

CITY AIRPORT DEVELOPMENT PROGRAMME (CADP)

# CADP: PART 2 HEALTH IMPACT ASSESSMENT ADDENDUM

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**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP)**

**HEALTH IMPACT ASSESSMENT (HIA)  
ADDENDUM**

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# 1 INTRODUCTION

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## a) Background

- 1.1 On the 26th July 2013 London City Airport (the Airport) submitted proposals for the City Airport Development Programme (CADP), comprising two planning applications:
- i. CADP 1 . A detailed application for new airfield infrastructure and extended passenger facilities at the Airport (LPA ref. 13/01228/FUL); and
  - ii. CADP 2 . An outline application for a new hotel with up to 260 bedrooms (LPA ref. 13/01373/OUT).
- 1.2 The applications were accompanied by a number of documents, including a Health Impact Assessment (HIA) and an Environmental Statement (ES).
- 1.3 The primary aim of the HIA was to build upon and complement the outputs in the ES to further integrate health and wellbeing within the proposed CADP, to identify and assess potential health outcomes, and to put forward recommendations to optimise health gains whilst minimising potential negative impacts and inequality.

## b) Environmental Statement Addendum, March 2014

- 1.4 Following the submission of the planning application, the London Borough of Newham (LBN) made a request for *further information* in accordance with Regulation 22 (*further information and evidence respecting environmental statements*) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011.
- 1.5 An Environmental Statement Addendum (ESA) was therefore prepared to respond to each matter raised in the Regulation 22 request. Written clarification and supplemental information was also provided in response to the other matters. Details of minor design changes were also given. No further information or clarifications were sought by LBN in relation to the HIA.
- 1.6 The findings of the ES were re-examined within the ESA and it was concluded that the further information provided did not alter the principal findings of the ES, which remain valid and up to date. This was summarised in a tabulated *EIA Compliance Statement* (Section 10 of the ESA). An Updated ES Non-Technical Summary (NTS) was also provided.

## c) LBN Regulation 22 Letter, May 2014

- 1.7 Following consultation on the ESA and related submissions listed at paragraph 1.5 above, LBN issued a further Regulation 22 letter dated 23<sup>rd</sup> May 2014.
- 1.8 Part 2 (*Non Regulation 22 Additional Information / Clarifications*) Items 1-5 of LBN's letter, relate to requests for supplemental information in relation to the HIA. This stand-alone HIA Addendum (RPS, May 2014) has therefore been prepared in order to respond to these requests.
- 1.9 Part 1 of LBN's letter is addressed within a separate document, the Environmental Statement Addendum (ESSA). This is explained further within the covering letter which accompanies this

document. This HIA Addendum should be read in conjunction with the HIA, ESA (March 2014) and ESSA, which are cross-referenced throughout.

- 1.10 The requests from LBN relate to the further information contained in both the March 2014 ESA and the ESSA with regards to the health effects of noise (including annoyance; night time construction noise and possible sleep disturbance; and, cardio-vascular effects) with reference to established Government standards and scientific research. The HIA Addendum also considers the cumulative effects from the CADP in combination with current application by ABP to redevelop the Royal Albert Dock site to the north of the Airport (planning application reference number 14/00618/OUT). This is largely based on the Updated Cumulative Effects Assessment, contained in Section 5 of this ESSA.
- 1.11 Part 2, Items 1-5 of LBN's letter have been repeated below and responses have been provided by RPS.

## 2 NON REGULATION 22: PART 2, ITEM 1

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### a) Part 2 of LBN's Letter, Item 1

2.1 The following request was made within LBN's letter in relation to the HIA.

#### **LBN Letter, Part 2:**

*1) In LCA's response to the first Regulation 22 request (received on the 10th March 2014), further information was provided in relation to noise and its potential impact on schools and hospitals. Likewise, further information has been provided in relation to night time construction noise and possible sleep disturbance. This Regulation 22 also requests for further information to be provided in relation to noise, as detailed in Part 1 above. All new information that is provided in the ES and subsequent addendums is to be considered in the HIA.*

#### **Response in relation to noise and potential impacts on schools and hospitals**

- 2.2 As detailed in Chapter 8 of the ES, Section 5.66 of the HIA and as further demonstrated in Section 4 of the ESA (March 2014), noise exposure levels resulting from aircraft will be minor and in keeping with the prevailing ambient noise level. Change in noise exposure at modelled academic receptors will be marginal at most.
- 2.3 The RANCH study (Ref <sup>1</sup>), researched the effects of road traffic and aircraft noise on the cognitive performance and health of children. In this study, a linear exposure-response association was found between aircraft noise exposure and adverse effects on reading comprehension, episodic memory and working memory. It was estimated that a 5 dB (A) increase in noise exposure at schools was associated with a two-month impairment in reading age of UK children aged 9-10.
- 2.4 In the case of the proposed CADP, the greatest potential change in noise exposure at all of the modelled schools is 2 dB (A), below what is generally considered perceptible, and substantially less than the RANCH study noise change increment associated with adverse impacts. Therefore, the predicted increases in noise are not of a level to quantify any impact on academic performance using the current evidence base.
- 2.5 For those schools and colleges experiencing relatively high levels of noise at present, such as Drew Primary School and the University of East London, these have already been built or insulated to mitigate higher noise levels from the Airport.

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<sup>1</sup> Stansfeld et al Aircraft and road traffic noise and children's cognition and health: a cross national study. The Lancet 2005;365:1942-49

2.6 While the ESA (March 2014) provides greater resolution to the potential changes in noise at schools, the changes predicted continue to be below a level to quantify any measurable effect on cognitive performance, and the Airport continues to engage and support local academic institutes in order to address issues and maximise opportunities.

2.7 In relation to hospitals and hospices, Table 8.26 of the ES includes all relevant receptors including Richard House Hospice and paragraph 8.171 specifically refers to this, stating:

*8.171 Richard House hospice currently lies just within the boundary of the existing Sound Insulation Scheme and is predicted to experience a 1 dB increase in noise by 2023. This is a new building however and should be well insulated against external noise.*

2.8 This change is therefore below what is generally considered perceptible.

### **Response in relation to night time construction noise and possible sleep disturbance**

2.9 As detailed in Sections 3.60-3.68 of the ESA, a detailed noise assessment has been undertaken, taking into account the Indicative Detailed Construction Programme. The further information within the ESA, while providing a greater spatial and temporal resolution, and further refining the construction programme to minimise cumulative impacts, do not materially change the conclusion of the ES. Consequently, they do not materially change the conclusion of the HIA concerning potential for effects on sleep disturbance and health due to noise.

2.10 Further information regarding night-time construction noise impacts with consideration for intermittent operation of noisy plant and change to noise exposure over 15-minute intervals. The representative case predicts noise levels comparable to those given in the ES.

2.11 As stated in Section 5.49 of the HIA, prior to mitigation, potential health impacts from construction noise would be limited to annoyance and potential intermittent sleep disturbance from landside construction activities in proximity to communities. The updated information presented in the ESA and subsequent responses does not change this conclusion.

2.12 However, when taking into account the following points and mitigation measures, residual health impacts are not considered significant.

- The CADP will build upon the success of the construction of the Eastern Apron (Operational Improvement Programme, OIP), which managed environmental and noise impacts (including night time periods) effectively, with minimal community complaints;
- The intermittent nature and planned programme of noise-generating construction work, which will be further managed by the Construction Noise and Vibration Management and Mitigation Strategy (as described within the ESSA);
- The mitigation detailed in the ES, ESA, ESSA and HIA;
- Committed on-going engagement with local communities to manage any residual impacts, and enable local residents to address temporary and intermittent disruption.

2.13 On the above basis, no further health assessment is required, the conclusions of the HIA stand, and the recommendations detailed in the HAP do not require amendment.

### 3 NON REGULATION 22: PART 2, ITEM 2

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a) **Part 2 of LBN's Letter, Item 2**

3.1 The following request was made within LBN's letter in relation to the HIA.

**LBN Letter, Part 2:**

*2) It is considered that the annoyance is under-estimated in the HIA as the latest dose response relationships have not been considered. This is to be considered.*

**Response:**

- 3.2 The evidence base captured in the 2010 EEA Good Practice Guide (Ref. 2) provides a useful, concise summary of the general noise health evidence base as of 2010 setting out recent dose-response noise annoyance data. However, the exposure response parameters for annoyance provided within the guide are not definitive, and do not form the sector-approved assessment protocol for airport projects in the UK.
- 3.3 As detailed in Appendix B of the HIA, while there is some evidence to suggest that attitudes to noise have changed, there remains considerable debate in this area, and in regard to assessing annoyance from aviation noise, the approach outlined in the Civil Aviation Authority (CAA) Guidance (Ref. 3) remains prominent in evidence-based assessments for planning purposes.
- 3.4 It is important to note that using an alternative set of exposure response parameters will not alter the noise contours modelled, the population exposure within each noise contour, or the mitigation recommended. It will not replace the assessment or conclusions within the HIA. It will solely recognise that attitudes towards noise may be changing, and reinforces the need to manage noise effectively.
- 3.5 On this basis, while an alternative assessment of the same noise exposure scenarios may provide additional commentary as to how attitudes towards noise (and towards aviation noise in particular) have changed, this would not fundamentally change the conclusions of the HIA or the recommendations in the HAP concerning the importance of noise management and the appropriate mitigation measures proposed. It is also stated in the 2010 EEA Good Practice Guide that using the exposure response parameters adopted in this HIA is formally valid in the context of the Environmental Noise Directive while recognising that it leads to a conservative approach.

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<sup>2</sup> EEA Good practice guide on noise exposure and potential health effects (Technical report No 11/2010) published by EEA (European Environment Agency), 10 November 2010

<sup>3</sup> Civil Aviation Authority. (2007). CAP 725 CAA Guidance on the Application of the Airspace Change Process. Available at <http://www.caa.co.uk/docs/33/CAP725.PDF>, last accessed 15/07/13.

## 4 NON REGULATION 22: PART 2, ITEM 3

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### a) Part 2 of LBN's Letter, Item 3

4.1 The following request was made within LBN's letter in relation to the HIA.

#### LBN Letter, Part 2:

3) *Cardio-vascular effects were not quantified and also require consideration.*

#### Response:

4.2 In relation to cardiovascular health, the current scientific evidence base demonstrates that there are varying associations between changes in both aircraft and road noise exposure, and hypertension (high blood pressure). There is an associated risk of myocardial infarction (MI, heart attack) observed from exposure to road noise, but not from aircraft noise (Refs. 4, 5).

4.3 The recent CAA report on aircraft noise (Ref. <sup>6</sup>) best encapsulates the current scientific evidence base on the cardiovascular health from aviation noise in their 2013 review:

*"In terms of cardiovascular impact there are mixed conclusions from the various reviews and papers on the evidence for effects. Some reviewers consider that there is sufficient evidence, others that the evidence does not convincingly demonstrate an association. Based on existing evidence, it is possible that exposure to aircraft noise may be a risk factor for cardiovascular disease and all would agree that further research is needed to examine the impact of noise on cardiovascular health."*

4.4 The potential for a causal mechanism between aircraft noise and MI is not well understood, but biologically plausible autonomic and endocrine pathways are a possible basis for a potential link between cardiovascular disease with particular reference to chronic exposure to night-time noise (Refs. 7, 8). This potential health pathway is not applicable in the case of the proposed CADP

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<sup>4</sup> World Health Organisation (2011) Burden of disease from environmental noise: Quantification of healthy life years lost in Europe

<sup>5</sup> World Health Organisation (2012) Methodological guidance for estimating the burden of disease from environmental noise.ver-2.

<sup>6</sup> Civil Aviation Authority (2013). ERCD Report 1208: Aircraft Noise, Sleep Disturbance and Health Effects: A Review. <http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=5360>

<sup>7</sup> World Health Organisation (2011) Burden of disease from environmental noise: Quantification of healthy life years lost in Europe

<sup>8</sup> World Health Organisation (2012) Methodological guidance for estimating the burden of disease from environmental noise.ver-2.

development, as the Airport does not seek to alter the current operational flying hours, and hence will not increase night-time aircraft noise.

- 4.5 Given the changes in daytime and overall noise exposure predicted, the fact that there will be no change in night time operations, and the limitations of the scientific evidence base, an attempt to quantify potential cardiovascular risk is not appropriate in this instance. Instead, the individual noise health pathways, where sufficient evidence exists for an exposure response pertinent to the project, have been assessed within the HIA.
- 4.6 On the above basis, the HIA Addendum has considered the more detailed information contained in the ESA, and has further considered the wider health evidence base and alternative assessment protocols. The more detailed information provides greater temporal and spatial resolution, but does not influence the conclusion and recommendations of the HIA and Health Action Plan (HAP, included within the HIA). The alternative assessment protocols suggested, while providing additional commentary, again do not influence the findings of the HIA, its conclusions or the recommendations of the HAP.

## 5 NON REGULATION 22: PART 2, ITEM 4

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### a) Part 2 of LBN's Letter, Item 4

5.1 The following request was made within LBN's letter in relation to the HIA.

#### **LBN Letter, Part 2:**

*4) Similar to 5, Part 1 above, the health impacts of the proposals upon the Royals Business Park should be considered. Specifically in relation to planning application reference number 14/00618/OUT as mentioned above.*

#### **Response**

- 5.2 An update to the Cumulative Effects Assessment (Chapter 18 of the ES) has been provided within Section 5 of the ESSA which includes the Royals Business Park (ABP Scheme) (Ref: 14/00618/OUT).
- 5.3 The findings of the ES that supported the Royals Business Park (ABP Scheme) have been considered in terms of potential cumulative impacts when considered with the CADP applications. Other schemes that have subsequently emerged have also been considered as part of the Section 5 of the ESSA.
- 5.4 It is acknowledged that the construction works have the greatest potential to result in cumulative effect interactions (e.g. noise, dust), particularly in view of the relative proximity of the CADP and Royals Business Park (ABP Scheme) sites and the extended duration of both construction programmes. However, for the reasons set out in the ESSA, such effects are likely to be no worse than negligible to minor adverse. The Royals Business Park ABP scheme has been designed in full knowledge of the CADP proposals and appropriate design and other mitigation measures have been put forward to ensure that acceptable environmental conditions are achieved and maintained throughout the construction works and subsequent occupation and operation of the development.
- 5.5 Each of the other developments identified Table 1.1 of the ESSA have or will be sufficiently conditioned to mitigate any adverse effects from their construction and operation activities as part of the relevant planning permission, for example, by the implementation of a Construction Logistics Plan (CLP) and Construction Environmental Management Plan (CEMP) to control emissions or other pollution during this phase.
- 5.6 In conclusion, there would be no significant adverse cumulative impacts as a result of the proposed CADP in combination with the developments considered in Section 5 of the ESSA or those assessed previously in the July 2013 CADP ES.
- 5.7 These conclusions have been considered in terms of health impacts. As there are no further cumulative environmental impacts in relation to this scheme (including noise) it is considered that there are no health impacts related to this planning application. The proposed Royals Business Park (ABP Scheme) and other schemes discussed within the ESSA do not influence the conclusion and recommendations of the HIA.

## **6 NON REGULATION 22: PART 2, ITEM 5**

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a) **Part 2 of LBN's Letter, Item 5**

6.1 The following statement formed Item 5 of Part 2.

**LBN Letter, Part 2:**

*5) For clarification, though the submitted Health Impact Assessment is a separate document, reference to it is included within Chapter 7 (Socio-Economics, Community and Recreation) of the ES. However, as a separate document it is considered that the additional information requested above, does not form part of a formal Regulation 22(1) request.*

**Response:**

6.2 This is noted.

## 7 SUMMARY

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- 7.1 The purpose of this HIA Addendum has been to respond to Part 2, Items 1-5 of LBN's letter dated 23<sup>rd</sup> May 2014.
- 7.2 The requests from LBN have related to the further information contained in both the March 2014 ESA and the ESSA with regards to the health effects of noise (including annoyance; night time construction noise and possible sleep disturbance; and, cardio-vascular effects) with reference to established Government standards and scientific research. These are addressed within Sections 2-4 of this report.
- 7.3 Section 5 of this HIA Addendum considers the cumulative effects from the CADP in combination with current application by ABP to redevelop the Royal Albert Dock site to the north of the Airport (planning application reference number 14/00618/OUT). This is largely based on the Updated Cumulative Effects Assessment, contained in Section 5 of this ESSA.
- 7.4 Item 5, Part 2 of LBN's letter is stated within Section 6 of this report and clarifies that the HIA is a separate document to the ES and these requests do not form part of a formal Regulation 22 request. This is noted and a response is not required from this item.
- 7.5 In conclusion, the information provided within this HIA Addendum does not give rise to any likely significant health effects that are new or materially different than those set out in the HIA.