CITY AIRPORT DEVELOPMENT PROGRAMME
(CADP1) S73 APPLICATION

ENVIRONMENTAL STATEMENT

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City Airport Development Programme (CADP1) S73 Application

Volume 1: Environmental Statement
Chapter 3: EIA Methodology

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3 EIA Methodology

3.1 Introduction

3.1.1 This chapter describes the general approach, methodology and the key stages of the EIA process and explains the terminology, assessment years and scenarios, assessment criteria and generic categories of 'significance' used within this ES.

3.1.2 The proposed technical scope, assumptions and methodology of the EIA and its component impact assessments were set out in a detailed Scoping Report which was issued to London Borough of Newham (LBN) on 28th July 2022, together with a request for a Scoping Opinion in accordance with the procedures set out in Regulation 15 of the EIA Regulations 2017. The formal scoping request was preceded by the submission of a draft version of the Scoping Report (June 2022) and the publication of an Initial Environmental Report (IER) as part of the public consultation exercise.

3.1.3 A number of meetings were held with LBN and their advisors (led by LUC Limited), as well as with the Greater London Authority (GLA), Transport for London (TfL) and the Environment Agency (EA) throughout June to November 2022 in order to clarify and address various matters raised on the proposed scope of the EIA. The outcomes of these meetings are discussed further in this chapter. As such, the EIA scoping process has been an iterative and thorough one, ensuring that all relevant matters and 'likely significant effects' of the proposed development have been properly addressed in the ES.

3.1.4 This chapter describes the outcome of the scoping exercise and the separate public consultation exercise, providing an account of how the matters raised have been accounted for and addressed in the ES.

3.1.5 The ES, which is based on LBN's Scoping Opinion of 24th November 2022, describes the likely significant environmental effects of the proposed amendments, utilising current knowledge of the airport site and the surrounding environment. Based on the findings of the studies undertaken as part of the EIA, methods of avoiding, reducing or offsetting any significant negative ('adverse') effects and enhancing positive ('beneficial') effects are set out in each relevant technical chapter of the ES.

3.2 Approach to EIA

EIA Statutory Requirements and Guidance

3.2.1 The ES has been prepared in compliance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017[1] (Referred to as the "EIA Regulations") which implement European Council Directive No 2011/92/EU (as amended by Directive 2014/52/EU) on the assessment of the effects of certain public and private projects on the environment ("the EIA Directive").

3.2.2 Reference has also been made to current EIA good practice guidance including:

- Ministry of Housing, Communities and Local Government (MCLG) (2021) - Planning Practice Guidance at http://planningguidance.planningportal.gov.uk[2];
- MCLG, Guidance on Environmental Impact Assessment. Updated in 2020[3];
- Institute of Environmental Management and Assessment Update to Guidelines for Environmental Impact Assessment (2006)[4];

[1] HMSO (2017) Town and Country Planning (Environmental Impact Assessment) Regulations 2017
[2] Ministry of Housing, Communities and Local Government (2021) Planning Practice Guidance at http://planningguidance.planningportal.gov.uk.
[3] Ministry of Housing, Communities and Local Government (2012) National Planning Policy Framework (NPPF). Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework (NPPF).
[4] Institute of Environmental Management and Assessment (2006) Updated Guidelines for Environmental Impact Assessment.

- Institute of Environmental Management and Assessment (2011) - The State of Environmental Impact Assessment Practice in the UK[5];
- Institute of Environmental Management and Assessment (2015a) - Environmental Impact Assessment Guide to Shaping Quality Development[6];
- Institute of Environmental Management and Assessment (2015b) - Climate Change Resilience and Adaptation[7];
- Institute of Environmental Management and Assessment (2016) - Guide to Delivering Quality Development[8];
- The Planning Inspectorate Advice Note 17: Cumulative Effects Assessment (August 2019, version 2)[9];
- Recent airport planning decisions following public inquiry; and
- Topic specific guidance and assessment criteria, where appropriate.

EIA Process and Key Stages

3.2.3 The principal stages of the EIA process, in this instance, have comprised the following tasks:

- Review of the previous EIA findings, as set out in the 2015 UES;
- Review of subsequent Approval of Details (AoD) submissions to LBN between 2017 and 2021 to discharge planning conditions attached to the CADP1 planning permission;
- Collating operational, environmental and other data from LCY and other sources for the Baseline Year of 2019 – this year comprising the last representative year of 'normal' airport operations prior to the onset the Covid-19 pandemic;
- Gathering additional third-party data (e.g., for air quality, employment and socio-economic statistics, ecological records etc.) and obtaining other information and data held by LCY, LBN and other public bodies;
- Undertaking site surveys and modelling (e.g., for traffic and noise) to supplement the 2019 baseline data;
- Identification and mapping of existing sensitive receptors at or in proximity to the site (including residents, listed buildings, ecologically sensitive areas etc.), as well as future potential receptors such as committed developments (i.e., those with planning permission) within the Zone of Influence of the airport
- Preparation and submission of draft and final Scoping Report to LBN;
- Completion and publication of the Initial Environmental Report (IER) to inform the public and other stakeholders of the provisional findings of the EIA;
- Receipt and review of the formal Scoping Opinion from LBN together with further comments from statutory and non-statutory consultees;
- Completion of detailed impact assessments to identify the likely environmental effects of the proposed development;
- Identification of any necessary additional mitigation measures and environmental controls to avoid, reduce or offset identified adverse effects, and to enhance beneficial effects;
- Identification of the residual (remaining) environmental effects of the proposed amendments, assuming that the proposed mitigation measures and any further enhancements are implemented; and
- Preparation and submission of the ES with the S73 planning application, including a Non-Technical Summary of the ES.

[5] Institute of Environmental Management and Assessment (2011) The State of Environmental Impact Assessment Practice in the UK.
[6] Institute of Environmental Management and Assessment (2015a) Environmental Impact Assessment: Guide to Shaping Quality Development.
[7] Institute of Environmental Management and Assessment (2015b) Climate Change Resilience and Adaptation.
[8] Institute of Environmental Management and Assessment (2016) Environmental Impact Assessment: Guide to Delivering Quality Development
[9] The Planning Inspectorate (2019) Advice Note 17 - Cumulative Effects Assessment

3.3 Scoping and Consultation

Public Consultation

3.3.1 A 10-week period of public consultation in respect of the S73 proposed amendments was undertaken by the airport in the summer of 2022, and ended on 9th September. This comprised the following activities:

- A dedicated publicly accessible website (https://consultation.londoncityairport.com/) which included a virtual exhibition, key documents and reports, and opportunity to complete a feedback form;
- Seven in-person consultation events held in seven local London Boroughs in July 2022;
- Nine 'pop-up' events during July, August and September 2022;
- Newspaper advertising in both print and online versions; and
- Active engagement with airport passengers and staff.

3.3.2 The outcome from this public consultation exercise is reported in full in the Statement of Community Involvement (SCI) submitted with the S73 planning application.

3.3.3 As introduced in Chapter 1 of this ES, the airport published an Initial Environmental Report (IER) in July 2022 as part of the public consultation materials. This report, provided as ES Appendix 3.1, was separate from the EIA Scoping Report described in the next section of this chapter.

3.3.4 Whilst not a requirement of the EIA Regulations, the IER served as a precursor to the full ES; having the objective of providing a preliminary overview of the likely environmental and socio-economic effects of the proposals and the mitigation and enhancement measures being considered by the airport at the time. It was published in conjunction with other consultation materials, to enable the public and interested parties to understand the effects of the proposals and to provide specific feedback. The overall conclusion of this provisional analysis was that there was unlikely to be any significant adverse environmental effects associated with the proposed development and that some effects (e.g., aircraft noise) would be less than originally predicted in the 2015 UES.

3.3.5 Detailed information on the comments received during the public consultation, and LCY's responses to these, can be found in the SCI. In summary, the type of environmental issues/ concerns raised during this public consultation exercise included:

- The impacts on 'quality of life' due to aircraft noise;
- The extension of Saturday opening hours (originally proposed to occur up to 22.30 hours), including for the reasons of noise and the reduction in the existing 24-hour period of respite;
- The proposed increase in flights in the first half-hour of operation, including for reasons of noise;
- Impacts on climate change and increased carbon emissions associated with the airport expansion; and
- Impacts on local air quality and people's health.

3.3.6 A key change to the proposals following this consultation exercise was for the extension to Saturday operational hours to be limited to 18.30 hours (rather than 22.00 as initially proposed) with up to 12 arrivals for a further hour, but in summer months only.

3.3.7 None of the feedback from the public consultation exercise has directly altered the scope of the EIA because all of the general and specific matters raised through this consultation process had already been envisaged and incorporated into the scope of the EIA, where applicable.

Local Authority and Statutory Consultees

3.3.8 In addition to the public consultation exercise, separate on-line (MS Teams) meetings were held with the LBN, the GLA, TfL and the EA. The specific meeting dates and discussion topics were as follows:

LBN

- 3rd May – LCY presentation to LBN on the S73 proposals and proposed outline scope of the EIA and component technical assessments;
- 15th June – discussion on technical scope of EIA, specifically noise and carbon;
- 29th June – discussion on scope of EIA, specifically air quality and surface access;
- 3rd August - meeting with LBN's aviation advisor (Chris Smith) to discuss aviation forecasts;
- 14th September – discussion with LBN's EIA advisors (LUC and Air Pollution Solutions) on the assessment of Ultra Fine Particulates (UFP's);
- 20th September – discussion on scope and methodology of the health and public wellbeing assessment with LBN's Deputy Director of Public Health; and
- 2nd November – discussion on particular outstanding matters with respect to the EIA scope, including the assessment of UFPs, health, carbon emissions and assessment scenarios.

GLA

- 10th June – Formal pre-application meeting to discuss the nature of the S73 application and its compliance with GLA/London Plan policies and requirements
- 13th September – Pre-application meeting to discuss the revised energy strategy.

TfL

- 16th June – Formal pre-application meeting to discuss the nature of the S73 application and the proposed scope of the Transport Assessment.

EA

- 16th August – Formal pre-application meeting to discuss the draft updated flood risk assessment (FRA) plus topics to be scoped-out of the EIA including ecology & biodiversity, major accidents & disasters, and ground conditions/ contamination (see Appendix 13.1).

3.3.9 The outcomes of these consultation meetings are summarised further below and in the technical chapters of the ES, where relevant.

EIA Scoping Request and Consultation

3.3.10 Scoping is the process of identifying the issues to be addressed during the EIA process and is an important preliminary procedure which sets the spatial, temporal and methodological context for the EIA process with a view to agreeing this with the local planning authority and key statutory consultees.

3.3.11 Regulation 15 of the EIA Regulations allows an applicant to request that the local planning authority sets out its opinion (known as a Scoping Opinion) as to the issues to be addressed in the ES. Whilst there is no formal requirement in the EIA Regulations to seek a Scoping Opinion prior to submission of an ES, it is recognised as best practice to do so.

3.3.12 A Draft EIA Scoping Report was initially submitted to LBN on 16th May 2022 (See ES Appendix 3.2). As listed above, several subsequent meetings were held between the airport's EIA and technical consultant team and LBN officers and their consultants (led by LUC). These meetings were held in order to discuss and clarify, and where necessary amend, the scope of the EIA and its component technical studies. As part of this process, LUC issued a range of queries and comments on the Draft Scoping Report on 21st July 2022[10] (Appendix 3.3) and the airport's team responded on a point-by-point basis and issued an ES Clarification Note on 15th August 2022 (Appendix 3.4).

3.3.13 The Final EIA Scoping Report was submitted to LBN on the 28th July 2022, together with a request for a formal Scoping Opinion in accordance with Regulation 15, Part 4 of the EIA Regulations 2017 (Appendix 3.5).

[10] Report Prepared by LUC in association with Ardent Consulting Engineering and Yellow Sub Geo, July 2022

3.3.14 Further meetings were then held between the airport's team and LBN/ LUC and various reports and notes were exchanged, as follows:

- LBN issued a Review Report of the EIA Scoping Report on 29th September 2022 (Appendix 3.6);
- The airport team responded to outstanding areas of clarification via email on 10th October 2022 (Appendix 3.7);
- LBN issued a further response to matters raised for clarification on 27th October 2022 (Appendix 3.8); and
- The airport team provided a final response on outstanding matters on 4th November 2022 (Appendix 3.9).

3.3.15 One particular area of remaining debate was the intent to scope out the consideration of UFPs within the air quality assessment, due to the absence of any significance criteria or agreed methodology for the assessment of UFPs. This was further explained in a technical note prepared by the airport's air quality consultants (AQC)[11] and issued to LBN alongside the Final Scoping Report. A summary of the discussions held on the assessment of UFPs and how this has been addressed in the ES is provided in Chapter 8: Air Quality and Chapter 12: Public Health and Wellbeing of the ES.

3.3.16 As required by Regulation 15 (4) of Part 4 of the EIA Regulations, LBN consulted in writing with the statutory consultations bodies in order to seek views on the scope of the EIA before determining its Scoping Opinion. In addition, LBN chose to consult a number of other local stakeholders.

3.3.17 Representations received on the Scoping Report have been reviewed and all relevant comments have been addressed within the technical chapters of this ES (Chapters 7 - 13). A summary of the main matters of relevance raised in these representations is provided in Table 2.1 below.

Table 2.1: Summary of Responses from Statutory Consultees

Consultee	Response Date	Main EIA topics referred to in response	LCY Response
LBN Public Health Officer	June 2022 (undated note sent via email from the Case Officer)	Various matters raised including: • National Policy • Climate Change • Socio-economics • Airspace modernisation • Major accidents and Disasters • Cumulative Schemes	All relevant matters addressed in chapters of the ES including No's 5, 7, 11 and 13.
GLA	15th July (letter)	• Various matters were raised that covered the following topics: • Carbon Emissions • Energy Strategy • Whole Life-Cycle Carbon • Noise • Transport	Further information on the issues raised and how these have been responded to are provided in the relevant technical chapters: Chapter 8: Noise; Chapter 10: Surface Access; and Chapter 11: Carbon and Climate Change. A revised Energy Strategy also accompanies the planning application.
TfL	11th August (letter)	Various matters were raised that covered the following topics: • Public transport • Cycle Parking • Transport Assessment • Taxi Management Plan • Travel Plan • Construction Logistics Plan	Further information on the issues raised and how these have been responded to are provided in Chapter 10: Surface Access and Volume 3: Transport Assessment.
NE	24th August (letter)	Natural England issued a generic consultation response to the Scoping Report that did not take into account the nature of the proposals. A variety of requests were	A full response to each of the issues raised by Natural England was prepared and issued to LBN on 26th September 2022. The response is included in Appendix 13.2 and further relevant information provided in

[11] Issues Related to UFPs – Note prepared by AQC, 20th July 2022

		made that are not considered relevant to the proposed development.	Chapter 13: Other Environmental Topics (Section 13.4: Ecology and Biodiversity).
EA	24th August (letter)	Various matters were raised that covered the following environmental topics: • Water Resources and Flood Risk • Flood resistance and resilience • Major Accidents and Disasters • Ground Contamination	Further information on the issues raised and how these have been responded to are provided in Chapters 12: Climate Change (Part B) and Chapter 13: Other Environmental Topics
PLA	4th August (email)	The PLA's main area of interest in relation to CADP1 is the use of the River Thames during construction. TfL pointed out that, since 2013, a new passenger pier has opened at Royal Wharf and therefore the PLA recommends that the Surface Access and Transport section of the ES considers the potential for passengers to be transported to site by water via Royal Wharf.	Planning Condition 60: Use of the River Thames will be retained for any future planning consent and will continue to apply to the future CADP1 construction works. This is discussed further in Chapter 6: Construction Programme and Environmental Mangement and Chapter 10: Surface Access

LBN Scoping Opinion

3.3.18 LBN issued its formal Scoping Opinion on 24th November 2022. A copy of the Scoping Opinion is provided at ES Appendix 3.10.

3.3.19 Pursuant to Regulation 15(4) of the EIA Regulations an ES must:

(a) "be based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion or direction); and

(b) include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment."

3.3.20 Importantly, the Scoping Opinion confirmed that the following EIA topics could be scoped out of any further assessment in this ES. As set out in the Scoping Report (Appendix 3.1), the rationale for scoping out these topics was mainly on the grounds that they had already been assessed within the 2015 UES, will not be materially influenced by the proposed amendments and/or are unlikely to give rise to any 'significant environmental effects' as a consequence of this S73 Application:

- Water Resources and Flood Risk;
- Ecology and Biodiversity;
- Ground Conditions and Contamination;
- Archaeology and Built Heritage;
- Townscape and Visual Impacts;
- Waste; and
- Major Accidents and/or Disasters.

3.3.21 In accordance with LBN's Scoping Opinion, the following technical assessments have been scoped into the EIA:

- Surface Access (Traffic and Transport);
- Noise (to include Air Noise; Ground Noise; Surface Access Noise; and Construction Noise);
- Air Quality;
- Socio-Economic Impacts;
- Climate Change;
- Public Health and Wellbeing; and

- Cumulative Effects.

3.3.22 A limited number of general matters were raised in LBN Scoping Opinion, as summarised in Table 2.2 below. More detailed comments that relate specifically to technical disciplines/ topics are summarised and the responses provided in the corresponding technical chapters of the ES or within Chapter 13: Other Scoped-Out Environmental Topics. The airport and its consultant team have provided detailed responses to these matters; describing how the issues raised have been addressed in the ES, explaining why the requested information is not applicable and/or providing clarification of the assessment approach adopted.

Table 2.2: General EIA Comments in Scoping Opinion and Consultant Team Response

Comment	Response
It would be helpful to include the information at 1.1.3 and 1.1.4 of the Scoping Report (proposed variations to conditions and consequential modifications) in Section 2.2 (Proposed Amendments to Conditions), to avoid the need to check back to understand the details of the proposed changes.	Chapter 2 of the ES provides a comprehensive and complete description of the proposed amendments being sought by this S73 application.
To ensure that the Proposed development is easy to understand, the Non-Technical Summary (NTS) should ensure that all terminology is clearly defined and illustrated to provide greater clarity where relevant.	The NTS provides a concise summary of the proposed development and the likely significant effects in non-technical language which is written in a style to be understood by the lay person.

3.4 EIA Methodology

EIA Baseline

Baseline Year - 2019

3.4.1 In accordance with Schedule 4, Part II of the EIA Regulations, it is necessary to describe the 'existing' baseline environmental conditions within the ES, which constitute the prevailing conditions at the airport and within its area of influence. The Zone of Influence (or 'Study Area') varies between topics, and is defined in each respective chapter, where required.

3.4.2 Due to the widespread impacts of the Covid-19 pandemic, particularly on activity in and around the airport where traffic levels and passenger throughput have yet to return to its pre-pandemic levels, 2019 represents the most realistic, complete and appropriate 'full' baseline year on which to base the majority of technical assessments. The years of 2020 and 2021 were affected by Covid-19 'lockdowns' and the assiciated severe economic downturn and whilst the airport's business has recovered strongly in 2022, there is not yet a complete or validated dataset for this year (e.g. traffic counts) which can be reliably used. This principle has been accepted by LBN and the statutory consultees. However, where alternative (non-2019) baseline data have been used in the assessments, this has been justified within the relevant chapter of the ES.

3.4.3 A wide range of environmental baseline data has been captured and used to inform the environmental assessment work. Data was obtained from a combination of sources, including:

- Internal records including information and monitoring data held by the airport;
- Ongoing survey information from within and outside the airport boundary, including ground and air noise levels, air quality data, employment and traffic data;
- Information published in the airport's Annual Performance Report 2019;
- Publicly available datasets, mapping resources and reports; and
- Relevant data from statutory and non-statutory consultees.

3.4.4 The baseline information obtained is included in each of the respective topic chapters of this ES and describes the aspects of the environment with the potential to be affected by the proposed development.

Projected Future Baseline

3.4.5 It is also relevant to consider how the existing baseline conditions may change over time should the proposed amendments not be approved. Therefore, where possible, the existing baseline data has been extrapolated and modelled to identify the likely 'projected baseline' conditions in key assessment years.

3.4.6 For the purposes of this ES, this projected baseline is represented by the DM Scenario which is discussed below and in Chapter 4 of this ES (where the aviation forecasts are set out in detail). In this outcome, the existing annual 6.5 mppa passenger cap would be retained and the CADP1 infrastructure would be built out as consented by the 2016 CADP1 planning permission, albeit at a slower rate of delivery (as described more fully in Chapter 6).

3.4.7 A 'Without CADP1' scenario was assessed within the 2015 UES because this represented the future baseline against which the impacts of CADP1 could be assessed (i.e., were planning permission not to have been granted). However, a 'Without CADP1' future baseline is no longer a realistic concept because the CADP1 planning permission, granted on appeal in 2016, has since been implemented and this has already increased the airport's overall capacity and its operational functionality to handle larger Code C/ new generation aircraft.

3.4.8 As detailed in chapters 2 and 4 of this ES, key elements of the CADP1 infrastructure have been completed since 2016, including the extension of the deck over the KGV Dock to provide 8 new stands and the parallel taxilane (with 4 stands have been in operation since 2020). Accordingly, these physical and operational changes are included within the existing baseline that has informed this current ES. Moreover, these physical elements facilitate the primary operational changes approved by the CADP1 planning permission; notably, the increase in peak runway capacity, peak aircraft stand capacity and the accommodation of larger aircraft which would allow the airport to accommodate the permitted 6.5 mppa and 111,000 ATMs.

3.4.9 In view of the above, there is no realistic future baseline that could exclude those elements of CADP1 which have already been completed, and there are no plausible circumstances in which the airport would not seek to make beneficial use of this existing infrastructure and other capacity secured through the CADP1 planning permission, especially as it seeks to recover its market following the Covid-19 pandemic.

Core Assessment Scenarios

3.4.10 The methodology and approach to the EIA has been informed by the annual passenger and aircraft traffic forecasts calculated by York Aviation and detailed in Chapter 4 of the ES.

3.4.11 In accordance with convention and best practice standards, the EIA has focused on assessing the difference in environmental effects between the DM Scenario (with the existing CADP1 conditions unchanged) and the Development Case (DC) Scenario (with the proposed amendments). This represents the direct consequences and resulting 'likely significant environmental effects' associated with the proposed amendments.

3.4.12 Under the DM Scenario, the existing annual 6.5 mppa passenger cap is retained, whilst under the DC Scenario it is assumed that the airport can continue to grow and make better and more efficient use of its existing single runway and other infrastructure to handle an increase in passengers up to 9 mppa. A summary of the key aviation and passenger forecast statistics in the DM and DC scenarios is presented in Table 3.3 below.

Table 3.3: ATMs and Passengers under the DM and DC Scenarios

	2024	2025	2026	2027	2028	2029	2030	2031
DM Scenario								
Total ATMs	78,080	78,630	82,370	84,465	90,245	93,985	93,985	93,985

Total Passengers (Millions)	4.9	5.0	5.3	5.4	5.9	6.3	6.4	6.5
DC Scenario								
Total ATMs	78,280	83,110	90,585	97,255	101,965	104,265	111,000	111,000
Total Passengers (Millions)	4.9	5.4	6.4	7.1	7.6	7.9	8.6	9.0

3.4.13 With regard to the build out of the remaining CADP1 infrastructure, under the DC Scenario, construction works are anticipated to take around 6 years and could commence as early as 2025 and be completed in 2031, depending on the growth in passenger numbers, operational and service requirements, and financial considerations. Under the DM Scenario, it is anticipated that construction of the remaining CADP1 infrastructure would be delayed until the early 2030s and would be built out incrementally with completion expected to be around 2038. These core construction programmes are described in further detail in Chapter 6 of the ES

3.4.14 In addition to assessing the differences between the DC and DM Scenarios, in accordance with the Planning Practice Guidance[12] and EIA Regulations[13], the ES also considers the effects of the proposed development (i.e., CADP1 + the proposed amendments) as a whole with reference to a 2019 baseline. In assigning a significance value to a particular effect such as noise (i.e., negligible, minor, moderate or substantial) the assessments look at the predicted changes from the existing baseline position (2019) as well as the difference between the DM and DC Scenarios.

EIA Assessment Years

3.4.15 Annual passenger and aircraft traffic forecasts have been calculated by York Aviation for each year between 2024 and 2031, as described and shown graphically in Chapter 4 of the ES. Additional forecasts up to 2033 have also been prepared for the Slower Growth Case (see below).

3.4.16 Under the DC Scenario, the aviation forecasts predict that the airport would achieve 9 mppa and the maximum permitted 111,000 air transport movements by 2031. For all environmental topics, the ES therefore assesses and describes the changes in effects between the DM and DC Scenarios, adopting 2031 as the Principal Assessment Year, as well as setting out the total effects in each case by comparison to the baseline. The Principal Assessment Year represents the point at which the maximum or worst-case effects of the proposed development would generally occur (i.e., with the combination of the maximum number of passengers and the maximum number of aircraft movements) combined with the greatest difference in aircraft numbers and the associated environmental effects between the two scenarios.

3.4.17 As outlined in Chapter 4: Aviation Forecasts, the existing passenger cap of 6.5mppa is predicted to be reached in 2027 in the DC Scenario. For the purposes of the EIA, 2027 is therefore adopted as the 'Transitional Year' which represents the first year during which a strong divergence will occur between the DM and DC positions. This is due to the additional passengers, greater number of flights and progressive airline fleet replacement that would be stimulated by the combination of the higher passenger limit combined with the proposed changes to the airport's operational hours.

3.4.18 Between the 2027 Transitional Year and the 2031 Principal Assessment Year the forecasts show a further progressive divergence between the DM and DC Scenarios. However, there is no obvious intervening year before or after 2027, which would derive more pronounced environmental effects than those which would occur in 2031, because this is the year when maximum throughput of 9 mppa and 111,000 ATMs is forecast to be reached. Accordingly, in most cases, it is not necessary to assess the operational effects during the intervening years (2028, 2029 and 2030). This approach is consistent with the intent and purpose of the EIA

[12] http://www.gov.uk/guidance/flexible-options-for-planning-permissions#make-minor-material-amendments
[13] Town & Country Planning (EIA) regulations - Schedule 2.13(a)

Regulations and associated guidance, which require an ES to remain proportionate and focussed on both the 'likely' and plausible 'worst-case' effects of a proposed development at any given future years.

3.4.19 The notable exceptions to this pattern are for air noise, where a further operational assessment year of 2024 is also considered because this constitutes the 'worst case year' for air noise, and 2029 for air quality. The reasons for these additional assessment years relate specifically the anticipated fleet mix during these years and the likely prevailing environmental conditions, as described in detail in Chapter 8 of the ES (Noise) and Chapter 9 (Air Quality).

3.4.20 With regard to the assessment of construction effects, 2029 has been identified as the busiest year for construction activity and construction vehicles movements under the core DC construction timeline (as detailed in Chapter 6 of the ES). Conversely, under the DM Scenario, no construction would be occurring in 2029. Accordingly, this year represents a worst-case year for potential construction-derived environmental effects (i.e., noise, dust and emissions, traffic etc.) and is assessed accordingly in the relevant technical chapters of the ES.

Sensitivity Tests

Alternative DC Scenarios

3.4.21 As discussed in Chapter 2 of the ES and the Need Case (ES Volume 3), two separate sensitivity tests have been applied to the DC forecasts - the 'DC Faster Growth Case' and a 'DC Slower Growth Case'. These alternative forecasts, which are considered plausible but less likely than the core DC forecasts, reflect the inevitable uncertainties inherent in projecting future demand, particularly in the current circumstance of the aviation sector's recovery from the Covid-19 pandemic and other geo-political uncertainties.

3.4.22 The Faster Growth Case indicates the airport reaching 9 mppa in 2029, with a Compound Annual Growth Rate (CAGR) of 5.8%, whilst the Slower Growth Case is projected to reach 9 mppa in 2033, with a CAGR of 4.1% per annum. In essence, these sensitivity test cases feature the overall same type of growth as the core forecasts, but with minor variations depending on the rate of growth of the underlying market. For instance, aside from a slightly greater proportion of new generation jets compared to old generation jets in the Slower Growth Case, there is little difference in the capacity requirements for each scenario. As explained in the Need Case, in both the slower and faster growth outcomes the final number of busy day and hourly aircraft movements remains consistent with the core forecasts as this would be the most likely profile of activity related to 111,000 annual movements.

3.4.23 Under the Faster Growth Case it is unlikely that construction works for the CADP1 would re-commence any sooner than for the core case (i.e., not before 2025). However, under the Slower Growth Scenario, it is anticipated that the remaining CADP1 infrastructure would be built out commensurate with the rate of growth at the airport. Accordingly, under this scenario, construction would likely commence in 2027 and be completed by 2033. This Slower Growth Construction Programme is discussed further in Chapter 6 of the ES.

3.4.24 In view of the above, the differences in environmental effects between the core, faster and slower growth forecasts are generally negligible. However, for particular topics, where these alternative forecasts may derive slightly more pronounced effects in any one year, these are also assessed within the respective technical chapters of this ES.

Alternative DM Scenarios

3.4.25 The core forecasts for the DM Scenario represent the slowest rate of growth of the airport which is reasonably likely given known market dynamics and economic projections. Accordingly, this can be used as the 'benchmark' with which to identify the greatest possible differences between the DM and DC scenarios. There would be no value, in EIA terms, of producing further alternative DM scenarios with a faster rate of growth because more aircraft movements and passengers would simply result in the less pronounced differences between the DC and DM scenarios with respect to noise, air quality and other environmental effects. The consequential effects of the proposed amendments would therefore also be lower and would not

represent the worst case. Accordingly, there is no practical value or reason to assess alternative DM forecasts for the purpose of the EIA.

3.4.26 However, a DM 'sensitivity test' has been applied in respect to the construction and build out of the remaining CADP1 infrastructure. Under this scenario, it is assumed that no further construction takes place (within the foreseeable future) and the airport continues to operate with its existing terminal and temporary facilities, with selective internal modifications/ operational interventions to enable it to process peak hour passenger numbers and 6.5 mppa overall. This scenario is referred to as the 'DM Construction Sensitivity Test' and is assessed where relevant in the technical chapters of the ES.

Assessment of Environmental Effects and Significance Criteria

3.4.27 An ES should focus on assessing the consequential environmental effects of the proposed development, rather than solely on the activities or changes/impacts that cause them. The terms 'impacts' and 'effects' are often used interchangeably in ESs, due partly to the inconsistent terminology used in the EIA Regulations. However, in this ES, the term 'effect' is used consistently to describe the consequence of the predicted change or impact upon a particular environmental receptor, including people. In addition, a significant adverse effect from the proposed development would only transpire if the impacts (e.g., changes in air noise levels) are greater under the DC Scenario than in the DM Scenario and/or greater than predicted in the 2015 UES. In all other cases, the effects can only be negligible, neutral or positive.

3.4.28 The determination and classification of the significance of environmental effects is intended to aid the relevant 'determining authorities' in identifying:

- The likely environmental effects of a development; and
- The relative weight that each identified environmental effect should be given in the decision-making process.

3.4.29 The determination of 'significance' is a function of the magnitude of the impact(s) and the value or importance of the receptor.

3.4.30 One of the requirements of an ES is to establish whether identified environmental effects should be deemed 'significant' accounting for the availability and likely effectiveness of mitigation measures to "avoid, prevent or reduce and, if possible, offset likely significant adverse effects".

3.4.31 The EIA Regulations and associated planning practice guidance (PPG) do not define what constitutes a 'significant environmental effect' as this may vary between topics and be influenced by such factors as the sensitivity of the receiving environment and the susceptibility of local receptors to change. Moreover, in the absence of definitive legal standards for all topics, assigning levels of significance to predicted effects is often a matter of judgement and not necessarily a measure of the 'acceptability' or 'unacceptability' of such effects. Indeed, it remains the decision of the local planning authority as to whether the reported environmental effects should be considered significant and the weight to be given to them in reaching a planning decision.

3.4.32 Notwithstanding the above, a set of generic significance criteria can be applied based on established best practice in EIA, as shown in Tables 2.2 and 2.3 below. 'Significant effects' are shown in the highlighted cells. These criteria have been used for most assessments, whilst some topics use a derivation of these criteria to account for sector-specific guidance, including that recently published by IEMA for assessing climate change and health impacts, together with environmental quality standards (e.g., the national Air Quality Objectives) and policy tests contained in the NPPG and associated technical guidance (e.g., for assessing noise and road traffic impacts).

3.4.33 The specific criteria used to assess significance for each environmental topic are defined in the corresponding topic chapter of this ES.

Table 2.2: Generic EIA Terminology Applied within this ES

Magnitude/Scale of Impact					
Value of Receptor		**High/Large**	**Medium**	**Low/Small**	**Very Small/Negligible**
	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	None/Little	Minor	Negligible	Negligible	Negligible

3.4.34 In order to provide a consistent approach in reporting the outcomes of the various studies undertaken as part of the EIA, the terminology in Table 2.3 has generally been used within this ES to describe the relative significance of identified effects.

Table 2.3: Levels of Significance

Level of Significance	Description
Major	Very large or large change in environmental or socio-economic conditions. Effects, both adverse and beneficial, which are likely to be important considerations at a regional or district level because they contribute to achieving regional or local objectives or, could result in exceedance of statutory objectives and/or breaches of legislation.
Moderate	Intermediate change in environmental or socio-economic conditions. Effects which are likely to be important considerations at a local level.
Minor	Small change in environmental or socio-economic conditions. These effects may be raised as local issues but are unlikely to be of overriding importance in the decision-making process.
Negligible	No discernible change in environmental or socio-economic conditions. An effect that is likely to have a negligible or neutral influence, irrespective of other effects, often not discernible above the natural levels of variation.

3.4.35 Following their identification, all significant effects are classified on the basis of their nature and duration as follows:

- Beneficial – effects that have a positive influence on receptors and resources;
- Adverse – effects that have a negative influence on receptors and resources;
- Temporary – effects that persist for a limited period only (due for example, to particular construction activities taking place for a short period of time);
- Permanent – effects that result from an irreversible change to the baseline environment (e.g., land-take) or which persist for the foreseeable future (e.g., noise from regular or continuous operations or activities);
- Direct – effects that arise from the impact of activities that form an integral part of the proposed development (e.g., direct employment and income generation) and which occur at the same time and place;
- Indirect – effects that arise from the impact of activities that do not explicitly form part of the proposed development (e.g., off-site infrastructure upgrades to accommodate the development), which may occur later in time and/or are geographically remote from the site, but are nonetheless reasonably foreseeable and measurable; and
- Cumulative – effects that can arise from a combination of different effects at a specific location or the interaction of different effects over different periods of time.

3.4.36 Where it has not been possible to quantify the effects of the proposals, qualitative assessments have been undertaken, based on professional judgment in the knowledge of the information available and in the context of the proposals.

3.4.37 Those effects which are considered 'significant', and therefore material to planning decisions, are those identified as Moderate or Major (unless stated otherwise in the individual chapter methodologies).

3.4.38 Each of the technical chapters of this ES provides more specific detail on the criteria used, including the sources and justifications for quantifying the different levels of effect.

Mitigation and Enhancement Measures

3.4.39 Where potentially significant adverse environmental effects have been identified through the EIA, mitigation measures are proposed to avoid, reduce or offset these through appropriate environmental controls and/or compensation measures. These include mitigation measures which were previously identified in the 2015 UES and those which have already been agreed and/or discharged with LBN in accordance with the various planning conditions attached to the CADP1 planning permission. Where positive effects have been identified, measures are proposed to enhance these effects through new initiatives or by the strengthening of existing commitments, strategies and plans introduced by the airport in recent years, including those associated with the CADP1 planning conditions and 2016 Section 106 (S106) agreement.

3.4.40 A substantial level of environmental mitigation and community investment already takes place at the airport in response to controls imposed by the Government, the CAA and LBN; for example, the requirements of the existing 97 CADP1 planning conditions and the S106 agreement (e.g., the airport's Sound Insulation Scheme and contributions to the Community Fund) and other initiatives (e.g., supporting or chairing various business, employment and transport forums). Each technical chapter sets out these existing (or 'embedded') mitigation measures that form part of the approved CADP1 planning permission and have therefore been taken into account in the assessment of effects for that topic.

3.4.41 This existing package of mitigation and enhancement measures will be built upon, where required, to mitigate any additional impacts associated with this S73 application. Specific mitigation and enhancement measures are discussed within the individual topic chapters, whilst Chapter 14 of the ES (Summary of Mitigation and Residual Effects) presents a summary of both existing and proposed mitigation and draws conclusions on the residual (remaining) effects of the proposed development with such measures in place.

Assessment of Likely Residual Effects

3.4.42 The likely residual effects of the proposed development are set out for each topic assuming implementation of all mitigation measures identified. This includes an assessment of the significance of those effects in accordance with the identified criteria. Chapter 15: Summary of Mitigation and Residual Effects sets out a full summary of the mitigation measures that the Applicant is committed to, together with any further recommended enhancement measures. The residual effects are then described.

3.5 Cumulative Assessment

Cumulative Effects

3.5.1 This ES provides an update to the cumulative effects assessment presented in the 2015 UES to account for the revised CADP1 construction programme and an updated list of permitted developments that have been identified in the local area. This includes new planning applications that have been submitted since 2015, but excludes those developments previously considered in the UES which are now complete and therefore now form part of the baseline.

3.5.2 For the purposes of the EIA, cumulative effects are generally considered to arise from the combination of effects from the proposed development in combination with other permitted developments (not yet constructed or currently under construction) in the vicinity of the airport, acting together to potentially generate elevated levels of impact. Examples of these kinds of effects include:

- Traffic generated from major residential and commercial developments, affecting the surrounding road network;
- Emissions from such developments and associated traffic affecting local air quality conditions; and
- Future environmental, infrastructure and community enhancements funded by joint contributions of developers.

3.5.3 A 'long list' of potential cumulative schemes was included in the Scoping Report submitted to LBN. This list has been refined to provide a distinction between those future developments that could be affected by the proposed development (i.e., those located within the noise contours) and those developments which have the potential to give rise to significant cumulative effects in combination with the proposed development.

3.5.4 The 'screening criteria' adopted to identify the cumulative schemes to include in the assessment of cumulative effects is set out in Chapter 14 of the ES (Cumulative Effects) and the updated list of cumulative schemes is provided in Appendix 14.1 of the ES.

3.5.5 It should be noted that most of these cumulative developments identified are likely to be built out and fully operational before 2031. They therefore form part of the projected baseline for the EIA, against which the environmental effects of the proposed development have been assessed (e.g., new residential receptors within the air noise contours).

3.5.6 Further developments in the wider area of influence around the airport are already factored into the approved transport model, so the associated effects of traffic noise and exhaust emissions are accounted for in these assessments. The traffic 'growth factor' and other assumptions which underpin the model are described in the TA, which is contained in ES Volume 3.

3.5.7 As well as considering the cumulative effects of other proposed developments in proximity to the airport, there is the potential for 'intra' project effects within the airport boundary due to the overlap of different planned capital investment projects by LCY. The potential for such cumulative effects is considered in ES Chapter 14. However, as stated above, it is expected that most scheduled airport improvement projects (e.g., the EMAS) will be completed by 2023 and therefore cumulative effects with the proposed development are not anticipated.

Interactive Effects

3.5.8 Interactive cumulative effects constitute the net effect of two or more separate environmental impacts from the proposed development (e.g., surface access traffic noise and aircraft noise) occurring at a single sensitive receptor; where individually these impacts result in a minor effect but, in aggregate, they could create a moderate (or even major) adverse effect on that particular receptor.

3.5.9 Interactive effects can also arise where effects from one environmental element bring about changes in another environmental element. Examples of the main types of interactive effects are as follows:

- Effects of traffic on air quality;
- Effects of traffic on noise;
- Effects of air quality on human health and wellbeing; and
- Effects of noise on human health and wellbeing.

3.5.10 These interactive effects are considered in the respective topic chapters of this ES where appropriate and, in particular, these are addressed within ES Chapter 12 (Public Health and Wellbeing).

3.6 Assumptions and Limitations

3.6.1 The specific limitations, constraints or assumptions common to all assessment topics are listed below:

- The airport will continue to operate under restrictions and the obligations associated with the extant CADP1 planning permission (ref: 13/01228/FUL), except where these are proposed to be amended at part of the S73 application;
- The proposed amendments do not seek to increase the permitted number of flight movements, which will remain at a maximum of 111,000 ATMs per annum and subject to the agreed Quota Count (QC) under the currently approved Air Noise Classification Scheme (ANCS);
- Forecasts of aircraft fleet mix, annual movements and passenger numbers are based upon the methodology included in the Need Case (Volume 3);
- The design and construction of the CADP1 will satisfy environmental standards in accordance with current legislation, industry practice and knowledge, and will endeavour to achieve best practice at the time of the works;
- Unless otherwise stated, all existing CADP1 planning conditions will be carried forward as currently worded, with the exception of those proposed to be amended under the S73 application; and
- The details (plans, strategies, designs etc) already approved by LBN in order to discharge pre-commencement conditions will continue to apply unless they need to be updated to account for the passage of time (e.g., Condition 4: Construction Phasing Plan)

3.6.2 In respect to constraints and uncertainties, where there are deficiencies in the data these are identified in the relevant chapter of the ES. Despite limitations, constraints and assumptions, the results of the assessment are considered robust and compliant with the EIA Regulations.

3.7 Structure and Approach to ES Topic Chapters

3.7.1 All of the individual topic chapters (7 to 13) follow a consistent structure, as set out below.

3.7.2 In the majority of cases, the ES topic chapters are also supported by separate technical appendices which include supporting baseline data, figures, reports and plans. Where relevant, the interrelationship between topics (e.g., transport and air quality) is explained within the chapters and cross-references are made between chapters or sub-sections.

Introduction

3.7.3 The introduction to each chapter provides a brief summary of what is considered in the chapter and identifies the author and/or relevant technical contributor. (Note: a 'statement of competency' for the whole EIA team is provided in Appendix 1.1 of the ES, as required by the EIA Regulations).

Planning Policy and Legislative Context

3.7.4 This section of each chapter provides details of:

- relevant legal considerations or standards for the impact assessment;
- national, regional and local policy and Industry guidance that has informed the assessment; and
- topic-specific overview of relevant existing planning conditions and legal obligations attached to the CADP1 planning permission.

Assessment Methodology and Significance Criteria

3.7.5 This section of each chapter provides details of:

- the methodology, technical, spatial and geographic scope of the assessment, with reference to any published methodological standards, professional guidelines and best practice that are particular to the topic;
- the comments raised during scoping / consultation process and a commentary on how any pertinent matters have been addressed within the assessment;

- how baseline conditions have been assessed (e.g., site visits, surveys, review of publicly available data) and the scale of sensitivity and magnitude adopted within the assessment;
- how significance has been assessed (e.g., whether a matrix or some other approach has been adopted);
- any associated development (i.e., works which are required to facilitate the development but do not form part of the planning application, such as off-site utilities works) that is relevant to the assessment; and
- any assumptions or limitations.

Baseline Conditions

3.7.6 The baseline conditions at the airport and surrounding area are described for the environmental topic being considered. As explained earlier in this chapter, this is largely based on 2019 data (being the last year of 'normal' operations), supplemented by current (2022) surveys where appropriate.

3.7.7 Where necessary, and feasible, projected baseline under the DM scenario is also described to identify the conditions that are reasonably foreseeable in the future assessment year scenarios.

3.7.8 Each chapter describes the existing receptors or resources that could be impacted by the construction and operation of the proposed development and states the relative sensitivity and, where relevant, importance of these receptors. Together, this provides the context against which the environmental effects of the development have been assessed.

Incorporated Mitigation

3.7.9 Incorporated mitigation measures are described to account for those measures that are already either committed to, in place and/or will be extended to the construction and operational phases of the CADP1 scheme, as amended. These are sometimes referred to as 'designed in' or 'embedded' mitigation and include obligations under extant planning conditions and S106 obligations, as well as other commitments made by the airport (e.g., its recently published Sustainability Roadmap). As such, the assessment of effects has been undertaken on the basis that a number of mitigation measures are assumed to already be implemented as part of both the DM Scenario and DC Scenario, being retained/re-imposed by LBN in the granting of the S73 amendments.

Assessment of Effects

3.7.10 This section of each chapter presents the assessment of potential impacts and likely significant effects that are predicted to occur during the remaining construction and operation of the proposed development. Each assessment accounts for the effects of the whole CADP1 development, as amended by this S73 application (i.e., CADP1 + proposed amendments, which comprises the 'proposed development'). The assessment includes:

- The activities and physical elements of the development that are likely to give rise to particular effects, together with a more detailed description of such activities or elements where this would aid the reader's understanding of the assessment;
- The receptor(s) that are likely to be affected;
- The magnitude of the impact (including consideration of any embedded mitigation measures);
- The overall significance of the effect, prior to further mitigation; and
- Whether further mitigation is required.

3.7.11 As described previously, the likely operational effects arising from the proposed development have been considered by comparing the difference in environmental effects between the DC and DM scenarios. For most of the EIA topics, the impact assessments are predicated on a Principal Assessment Year of 2031, representing the point at which the maximum or worst-case effects of the proposed development will manifest (i.e., 9mppa and 111,000 ATMs).

3.7.12 The ES also considers the effects of the proposed development as a whole (i.e., CADP1 + the proposed amendments) with reference to a 2019 baseline, and assesses the predicted changes from this baseline position, where appropriate and relevant, as well as the difference between the DM and DC scenarios.

3.7.13 As discussed above, it is not realistic (or indeed possible) to forecast or model a future baseline with 'no CADP1' against which the proposed development can be assessed, as was done in the 2015 UES. Therefore, in order to determine whether there are likely to be new or materially different 'significant effects' from those identified previously in the 2015 UES, each technical assessment within the ES also provides a qualitative overview of the likely effects of the proposed development with reference to the impacts identified and findings of the 2015 UES. This is discussed further in each of the technical chapters of the ES.

Further Mitigation and Monitoring

3.7.14 This section of the chapter includes, where relevant, details of:

- The mitigation and/or enhancement measure(s) being proposed
- The year/ phase during which the mitigation or enhancement measures will be implemented;
- How each measure will be secured and when it will be triggered;
- The magnitude of the effect post-mitigation; and
- Whether the post-mitigation effect is adverse or beneficial.

Residual Effects and Conclusions

3.7.15 This section will be tabulated, and include details of:

- The residual effect following the implementation of further mitigation/ enhancement measures; and
- The significance of the residual effect and whether it is adverse or beneficial, direct or indirect, and permanent or temporary.