

## 4. Approach to preparing the Environmental Statement

### 4.1 The Environmental Impact Assessment process

4.1.1 The preparation of the ES is one of the key stages in the EIA process, as it brings together information about any likely significant environmental effects, which LBC will use to inform its decision about the Proposed Scheme.

### 4.2 EIA terminology

#### Impacts and effects

4.2.1 The convention used in this ES is to use 'impacts' only within the context of the term EIA, which describes the process from scoping through ES preparation to subsequent monitoring and other work. Otherwise, this document uses the word 'effects' when describing the environmental consequences of the Proposed Scheme. For example, such effects may come about as a result of the following:

- Physical activities that would take place if the development were to proceed (e.g. vehicle movements during construction operations); or
- Environmental changes that are predicted to occur as a result of these activities (e.g. loss of vegetation prior to the start of construction work or an increase in noise levels). In some cases, one change causes another change, which in turn results in an environmental effect.

4.2.2 The predicted environmental effects are the consequences of the environmental changes for specific environmental receptors. For example, with respect to bats, the loss of roosting sites or foraging areas could affect the bats' population size; with regard to people, an increase in noise levels could affect people's amenity.

4.2.3 This ES is concerned with assessing the significance of the environmental effects of the Proposed Scheme, rather than the activities or changes that cause them. However, this requires these activities to be understood and the resultant changes identified and quantified, often based on predictive assessment work.

#### Spatial and temporal scope

4.2.4 Spatial scope is the area over which changes to the environment are predicted to occur as a consequence of a Proposed Scheme. In practice, an EIA should focus on those areas where these effects are likely to be significant.

4.2.5 In this ES, the spatial scope varies between environmental topics and is therefore described in each of the topic chapters. For example, the spatial effects of a development on noise will probably cover a much greater area to that affected by transport.

4.2.6 The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur and are typically defined as either being temporary or permanent.

## 4.3 EIA screening

- 4.3.1 A formal Screening Opinion was sought from LBC for the variations associated with the Proposed Scheme. Consideration against the criteria set out in Schedule II of the 2017 EIA Regulations is shown in **Table 4.1**. This indicated that the Proposed Scheme met threshold (i) of paragraph 13(b) and has the potential to have significant effects on the environment, due to the characteristics, location, and potential impact.

Table 4.1 Schedule 2 thresholds and criteria of the 2017 EIA Regulations

Column 1: Description of development	Column 2: Applicable thresholds and criteria
<b>13. Changes and extensions</b>	
<b><i>“(a) Any change to or extension of development of a description listed in Schedule 1 (other than a change or extension falling within paragraph 24 of that Schedule) where that development is already authorised, executed or in the process of being executed.”</i></b>	<p>“Either-</p> <p>(i) The development as changes or extended may have significant adverse effects on the environment; or</p> <p>(ii) in relation to development of a description mentioned in a paragraph in Schedule 1 the thresholds and criteria in column 2 of the paragraph of the table applied to the change or extension are met or exceeded.”</p>
<b><i>“(b) Any change to or extension of development of a description listed in paragraphs 1 to 12 of column 1 of this table, where that development is already authorised, executed or in the process of being executed.”</i></b>	<p>“Either-</p> <p>(i) The development as changed or extended may have significant adverse effects on the environment; or</p> <p>(ii) in relation to a development of a description mentioned in column 1 of this table, the thresholds and criteria in the corresponding part of column 2 of this table applied to the change or extension are met or exceeded.”</p>

- 4.3.2 The Proposed Scheme was screened against the criteria set out in Schedule III of the 2017 EIA Regulations, and LBC in their Screening Opinion (reference: 20/00826/EIASC<sup>16</sup>) considered that, due to resultant noise impact, the Proposed Scheme is likely to have a significant environmental effect, which has the potential to harm human health. Therefore, the Proposed Scheme was classed as an EIA development and required the environmental effects of the proposal to be evaluated through the EIA process and presented in an ES.

## 4.4 EIA scoping

### Introduction

- 4.4.1 Scoping involves identifying the following:
- the people and environmental resources (collectively known as 'receptors') that could be significantly affected by the Proposed Scheme;
  - what aspects of the Proposed Scheme those receptors might be affected by; and
  - the work required to take forward the assessment of these potential likely significant effects.

<sup>16</sup> Screening application [online]. Available at: <https://planning.luton.gov.uk/online-applications/applicationDetails.do?keyVal=QDGC7HKG05100&activeTab=summary>

- 4.4.2 Our approach for this ES involved scoping being started at the outset of our work on the EIA, with the initial conclusions about the potential likely significant effects of the Proposed Scheme set out in a Scoping meeting (discussed with LBC, **Appendix 1C** in **Volume 3: Figures and Appendices**). The preparation of the Scoping Presentation was informed by information about the legislative and policy context relevant to the Proposed Scheme alongside a review of the 2014 Planning Permission's 2012 ES. It was also informed by the simple rule that, to be significant, an effect must be of sufficient importance that it should influence the process of decision-making about whether or not consent should be granted for the Proposed Scheme or an element of it. In this ES, this is referred to as the 'significance test'.
- 4.4.3 At the scoping stage, early identification of potentially significant effects is drawn utilising the significance test. These are based upon professional judgement, with reference to the Proposed Scheme's description and justification (**Chapter 3: Description of the Proposed Scheme**), drawing upon, as appropriate, available information about:
- the magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Scheme;
  - the sensitivity of receptors to these changes;
  - the duration of the changes;
  - the effects of these changes on relevant receptors;
  - the value of receptors; and
  - the spatial area over which changes may occur.
- 4.4.4 If the information that is available at the scoping stage does not enable a robust conclusion to be reached that a potential effect is not likely to be significant, the effect is then taken forward for further assessment.
- 4.4.5 Due to the limited nature of the proposed changes, the Applicant agreed with LBC that the scope was to be discussed in a meeting with LBC. The Scoping meeting (**Appendix 1C** in **Volume 3: Figures and Appendices**) set out what had been identified to be the potentially significant environmental effects for consideration in the ES and the approach to undertake the assessments. From the Scoping meeting, LBC and the Applicants team agreed that the environmental topics that will be assessed for each condition variation, as presented in **Table 4.2**.

Table 4.2 Environmental topics to be assessed as part of each condition variation

Environmental topic	Proposed variations	
	Condition 8 passenger throughput cap	Condition 10 noise contours
Air quality	Yes	No
Climate	Yes	No
Human health	Yes	Yes
Noise	Yes	Yes
Transport	Yes	No

- 4.4.6 Alongside this, it identified that the Proposed Scheme was unlikely to cause significant changes to the risks associated with: Biodiversity; Ground conditions; Historic environment; Landscape and visual; Major accidents and disasters; Socio-economics effects; Waste and resource use, and Water resource and flood risk, and as such recommended that these topics were scoped out of the EIA.
- 4.4.7 As such, the scope of the EIA has been progressively refined in response to comments from LBC (refer to **Section 4.4**), together with environmental information that has been obtained from assessment work carried out as part of the EIA.
- 4.4.8 The environmental topic chapters (**Chapters 6 - 10**) detail the final scope of the assessment in relation to effects assessed as potentially significant, which therefore require an in-depth detailed assessment. In some cases, effects that could be scoped-out (because they are considered not likely to be significant) have been scoped-in because further information is required to justify and explain this. All other effects (i.e. those which are not referred to in the environmental topic chapters) are not likely to be significant.

### Topics scoped out from further assessment

- 4.4.9 As reported in the Scoping meeting (**Appendix 1C in Volume 3: Figures and Appendices**), the following topics have been scoped out from further assessment, as there is limited scope for likely significant effects as a result of the Proposed Scheme.
- 4.4.10 The following topics have been scoped out of this assessment:
- Biodiversity;
  - Ground conditions;
  - Historic environment;
  - Landscape and visual effects;
  - Major accidents and disasters;
  - Socio-economics;
  - Waste and resource use; and
  - Water environment.

### Biodiversity

- 4.4.11 There are no material changes proposed, which seek to alter the overall built infrastructure of the airport. The increase in ATMs as a result of the increase in passengers would be minor and the direction of flights will remain the same, so there will be no change to the spatial pattern of ATMs, meaning there will not be an introduction of new ecological sites that could be sensitive to changes in noise.
- 4.4.12 There are no statutory sites within 5 km of LLA, including within the proposed noise contour limit. Knebworth Woods is a Site of Special Scientific Interest (SSSI) approximately 8 km east of the airport, the qualifying feature of Knebworth Woods is almost all ancient in origin and is ecologically diverse with rides, ponds, and small areas of both acidic and neutral grassland. Galley and Warden Hills SSSI, located approximately 6 km north of the Site, has been designated for calcareous grassland and plants which are not considered to be sensitive to changes in noise.
- 4.4.13 At this location, it is likely that aircraft will be at a sufficient height and distance whereby emitted noise is low enough to be considered as to not have a significant effect. As such, there is unlikely to

be a change in significant effects on the ecological environment that would require further consideration. The **biodiversity topic has been scoped out from further assessment**.

### Ground conditions

- 4.4.14 The 2012 ES highlighted that during the construction phase, following the implementation of mitigation measures, that 'none of the residual effects are likely to be significant, as all potential effects are reduced to slight or negligible'. During operation, it was noted that the most likely source of surface and groundwater contamination was from fuel oils, de-icing compounds, and firefighting foam, for which there are existing control mechanisms in place. As such, no significant effects were expected.
- 4.4.15 The Proposed Scheme will not change the nature of the construction works associated with the 2014 Planning Permission, which are ongoing. There are no additional construction requirements associated with the Proposed Scheme, therefore no additional contamination risks, dust generation, or increased excavation activity are anticipated. Similarly, operational activities are not anticipated to change, so risks due to site contamination, and contamination of controlled waters remain. Therefore, no additional significant effects would require further consideration.
- 4.4.16 As there are no additional significant effects anticipated as a result of the Proposed Scheme, the conclusions made within the 2014 Planning Permission 2012 ES remain valid and the **ground conditions topic has been scoped out from further assessment**.

### Historic environment

- 4.4.17 There are no material changes associated with the Proposed Scheme, which seek to alter the overall built infrastructure of the airport.
- 4.4.18 The increase in ATMs as a result of the increase in passengers due to the variation of Condition 8 would be minor and the direction of flights will remain the same, so there will be no change to the spatial pattern of ATMs. Therefore, there would only be a negligible impact from the increase to 19 mppa from in-air and ground aircraft noise, and road traffic noise. There will therefore only be a negligible change to the noise environment at designated sites due to the variation to Condition 8.
- 4.4.19 As reported in the 2014 Planning Permission 2012 ES, during the operational phase there would be no significant effects through a change to setting, resulting from the additional built development at the airport consented in the 2014 Planning Permission.
- 4.4.20 The 2012 ES did assess potential effects to the scheduled monument at Someries Castle as being of slight to moderate significance. The assessment also concluded that the development may affect Luton Hoo House, and registered parkland and listed buildings within the surrounding area. The degree of the effect to Luton Hoo House was assessed as slight, while effects to listed buildings were assessed as slight to negligible. The proposed variation to Condition 10 proposes the equivalent of a 1 dB change; a change in noise of 1 dB in the short-term is the smallest that is considered perceptible and is therefore considered negligible. The 2014 Planning Permission 2012 ES considered that a change in aircraft noise of 1 dB has 'no effect'. As such, the conclusions of the 2012 ES would not be altered as a result of the Proposed Scheme.
- 4.4.21 There are no Scheduled Monuments, World Heritage Sites, Registered Battlefields, or Registered Parks and Gardens located within the proposed noise contour limit. However, there are a number of listed buildings located within this area.
- 4.4.22 The nature of the proposed variation to Condition 10 will not result in a reduction or increase of any effect as assessed in the 2014 Planning Permission 2012 ES. There is not expected to be an increase in noise over 1 dB affecting listed buildings or their settings, so any increase would not be

considered perceptible. Therefore, the increase in noise (if any) would not affect any listed buildings or their settings and there are no additional significant effects that would require further consideration as a result of the proposed variation to Condition 10. The **historic environment topic has been scoped out from further assessment.**

### Landscape and visual effects

- 4.4.23 Guidance<sup>17</sup> states that in the consideration of exercising or performing of air navigation functions 'in relation to, or so as to affect, land in National Parks and AONB' the statutory purpose of those areas should be given due regard. The proximity of the Chilterns AONB is unlikely to be the subject of any significant noise effects, regardless of contours being sited closer to the boundary of the AONB. The height of aircraft passing over the AONB varies depending on location; between Hitchin and Toddington aircraft fly at an average of 5,000 ft, while between Ivinghoe and Berkhamsted arrivals average 4,000 ft and departures 8,000 ft. In all instances, this is above the 4,000 ft threshold whereby effects are deemed to be insignificant. The Proposed Scheme will result in no change to this prescribed flight height, or present flight paths taken by aircraft. Moreover, current guidance also states that '*given the finite amount of airspace available, it will not always be possible to avoid overflying National Parks or AONB, and there are no legislative requirements to do so as this would be impractical*'. As such, it is not expected that there will be any effects requiring further assessment.
- 4.4.24 It should be acknowledged that there will be a slight increase in the extent of the 57 dB daytime noise contour over the Chilterns AONB for the 2024 19 mppa scenario, however this will decrease in the 2028 19 mppa scenario. Nonetheless, the results of the screening assessment for noise have shown that there would be a negligible impact from the increase to 19 mppa from 18 mppa from in-air and ground aircraft noise, and road traffic noise on designated sites. There will, therefore, only be a negligible change to the noise environment at designated sites.
- 4.4.25 Moreover, there are no areas within proximity to LLA that would be referred to in the NPPF as being prized for their recreational and amenity value. Consequently, there is no requirement to undertake assessments considering the likely effects upon open spaces and quiet areas.
- 4.4.26 There are no material changes associated with the Proposed Scheme that seek to alter the overall built infrastructure of the airport. In addition, the increase in ATMs as a result of the increase in passengers would be minor and the direction of flights will remain the same, so there will be no change to the spatial pattern of ATMs. Therefore, it is not expected that there will be any landscape and visual adverse effects requiring further assessment in addition to those addressed in the 2014 Planning Permission 2012 ES. The **landscape and visual effects topic has been scoped out from further assessment.**

### Major accidents and disasters

- 4.4.27 The assessment of major accidents and disasters is a requirement of the 2017 EIA Regulations and as such, was not assessed as part of the 2014 Planning Permission 2012 ES. Whilst material changes associated with the Amendments are limited to the increase in passenger movements from 18 mppa to 19 mppa and the increase in noise contours, consideration needs to be given to whether this change could arise in likely significant effects.

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<sup>17</sup> Department for Transport (2017) Air Navigation Guidance 2017, [online]. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/653978/air-navigation-guidance-2017.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/653978/air-navigation-guidance-2017.pdf) [Checked October 2018].

- 4.4.28 There will be no associated construction works associated with the Proposed Scheme and as such no risk of accident (e.g. indirect effects on existing fuel storage tanks which could initiate a major accident, such as collision with a construction vehicle) will be introduced.
- 4.4.29 A Transport Assessment (TA) accompanies this application and has taken into account the effect of traffic associated with the Proposed Scheme and proposed environmental measures to ensure safety of the network.
- 4.4.30 Flight numbers have increased quicker than anticipated. The number of forecasted aircraft is consistent with the figures assessed as part of the 2014 Planning Permission 2012 ES, only the year in which the increase was anticipated has changed. As with all UK airports, licensing and controls imposed by the Civil Aviation Authority (CAA) are in place, and the slight increase in the number of aircraft movements will operate under the same licensing and controls (e.g. CAA, International Civil Aviation Organisation, and European Union Aviation Safety Agency). Additionally, it is not expected that there will be any alteration to aircraft flightpaths.
- 4.4.31 The control measures imposed at the airport will ensure that the likelihood of a major accident occurring as a result of the Amendments and impacting people, or the environment is limited.
- 4.4.32 The consideration of potential effects above has demonstrated that the Proposed Scheme is unlikely to result in likely significant effects, reflecting the limited changes in the risk profile of the development and the low likelihood of occurrence of an event that could constitute a major accident or natural disaster. Therefore, there are no likely significant effects that would require further consideration in relation to major accidents and disasters, and the **major accidents and disasters topic has been scoped out from further assessment.**

### Socio-economics

- 4.4.33 Since there are no material changes to the overall built infrastructure of the airport, or construction activities associated with the Proposed Scheme, there are no changes to the conclusions of the socio-economic assessment within the 2014 Planning Permission 2012 ES and therefore the conclusions of that assessment remain valid.
- 4.4.34 The 2012 ES assessed the effects upon employment and the local economy during operation of the 2014 Planning Permission as substantial and significant. There could be potential for beneficial effects upon employment and the local economy associated with the increase in passenger numbers.
- 4.4.35 Potential environmental effects on community facilities surrounding the Site have been considered. The potential effects that could arise from air quality, health or noise on community facilities have been assessed within the respective assessment chapters.
- 4.4.36 Therefore, as there are no additional significant socio-economic effects that would require further consideration as a result of the Proposed Scheme the conclusions made within the 2014 Planning Permission 2012 ES remain valid, and the **socio-economics topic has been scoped out from further assessment.**

### Waste and resource use

- 4.4.37 Since there are no material changes to the overall built infrastructure of the airport there will not be any generation of construction waste, so it is not expected that there will be any significant effects requiring further assessment.
- 4.4.38 An increase in passenger numbers will result in a minor increase in operational waste, which is within the routine capacity of LLA's waste management infrastructure and facilities operated by

their waste management contractors. The management of waste will continue as existing and there are unlikely to be significant effects associated with the operational waste.

4.4.39 As discussed in **Section 3.4**, a Site Waste Management Plan (SWMP) has been produced to support the application. The findings of the SWMP have shown that:

- there will be a slight – moderate impact on total waste arisings due to the additional passengers, and a minimal impact on the day-to-day management of operational waste. Strategies for managing and minimisation of waste at the airport will be outlined, with targets to reduce passenger waste rates;
- there is sufficient capacity within the airport’s existing infrastructure for routine operational waste arisings; and
- existing procedures for waste management at the airport will be sufficient to manage the additional waste produced from the increase in passengers.

4.4.40 The variation to Condition 8 will not result in any likely significant effects on waste at the airport and the existing infrastructure at the airport will be able to handle the increase in passengers. Due to the above, the **waste and resource use topic has been scoped out from further assessment.**

### Water environment

4.4.41 LLA comprises of large impermeable areas associated with the runway, taxiways, and apron, as well as buildings and large car parking areas. The rest of the airport, including the land between and around the runway and taxiways is short, maintained grass.

4.4.42 With regards to the area to which surface water run off could drain, the airport is set within an urban landscape to the north and a largely agricultural landscape to the south, comprising of primarily pasture. To the north lies Luton, with the area adjacent to LLA being predominantly residential in nature. LLA is within the Lee Upper drainage catchment, which has a total of 23 rivers or canals within it. No surface water bodies are present on-site.

4.4.43 The Environment Agency Flood Map for Planning<sup>18</sup> identifies LLA to be located within Flood Zone 1, so has a low probability of flooding. The River Lea, one of the tributaries to the River Thames, is located approximately 0.5 km to the south-west of LLA; land on either side of the River is designated as Flood Zone 3 (so at a high probability of flooding).

4.4.44 Since there are no material changes proposed that seek to alter the overall quantum of built development or increase impermeable areas, it is not expected that there will be any additional significant effects requiring further assessment in relation to water resources and flood risk.

4.4.45 A Drainage and Water Supply Infrastructure Appraisal has been carried out and submitted with the Planning Application. This appraisal evaluates the ability of the existing drainage and water supply systems to accommodate the additional passengers arising from the Proposed Scheme. This has evaluated the existing surrounding public infrastructure conveying contaminated surface and foul water, and incoming water supply.

4.4.46 There will be an increase in demand for water from the network due to the additional 1 mppa associated with the Condition 8 variation. However, as the airport plans to restrict peak passenger throughput to those currently experienced under the 2014 Planning Permission at 18 mppa (see **Section 3.3, Graphic 3.1**), neither foul water discharge nor potable water demand will be subject to an increase at peak times. This demand can be met by the local water supplier (Affinity Water).

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<sup>18</sup> The Environmental Agency Flood Map for Planning [online]. Available at: <https://flood-map-for-planning.service.gov.uk/>

- 4.4.47 There will be no increase in the peak foul water rate, as peak passenger throughput will be limited to that currently experienced under the 2014 Planning Permission. Although there will be an increase of foul effluent discharge annually, Thames Water has confirmed that this increase in volume can be accommodated within the local network.
- 4.4.48 An increase in surface water contamination from de-icer use will be minimal. This is because of improved operational application techniques and most of the additional aircraft movements coming during non-winter months when the application of de-icer is not required.
- 4.4.49 The Proposed Scheme will not result in any likely significant effects and the local network is able to handle the additional capacity due to the increase in passengers. Due to this, the **water environment topic has been scoped out from further assessment.**

## 4.5 Consultation

- 4.5.1 As part of the Proposed Scheme, consultation, in the form of meetings, telephone and written correspondence, was undertaken with LBC and its technical advisors to agree the assessment methodologies for technical studies and identify any associated sensitivities or concerns. These are discussed in further in each technical chapter within this ES.
- 4.5.2 A non-statutory public consultation exercise was also undertaken to gather views from the local community, statutory consultees, the wider public, and those with an interest in the Proposed Scheme. Views were specifically sought on:
- plans for increasing the airport's capacity;
  - managing the effects of the proposals on the environment and local communities;
  - opportunities to enhance the local area through the proposals;
  - whether the proposals would help to support regional prosperity and economic growth; and
  - the documents published as part of the consultation.
- 4.5.3 A Consultation Summary Report (CSR) has been prepared that presents the results of the non-statutory consultation held by the Applicant on its proposals and accompanies the Section 73 Application for the Proposed Scheme. This CSR provides details of the consultation undertaken, the number of responses that were received during the consultation period and a summary of the comments received, which are grouped by topic. **Table 4.1** provides an overview of environmental issues that were raised during the consultation, identifies how the EIA has had regard to those issues, and where further information can be found in this ES.

Table 4.1 Overview of environmental issues raised during non- statutory consultation

Issue raised	Consultee	Response and how considered in this ES
<p>Some consultees said that they wanted more information on the following environmental issues:</p> <ul style="list-style-type: none"> <li>● air quality and air quality breaches;</li> <li>● the impacts of the proposals, including environmental, health and climate change impacts;</li> <li>● how impacts, such as noise, air pollution and other environmental impacts will be managed and mitigated;</li> </ul>	Various	<p><b>Chapter 6: Air quality</b> presents the air quality assessment that has assessed the likely significant effects arising from the proposed change to increase the passenger throughput cap from 18 mppa to 19 mppa. The scope of this assessment was agreed with LBC. It is the operational changes arising from this passenger uplift that would generate additional surface access</p>

Issue raised	Consultee	Response and how considered in this ES
<ul style="list-style-type: none"> <li>the number of additional aircraft movements required to accommodate the increase in passenger numbers;</li> <li>how the proposal would support the local economy;</li> <li>how the existing transport infrastructure would cope with increased passengers;</li> <li>how the daytime and night-time noise contours will be reduced once the temporary variation of Condition 10 has ended.</li> </ul>		<p>movements and atmospheric emissions from a variety of transport modes.</p> <p><b>Chapter 7: Climate</b> assesses the impact of the increase in Greenhouse Gas (GHG) emissions from the Proposed Scheme on the global climate. It identifies the extent to which the magnitude of emissions associated with the 19 mppa airport, compared to the existing 18 mppa airport affects the ability to meet national budgets and targets for climate change.</p> <p><b>Chapter 8: Noise</b> presents the noise assessment that has assessed likely significant impacts arising from the Proposed Scheme. It presents the likely significant effects arising from the proposed increases to the daytime and night-time noise contours through the variation of Condition 10 for the period to the end of 2027, and from 2028 onwards.</p> <p><b>Chapter 9: Health</b> has assessed the likely significant effects arising from the proposed change to raise the passenger throughput cap to 19 mppa, and the resulting changes in air transport movements and surface access movements. The assessment also identifies the likely significant effects of the proposed increase of the noise contours through the variation of Condition 10 for the period to the end of 2027, and from 2028 onwards.</p> <p><b>Chapter 10: Transport</b> has assessed the likely significant effects arising from the proposed increase of the passenger throughput cap to 19 mppa. It is the operational changes arising from this condition that generate the additional surface access movements from a variety of transport modes. It also demonstrates how the existing transport infrastructure would be able to deal with the additional passenger numbers. Additional information is presented in both the Travel Plan, and Transport Assessment which accompany the Section 73 Application.</p> <p><b>Table 3.3, Table 3.4, and Appendix 3A</b> present comparative tables that show information regarding the number and types of additional aircraft movements required to accommodate the increase in passenger numbers to 19 mppa. The forecasts presented in these tables have</p>

Issue raised	Consultee	Response and how considered in this ES
Comments were raised by respondents regarding the information provided on aircraft movements. Specifically, comments said that the data did not allow a direct comparison between actual movements in 2018 and 2019.	Various	<p>been used to underpin the assessments carried out and presented within this ES and are based on the current fleet modernisation and renewal strategies of the airlines that operate out of LLA.</p> <p><b>Table 3.3, Table 3.4, and Appendix 3A</b> present comparative tables that show information regarding the number and types of additional aircraft movements required to accommodate the increase in passenger numbers to 19 mppa. The forecasts presented in these tables have been used to underpin the assessments carried out and presented within this ES and are based on the current fleet modernisation and renewal strategies of the airlines that operate out of LLA.</p>

## 4.6 Overview of assessment methodology

### Introduction

- 4.6.1 All the topic assessments presented in the ES have been undertaken on the basis of a description of the Proposed Scheme provided in **Chapter 3: Description of the Proposed Scheme**.
- 4.6.2 For each topic, the assessment of likely significant effects has been undertaken by competent experts with relevant specialist skills, drawing on their experience of working on other development projects, good practice in EIA and on relevant published information (**Appendix 1D** and **Appendix 1E** in **Volume 3: Figures and Appendices**). For both **Chapter 9: Noise** and **Chapter 10: Transport** use has been made of modelling.
- 4.6.3 With few exceptions, each topic chapter follows a common format, as outlined below:
1. Introduction;
  2. Limitations of this assessment;
  3. Legislative and policy context;
  4. Data gathering methodology;
  5. Overall baseline;
  6. Consultation;
  7. Scope of the assessment;
  8. Environmental measures embedded into the scheme;
  9. Assessment methodology;
  10. Assessment of effects - this sub-section excludes cumulative effects and deals separately with each receptor or category of receptors that could be significantly affected. The assessment is made against the predicted future baseline (see **Section 4.7**);

11. Consideration of optional additional mitigation or compensation;
12. Conclusion of significance evaluation; and
13. Implementation of environmental measures.

## 4.7 Identification of baseline conditions

- 4.7.1 To determine the baseline conditions that should be used for the assessment of the likely significant effects of the Proposed Scheme, it is necessary to define the current baseline conditions and then to decide whether these conditions are likely to change by the 'assessment years' that are selected for the operation of the proposed variations to Conditions 8 and Condition 10.
- 4.7.2 If this future baseline is more likely to occur than the current baseline, the future baseline is used for the assessment of likely significant effects. However, in many cases it may conclude that the current baseline is just as likely, or even more likely, to occur in the assessment years than would be the case with any future baseline conditions. When this is the case, the current baseline is used for the assessment.
- 4.7.3 Generally, in EIA the current baseline is determined for the 'Study Area' of each environmental topic by a combination of desk-based research, consultation with the relevant statutory and non-statutory authorities, and where, required, field survey work.
- 4.7.4 In this instance, the Proposed Scheme does not relate to a physical structure however, noise contours associated with the variations proposed mean the Study Area assessed as part of the 2014 Planning Permission 2012 ES did not include the additional land now included within the noise contours for the proposed Condition 10 variation.
- 4.7.5 Details of the Study Area are discussed in the baseline section of each environmental topic chapter. These chapters also explain the basis for defining the baseline conditions.
- 4.7.6 Part of understanding baseline conditions involves identifying nearby developments (and other land use / environmental changes) that need to be considered within the EIA due to the likelihood that those developments would contribute to cumulative effects associated with construction phases occurring at the same time or introducing new receptors to the Study Area during the relevant baseline year. If cumulative schemes are unlikely to occur at the same timescales, they should not be referred to. Further guidance on cumulative effects is provided in **Section 4.8**.

## 4.8 Overview of approach to evaluation of significance

### Introduction

- 4.8.1 A requirement of an ES is to set out the conclusions that have been reached about whether the Proposed Scheme would result in any additional likely significant environmental effects or increases in significance to those identified within the 2014 Planning Permission 2012 ES. Reaching a conclusion about which effects, if any, are likely to be significant is the culmination of an iterative process that involves the following stages:
- identifying those effects that could be likely to be significant (see **Section 4.4** on scoping);
  - assessing the effects of the Proposed Scheme against the baseline (current or future, as appropriate); and
  - concluding whether these resultant effects are likely to be significant.

- 4.8.2 **Chapters 6 to 10** describe the approaches that have been used, in relation to the stages outlined in the bullet points above, for each of the environmental topics that are considered in this ES.

### Identification of likely significant effects

- 4.8.3 To inform the identification of likely significant effects, during the early stages of the assessment process, information pertaining to current and future operation at LLA was considered. This enabled the assessment of potential environmental changes caused by the Proposed Scheme to be refined, including their spatial extent and characteristics (e.g. their magnitude, frequency, duration etc.).
- 4.8.4 The identification of receptors under consideration within the assessments draws upon available information about environmental change. The technical assessments, undertaken in **Chapters 6 - 10**, describe how environmental changes and resulting effects are assessed, together with the topic specific approaches that have been used to identify the receptors affected by the Proposed Scheme.

### Types of effects

- 4.8.5 Paragraph 5 of Schedule 4 of the 2017 EIA Regulations<sup>19</sup> states:
- "The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development."*
- 4.8.6 This ES considers all these types of effects where they are relevant to different environmental topic chapters, with the exception of cumulative effects, which are dealt with separately in **Section 4.9**.

#### Direct effects

- 4.8.7 Direct effects are those that result directly from a scheme. For example, where a machine disturbs an area of habitat; the associated physical activity could result in a change to the receptor (i.e. the habitat).

#### Indirect and secondary effects

- 4.8.8 Indirect and secondary effects are those that result from consequential change caused by the scheme. As such they would normally occur later in time or at locations farther away than direct effects. An example would be where water or gas pipes are damaged as a result of the development, and the consequences of that damage is fire or flood risk to other receptors.

#### Transboundary effects

- 4.8.9 Transboundary effects are those that would affect the environment in another state within the European Economic Area (EEA). Unless these effects are considered significant, they are not reported within the topic chapters (**Chapters 6 - 10**) of this ES. Following EIA guidance, transboundary effects related to climate have been assessed within **Chapter 7: Climate**.

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<sup>19</sup> The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, Schedule 4, Paragraph 5 [online]. Available at: <http://www.legislation.gov.uk/ukxi/2017/571/contents/made> [Checked November 2020].

## Temporal effects

- 4.8.10 As discussed in **Section 4.3**, temporal effects are typically defined as being permanent or temporary as follows:
- **Permanent** - these are effects that will remain even when the scheme is complete, although these effects may be caused by environmental changes that are permanent or temporary. For example, an excavator that is temporarily driven over an area of valuable habitat could cause so much damage that the effect on this vegetation would be permanent; or
  - **Temporary** – these are effects that are related to environmental changes associated with a particular activity and that will cease when that activity finishes.

## Significance evaluation

### Overview

- 4.8.11 The receptors that could be significantly affected are identified within each topic chapter. The approach that is adopted to determine whether the effects on these receptors are significant is to apply a combination of professional judgement and a topic-specific significance evaluation methodology that draws on the results of the assessment work that has been carried out.
- 4.8.12 Receptors that are likely to be significantly affected as a result of the Proposed Scheme are identified in the topic chapters (**Chapters 6 - 10**). The adopted approach to determine whether effects on receptors is significant is to apply a combination of professional judgement and significance evaluation methodology which is topic-specific to draw upon the results of the assessment.
- 4.8.13 In applying this approach to significance evaluation, it is necessary to ensure that there is consistency between each environmental topic in the level at which effects are considered to be significant. Therefore, it is inappropriate for the assessment of one topic to conclude that minor effects are significant, when, for another topic, only comparatively major effects are significant.
- 4.8.14 In order to achieve the desired level of consistency, each environmental topic lead has been guided in their decision-making about likely significance by the '*significance test*' that informed the preparation of the scoping report (see **Section 4.4** above), as well as the relevant topic-specific significance evaluation methodology.
- 4.8.15 Conclusions about significance are arrived at using the following: professional judgement; available information on the magnitude and other characteristics of potential changes expected to be caused by the Proposed Scheme; receptors' sensitivity to these changes; the value of the receptor; and the effects of these changes on relevant receptors.
- 4.8.16 In some cases, use of the '*significance test*' alone will enable a conclusion to be reached in the '*Scope of the assessment*' section of the topic chapter (Sub-section 6 in paragraph 4.6.3), without the need for more detailed assessment, that a potential effect is not likely to be significant. However, in other cases, effects identified in the '*Scope of the assessment*' section are taken forward for further assessment in the subsequent section(s) of each topic chapter.
- 4.8.17 For some of these effects, relatively little assessment work may be required to reach a conclusion that an effect is not significant. But, in other cases, more extensive assessment work is required. Sometimes the application of the '*significance test*' is sufficient to support this conclusion but, in other cases, the relevant topic-specific significance evaluation methodology is used to inform the evaluation of significance (to determine whether an effect is or is not significant).

- 4.8.18 Having applied the relevant topic-specific significance evaluation methodology, the topic specialists check the conclusions against the significance test. If this test results in a different conclusion to that reached using the significance evaluation methodology, a detailed justification is provided as to why this different conclusion is valid.
- 4.8.19 For some of the topics that are assessed in the ES, there is published guidance available about significance evaluation. Where such guidance exists, even if in draft, it has been used to inform the development of the significance evaluation methodologies that are used in this ES. For other topics, it has been necessary to develop methodologies without the benefit of guidance. This has involved technical specialists drawing on their previous experience of significance evaluation in EIA.

### Evaluation matrices

- 4.8.20 Significance evaluation involves combining information about the sensitivity, importance or value of a receptor, and the magnitude and other characteristics of the changes that affect the receptor. The approach to using this information for significance evaluation is outlined below.

### *Receptor sensitivity and importance/value*

- 4.8.21 The value of a receptor is largely a product of the importance of an asset, as informed by legislation and policy, and as qualified by professional judgement. For example, receptors for landscape, biodiversity or the historic environment may be defined as being of international or national importance. Lower value resources may be defined as being important at a county or district level. For each environmental topic, it is necessary to provide a detailed rationale that explains how the categories of importance or value have been used. The sensitivity of a receptor will be dependent on its ability to respond to change and the nature and duration of the change.
- 4.8.22 The use of a location or physical element that may be representative of receptors, e.g. human beings, would also play a part in its classification in terms of sensitivity and importance/value. For example, when considering effects on the amenity of a human population, a location used for recreational purposes may be valued more than a place of work and may be considered more sensitive to changes brought about by the Proposed Scheme.

### *Magnitude of change*

- 4.8.23 The magnitude of change affecting a receptor that would be affected by the Proposed Scheme would be identified on a scale from very low to very high. As with receptor sensitivity and importance/value, a rationale is provided in each topic chapter (**Chapters 6 - 10**) that explains how the categories of environmental change are defined. For certain topics, the magnitude of change would be related to guidance on what levels of change are acceptable (e.g. for air quality or noise) and be based on numerical parameters. For other changes, it will be a matter of professional judgement to determine the magnitude of change, using descriptive terms.

### *Determination of significance*

- 4.8.24 The significance of an effect is determined with reference to information about the nature of the Site and the Proposed Scheme, the receptors that could be significantly affected and their sensitivity and importance/value, together with the magnitude of environmental changes that are likely to occur. The effects of the environmental changes are considered with respect to their duration, frequency, timing, and reversibility.
- 4.8.25 Sensitivity or value and the characteristics of environmental changes can be combined using a matrix (see **Table 4.3**). In addition, professional judgement is applied because, for certain

environmental topics, the lines between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying.

- 4.8.26 Variations to this approach will be detailed in the relevant 'Significance evaluation methodology' sub-section contained in each environmental topic chapter (**Chapters 6 - 10**).
- 4.8.27 Definitions of how matrix categories are derived for each topic are also outlined in the relevant environmental topic chapter (**Chapters 6 - 10**), along with an explanation of receptor sensitivity, magnitude of change and levels of effect that are considered significant under the 2017 EIA Regulations.
- 4.8.28 Within the matrix that is used in most significance evaluation exercises reference is made to:
- **Major effects**, which will always be determined as being significant in EIA terms;
  - **Moderate effects**, are likely to be significant, although there may be circumstances where such effects are considered not significant on the basis of professional judgement; and
  - **Minor or negligible effects**, which will always be determined as not significant.

Table 4.3 Significance evaluation matrix

		Magnitude of change				
		Very high	High	Medium	Low	Very low
Sensitivity/importance/value	Very high	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Potentially significant)
	High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)
	Medium	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
	Very low	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

Note: Significant effects are those identified as 'Major'. 'Moderate' effects would normally be deemed to be significant. However, there may be some exceptions, depending on the environmental topic and the application of professional judgment.

## 4.9 Assessment of cumulative effects

### Introduction

- 4.9.1 There is a requirement under the 2017 EIA Regulations to consider the cumulative effects of the Proposed Scheme. This element of the assessment has identified whether any of the individual effects of the Proposed Scheme would combine to create a cumulative effect greater than the sum of the individual effects.

- 4.9.2 The cumulative effects assessment considered this in two ways:
- **Inter-project effects:** consideration has been given to whether there is the potential for the effects of the Proposed Scheme and effects of other 'major' developments to combine and result in a significant environmental effect; and
  - **Intra-project effects:** typically, these effects occur when different activities associated with the Proposed Scheme act upon the same environmental receptor. In determining such effects, consideration has been given to the sensitivity of the receptor and the magnitude of environmental change. Consideration is given to both the interaction of significant effects and the interaction of different impacts from project activities even if individually they are not significant.
- 4.9.3 The proposed variation to Condition 8 and Condition 10 intends to change the noise environment and the passenger throughput cap. Consideration has therefore been given to the potential inter-project and intra-project effects that could arise from a change in the noise environment, and where the increased passenger throughput could have subsequent air quality, climate, noise, health, and transport effects. All other cumulative effects as assessed within 2012 ES remain valid, since there are no further material changes as a result of the Amendments that would alter the assessment previously undertaken.

### Inter-project effects

- 4.9.4 Typically, for each environmental topic that is dealt with in this ES Addendum, an assessment is undertaken of how the environmental effects resulting from the Proposed Scheme, could combine with the same topic-related effects generated by other developments to affect a common receptor. To do this, it is important to first identify which other developments need to be included in the cumulative effects assessment under each environmental topic assessment.
- 4.9.5 The approach taken within this ES Addendum differs to that taken within the 2014 Planning Permission 2012 ES, however for robustness this ES has used the methodology set out in the Planning Inspectorate Advice Note Seventeen: Cumulative effects assessment<sup>20</sup> relevant to nationally significant infrastructure projects. This methodology involves first acknowledging that the availability of information necessary to conduct a cumulative effects assessment will partly depend on the prevailing status of the relevant other developments within the Study Area. This process then develops this concept further by grouping the other developments into tiers, which reflect the likely degree of certainty attached to each development, with Tier 1 being the most certain and Tier 3 the least certain (see **Table 4.4**). This is illustrated in **Table 4.4**, which is a slightly modified version of Table 3 in the advice note to reflect that it is being applied to a *Town and Country Planning Act 1990* application.

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<sup>20</sup> The Planning Inspectorate, Cumulative Effects Assessment Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects, August 2019 [online]. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/12/Advice-note-17V4.pdf> [Checked November 2020].

Table 4.4 Other developments to be considered in the Cumulative Effects Assessment

Hierarchy of other developments	Certainty of other developments
<b>Tier 1</b>	Under construction*.
	Permitted application(s), whether under the <i>Planning Act 2008</i> or other regimes, but not yet implemented.
	Submitted application(s), whether under the <i>Planning Act 2008</i> or other regimes, but not yet determined.
<b>Tier 2</b>	Projects which have been received by a relevant local planning authority, and where a scoping report has been submitted.
<b>Tier 3</b>	Projects which have been the subject of pre-application discussion with a relevant LPA, 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.
	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.

Decreasing  
level of detail  
likely to be  
available

Source: Adapted from the Planning Inspectorate Advice Note Seventeen<sup>21</sup>

\* Where other projects are expected to be completed before construction of a scheme, and the effects of those projects are fully determined, effects arising from them are considered as part of the baseline and therefore as part of the assessment of both the construction and operational phases. This ES will therefore clearly distinguish between projects forming part of the baseline and those in the cumulative effects assessment

- 4.9.6 Cumulative effects have been assessed where there are additional developments located within the noise contour limits, which have been granted consent between the baseline assessment year assessed within the 2012 ES (i.e. 2011) and 2020. Additionally, the assessment has taken account of the growth in traffic on the highway network that could arise from other developments.
- 4.9.7 A search of the planning portal confirmed that a total of 6,571 dwellings have been given consent within the noise contours limit since 2011. Assuming an average occupancy of 2.7 persons per house, based on census data for the area, this indicates that approximately 17,742 additional residents now live within the study area for the proposed variation to Condition 10.
- 4.9.8 These include: Land adjacent to Caddington Road, Land Adjacent to Caddington Road and Newlands Road, 13 – 31 Dunstable Road, Land at Cotswold Farm Business Park, Former Travis Perkins Site Dallow Road, 1 – 11 Cumberland Street, amongst other single dwelling schemes.
- 4.9.9 The assessments for noise and health have calculated the population growth in the area for the purposes of noise modelling. This has identified a population increase since 2011 (the baseline assessment year) that has been attributed to each noise contour. This population growth calculation has assumed a higher population growth than identified above and as such, the assessment of cumulative schemes has been based on the population growth calculation rather than the 2014 Planning Permission and planning permissions granted since the 2012 ES. **No likely significant inter-project effects** are predicted to occur from the Proposed Scheme together with 'other developments'.

<sup>21</sup> The Planning Inspectorate, Cumulative Effects Assessment Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects, August 2019 [online]. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/12/Advice-note-17V4.pdf> [Checked November 2020].

## Intra-project effects

- 4.9.10 The second type of cumulative effects assessment involves assessing whether any of the individual environmental topic effects resulting from the proposed variation to Condition 8 and Condition 10, which are not significant in their own right, could combine to create effects that are significant.
- 4.9.11 Typically, the first step is to identify the environmental topics that have common receptors, and then to consider whether the topic effects on any common receptors are likely to combine. The most likely types of receptors that could fall into this category are those pertaining to the amenity of the relevant human population. For example, the occupants of a residential property in close proximity to the Proposed Scheme might be subject to adverse effects in terms of noise, vibration, air quality, traffic, as well as with regard to visual amenity, or any combination thereof, each of which, when assessed individually, is not significant in EIA terms, but when assessed cumulatively, the effects are judged to be significant.
- 4.9.12 The potential for inter-related effects has been identified at receptors that could experience noise and health effects, and these are reported in **Chapter 8: Health** and **Chapter 9: Noise**. The air quality, climate, and transport assessments have identified that no likely significant effects would occur. There are, therefore, unlikely to be any likely significant intra-project effects involving interactions with these aspects. Additionally, all other effects as assessed within the 2014 Planning Permission 2012 ES remain valid since there are no material changes to the application that would impact upon the previous assessment undertaken. **No likely significant intra-project effects** are predicted to occur from the Proposed Scheme.

## Summary

- 4.9.13 The approach adopted to addressing the potential for likely significant cumulative effects is a proportionate one. The assessments presented in **Chapter 6 to Chapter 10** show that the proposed changes to the operation of the airport are unlikely to result in likely significant effects of a magnitude which could interact with other projects and result in likely significant cumulative effects.
- 4.9.14 The assessment of the potential traffic impacts on the local highway network (**Chapter 10: Transport**), and discussions held with Highways England and Luton Borough Council, have established that the level of flow increase is unlikely to have a significant impact on the operation of the network. As such, further detailed transport modelling analysis would not be warranted at this stage. Additionally, the air quality impact assessment presented in **Chapter 6: Air quality**, shows that the impacts arising from the change in road traffic movements, and from the uplift to 19 mppa, shows that there would be negligible effects on air quality. The assessments of noise (**Chapter 9: Noise**) and health (**Chapter 8: Health**) have also accounted for additional developments since 2011, which have introduced new dwellings, and included them as new receptors.