancroft (Ref. 20/00193/FP);</p> <p>x. Residential development on land on the northern edge of Houghton Regis (Ref. 12/03613/OUT);</p> <p>y. Mixed – use development on land west of Bidwell (Ref. CB/15/00297/OUT); and</p> <p>z. Residential development on Cotswold Farm Business Park (Ref. CB/18/04602/OUT).</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.	Proposed Highway Intervention works. Construction Traffic Management Plan. Construction Workers Travel Plan.	Negligible adverse Not significant
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.	Proposed Highway Intervention works. Construction Traffic Management Plan. Construction Workers Travel Plan.	Negligible adverse Not significant
Users of Prospect House Day Nursery	Adverse impact on 'Access to services' resulting from loss of an	No committed developments within the vicinity of the Proposed Development are proposing to build a nursery therefore, there is no change in this effect.	Discussions are taking place with the nursery to find a suitable site for relocation however, no	Major adverse Significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	OFSTED 'Good' rated, purpose built childcare facility. This will have a major adverse permanent (significant) effect on young people with potential effects on wellbeing.		agreement has been reached at this stage.	
<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 WVP 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.	Minor adverse Not significant
Wider Area	Adverse impact on 'Aircraft noise' due to changes to aircraft noise exposure in the 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.	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 2019-2023 and an acoustically screened engine run-up pen. Compensation Proposals (i.e., noise insulation, voluntary acquisition, hardship scheme).	Moderate adverse Significant
Wider Area	Adverse impact on air quality from sources within the airport and increased road traffic. Minor adverse on respiratory health for a	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.	Draft Air Quality Plan measures	Minor adverse Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	small number of receptors.			
Wider Area	Beneficial impact on 'Employment and income'. Moderate beneficial permanent (significant) effect (all Phases) on mental and physical health associated with increased income, skills and/or job security for those local people securing operation related employment.	<p>During operation, 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. New Century 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. Millbrook Power; h. Bartlett Square (18/00271/EIA); i. Houghton Regis North 1 (12/03613/OUT); and j. Houghton Regis North (Land West of Bidwell) (CB/15/00297/OUT). <p>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.</p>	The Draft Employment and Training Strategy has been developed to maximise opportunities and upskilling for local people, including hard to reach groups and those currently unemployed.	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 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>Extension DART system to serve the new terminal.</p> <p>Proposed Highway Intervention works.</p> <p>Travel Plan (for the airport operations).</p>	Negligible adverse Not significant
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. Mixed – use development on Latimer Road (Ref. 16/01102/FUL); b. Residential development on Dunstable Road (Ref. 16/01499/FUL); c. Mixed – use development on Flowers Way (Ref. 16/01649/FUL) d. Residential development on land adjacent to Caddington Road and Newlands Road (Ref. 17/00590/FUL); e. Residential development on Caleb Close (Ref. 17/01040/FUL) f. Residential development on Rothesay Road (Ref. 20/00135/FUL); g. Mixed – use development on Park Street (Ref. 19/01104/OUT) h. Residential development on Seymour Avenue (Ref. 20/00785/FUL); i. Residential development on Taylor Street (Ref. 19/00925/FUL); 	n/a	Minor Adverse Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		<p>j. Residential development on Chapel Street (Ref. 19/00889/FUL);</p> <p>k. Residential development on Cumberland Street (Ref. 20/00281/FUL);</p> <p>l. Residential development on Hitchin Road (Ref. 19/01363/FUL);</p> <p>m. Residential development on Old Bedford Road (Ref. 19/01358/FUL);</p> <p>n. Residential development on Alma Street (Ref. 20/00514/FUL);</p> <p>o. Residential development on Burr Street (Ref. 20/00567/FUL);</p> <p>p. Mixed – use development on Hayward Tyler (Ref. 20/00147/OUT);</p> <p>q. Mixed – use development on Cumberland Street (Ref. 17/01764/FUL);</p> <p>r. Residential development on George Street (Ref. 20/00133/FUL);</p> <p>s. Residential development on Burr Street (Ref. 21/00306/FUL);</p> <p>t. Mixed – use development on Bute Street (Ref. 21/0115/EIASC);</p> <p>u. Residential development on land west of Cockernhoe / land east of Copthorne Cockernhoe (Ref. 16/02014/1);</p> <p>v. Mixed – use development on land south and north of Cockernhoe and east of Wigmore (Ref. 17/00830/);</p> <p>w. Residential development on Bancroft (Ref. 20/00193/FP);</p> <p>x. Residential development on land on the northern edge of Houghton Regis (Ref. 12/03613/OUT);</p> <p>y. Mixed – use development on land west of Bidwell (Ref. CB/15/00297/OUT); and</p> <p>z. Residential development on Cotswold Farm Business Park (Ref. CB/18/04602/OUT).</p> <p>The cumulative impact of the schemes listed above will have a beneficial impact on the 'housing market', through increased supply of housing.</p>		
Community				
<i>Construction</i>				
Wigmore Valley Park	<p>Minor beneficial permanent effect, not significant (All Phases)</p> <p>Closure and re-provision of part of WVP. Access maintained to existing park during construction of replacement open space and facilities to be delivered in Phase</p>	<p>This receptor may experience the changes to be brought about by the Proposed Development in combination with works associated with the New Century Park development (Ref. 17/02300/EIA). The New Century Park development may introduce construction activities associated with the delivery of improved facilities at WVP, which may be evident in combination with the Proposed Development in construction Phase 1. The other developments are however judged to not materially change the effect on WVP.</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>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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	1. Overall gain in parkland provided and enhancement of facilities.			
Prospect House Day Nursery	Major adverse effect, significant. (Phase 2a) Demolition of nursery due to AAR.	Receptor is permanently lost in Phase 2a so no additional effects.	Receptor is permanently lost in Phase 2a so no additional effects.	Major adverse effect Significant
Ace Sandwich Bar	Minor adverse effect, not significant. (Phase 2a) Demolition of sandwich bar due to AAR.	Receptor is permanently lost in Phase 2a so no additional effects.	Receptor is permanently lost in Phase 2a so no additional effects.	Minor adverse effect Not significant
Impact on users of PRow Kings Walden 043	Minor beneficial permanent effect, not significant. (All Phases) Diversion and upgrading of PRow.	This receptor would experience the changes to be brought about by the Proposed Development in combination with the New Century Park development (Ref. 17/02300/EIA). However, as the New Century 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.	Minor beneficial Not significant
Impacts on users of undesignated footpath within WVP and public footpaths FP29 and FP38 and public bridleways BW28 and BW37	Minor beneficial permanent effect, not significant. (All Phases) Undesignated footpath will be permanently stopped. Public footpaths FP29 and FP38 and public bridleways BW28 and BW37 stopped up during Phase 2a. Additional footpaths and bridleways will be provided as part of the replacement open space. Connectivity partly restored in Phase 2b.	This receptor would experience the changes brought about by the Proposed Development in combination with the New Century Park development (Ref. 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.	The other developments are assessed not to result in additional effects on this receptor. It is accordingly determined that no additional mitigation is required.	Minor beneficial Not significant
Impact on users of PRow Kings Walden 041 (between Eaton Green Road and Darley Road, section not part of Chiltern Way long distance footpath)	Minor beneficial permanent effect, not significant. (All Phases) Diversion and upgrading of PRow.	This receptor would experience the changes brought about by the Proposed Development in combination with the New Century Park development (Ref. 17/02300/EIA). However, as the New Century 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.	Minor beneficial Not significant
<i>Operation</i>				

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
No effects on community resources during operation				
Landscape and Visual				
The Cumulative Landscape and Visual Impact Assessment adopts a two-stage process, assessing first 'total effects' (i.e. the combined effects of past, present and future proposals together with the Proposed Development against the existing baseline) and secondly 'additional effects' (i.e. the effects of the Proposed Development assuming past, present and future proposals are already present within the existing baseline). Where no 'total effects' (stage 1) are considered likely, the subsequent 'additional effects' (stage 2) assessment - to recognise the contribution that the Proposed Development makes to the total effects - has not been carried out as it is not required. The Residual Effects column below either records the 'additional effect' or states the effect as determined in Chapter 14 Landscape and Visual in Volume 2 of this PEIR, where no additional effect is assessed.				
Landscape				
The landform East of the airport	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year)	The Proposed Development may occur in combination 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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year)
The mixed ancient deciduous and plantation woodlands East of the airport	Moderate adverse, significant (Phases 1 and 2a) reducing to Minor adverse, not significant (Phase 2b) then Minor beneficial, not significant (maximum passenger capacity and Design Year)	The Proposed Development may occur in combination 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.	Moderate adverse, significant (Phases 1 and 2a) reducing to Minor adverse, not significant (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 (Phase 1) and Minor beneficial, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year)	The Proposed Development may occur in combination 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.	Minor adverse, not significant (Phase 1) and Minor beneficial, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year)
The irregular arable field patterns East of the airport	Minor adverse, not significant (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.	Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	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 (Phase 1) reducing to Moderate adverse, significant (Phases 2a and 2b) then Minor adverse, not significant (maximum passenger capacity and Design Year).	<p>The New Century Park development would deliver changes within Wigmore Valley Park which may be experienced in combination 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 New Century Park development would also introduce additional construction activities and built form which will be visible and audible beyond the replacement open space from construction Phase 2a.</p> <p>The combined impact of the Proposed Development and changes within Wigmore Valley Park to be brought about by the New Century 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 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.	Major adverse , significant (Phase 1) reducing to Moderate adverse, significant (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 (Phase 1) and Negligible beneficial, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>The Proposed Development may occur in combination 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 Cophorne 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.	Negligible adverse, not significant (Phase 1) and Negligible beneficial, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
The outlying cottages and scattered farmsteads East of the airport	No effect (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.	No effect (Phases 1, 2a, 2b, maximum passenger capacity and Design Year)
The network of PRoW East of the airport	Moderate beneficial, significant (Phase 1) changing to Minor adverse, not significant (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.	Moderate beneficial, significant (Phase 1) changing to Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
				capacity and Design Year)
Luton Borough Landscape Character Assessment (LBLCA) Area 4c - Lea Valley Lower	Negligible adverse, not significant (Phase 1) and Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year)	The Proposed Development may be experienced in combination 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 in combination with development at the Power Court development. 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 in combination with Work No. 6m.02, but would not be perceived in combination 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 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 landscape effects on this receptor. It is accordingly determined that no additional mitigation is required.	Negligible adverse, not significant (Phase 1) and Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year)
LBLCA Area 13 - Wigmore Rural	Moderate adverse, significant (Phase 1) rising to Major adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year)	The New Century Park development would deliver changes within Wigmore Valley Park which may be experienced in combination with the Proposed Development in construction Phase 1 and would introduce additional construction activities and built form which would be visible and audible within this LCA in construction 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 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.	Moderate adverse, significant (Phase 1) rising to Major adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year)
LBLCA Area 14 – Luton Airport	Minor adverse, not significant (Phases 1, 2a, 2b and maximum passenger capacity) reducing to Negligible adverse, not significant (Design Year)	The Proposed Development may occur in combination with the Courtyard by Marriott development and New Century 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.	Minor adverse, not significant (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 (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse (Phase 2b, maximum passenger capacity and Design Year).	The Proposed Development may occur in combination with the Bartlett Square development and Napier Parkway; and 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 Phase 1 to Medium adverse. The other developments are assessed to increase the significance of total landscape effect in construction Phase 1 to Moderate adverse. As the	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.	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse (Phase 2b, maximum passenger

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		Proposed Development would not introduce any construction activities within this LCA in this phase it is however assessed that there would be no additional effects.		capacity and Design Year).
LBLCA Area 22 – Stockwood Park	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Hertfordshire Landscape Character Assessment (HLCA) Area 200 – Peters Green Plateau	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
HLCA Area 201 – Kimpton and Whiteway Bottom	Minor adverse, not significant (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.	Minor adverse, not significant (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 (Phase 1) changing to Minor beneficial, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	The Proposed Development may occur in combination 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 to 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 effects.	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.	Minor adverse, not significant (Phase 1) changing to Minor beneficial, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
HLCA Area 203 – Whitwell Valley	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
HLCA Area 211 – Offley and St. Paul's Walden	Minor adverse, not significant (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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Central Bedfordshire District Landscape Character Assessment (CBDLCA) Area 11B – Caddington / Slip End Chalk Dipslope	Negligible adverse, not significant (Phase 1) rising to Minor Adverse, not significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor Adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
CBDLCA Area 11C – Luton Hoo Chalk Dipslope	Minor adverse, not significant (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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
CBDLCA Area 12C – Slip End Chalk Valley	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
CBDLCA Area 12D – Lea Chalk Valley	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
The townscape of Hitchin	No effect (Phase 1) rising to Moderate adverse, significant (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.	No effect (Phase 1) rising to Moderate adverse, significant (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 (Phase 1 and 2a) rising to Moderate adverse, significant	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 result in additional landscape effects on this receptor. It is accordingly	Minor adverse, not significant (Phase 1 and 2a) rising to Moderate adverse, significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	(Phase 2b, maximum passenger capacity and Design Year).	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.	determined that no additional mitigation is required.	(Phase 2b, maximum passenger capacity and Design Year).
Visual				
Visitors to Wigmore Valley Park	Moderate adverse, significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor may experience the changes brought about by the Proposed Development in combination with works associated with the New Century 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 Phase 2a. The New Century Park development may also introduce construction activities associated with the delivery of improved amenity facilities at Wigmore Valley Park, which may be evident in combination with the Proposed Development in construction 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 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 Phase 2b to Major adverse. 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.</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.	Moderate adverse, significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Visitors to Someries Castle and grounds	Minor adverse, not significant (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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of Winsdon Hill	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor may experience the changes brought about by the Proposed Development in combination with proposed built form at New Century Park in construction Phase 2 and in combination with other developments located within the lower lying townscape to the west of the airport, including:</p> <ol style="list-style-type: none"> Power Court; Bartlett Square and Napier Parkway; 16/01102/FUL; 16/01499/FUL; 16/01649/FUL; and 18/01244/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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		<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 (Phase 1) rising to Minor adverse, not significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Raynham Recreation Ground and Community Centre	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a) rising to Moderate adverse, significant (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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a) rising to Moderate adverse, significant (Phase 2b, maximum passenger capacity and Design Year).
Users of the area of greenspace next to Polzeath Close	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).	<p>This receptor may experience the changes to be brought about by the Proposed Development in combination with the Bartlett Square and Napier Parkway and works to be delivered as part of the East of Luton Study, notably the widening of the A505 and junction improvements at Kimpton Road.</p> <p>These other developments are judged to increase the total magnitude of visual impact in assessment Phase 1 to Low adverse, and in assessment Phase 2b 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 at assessment Phase 1 to Minor adverse and at assessment Phase 2b, maximum passenger capacity and the Design Year to Moderate adverse.</p> <p>These other developments would be within the observer's arc of vision when viewing changes to be brought about by the Proposed Development but would be seen separately from these Works. It is accordingly assessed that these other developments would not result in any additional visual effects on this receptor.</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.	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).
Users of Powdrills Field	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum	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	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	passenger capacity and Design Year).		determined that no additional mitigation is required.	passenger capacity and Design Year).
Users of Stockwood Park	Negligible adverse, not significant (Phases 1 and 2a) rising to Minor adverse, not significant (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 cumulative development is judged to increase the total magnitude of visual impact for all assessment phases to Low adverse. This development is judged to increase the significance of total visual effect in construction Phase 1 to Minor adverse. This cumulative development would not however increase visibility to the Proposed Development and is accordingly assessed not to result in additional visual effects on this receptor.	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.	Negligible adverse, not significant (Phases 1 and 2a) rising to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).
Users of Stopsley Common	No effect (Phase 1) rising to Negligible adverse, not significant (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.	No effect (Phase 1) rising to Negligible adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Residents and users of Luton Hoo hotel and parkland	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	This receptor may experience the changes brought about by the Proposed Development in combination with development at Bartlett Square and Napier Parkway. This development is judged to increase the total magnitude of visual impact in construction Phase 1 to Low adverse. The other developments are however 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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Residents of Wandon End	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with the New Century 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. This cumulative development is judged to increase the total magnitude of visual impact experienced by this receptor in construction phases 1 and 2a to Medium to high adverse and in construction Phase 2b to Medium adverse. Operational stage impacts would remain unchanged. This cumulative development is assessed to increase the significance of total visual effect in construction Phases 1, 2a and 2b to Moderate adverse. This cumulative development would not however increase visibility to the Proposed Development and is accordingly assessed not to result in additional visual effects on this receptor.	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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Residents of Winch Hill House	Negligible adverse, not significant (Phase 1)	This receptor may experience the changes to be brought about by the Proposed Development in combination with glimpsed views to the New	The other developments are assessed not to result in	Negligible adverse, not significant (Phase 1)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	Century Park development. This cumulative development is however judged not to 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.	additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Residents of Winch Hill Cottages	Minor adverse, not significant (Phases 1, 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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
People in South Wigmore	Minor adverse, not significant (Phases 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes to be brought about by the Proposed Development in combination with the New Century Park development. This cumulative 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. 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.	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.	Minor adverse, not significant (Phases 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
People in Darleyhall	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor may experience the changes to be brought about by the Proposed Development in combination with the New Century Park development, with construction activities and built form potentially 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.	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
People in Breachwood Green, The Heath and Lye Hill	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes to be brought about by the Proposed Development in combination with the New Century 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'	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.	Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		are considered likely, the subsequent 'additional effects' assessment has not been carried out.		
People in Tea Green	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in combination with the New Century Park development, which may be discernible in glimpsed views from construction 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.</p> <p>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.</p> <p>These other developments are assessed to increase the significance of total visual effect in Phases 2a and 2b to Major adverse and in Phase 1, when operating at maximum passenger capacity and at the Design Year to Moderate adverse.</p> <p>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.</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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Wigmore Hall Conference Centre	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (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 in combination with the New Century Park development, with construction activities and built form anticipated to be visible alongside the Proposed Development in 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.</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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (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 (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; in combination 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>	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.	Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		<p>This receptor would also experience the Proposed Development in combination with built form proposed as part of the New Century Park development from 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 in combination 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 in combination change from buildings proposed as part of the New Century Park development would be largely screened by the embedded and additional mitigation 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 Phases 1 and 2a to High adverse and in 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.</p>		
Users of Darley Road	Minor adverse, not significant (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 in combination with built form proposed as part of the New Century Park development in 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 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.</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.	Minor adverse, not significant (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 (Phase 1) rising to Moderate adverse, significant (Phases 2a and 2b) then reducing to Minor adverse, not significant (maximum passenger	<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 in combination with built development proposed as part of the New Century Park development from Phase 2a.</p> <p>These other developments, are judged to increase the total magnitude of visual impact in Phase 1 to Low to Medium adverse, at Phase 2b to Medium to high adverse and when operating at maximum passenger</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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a and 2b) then reducing to Minor adverse, not significant (maximum passenger

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	capacity and Design Year).	capacity to Medium adverse. These other developments are however 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.		capacity and Design Year).
Users of Winch Hill Lane	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	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 in combination with proposed built development at the New Century Park 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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Vauxhall Way	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination 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. 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. 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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of Kimpton Road and Airport Way	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse, not significant (Phases 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes to be brought about by the Proposed Development in succession with views to the Courtyard by Marriott development, Napier Parkway and Bartlett Square development. 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 Phase 2a. It is judged that these changes would increase the total magnitude of visual impact experienced by this receptor at Phase 1 to Medium adverse. The other developments are assessed to increase the significance of total visual effect at 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.	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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse (Phase 2a) then reducing to Minor adverse, not significant (Phases 2b, maximum passenger capacity and Design Year).
Users of New Airport Way	Moderate adverse, significant (Phases 1 and	This receptor would experience the changes brought about by the Proposed Development in combination, in succession and in frequently	The other developments are assessed not to result in	Moderate adverse, significant (Phases 1

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	2a) reducing to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).	sequential views with the Courtyard by Marriott development and the Bartlett Square and Napier Parkway. 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.	additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	and 2a) reducing to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).
Users of Luton Borough public footpath FP39 to the East of Wigmore	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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 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.	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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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 (Phase 1) rising to Moderate adverse, significant (maximum passenger capacity and Design Year). *PRoW would be stopped up in phases 2a or 2b. Assessment not undertaken during these phases.	This receptor would experience the changes brought about by the Proposed Development in combination with the New Century 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 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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (maximum passenger capacity and Design Year).
Users of the Chiltern Way long distance footpath	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes to be brought about by the Proposed Development in combination with the New Century 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 in combination, 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	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.	Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
		<p>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 Phase 1 to High adverse, in 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 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.</p>		
Users of PRow to the West of Breachwood Green	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in combination with the New Century 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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
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 (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in combination with New Century 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 Phases 1 and 2a to Medium adverse.</p> <p>The other developments are assessed to increase the significance of total visual effect in 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.</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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpaths near Lye Hill	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	<p>This receptor would experience the changes brought about by the Proposed Development in combination with glimpsed views to the New Century Park development. This 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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (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 (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Users of footpaths near Ley Green	No effect (Phase 1) rising to Minor adverse, not significant (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.	No effect (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow south of the airport	Minor adverse, not significant (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.	Minor adverse, not significant (Phases 1, 2a, 2b, maximum passenger capacity and Design Year).
Users of public footpath Hyde 4B, West of Someries Castle	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with the Bartlett Square development and aspects of works to be delivered as part of the East of Luton Study, where adjoining New Airport Way at the westernmost extremity of this footpath. These other developments are judged to increase the total magnitude of visual impact in Phase 1 to Medium adverse. The other developments are assessed to increase the significance of total visual effect in 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.	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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phase 2a) then reducing to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).
Users of the Lea Valley Cycle Route nr. Park Street	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with glimpsed views to the Bartlett Square and Napier Parkway. This cumulative development is judged to increase the total magnitude of visual impact in Phase 1 to Low adverse. The other developments are assessed to increase the significance of total visual effect in 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.	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.	Negligible adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpath Offley 026, West of Cockernhoe	No effect (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with the Land West of Cockernhoe / Land East of Copthorne Cockernhoe development, which would be present in the foreground and that would entirely screen the Proposed Development from this receptor upon completion. This other developments 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.	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.	No effect (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpath St Pauls Walden 024, nr. Bendish	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum	This receptor would experience the changes brought about by the Proposed Development in combination with the New Century 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	The other developments are assessed not to result in additional visual effects on this receptor. It is accordingly	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	passenger capacity and Design Year).	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.	determined that no additional mitigation is required.	passenger capacity and Design Year).
Users of footpath Offley 003, West of Tea Green	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a and Phase 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination 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. This development is judged to increase the total magnitude of visual impact experienced by this receptor in Phases 1 to High adverse, in Phases 2a and 2b to Medium to high adverse and when operating at maximum passenger capacity or at the Design Year to Medium adverse. The other developments are assessed to increase the significance of total visual effect in 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.	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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a and Phase 2b, maximum passenger capacity and Design Year).
Users of footpaths East of Tea Green	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with glimpsed views of the New Century 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 Phase 1 to Low to medium adverse. The other developments are judged to increase the significance of total visual effect in 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.	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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of footpath Kings Walden 010	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with glimpsed views to the New Century Park development. This cumulative 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.	Minor adverse, not significant (Phase 1) rising to Moderate adverse, significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow on or adjoining the flight path East of Breachwood Green	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum	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	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	passenger capacity and Design Year).		determined that no additional mitigation is required.	passenger capacity and Design Year).
Users of PRow on or adjoining the flight path nr. Caddington	Negligible adverse, not significant (Phases 1 and 2a) rising to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).	This receptor may experience the changes brought about by the Proposed Development in combination with glimpsed views to the Newlands Park development. This cumulative 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.	Negligible adverse, not significant (Phases 1 and 2a) rising to Minor adverse, not significant (Phase 2b, maximum passenger capacity and Design Year).
Users of PRow within the AONB	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with glimpsed views to the New Century 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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a, 2b, maximum passenger capacity and Design Year).
Users of PRow within the AONB	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with glimpsed views to the New Century 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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phase 2a, 2b, maximum passenger capacity and Design Year).
People in southeast Hart Hill and southwest Wigmore	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).	This receptor would experience the changes brought about by the Proposed Development in combination with works to widen Vauxhall Way, associated with the East of Luton Study and Napier Parkway. This cumulative development is judged to increase the magnitude of total visual impact in Phase 1 to Low adverse. The other developments are assessed to increase the significance of total visual effect in 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.	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.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum passenger capacity and Design Year).
Users of Capability Green Business Park	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum	This receptor would experience the changes to be brought about by the Proposed Development in succession with the Bartlett Square, Napier Parkway and Land North of Kimpton Road development. 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 not to result in additional visual effects on this receptor. It is accordingly determined that no additional mitigation is required.	Negligible adverse, not significant (Phase 1) rising to Minor adverse, not significant (Phases 2a, 2b, maximum

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	passenger capacity and Design Year).	The other developments are assessed to increase the significance of total visual effect in 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.		passenger capacity and Design Year).
Major Accidents and Disasters				
<p>During construction: Construction personnel and equipment; Existing airport users and workers; Artefacts of national or international importance during import/export.</p> <p>During operation: airport users and workers; artefacts of national or international importance during import/export.</p>	<p>Vulnerability of the Proposed Development to fire and explosion at a neighbouring site.</p> <p>During construction: TifALARP (not significant)</p> <p>During operation: TifALARP (not significant)</p>	<p>Millbrook Power (ID 5) is a gas-fired power plant with associated infrastructure and a capacity of 299MW. The use of gas as fuel has a potential to increase the risk of fire and explosions at neighbouring sites. However, this Other Development is located 22km north west of the Proposed Development and, therefore, outside the ZOI established for this MA&D risk: 2km radius from Main Application Site and Off-site car parks and highway works. In addition, according to Section 4.8 of the Environmental Statement submitted as part of the planning application for the Millbrook Power development, this project does not constitute a (Control of Major Accident Hazards) COMAH site, and therefore, will not store sufficient quantities of hazardous substances on site to require management arrangements in accordance with a COMAH consent.</p>	No additional mitigation required.	No cumulative effects, the risk would remain TifALARP (not significant) during both construction and operation.
<p>During construction: Construction personnel; Existing airport users and workers;</p> <p>During operation: Existing airport users and workers;</p>	<p>Vulnerability of the Proposed Development to contamination or release of hazardous substances from off-site sources.</p> <p>During construction: TifALARP (not significant)</p> <p>During operation: TifALARP (not significant)</p>	<p>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.</p> <p>Most of these developments are urban developments of residential, commercial or mixed use, except for ID No. 41 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.</p> <p>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 PEIR, 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.</p>	No additional mitigation required.	No cumulative effects, the risk would remain TifALARP (not significant) during both construction and operation.

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Construction and operation: Motorised and non-motorised users of routes used by the traffic associated with the Proposed Development; Properties.	Impacts on road safety caused by the construction and operational traffic of the Proposed Development cumulatively with Other Developments.	Increase in traffic flows with other developments has been accounted for within the traffic and transport assessment presented in Chapter 18 of the PEIR. The assessment concludes that there are no significant effects with regards to collisions and safety and the transport of hazardous loads.	No additional mitigation required.	Not significant (see Chapter 18 Traffic and Transport of the PEIR).
Noise and Vibration				
Residential properties, schools, places of worship	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: New Century Park, Bartlett Square, 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 Draft CoCP Section 61 consent to be obtained	Not significant
Residential properties, schools, places of worship	Construction vibration Not significant	On-site other developments (New Century 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 Draft CoCP Section 61 consent to be obtained	Not significant
Residential properties, schools, places of worship	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 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.	Construction traffic management measures detailed in the Draft CoCP	Negligible – Not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Residential properties, schools, places of worship	Air noise Moderate Adverse – Significant. Population of approximately 1,100 people affected	No other developments will create additional air traffic. Consequently, there would be no permanent cumulative effect.	ICAO Balanced Approach covered in the Draft Operational Noise Management Plan Noise insulation scheme to compensate worst-affected properties Noise Envelope to ensure predictable growth and to share benefits of new technology with communities	Moderate Adverse – Significant. Population of approximately 1,100 people affected
Residential properties, schools, places of worship	Surface access noise	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.	More detailed analysis of road traffic noise modelling will be undertaken for the ES to determine as to whether there may be a significant effect and, if there are significant effects, mitigation measures will be identified where practicable.	Minor Beneficial to Moderate Adverse - Significant
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. Minor adverse (not significant)	Potential effect on human health from potentially contaminated soils due to earthworks and construction associated with proposed highway works by LBC as part of the East Luton Study. The potential for generation of contaminated dust/vapours within 250m of the Main Application Site and Off-Site Highway Interventions as a result of soil handling or clearance works. 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.	Implementation of construction environmental management measures set out in the Remediation Strategy (Appendix 17.5 in Volume 3 to this PEIR) and Draft CoCP, 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.	Minor (not significant)
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,	Potential effect on human health from potentially contaminated soils due to earthworks and construction associated with proposed construction of residential units at 1 Kimpton Road application number 20/00147/OUT. This is within 250m of two Off-site Highway Interventions.	Implementation of construction environmental management measures set out in the Remediation Strategy and Draft CoCP, including appropriate PPE, dampening down of dusts,	Minor (not significant)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	vapours and gases, from landfill material/Made Ground through a number of exposure routes. Minor adverse (not significant)	<p>The development will bring in additional highly sensitive receptors within 250m of Off-site Highway Interventions and 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>	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.	
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. Minor adverse (not significant)	<p>Potential effect on human health from potentially contaminated soils due to earthworks and construction associated with proposed erection of a hotel, at the airport, application number 20/00646/FUL.</p> <p>The development will bring in additional highly sensitive receptors within 250m of the new AAR and existing airport land and 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>	Implementation of construction environmental management measures set out in the Remediation Strategy and Draft CoCP, 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.	Minor (not significant)
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. Minor adverse (not significant)	<p>Potential effect on human health from potentially contaminated soils due to earthworks and construction associated with proposed conversion of office building to residential, at the airport application number 20/00020/COM.</p> <p>The development will bring in additional highly sensitive receptors to within 250m of the new AAR and existing airport land.</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>	Implementation of construction environmental management measures set out in the Remediation Strategy and Draft CoCP, 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	Minor (not significant)

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
			construction sites or activities within 500m of the Application Site. This would ensure dust/vapour mitigation and management plans are co-ordinated.	
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. Minor adverse (not significant)	<p>Potential effect on human health from potentially contaminated soils due to earthworks and construction associated with proposed conversion of office building to residential, at the airport application number 17/00830/1.</p> <p>The development will bring in additional highly sensitive receptors to within 250m of Area B.</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>	Implementation of construction environmental management measures set out in the Remediation Strategy and Draft CoCP, 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.	Minor (not significant)
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. 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.	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.	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			Slight, not significant
Construction resources - national consumption for	Slight, not significant			Slight, not significant

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
the key construction materials.		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.		
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	a. Millbrook Power stated “ <i>It can be concluded that the Project will not result in any likely significant environmental effects with respect to waste.</i> ”		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	b. HS2 stated in Volume 3 Route-wide effects dated November 2013 that “ <i>The likely residual significant effects from construction will be:</i> 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> ” c. HS2 stated “ <i>the likely residual significant effects associated with operation of the Proposed Scheme will be negligible.</i> ”		Slight, not significant
Operation resources - national consumption for the key construction materials.	Slight, not significant	d. 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> ” e. 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> ” f. 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> ” g. 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.		Slight, not significant
		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.		

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
Water Resources and Flood Risk				
Chalk aquifer	<p>Phase 1 - Construction Minor beneficial effect Not significant</p> <p>Phases 2a and 2b – Construction Moderate beneficial effect Significant</p> <p>Phases 2a and 2b – Operation Minor adverse effect Not significant</p>	<p>The New Century Park (17/02300/EIA), 1 Kimpton Road (20/00147/OUT), Power Court (20/01587/OUTEIA) 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 beneficial effect on the aquifer during Phase 1 and a moderate beneficial effect on the aquifer during Phases 2a and 2b.</p> <p>During operation, the Proposed Development will result in a very low adverse impact on the aquifer during Phases 2a and 2b (worse case).</p> <p>As the aquifer is a high value receptor, in combination 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>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 Remediation Strategy (Appendix 17.5) during construction will ensure that there is 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) for the Proposed Development during operation will ensure that there are no significant effects on the underlying chalk aquifer.</p>	<p>Phase 1 - Construction Minor beneficial effect Not significant</p> <p>Phases 2a and 2b – Construction Moderate beneficial effect Significant</p> <p>Phases 2a and 2b – Operation Minor adverse effect Not significant</p>
Thames Water network	<p>Phase 1 – Operation Minor adverse effect Not significant</p>	<p>The Bartlett Square (18/00271/EIA) development has the potential to have an adverse impact on the Thames Water network as a result of a requirement to discharge surface and foul water to the network.</p> <p>During the operation of Phase 1, the Proposed Development will result in a very low adverse impact on the Thames Water network due to an increase in the volume of foul water discharged from the Proposed Development to the Thames Water network.</p> <p>The Thames Water network is identified as a medium value receptor and therefore, with the implementation of the mitigation identified, the cumulative impact of Bartlett Square and the Proposed Development will not change the overall effect of the Proposed Development on the Thames Water network during operation.</p>	<p>The planning application documentation identifies that the Bartlett Square development is subject to a planning condition to ensure no significant impacts on the Thames Water network.</p> <p>The Drainage Design Statement (DDS) (Appendix 20.4) includes a description of the upgrades required to the Thames Water network to accommodate increase in foul runoff in Phase 1.</p>	<p>Phase 1 – Operation Minor adverse effect Not significant</p>
Flood risk receptors	<p>Phases 1, 2a and 2b - Construction Minor adverse effect (for high and medium value receptors) Not significant</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 Draft Flood Risk Assessment (Appendix 20.1 in Volume 3 to this PEIR) has accounted for the potential impacts of the highways work on fluvial and surface water flood risk in combination with the Proposed</p>	<p>The Draft CoCP outlines the requirements for the management of flood risk as a result of the highways works during construction.</p>	<p>Minor adverse effect (for high and medium value receptors) Not significant</p>

Receptor(s)	Effect of Proposed Development	Assessment of cumulative effects of 'other developments' listed in Appendix 21.2 Short List (Volume 3) with the Proposed Development	Proposed mitigation applicable to Proposed Development including any appointment	Residual cumulative effects
	<p>Negligible effect (for low value receptors) Not significant</p> <p>Phases 1, 2a and 2b - Operation Minor adverse effect (for high and medium value receptors) Not significant</p> <p>Negligible effect (for low value receptors) Not significant</p>	<p>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>Negligible effect (for low value receptors) Not significant</p> <p>Phases 1, 2a and 2b - Operation Minor adverse effect (for high and medium value receptors) Not significant</p>
<p>River Lee</p>	<p>Phases 1, 2a and 2b – Operation Minor adverse effect Not significant</p> <p>Phases 1, 2a and 2b – Operation Minor adverse effect 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 PEIR.</p>	<p>The Draft CoCP 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>Phases 1, 2a and 2b – Operation Minor adverse effect Not significant</p> <p>Phases 1, 2a and 2b – Operation Minor adverse effect Not significant</p>

Mitigation and enhancement measures

- 21.3.39 Proposed mitigation measures, further to embedded mitigation measures, are identified in **Table 21.12**.

Residual effects

- 21.3.40 Residual effects are as identified in **Table 21.12**.

Assumptions and limitations

- 21.3.41 The assessment undertaken for the PEIR has been based on the collation and evaluation of publicly available documentation provided on LPA and developer websites.
- 21.3.42 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.
- 21.3.43 The search for other developments to be included in the CEA has been frozen three months ahead of the publication of the Statutory Consultation, and will be updated and re-frozen three months ahead of the submission of the ES 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
CBC	Central Bedfordshire Council
CBDLCA	Central Bedfordshire District Landscape Character Assessment
CEA	Cumulative Effects Assessment
CoCP	Code of Construction Practice
DDS	Drainage Design Strategy
ES	Environmental Statement
HCC	Hertfordshire County Council
HLCA	Hertfordshire Landscape Character Assessment
LBC	Luton Borough Council
LBLCA	Luton Borough Landscape Character Assessment
LCA	Landscape Character Area
LVIA	Landscape and Visual Impact Assessment
NHDC	North Hertfordshire District Council
NSIP	Nationally Significant Infrastructure Project
PEIR	Preliminary Environmental Impact Assessment
ZOI	Zone of Influence

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