

Statutory Consultation 2022

Preliminary Environmental Information Report

Volume 3: Appendix 8.3

**Habitats Regulations Assessment
No Significant Effects Report**

Contents

	Page
1 Introduction	1
1.1 Background	1
1.2 Report Structure	1
1.3 HRA Process	1
2 Project Description	3
2.1 Site Location	3
2.2 Proposed Works	3
2.3 Environmental Baseline	4
3 Guidance and Methodology	4
3.1 Guidance and Policy	4
3.2 Desk Study Information	4
3.3 HRA Methodology	5
4 Screening Assessment	14
4.1 Potential effects of the proposed development	14
4.2 Consideration of Effects and Significance	15
5 Conclusion	20
Appendix A. Figures	21
Appendix B. Planning Inspectorate Advice Note 10 HRA Screening Matrices	22
Glossary and Abbreviations	28
References	30

Tables

Table 3.1: European Sites within 30km of the Proposed Development

Table 4.1: Summary of effects during construction and operation on European Sites within 30km of the Proposed Development.

1 INTRODUCTION

1.1 Background

1.1.1 Luton Rising (a trading name for London Luton Airport Limited (the Applicant)) proposes to submit an application for development consent for works that will allow London Luton Airport (the airport) to expand to accommodate 32 million passengers per annum (mppa) (the 'Proposed Development'). An Environmental Impact Assessment (EIA) Scoping Report (provided in **Appendices 1.1 and 1.2** in Volume 3 to the Preliminary Environmental Information Report (PEIR) has been prepared which sets out the proposed scope of the EIA that will be undertaken and reported in the Environmental Statement (ES) that will accompany the application for development consent.

1.1.2 As part of the EIA Scoping exercise, this Habitats Regulations Assessment (HRA) No Significant Effects Report (NSER) has been prepared to determine if there are potential for effects from the Proposed Development on European Sites (which comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), possible SPAs and candidate SACs) and Ramsar sites, in compliance with the requirements of The Conservation of Habitats and Species Regulations 2017 (as amended) ('Habitats Regulations'). These sites constitute the National Site Network.

1.1.3 This HRA NSER is provided as part of the Preliminary Environmental Information Report as part of statutory consultation.

1.2 Report Structure

1.2.1 This report is structured as follows:

- a. **Section 2** describes the Proposed Development (the 'project' in HRA terms) and the environmental baseline;
- b. **Section 3** outlines the data and methodology used in the assessment;
- c. **Section 4** provides information on European Sites that are considered in the assessment;
- d. **Section 5** provides a screening assessment (i.e. Test of Likely Significant Effects) for the potential pathways for effects; and
- e. **Section 6** provides a summary and conclusion.

1.3 HRA Process

1.3.1 Regulation 63 of the Habitats Regulations requires a Competent Authority to undertake an 'appropriate assessment' of any plan or project (alone or in combination with other plans and projects) which is likely to have a significant effect on the features or a European Site, unless the project is directly connected with the management of the site. In light of the conclusions of the assessment, the Competent Authority may proceed with or consent to the plan or project only after having ascertained that it will not adversely affect the

integrity of the European Site. UK Government policy requires proposed SACs and SPAs to be treated as European Sites along with Ramsar sites.

- 1.3.2 All plans and projects should identify any possible effects early in the plan/project making process and then either alter the plan/project to avoid them or introduce mitigation measures to the point where no adverse effects remain. The 'Competent Authority' shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site or sites concerned. In coming to a conclusion, the Competent Authority must consult with the Statutory Nature Conservation Organisation (Natural England) and have regard to their comments. They may also consult the general public if considered appropriate.
- 1.3.3 The assessment of a project under the Habitats Regulations can be split into four stages. Stage 1 is the assessment of the likelihood of a plan or project having a significant effect on the features of a European Site. This is the trigger for the need for an Appropriate Assessment as set out in Regulation 63(1). The Appropriate Assessment (Stage 2) is the detailed consideration of the potential effects of the plan or project in relation to the conservation objectives for the features of the European Site(s) to determine if there is likely to be an adverse effect on the integrity of the site (i.e. an effect that would compromise the site meeting its conservation objectives). Providing it can be demonstrated that with appropriate mitigation measures the plan or project would not give rise to an adverse effect on the integrity of a European Site, the plan or project can proceed.
- 1.3.4 Where this cannot be demonstrated or there is uncertainty, the Appropriate Assessment would then need to consider if there were any other alternatives to the plan or project (Stage 3) that would not give rise to adverse effects on the integrity of the European Site. If there are no alternatives, Stage 4 would then consider if there are any Imperative Reasons of Overriding Public Interest, only at this stage can Compensatory Measures be considered.
- 1.3.5 The implication of the Court of Justice of the European Union (CJEU) judgement referred to as People Over Wind (Peter Sweetman v Coillte Teoranta, Case C323/17) is that competent authorities can no longer take account of any "measures that are intended to avoid or reduce the harmful effects of the envisaged project on the site concerned", when considering at the HRA screening stage whether the plan or project is likely to have an adverse effect on a European Site. The effect of this is that the screening stage must be undertaken on a precautionary basis with no regard to any proposed integrated or additional avoidance or reduction mitigation measures.
- 1.3.6 Consequently, any project which identifies an impact on a European Site where likely significant effects cannot be excluded and where avoidance and mitigation is required will need to address these measures during Stage 2 Appropriate Assessment.
- 1.3.7 This document constitutes a No Significant Effects Report (NSER) and covers Stage 1, the Test of Likely Significant Effects. It has been prepared with reference to the Planning Inspectorate Advice Note 10 (Habitats Regulations Assessment) (Ref. 1) on the basis that an application for a Development

Consent Order is being made for the Proposed Development . Matrices required by PINS Advice Note 10 are included at **Appendix A** to this report.

2 PROJECT DESCRIPTION

2.1 Site Location

2.1.1 The Proposed Development is located to the immediate east and north east of the existing airport. New infrastructure will be predominately located within Luton Borough, with earthworks, construction activities and replacement open space extending into north Hertfordshire. The Main Application Site is broadly centred on National Grid Reference TL124215 (refer to **Figure 1, Appendix A**).

2.2 Proposed Works

2.2.1 The Proposed Development mainly consists of the provision of new infrastructure including:

- a. extension and remodelling of the existing passenger terminal (Terminal 1) to increase the capacity;
- b. new passenger terminal building and boarding piers (Terminal 2);
- c. earthworks to create an extension to the current airfield platform, material for these earthworks would be generated on site;
- d. airside facilities including new taxiways and aprons, together with relocated engine run-up bay and fire training facility;
- e. landside facilities, including buildings which support the operational, energy and servicing needs of the airport;
- f. enhancement of the existing surface access network, including a new dual carriageway road accessed via a new junction on the existing New Airport Way (A1081) to the new passenger terminal along with the provision of forecourt and car parking facilities;
- g. extension of the Luton Direct Air to Rail Transit (DART) with a station serving the new passenger terminal;
- h. landscape and ecological improvements, including the replacement of existing open space; and
- i. further infrastructure enhancements and initiatives to support our goal of a net zero airport operation by 2040, with interventions to support carbon neutrality being delivered sooner including facilities for greater public transport usage, improved thermal efficiency, electric vehicle charging, on-site energy generation and storage, new aircraft fuel pipeline connection and storage facilities and sustainable surface and foul water management installations.

2.3 Environmental Baseline

- 2.3.1 The undulating land within 2km of the Proposed Development mainly comprises the existing airport, Luton town and transport infrastructure, buildings, amenity grassland, species-poor semi-improved grassland, arable land, hedgerows, scrub and semi-natural broadleaved woodland.
- 2.3.2 Detailed studies for various ecological receptors have been undertaken to support the project and are reported separately. A full ecological assessment of impacts from the project will be presented within the Environmental Statement that will accompany the application for development consent.

3 GUIDANCE AND METHODOLOGY

3.1 Guidance and Policy

- 3.1.1 This information has been informed by the following guidance and policy documents:
- a. Tyldesley, D. & Chapman, C. (2017). The Habitats Regulations Assessment Handbook (6th Issue) (Ref. 2);
 - b. Tyldesley, D. & Chapman, C. (2018). People Over Wind - some Implications of the Judgment. The Habitat Regulations Journal, 10, 19 to 23 (Ref. 3); and
 - c. The Planning Inspectorate (2017): Advice Note Ten: Habitat Regulations Assessment relevant to Nationally Significant Infrastructure Projects (version 8) (Ref. 1).
- 3.1.2 This guidance is intended to improve understanding of how projects are regulated under the Habitats Directive. This guidance draws on project experience and case law in Britain and Europe.
- 3.1.3 PINS Advice Note 10 (Ref. 1) requires an evaluation of the potential for the Proposed Development to require other consents which could also require HRA by different Competent Authorities, and a statement as to whether the Proposed Development boundary overlaps with devolved administrations or other European Economic Area (EEA) States. It is confirmed that the Proposed Development boundary does not overlap with areas of devolved administrations or with those of EEA States.

3.2 Desk Study Information

- 3.2.1 In addition to the guidance noted above, the following websites were used to gather information on the European Sites:
- a. Multi-Agency Geographic Information for the Countryside (MAGIC) website; and
 - b. Joint Nature Conservation Committee (JNCC) website.
- 3.2.2 These websites provide information about European Sites including Conservation Objectives for their qualifying features, which are the primary

reason for designation. The features are considered to have Favourable Conservation Status only when the conservation objectives are being met. These objectives therefore provide an indication of the type of effects which could affect the features of a designated site. An effect which could affect the ability of a site or feature to meet its objective could be considered to be an adverse effect on the integrity of the designated site concerned.

3.3 HRA Methodology

3.3.1 To understand the potential implications for European Sites from the project it is necessary to identify those that are located nearby or are linked by pathways such as hydrological connections.

3.3.2 All European Sites were identified using Geographic Information System data from datasets downloaded from the JNCC and MAGIC.

Consultation with Natural England

3.3.3 An HRA screening assessment was undertaken as part of the 2019 PEIR for the Proposed Development, and determined that there would be no likely significant effects on European sites as a result of the Proposed Development and therefore, an appropriate assessment was not required.

3.3.4 Natural England stated that the HRA screening assessment did not consider any pathways between the development site and Chilterns Beechwoods SAC, nor included potential effects as a result of changes to air quality. This HRA provides an updated screening assessment that considers the potential impacts on Chilterns Beechwoods SAC, and includes potential effects in terms of air quality.

Understanding Qualifying Features and Conservation Objectives

3.3.5 For each of the European Sites identified the features were established and the conservation objectives for each feature were obtained. Information was also sought to understand the potential vulnerability of the features to any effects that might arise from the Proposed Development.

Identification of the Potential Effects of the Project

3.3.6 Any potential pathways for effect on European Sites resulting from the Proposed Development were identified using either available guidance (in the case of road traffic that involves the Design Manual for Roads and Bridges) or, where no such guidance is available, a source-pathway-receptor model utilising available research concerning the relevant impact pathways. Following consideration of the potential impact pathways and the distance to European sites (discussed below) that potential air quality impacts and potential for disturbance of birds in the nearest Special Protection Area are the only impact pathways requiring consideration. Other impacts have also been discussed where relevant such as the risk of fuel dumping affecting sites.

In-combination Effects

- 3.3.7 An 'in-combination' assessment is required where the project may have an effect on a European Site, but on its own the effects would not be significant. The potential effects of the project should be considered in-combination with other plans or projects that similarly may have an effect, but where on their own those effects would not be significant. The combined effects may therefore become significant.
- 3.3.8 Details of other plans and projects which are currently proposed or consented within the vicinity of the European Sites and/or European Sites identified were obtained to inform the in-combination assessment of the project.
- 3.3.9 PINS Advice Note 10 (Ref. 1) states that in assessing in-combination effects the following projects should be considered:
- a. projects that are under construction;
 - b. permitted application(s) not yet implemented;
 - c. submitted application(s) not yet determined;
 - d. all refusals subject to appeal procedures not yet determined;
 - e. projects on the National Infrastructure's programme of projects; and
 - f. projects identified in emerging development plans recognising that much information on relevant proposals will be limited and the degree of uncertainty which may be present.

Consideration of the Significance of Potential Effects

- 3.3.10 The significance of potential effects was assessed in the absence of avoidance or other mitigation measures other than those which are standard construction practices such as pollution control or those incorporated into the Proposed Development. The assessment has been made with awareness of the conservation objectives for the features of the European Sites, although as stated in the relevant guidance the assessment of the project against the conservation objectives is not required until the Appropriate Assessment stage of the HRA process.
- 3.3.11 In the assessment of the potential for significant effects, professional judgement was applied using the following criteria, as often information about the elements and interests is limited:
- a. the vulnerability/sensitivity of the receiving environment/features of interest;
 - b. when the risk of effects is likely to occur (e.g. construction and/or operation);
 - c. the likely geographical extent of the effects; and
 - d. likelihood of significant effects occurring based on previous experience with similar elements, where available.

- 3.3.12 Professional judgement was used in the carrying out of this work where professional guidance was not available. Where there was limited information about the risk of qualifying interests being present, or of the risk of effects, the assessment used the precautionary principle to inform the judgement.
- 3.3.13 The precautionary principle has been applied to ensure that any assessment errs on the side of caution. This principle means that the conservation objectives should prevail where there is uncertainty over whether there will be likely significant effects and that harmful effects will be assumed in the absence of evidence to the contrary.

European sites potentially affected by the proposed development

- 3.3.14 One key source of impacts on the natural environment from airport expansion proposals (particularly when, as here, the nearest European sites are at a considerable distance from the Proposed Development) is the potential for impacts from associated changes in traffic movements. Guidance on scoping impacts on European sites from schemes that involve a material change to road traffic is provided by National Highways in their Design Manual for Roads and Bridges (DMRB). According to DMRB Volume LA115 (Habitats Regulations Assessment) (Ref. 4):

“The screening stage of HRA shall be completed for all European sites where a route corridor or project meets any of the following screening criteria:

- a. is within 2km of a European site or functionally linked land;*
- b. is within 30km of SACs where bats are noted as one of the qualifying interests;*
- c. crosses or lies adjacent to, upstream of, or downstream of, a watercourse which is designated in part or wholly as a European site;*
- d. has a potential hydrological or hydrogeological linkage to a European site containing a groundwater dependent terrestrial ecosystem (GWDTE) which triggers the assessment of European sites; or*
- e. has an affected road network (ARN) which triggers the criteria for assessment of European sites.”*

- 3.3.15 Following the above guidance for the road traffic part of the Proposed Development, an area extending 2km from the Proposed Development boundary was first selected in which internationally important wildlife sites (SAC, SPA, Ramsar) were identified. However, no European sites are located within 2km of the Proposed Development. This was extended to a 30km area to search for European sites which are designated for bats, but in this case there are no bat European sites within 30km. European sites where there is a pathway by which hydrological impact might occur through river or stream connectivity, were also included based on professional judgement, a search radius of 15km has been used for this analysis on the basis that any potential for an effect at greater distances is likely to be negligible and below the level of detection, due to the size of any dilution factors relative to the likely scale of any pollution event at source. There are no hydrologically sensitive European sites

within 15km of the Proposed Development. There is no published guidance on search distances for impacts on designated wildlife sites from aircraft so as a precaution (and taking into account flight altitudes and the distance taken to reach those altitudes) a 30km zone was used for all European sites as a precaution. These areas are hereafter referred to as 'the Study Area'.

- 3.3.16 With specific regard to air quality impacts from road traffic, Affected Roads (as defined in DMRB volume LA105) are relevant to HRA only if they pass within 200m of a European site, this being the distance beyond which the local elevation of pollution due to roads has dropped to background levels.
- 3.3.17 There are four internationally designated sites within 30km of the Proposed Development, as shown in **Figure 1, Appendix A** (distances and direction are measured as a straight line from the Main Application Site boundary), which are as follows:
- a. Chilterns Beechwoods SAC (10.9km to the south west);
 - b. Wormley Hoddesdonpark Woods SAC (22.2km to the south east);
 - c. Lee Valley SPA (23.9km to the south east); and
 - d. Lee Valley Ramsar site (23.9km to the south east).
- 3.3.18 A fifth designated site, Aston Rowant SAC (40.5km to the south west) has also been considered in terms of potential air quality impacts as it is bisected by the M40 which is a major regional highway in south east England. However, the ARN developed based on the DMRB Volume LA105 (Air Quality) guidance (Ref. 5), shows the M40 through this site is not part of the ARN for the Proposed Development (shown on **Figure 2, Appendix A**) as it will not be subject to a material increase in 24hr Annual Average Daily Traffic (AADT) as a result of this Proposed Development. Therefore, no impact pathway exists and this site can be screened out.
- 3.3.19 The qualifying features for Sites are summarised in **Table 3.1** and their locations in respect to the Proposed Development are shown on **Figure 1, Appendix A**.

Table 3.1: European Sites within 30km of the Proposed Development (Information for each site has been obtained from the Natural England and Joint Nature Conservation Committee websites)

Site name and code (as per the citation/ site data sheet)	Site description (as per the citation/ site data sheet)	Qualifying features (as per the citation/ site data sheet)	Conservation Objectives (from Site Conservation Objectives and Supplementary Advice)	Vulnerability (taken from Site Improvement Plans/ site data sheet)
Chilterns Beechwoods Special Area of Conservation, UK0012724.	The site occupies an area of approximately 1,286ha, which is located north of Berkhamsted either side of the Hertfordshire/ Buckinghamshire border. The site comprises a mixture of ancient semi-natural and secondary woodland, plantation, scrub, bracken and grassland	9130 <i>Asperulo-Fagetum</i> beech forests (this is listed on Annex 1 of the 'Habitats Directive' and is the primary reason for designation of this site). This Annex I habitat type is represented by an extensive tract of <i>Asperulo-Fagetum</i> beech forest in the centre of the habitat's UK range. The woodland is an important part of a grassland-scrub-woodland mosaic. A distinctive feature in the woodland flora is the Nationally Scarce coralroot bitter-cress (<i>Cardamine bulbifera</i>). 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates <i>Festuco-Brometalia</i> , which includes the priority feature '*important orchid rich sites' (this is listed on Annex I of the 'Habitats	Ensure that the integrity of the site and the favourable conservation status of its qualifying features are maintained or restored as appropriate in accordance with the 'Habitats Directive'.	The cited adverse threats to the qualifying features at this site relate to habitat degradation as consequence of change in plant community structure and species composition because of competition from: a. invasive non-native plant species; b. invasive native plant species; and c. interspecific plant relations. Although not cited, professional judgement and

Site name and code (as per the citation/ site data sheet)	Site description (as per the citation/ site data sheet)	Qualifying features (as per the citation/ site data sheet)	Conservation Objectives (from Site Conservation Objectives and Supplementary Advice)	Vulnerability (taken from Site Improvement Plans/ site data sheet)
		<p>Directive’ but is not the primary reason for designation of this site). 1083 Stag beetle (<i>Lucanus cervus</i>) (this is listed on Annex II of the ‘Habitats Directive’ but is not a primary reason for designation of this site). 1166 Great crested newt (<i>Triturus cristatus</i>) (this is listed on Annex II of the ‘Habitats Directive’ but is not a primary reason for designation of this site).</p>		<p>experience suggests that there is potential for additional adverse threats to the qualifying features at this site which also relate to habitat degradation, such as: air pollution and deposition of air-borne pollutants; and, human intrusive activities.</p>
<p>Wormley Hoddesdonpark Woods Special Area of Conservation, UK0013696.</p>	<p>The site occupies an area of approximately 337ha, which is located west of Hoddesdon in Hertfordshire. The site mainly comprises ancient semi-natural and secondary</p>	<p>9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the <i>Carpinion betuli</i> (this is listed on Annex I of the ‘Habitats Directive’ and is the primary reason for designation of this site). This Annex I habitat type is represented at this site by large stands of almost pure hornbeam (<i>Carpinus betulus</i>), with sessile oak (<i>Quercus petraea</i>) standards. Areas dominated by bluebell</p>	<p>Ensure that the integrity of the site and the favourable conservation status of its qualifying features are maintained or restored as appropriate in accordance with</p>	<p>The cited adverse threats to the qualifying features at this site relate to habitat degradation as consequence of:</p> <ul style="list-style-type: none"> a. change in plant community structure and species composition

Site name and code (as per the citation/ site data sheet)	Site description (as per the citation/ site data sheet)	Qualifying features (as per the citation/ site data sheet)	Conservation Objectives (from Site Conservation Objectives and Supplementary Advice)	Vulnerability (taken from Site Improvement Plans/ site data sheet)
	woodland, wood-pasture and heaths.	<i>(Hyacinthoides non-scripta)</i> do occur, but elsewhere there are stands of great wood-rush (<i>Luzula sylvatica</i>) with carpets of the mosses (<i>Dicranum majus</i>) and (<i>Leucobryum glaucum</i>). Locally, a bryophyte community more typical of continental Europe occurs, including the mosses (<i>Dicranum montanum</i> , <i>D. flagellare</i> and <i>D. tauricum</i>).	the 'Habitats Directive'.	because of competition from: <ul style="list-style-type: none"> i. invasive non-native plant species; ii. invasive native plant species; and iii. interspecific plant relations. <ul style="list-style-type: none"> b. air pollution and deposition of air-borne pollutants; and c. human intrusive activities.
Lee Valley Special Protection Area, UK9012111.	The site comprises four discrete areas located within a lowland valley floodplain with extensive waterbodies between Ware,	The site regularly supports: 1% or more of the Great Britain population of the British wintering population of bittern (<i>Botaurus stellaris</i>) (which satisfies Article 4.1 of the Birds Directive and is a key reason for designation of this site).	Ensure that the integrity of the site and the favourable conservation status of its qualify features are maintained	The cited adverse threats to the qualifying features at this site relate to: <ul style="list-style-type: none"> a. habitat degradation as consequence of: <ul style="list-style-type: none"> i. aquaculture;

Site name and code (as per the citation/ site data sheet)	Site description (as per the citation/ site data sheet)	Qualifying features (as per the citation/ site data sheet)	Conservation Objectives (from Site Conservation Objectives and Supplementary Advice)	Vulnerability (taken from Site Improvement Plans/ site data sheet)
	Hertfordshire and Finsbury Park, London.	The site qualifies under article 4.2 of the Directive as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed on Annex I), in any season: <ul style="list-style-type: none"> a. Shoveler <i>Anas clypeata</i>; and b. Gadwall <i>Anas strepera</i> 	or restored as appropriate in accordance with the 'Birds Directive'.	<ul style="list-style-type: none"> ii. change in hydrology (affecting water level); iii. groundwater pollution; and iv. ecological succession (habitat change); and b. species disturbance because of human recreation.
Lee Valley Ramsar site, UK11034.	The site comprises four discrete areas located within a lowland valley floodplain with extensive waterbodies between Ware, Hertfordshire and	The site supports: <ul style="list-style-type: none"> a Nationally Rare water-boatman (<i>Micronecta minutissima</i>); and, the Nationally Scarce whorled water-milfoil (<i>Myriophyllum verticillatum</i>). (which satisfies Criterion 2 of the Ramsar Convention and are key reasons for designation of this site). The site regularly supports:	Ensure that the integrity of the site and the favourable conservation status of its qualifying features are maintained or restored as appropriate in	Although not cited, it is considered that there is potential for additional adverse threats to the qualifying features at this site which relate to: <ul style="list-style-type: none"> a. habitat degradation as consequence of:

Site name and code (as per the citation/ site data sheet)	Site description (as per the citation/ site data sheet)	Qualifying features (as per the citation/ site data sheet)	Conservation Objectives (from Site Conservation Objectives and Supplementary Advice)	Vulnerability (taken from Site Improvement Plans/ site data sheet)
	Finsbury Park, London.	2.6% (5-year peak mean between 1998/9 and 2002/3) of the British wintering population of gadwall (<i>Anas strepera</i>); and, 1.9% (5-year peak mean between 1998/9 and 2002/3) of the British spring/autumn passage population of shoveler (<i>Anas clypeata</i>). (which satisfies Criterion 6 of the 'Ramsar Convention' and are key reasons for designation of this site).	accordance with the 'Ramsar Convention'.	<ul style="list-style-type: none"> i. aquaculture; ii. change in hydrology (affecting water level); iii. groundwater pollution; and iv. ecological succession (habitat change); and <ul style="list-style-type: none"> b. species disturbance because of human recreation.

4 SCREENING ASSESSMENT

4.1 Potential effects of the proposed development

- 4.1.1 Pathways for effects to occur on qualifying features of the four European Sites are considered for the construction and operation phases of the Proposed Development and described in **Table 4.1** and shown in the PINS matrices in **Appendix A** to this report.
- 4.1.2 The potential pathways for effect include:
- a. habitat loss;
 - b. habitat degradation;
 - c. habitat severance;
 - d. species disturbance; and
 - e. species mortality/injury.
- 4.1.3 Consideration has also been given to the potential for ‘fuel dumping’ as a pathway. ‘Fuel dumping’ is carried out by aircraft in emergency situations in order to reduce weight, thereby improving the safety of landing. It is only carried out in emergency situations, as a matter of preserving human safety, and is a rare occurrence.
- 4.1.4 Even when fuel is dumped from an aircraft in an emergency situation, it is always carried out at, or above, an altitude that will allow evaporation or dissipation before the fuel reaches the ground. In most conditions an altitude of 5,000ft to 6,000ft above ground level (AGL) is sufficient (Ref. 6).
- 4.1.5 As fuel dumping is only carried out in emergency situations at a sufficient height that the fuel has evaporated before reaching the ground, there is no linking pathway to particular areas on the ground, including European sites.
- 4.1.6 To fall within the remit of the HRA process, any impact must be ‘likely’. While use of the precautionary principle (and case law) sets the threshold for ‘likely’ to be quite low, the Court of Appeal ruled in the Boggis judgement that there should be “*credible evidence that there was a real, rather than hypothetical risk*” (Ref. 7).
- 4.1.7 Therefore, in accordance with case law, and as set out above, for the following reasons, fuel dumping is not considered to be a realistic impact pathway connecting to specific European sites and is therefore not considered further in this No Significant Effects Report:
- a. fuel dumping is only carried out rarely and only in emergency situations;
 - b. much or all of the dumped fuel vaporises before reaching the land or sea, so does not cause any pollution of the terrestrial or marine environment. and;
 - c. due to the nature of the event it is impossible to know where any such event may take place given that it is carried out in emergency situations

or to draw a specific direct linkage to any European sites due to the evaporation of the fuel well above ground level.

4.2 Consideration of Effects and Significance

4.2.1 It is concluded that there is no impact pathway on the qualifying features of the designated sites. Justification for this overall conclusion is provided separately for each of the four European Sites, as follows:

Chilterns Beechwoods SAC

4.2.2 The Proposed Development is approximately 10.9km north east of this site. Given the separation distance between the Proposed Development and this Site and the fact the site does not lie on the ARN for the Proposed Development, no pathways for effect have been identified. This has included consideration of potential air quality changes and associated deposition of airborne pollutants from aircraft arriving and departing the airport and vehicle emissions resulting from an increase in road traffic travelling to and from the Proposed Development.

4.2.3 The main pollutants of concern for European sites are oxides of nitrogen (NO_x), ammonia (NH₃) and sulphur dioxide (SO₂) and their effects on habitats and species are summarised below:

- a. Nitrogen oxides (NO_x) - Direct toxicity effects of gaseous nitrates are likely to be important in areas close to the source (e.g. roadside verges). Deposition of nitrogen compounds (nitrates (NO₃), nitrogen dioxide (NO₂) and nitric acid (HNO₃) contributes to the total nitrogen deposition and may lead to both soil and freshwater acidification. In addition, NO_x contributes to the eutrophication of soils and water, altering the species composition of plant communities at the expense of sensitive species.
- b. Ammonia (NH₃) - The negative effect of NH₄⁺ may occur via direct toxicity when uptake exceeds detoxification capacity and via N accumulation. It is toxic to vegetation even at low concentrations but its main adverse effect is eutrophication, leading to species assemblages that are dominated by fast-growing and tall species. For example, a shift in dominance from heath species (lichens, mosses) to grasses is often seen. It should be noted that ammonia emissions from vehicles are associated with catalytic converters that are designed to minimise NO_x and emit ammonia as a by-product. Aircraft do not emit ammonia.
- c. Sulphur dioxide (SO₂) - Wet and dry deposition of SO₂ acidifies soils and freshwater and may alter the composition of plant and animal communities. The magnitude of effects depends on levels of deposition, the buffering capacity of soils and the sensitivity of impacted species. However, SO₂ background levels have fallen considerably since the 1970's and are now not regarded a threat to plant communities. For example, decreases in sulphur dioxide concentrations have been linked to returning lichen species and improved tree health in London. Neither aircraft or road traffic emit sulphur dioxide and therefore this can be screened out.

- 4.2.4 According to the World Health Organisation, the critical NO_x concentration (critical level) for the protection of vegetation is 30µgm⁻³. In addition, ecological studies have determined 'critical loads' of atmospheric nitrogen deposition (that is, NO_x combined with ammonia NH₃). These are bespoke to particular habitats are available on the Air Pollution Information System apis.ac.uk.
- 4.2.5 According to the Airport Air Quality Manual (ICAO, 2011 (Ref. 8)), local deposition of air-borne pollutants on the ground (i.e. that which may form a linking impact pathway to a specific European site) typically occurs from overflying aircraft at up to 1,000ft (305m) above ground-level (Ref. 9).
- 4.2.6 Detailed air quality assessments with associated modelling have been carried out for the project. Based on typical ascent/descent angles it is currently considered that aircraft will be flying above 305m when further than 6km from the Proposed Development.
- 4.2.7 Therefore, due to the distances involved (>6 km threshold) there is no pathway for air pollution and deposition of air-borne pollutants to the Chiltern Beechwoods SAC.
- 4.2.8 According to the Department for Transport's Transport Analysis Guidance, "*beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant*" (Ref. 10). As such, the traffic air quality study area used in this HRA is the ARN with a 200m buffer. Chiltern Beechwoods SAC is 7.7km away from the ARN, therefore, there is no pathway for air pollution and deposition of air-borne pollutants from an increase in vehicular traffic.

Wormley Hoddesdonpark Woods SAC

- 4.2.9 The Proposed Development is approximately 22.2km north west of this site. Given the separation distance between the Proposed Development and this Site and the altitude at which aircraft will be flying when over this SAC, no pathways for effect have been identified. This has similarly included consideration of potential air quality changes and associated deposition of air-borne pollutants from aircraft arriving and departing the airport.
- 4.2.10 For the reasons outlined above for the Chiltern Beechwood SAC, given the distance between the airport and Wormley Hoddesdonpark Woods SAC, no pathway for effect from air quality changes has been identified.

Lee Valley SPA and Lea Valley Ramsar Site

- 4.2.11 The Proposed Development is approximately 23.9km north west of the Lea Valley SPA and 25.3km from the Lea Valley Ramsar Site. The screening exercise has considered the potential pathway for adverse effects on certain qualifying features (populations of bittern, gadwall and shoveler); this includes disruption to a functional link, such as regularly frequented contributory habitat and/or documented bird dispersal route.
- 4.2.12 It is recognised that the qualifying bird populations will disperse to other locations away from Lee Valley SPA/Ramsar Site. However, there is no suitable habitat within 2km of the Proposed Development that is known to regularly

support important wintering populations of bittern, gadwall or shoveler that can be considered to be functionally linked habitat. Previous wintering bird surveys of the Main Application Site and further suitable habitats up to 500m did not detect any of the three SPA species mentioned, as described in the Ecology Baseline Report **Appendix 8.1** in Volume 3 to this PEIR, nor have they been identified as being at risk from air strikes as described in the Bird Strike Risk Assessment **Appendix 8.4** in Volume 3 of this PEIR. The Proposed Development is also not hydrologically connected to the SPA/Ramsar Site and is not on a known fly-way connected to these European Sites.

- 4.2.13 In line with Natural England guidance, none of the habitats within 2km of the airport are considered to provide a potentially important role in maintaining or restoring the protected SPA/Ramsar Site populations at Favourable Conservation Status (Ref. 11). Therefore, there is no evidence of functional linkage and thus no pathways for effect on qualifying species of the SPA/Ramsar Site.
- 4.2.14 Noise and visual disturbance are also to be considered. Hoang (2013) (Ref. 12) conducted a literature review of aircraft disturbance on shorebirds and seabirds. Of seven studies presented in the literature review which investigated effects on shorebirds, the minimum distance at which disturbance was found to be caused by fixed-wing aircraft was 300m above ground level, with higher level flights having relatively limited or no disturbance effects. It should be noted that all aircraft considered by this study were small planes or military jets which are more likely to fly at lower altitudes and be noisier and more disturbing than larger fixed wing aircraft.
- 4.2.15 Based on typical ascent/descent angles it is currently considered that aircraft will be flying above 305m when further than 6km maximum distance from the Proposed Development. Given the distances of the SPA and Ramsar from the Proposed Development, aircraft will be far too high to cause visual and/or noise disturbance to birds on the ground, or atmospheric pollution. There is therefore no pathway for effect on qualifying species of the SPA/Ramsar Site.

Other Plans and Projects

- 4.2.16 Since there is no pathway for effect on the qualifying features of the European Sites, there can be no potential for in-combination effects with other plans or projects.
- 4.2.17 For the aforementioned reasons, subsequent stages of HRA are not considered necessary.

Table 4.1. Summary of effects during construction and operation on European Sites within 30km of the Proposed Development.

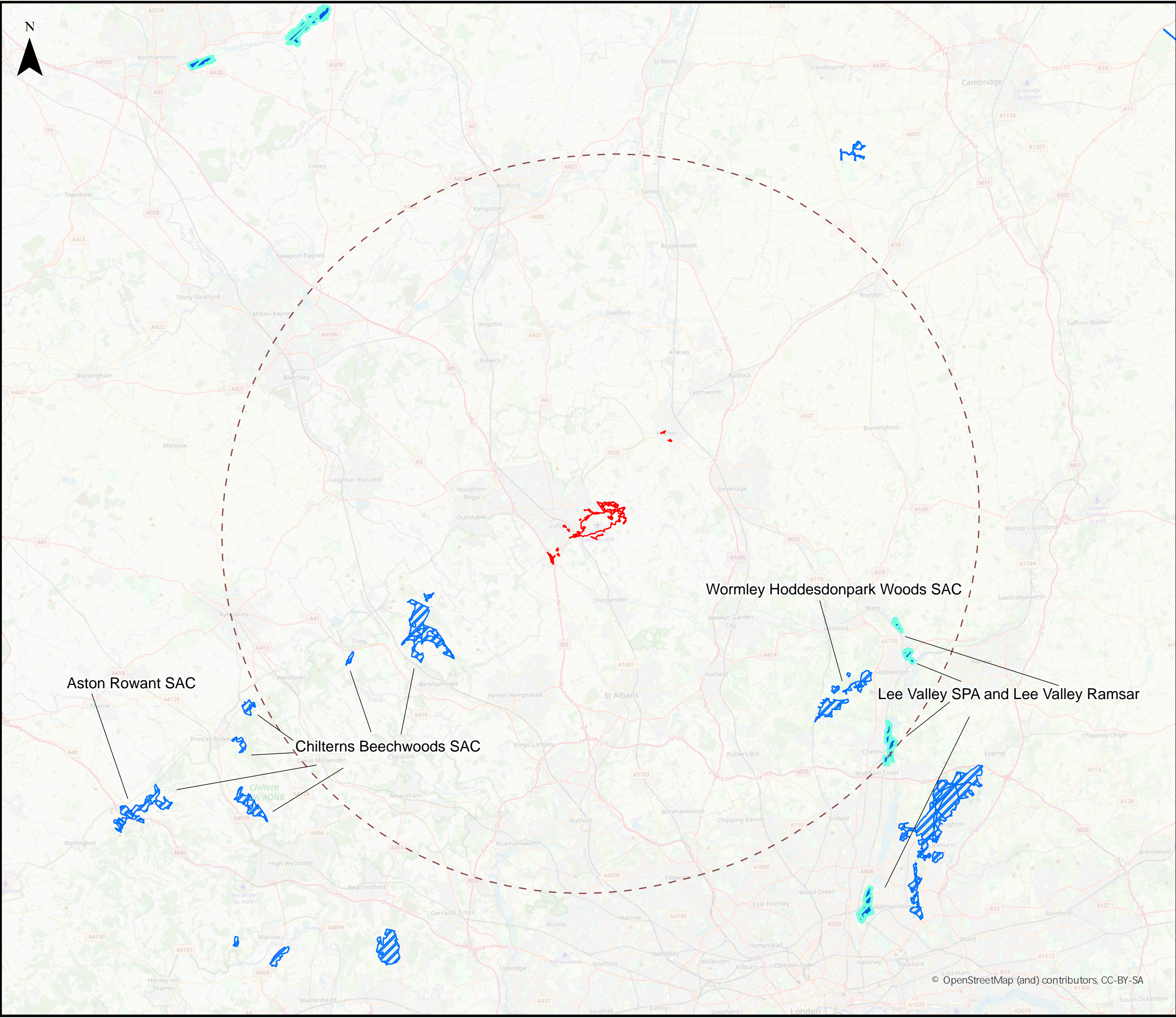
Pathways for Effects	Chilterns Beechwoods SAC	Wormley Hoddesdonpark Woods SAC	Lee Valley SPA	Lee Valley Ramsar Site
	<p>9130 <i>Asperulo-Fagetum</i> beech woodland, which support the Nationally Scarce coralroot bitter-cress.</p> <p>6210 Semi-natural calcareous <i>Festuco-Brometalia</i> grasslands with scattered scrub, which are of importance for orchids.</p> <p>1083 Stag beetle and 1166 Great crested newt.</p>	<p>9160 Sub-Atlantic and medio-European oak or oak-hornbeam <i>Carpinion-Betuli</i> woodland.</p>	<p>Wetlands which support:</p> <p>a. wintering population of bittern;</p> <p>b. wintering population of gadwall; and</p> <p>c. wintering population of shoveler.</p>	<p>Wetlands which support:</p> <p>a. a Nationally Rare water-boatman (<i>Micronecta minutissima</i>);</p> <p>b. the Nationally Scarce whorled water-milfoil;</p> <p>c. wintering population of gadwall; and</p> <p>d. spring/autumn passage population of shoveler.</p>
Construction				
Habitat loss	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Habitat degradation	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Habitat severance	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Species disturbance	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects

Pathways for Effects	Chilterns Beechwoods SAC	Wormley Hoddesdonpark Woods SAC	Lee Valley SPA	Lee Valley Ramsar Site
Species mortality / injury	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Operation				
Habitat loss	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Habitat degradation	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Habitat severance	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Species disturbance	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects
Species mortality / injury	No pathway for effects	No pathway for effects	No pathway for effects	No pathway for effects

5 CONCLUSION

- 5.1.1 This No Significant Effects Report has considered the Proposed Development and European Sites within 30km, and beyond in accordance with consultation responses. Potential effects have been discussed and associated pathways described.
- 5.1.2 Based on information available at this point in time, no pathway for effect on any European Site has been identified and thus no effects on such sites is predicted to occur. With the conclusion of no effect from the Proposed Development, no potential for in-combination effect can occur.
- 5.1.3 This document will be updated as technical assessments and models for the project are finalised and submitted with the Environmental Statement as part of the application for development consent.

APPENDIX A. FIGURES



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 All structure positions are indicative. The proposed works will be subject to detailed design development. The changes will be within limits of deviation specified in the Development Consent Order.

Legend

- Proposed Development Boundary
- Application Site 30km Buffer
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Ramsar

Aston Rowant SAC

Chilterns Beechwoods SAC

Wormley Hoddesdonpark Woods SAC

Lee Valley SPA and Lee Valley Ramsar

First Issue	AB	NL	CS	30/11/21	P01
Revision History	Drawn	Checked	Approved	Date	Rev.

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**London Luton Airport
 Development Consent Order**

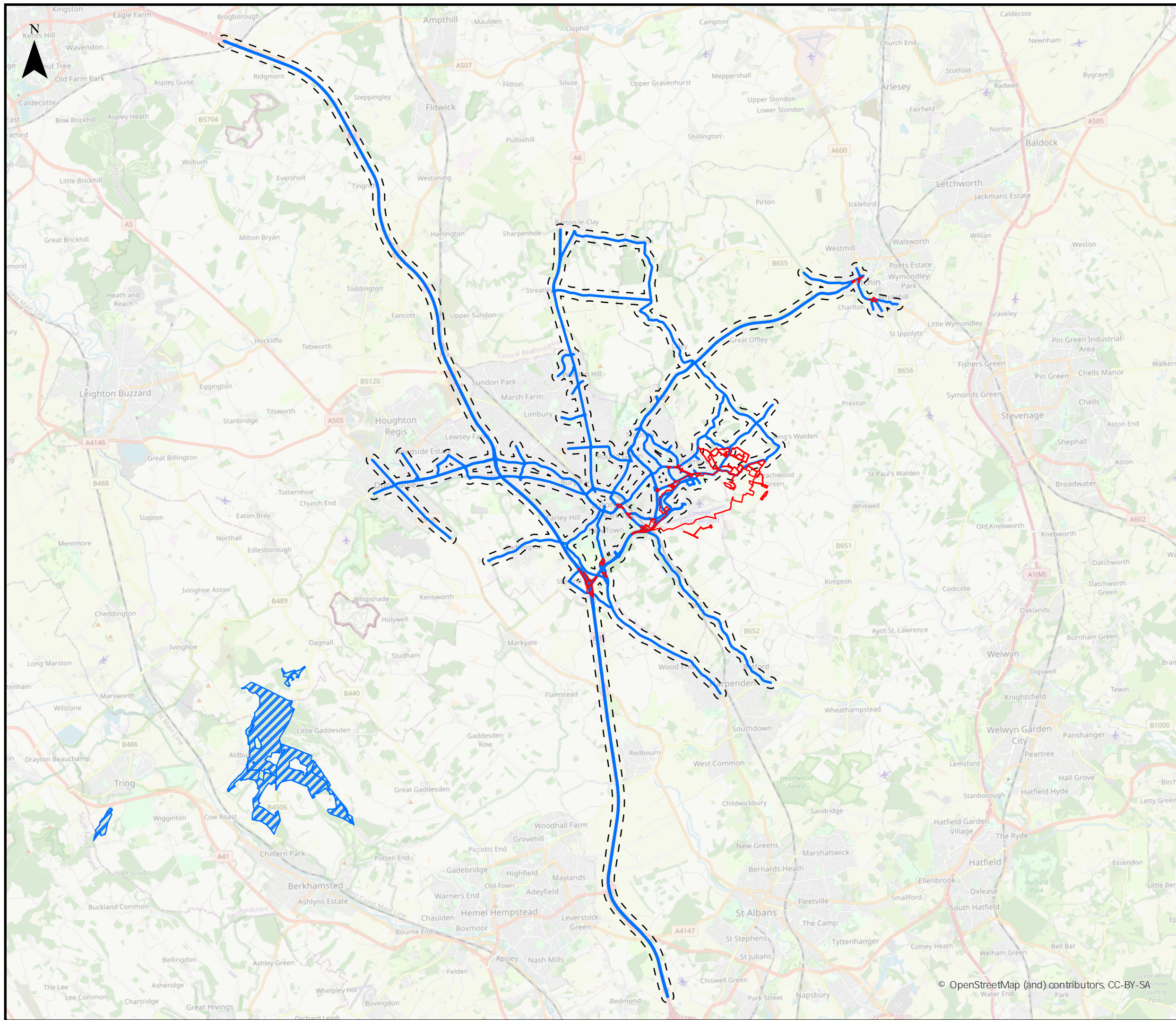
Drawing Title
**Figure 1
 European Designated Sites**

Purpose of issue SUITABLE FOR INFORMATION				Suitability S2	
Drawn AB	Checked SM	Approved CS	Date 17/11/21	Scale 1:300,000	Size A3

DCO Application Ref. TR020001	APFP Regulation	DCO Document Ref.
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Drawing Number LLADCO-3C-ARP-00-00-DR-YE-0225	Revision P01
Project - Phase - Originator - Asset/Zone - Sub-Asset - Type - Disp. - Number	

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All structure positions are indicative. The proposed works will be subject to detailed design development. The changes will be within limits of deviation specified in the Development Consent Order.

Legend

- Proposed Development Boundary
- Modelled road network
- Affected Road Network 200m Buffer
- Ramsar
- Special Protection Areas (SPA)
- Special Areas of Conservation (SAC)

First Issue	AB	NL	CS	30/11/21	P01
Revision History	Drawn	Checked	Approved	Date	Rev.

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Drawing Title
**Figure 2
Affected Road Network**

Purpose of issue				Suitability	
SUITABLE FOR INFORMATION				S2	
Drawn	Checked	Approved	Date	Scale	Size
AB	NL	CS	17/11/21	1:125,000	A3
DCO Application Ref.		APFP Regulation	DCO Document Ref.		
TR020001					
Drawing Number					Revision
LLADCO-3C-ARP-0000-DR-YE-0224					P01
Project - Phase - Originator - Asset/Zone - Sub Asset - Type - Discp - Number					

APPENDIX B. PLANNING INSPECTORATE ADVICE NOTE 10 HRA SCREENING MATRICES

A.1. Potential Effects

Potential effects upon the European site(s), as defined in Advice Note 10 (Ref. 1) which are considered within this HRA report are provided in **Table A.1**.

Table A.1: Effects considered within the screening matrices

Designation	Effects described in submission information	Presented in screening matrices as
Chilterns Beechwoods SAC	Habitat loss Habitat degradation Habitat severance	Air quality
Wormley Hoddesdonpark Woods Special Area of Conservation, UK0013696.	Habitat loss Habitat degradation Habitat severance	Air quality
Lee Valley Special Protection Area, UK9012111.	Habitat loss Habitat degradation Habitat severance Species disturbance Species mortality / injury	Disturbance
Lee Valley Ramsar UK11034.	Habitat loss Habitat degradation Habitat severance Species disturbance Species mortality / injury	Disturbance

A.2. STAGE 1: SCREENING MATRICES

The European sites included within the screening assessment are:

- a. Chilterns Beechwoods SAC;
- b. Wormley Hoddesdonpark Woods;
- c. Lee Valley SPA; and
- d. Lee Valley Ramsar.

Evidence for, or against, likely significant effects on the European site(s) and its qualifying feature(s) is detailed within the footnotes to the screening matrices below.

Matrix Key:

✓ = Likely significant effect **cannot** be excluded

✗ = Likely significant effect **can** be excluded

C = construction

O = operation

D = decommissioning

If there is no impact pathway at all linking the Proposed Development to a European site the cells are greyed out in line with PINS guidance.

A.2.1. HRA Screening Matrix 1: Chilterns Beechwoods SAC

Name of European site and designation: Chilterns Beechwoods SAC						
EU Code: UK0012724						
Distance to the airport: 10.9 km						
European site features	Likely effects of the airport					
<i>Effect</i>	<i>Air quality</i>			<i>In combination effects</i>		
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
<i>9130 Asperulo-Fagetum beech woodland, which support the Nationally Scarce coralroot bitter-cress.</i>						
<i>6210 Semi-natural calcareous Festuco-Brometalia grasslands with scattered scrub, which are of importance for orchids.</i>						
<i>1083 Stag beetle</i>						
<i>1166 Great crested newt.</i>						

Evidence supporting conclusions:

Paragraphs 5.2.2 and 5.2.6 describe the height at which air-borne pollutant from aircraft cease to be deposited on the ground (up to 305m above ground level). Aircraft will be flying above 305m when further than 6km from take-off; therefore, there is no pathway for air pollution and deposition of air-borne pollutants to the Chiltern Beechwoods SAC. Paragraph 5.2.7 describes the ARN and traffic air quality impacts being within 200m. This SAC is over 200m from the ARN.

A.2.2. HRA Screening Matrix 2: Wormley Hoddesdonpark Woods SAC

Name of European site and designation: Wormley Hoddesdonpark Woods SAC						
EU Code: UK0013696.						
Distance to the airport: 22.2 km						
European site features	Likely effects of the airport					
<i>Effect</i>	<i>Air quality</i>			<i>In combination effects</i>		
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
<i>9160 Sub-Atlantic and medio-European oak or oak-hornbeam Carpinion-Betuli woodland.</i>						

Evidence supporting conclusions:

Paragraphs 5.2.2 and 5.2.6 describe the height at which air-borne pollutant from aircraft cease to be deposited on the ground (up to 305m above ground level). Aircraft will be flying above 305m when further than 6km from take-off; therefore there is no pathway for air pollution and deposition of air-borne pollutants to Wormley Hoddesdonpark Woods SAC.

Paragraph 5.2.7 describes the ARN and traffic air quality impacts being within 200m. This SAC is over 200m from the ARN.

A.2.3. HRA Screening Matrix 3: Lee Valley SPA

Name of European site and designation: Lee Valley SPA						
EU Code: UK9012111.						
Distance to the airport: 23.9 km						
European site features	Likely effects of the airport					
<i>Effect</i>	<i>Disturbance</i>			<i>In combination effects</i>		
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Wetlands which support: <ul style="list-style-type: none"> • wintering population of bittern; • wintering population of gadwall; and, • wintering population of shoveler. 						

Evidence supporting conclusions:

Paragraph 4.2.14 identifies that Hoang (2013) (Ref. 12) conducted a literature review of aircraft disturbance on shorebirds and seabirds. Of seven studies presented in the literature review which investigated effects on shorebirds, the minimum distance at which disturbance was found to be caused by fixed-wing aircraft was 300m above ground level, with higher level flights having relatively limited or no disturbance effects. It should be noted that all aircraft considered by this study were small planes or military jets which are more likely to fly at lower altitudes and be noisier and more disturbing than larger fixed wing aircraft.

Paragraphs 5.2.2 and 5.2.6 describe the height at which air-borne pollutant from aircraft cease to be deposited on the ground (up to 305m above ground level). Aircraft will be flying above 305m when further than 6km from take-off. Given the distances of the SPA and Ramsar from the Proposed Development aircraft will be far too high to cause visual and/or noise disturbance to birds on the ground. Paragraph 4.2.13 confirms that there is also no habitat within 2km of the Proposed Development that is likely to be used by birds from this SPA site. There is therefore no pathway for effect on qualifying species of the SPA.

A.2.4. HRA Screening Matrix 4: Lee Valley Ramsar

Name of European site and designation: Lee Valley Ramsar						
EU Code: UK11034.						
Distance to the airport: 23.9 km						
European site features	Likely effects of the airport					
<i>Effect</i>	<i>Disturbance</i>			<i>In combination effects</i>		
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
<i>Wetlands which support:</i> <ul style="list-style-type: none"> • <i>a Nationally Rare water-boatman (<i>Micronecta minutissima</i>);</i> • <i>the Nationally Scarce whorled water-milfoil;</i> • <i>wintering population of gadwall;</i> <i>and,</i> <ul style="list-style-type: none"> • <i>spring/autumn passage population of shoveler.</i> 						

Evidence supporting conclusions:

Paragraph 4.2.14 identifies that Hoang (2013) conducted a literature review of aircraft disturbance on shorebirds and seabirds. Of seven studies presented in the literature review which investigated effects on shorebirds, the minimum distance at which disturbance was found to be caused by fixed-wing aircraft was 300m above ground level, with higher level flights having relatively limited or no disturbance effects. It should be noted that all aircraft considered by this study were small planes or military jets which are more likely to fly at lower altitudes and be noisier and more disturbing than larger fixed wing aircraft.

Paragraphs 5.2.2 and 5.2.6 describe the height at which air-borne pollutant from aircraft cease to be deposited on the ground (up to 305m above ground level). Aircraft will be flying above 305m when further than 6km from take-off. Given the distances of the Ramsar from the Proposed Development aircraft will be far too high to cause visual and/ or noise disturbance to birds on the ground. Paragraph 4.2.13 confirms that there is also no habitat within 2km of the Proposed Development that is likely to be used by birds from this Ramsar site.

GLOSSARY AND ABBREVIATIONS

Term	Definition
AA	Appropriate Assessment
AGL	Above ground level
ARN	Affected Road Network
Critical load	The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur.
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EPUK	Environmental Protection UK
ES	Environmental Statement
ft	Feet
JNCC	Joint Nature Conservation Committee
km	Kilometre
HNO ₃	Nitric acid
HRA	Habitats Regulations Assessment
LALL	London Luton Airport
m	metre
MAGIC	Multi-Agency Geographic Information for the Countryside
µgm ⁻³	Microgram per cubic metre
N	Nitrogen
NSER	No Significant Effects Report

Term	Definition
NE	Natural England
NH ₃	Ammonia
NO _x	Oxides of nitrogen
SAC	Special Area of Conservation
SO ₂	Sulphur dioxide
SPA	Special Protection Area
Ramsar	A wetland of international importance identified under The Convention on Wetlands, known as the Ramsar Convention

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-
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