

CITY AIRPORT DEVELOPMENT PROGRAMME (CADP)

NON-TECHNICAL SUMMARY
OF CONSOLIDATED
ENVIRONMENTAL STATEMENT
NOVEMBER 2014

London City Airport 
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Non-Technical Summary of Consolidated Environmental Statement (CES), November 2014

Preamble

On the 26th July 2013 London City Airport (the Airport) submitted proposals for the City Airport Development Programme (CADP) comprised in two planning applications:

- CADP 1 . A detailed application for new airfield infrastructure and extended passenger facilities at the Airport (LPA ref. 13/01228/FUL)
- CADP 2 . An outline application for a new hotel with up to 260 bedrooms (LPA ref. 13/01373/OUT)

The applications were accompanied by a number of documents, including an Environmental Statement (ES) and ES Non-Technical Summary (NTS) which reported the findings of an Environmental Impact Assessment (EIA) of the proposed CADP. Following the submission of the planning applications, the London Borough of Newham (LBN) sought further information and clarification from the Airport on various matters presented in the ES. This was duly provided to LBN in the form of the Environmental Statement Addendum (ESA) dated March 2014, and the Environmental Statement Second Addendum (ESSA) submitted in May 2014.

The current **Consolidated Environmental Statement Addendum (CESA)** provides a full account of all further information provided to the Council since the July 2013 ES. It also provides the additional information and answers to matters raised by LBN in its most recent letter of 20th August 2014. As with the two earlier ES addendums, the information contained in the CESA has been provided in accordance with Regulation 22 (Further information and evidence respecting environmental statements) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011. The CESA therefore gathers together in one place all further information and clarifications on the ES that have been provided to LBN since July 2013, and also provides supplemental information regarding an EIA sensitivity test of 120,000 actual aircraft movements by 2023 and a new system of aircraft noise control being brought forward under the Aircraft Categorisation Review (ACR).

As a result of the minor design changes that have occurred to the CADP proposals and the further information that is contained in the CESA, the original ES has also been reproduced as the **CADP Consolidated Environmental Statement (CES)**, with relevant chapters amended or replaced to account for the key new information and supplemental assessments undertaken by the Airport and its consultants.

Much of the information contained in this CESA has no consequence or bearing on the findings of the original ES. Instead, it simply acts to clarify, validate and elaborate upon particular matters contained within the ES and/or to provide further project details that have been requested by LBN in the intervening period. Indeed, the vast majority of the ES text remains

valid on account of the fact that the main findings of the EIA, including the identification of all likely significant environmental effects of the CADP proposals, are not materially altered by the further environmental information or other matters of clarification which have been provided by the Airport.

However, certain minor changes to the design of the CADP proposals, the introduction of significant improvements to the construction programme, together with some of the supplemental noise and cumulative impact assessment work requested by LBN, can be regarded as material additions to the original ES. Accordingly, the CES has been submitted to LBN at the same time as the CESA.

The CES is summarised in this revised version of the Non-Technical Summary (NTS of Consolidated Environmental Statement, November 2014) which also describes relevant further information contained in the CESA.

In summary, the CES provides a complete account of all likely significant environmental effects of the proposed CADP, as required by the EIA Regulations 2011, together with proposed mitigation measures to avoid, reduce or offset potential adverse effects and to ensure that the beneficial effects of the development are realised; it incorporates some of the additional information and clarification provided to LBN since July 2013, but only where this has consequences for the content of the original ES. The CESA, on the other hand, provides all of the responses given by the Airport to the requests made by LBN for additional information or clarification.

Additions and minor factual amendments within the chapters of this CES are shown as red text/strike-through. Where it was considered that the degree of additional information provided warranted a full replacement chapter, this is denoted in the CES by the inclusion of Replacement Chapters within the header of the chapter; and is also distinguished in hard copy by being printed on different, light green coloured paper. Tracked changed versions of these replacement chapters are also included for reference as Annex A to Volume I of the CES.

The three chapters which are replaced in full in the CES are: Chapter 6: Development Programme, Demolition and Construction; Chapter 8: Noise and Vibration; and Chapter 18: Cumulative effects.

Being a summary only, this NTS is not intended to provide a full account of the CES or all of the further information and clarifications on the ES which are now provided in aggregate in the CES and CESA. Instead, it focuses on the key new information and supplemental assessments that have been undertaken by the Airport and its consultants. The reader is therefore encouraged to review the CES in its entirety alongside the CESA (Parts A to D) in order to appreciate the detail of the EIA and the latest changes.

The content of the CES and the various addendums to the July 2013 ES (now consolidated in the CESA) are summarised in the tables A and B below:

Table A: Summary of CADP Environmental Statement Documentation

ES Document	Summary of Matters covered	Status
Environmental Statement (ES) July 2013	Non Technical Summary (NTS) Volume I: Main Text and Figures Volume II-IV: Technical Appendices	Reproduced in CES with relevant text amended and 3 Chapters replaced entirely.
ES Addendum (ESA) March 2014	Minor revisions to the design of CADP1. Supplementary assessment of air noise, ground noise and construction noise), as requested by LBN in its letter of 21 st January 2014.	Responses incorporated into Part D of the CESA
Environmental Statement Second Addendum (ESSA) May 2014	Additional consideration of the following matters, as requested in LBN's letter of 23 rd May 2014: <ul style="list-style-type: none"> - Air and Ground Noise; - Construction Noise; - Noise data for Bombardier CS100 Aircraft; - Cumulative Effects; and - Other clarifications. 	Responses incorporated into Volume III, Part D of the CESA.
Consolidated ES (CES), November 2014	Consolidation of all previous ES documents plus further information requested by LBN in its letter of 20 th August, relating to: <ul style="list-style-type: none"> - Improved Construction Programme; - Alternative Construction Methods; - Construction Noise and Mitigation; - Implications of London Airspace Management Project (LAMP); - Cumulative effects; and - Alternatives to Hotel (CADP2). 	Consolidated source of all relevant environmental information which has a bearing on the findings of the EIA.
Consolidated ES Addendum (CESA) November 2014	Part A - Detailed responses to LBN's letter of 20 th August 2014, to the matters summarised above Part B - Sensitivity analysis for 120,000 actual movements. Part C - Explanation of proposed Aircraft Categorisation Review (ACR) quota count system	Consolidated source of all further environmental information and matters of clarification submitted to LBN since July 2013.

The content of the CES and changes relative to the July 2013 ES are summarised in Table B below:

Table B: Content of Consolidated Environmental Statement (CES)

ES Reference/ Chapter	Changes relative to original ES
VOLUME I: MAIN TEXT AND FIGURES	
Chapter 1. Introduction	Minor changes
Chapter 2. Site Context and Scheme Description	Minor changes
Chapter 3. EIA Methodology	No change to methodology
Chapter 4. Alternative and Design Evolution	Additional explanation of alternative sites for Hotel

Chapter 5. Planning Context and Existing Controls	Minor changes
Chapter 6. Development Programme and Construction	Replacement Chapter.
Chapter 7. Socio-Economics, Community & Recreation	No change
Chapter 8. Noise and Vibration	Replacement Chapter.
Chapter 9. Air Quality	Updated with relevant amendments
Chapter 10. Townscape and Visual Impact	Minor changes to assess design refinements of buildings (submitted in March 2014) and introduction of additional temporary construction noise barrier
Chapter 11. Surface Transport and Access	Minor changes to reflect alterations to construction traffic
Chapter 13. Ecology and Biodiversity	No change
Chapter 12. Water Resources and Flood Risk	No change
Chapter 14. Cultural Heritage	No change
Chapter 15. Waste Management	No change
Chapter 16. Ground Contamination	No change
Chapter 17: Climate Change	Minor changes to reflect clarification provided in ESA
Chapter 18. Cumulative Effects	Replacement Chapter
Chapter 19. Summary of Mitigation and Residual Effects	Updated with relevant amendments
ES VOLUME II - IV: TECHNICAL APPENDICES	
Relevant appendices updated (the contents page to these volumes confirms what has been updated/replaced)	

Introduction

- 1.1 London City Airport Limited (LCY) (~~the Airport~~) has submitted two planning applications to the London Borough of Newham (LBN). The proposed development project, known as the City Airport Development Programme (CADP), comprises a full planning application to construct new passenger facilities, 7 new aircraft stands and associated infrastructure (CADP1) together with a separate outline planning application for a proposed Hotel (CADP2).
- 1.2 Planning permission is sought for new airfield infrastructure and extended passenger facilities. Planning permission is not being sought for changes to the permissible number of flights or opening hours. These will continue to be controlled through **the re-imposition of** conditions and obligations attached to the 2009 Permission and Planning Agreement and it is anticipated that **further identical** controls will apply to the proposed CADP, **including the introduction of a new noise Quota Count (QC) system applied to different aircraft types. This new system of aircraft noise control, which will be brought forward in accordance with the Aircraft Categorisation Review (ACR), is described in Part C of the CESA. This is expected to be agreed with LBN before any planning permission for the CADP is implemented.**
- 1.3 This document is a Non-Technical Summary (NTS) of the CADP Environmental Statement (ES) which accompanies the two CADP1 and CADP2 planning applications. It is intended to be understood by the professional and layperson alike, so they can gain an understanding of what is proposed by the CADP applications and the likely significance of environmental effects associated with these future developments at the Airport.
- 1.4 The ES has been prepared by RPS Planning and Development Ltd and other expert consultants on behalf of the Airport and reports on the findings of a process known as Environmental Impact Assessment (EIA). A full glossary of terms used in this NTS is included at the end of the document.

Environmental Impact Assessment

- 1.5 To identify the likely significant environmental effects of the proposals and to determine, where appropriate, the ways of avoiding, reducing, off-setting or enhancing such effects (collectively known as ~~mitigation measures~~) an EIA study has been undertaken, which was **initially** conducted over a period of approximately 10 months and formed the iterative part of the CADP design evolution. **However, the EIA process has been ongoing since the planning applications and ES were submitted to LBN in July 2013, in order to respond to the LBN's three separate requests for further information and clarification (as set out in its letters of 21st January, 23rd May and 20th August 2014). The component assessments and findings of this extended exercise are therefore reported in both the CES and within the CESA (November 2014) which provides a composite account of all further environmental information provided to LBN since the July 2013 ES was submitted.**
- 1.6 The EIA has been undertaken in accordance with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) 2011 (~~the EIA Regulations~~) **and the**

further information requested has been provided and consulted upon in accordance with Regulation 22 (~~Further information and evidence respecting environmental statements~~).

- 1.7 The CES (Volume I) is divided into a series of chapters, as seen below. A summary of each chapter is explained within this Non-Technical Summary:
- a) Chapter 1: Introduction
 - b) Chapter 2: Site Context and Scheme Description
 - c) Chapter 3: EIA Methodology
 - d) Chapter 4: Alternatives and Design Evolution
 - e) Chapter 5: Planning Policy Context and Existing Controls
 - f) **Replacement** Chapter 6: Development Programme, Demolition and Construction
 - g) Chapter 7: Socio-Economics, Recreation and Community
 - h) **Replacement** Chapter 8: Noise and Vibration
 - i) Chapter 9: Air Quality
 - j) Chapter 10: Townscape and Visual
 - k) Chapter 11: Traffic and Transport
 - l) Chapter 12: Water Resources and Flood Risk
 - m) Chapter 13: Ecology and Biodiversity
 - n) Chapter 14: Cultural Heritage
 - o) Chapter 15: Waste
 - p) Chapter 16: Ground Contamination
 - q) Chapter 17: Climate Change
 - r) **Replacement** Chapter 17: Cumulative Effects
 - s) Chapter 18: Summary of Mitigation and Residual Effects
- 1.8 Volumes II-IV of the CES provide a set of technical appendices, including plans and drawings, separate reports, surveys and data, which have informed the EIA process.

Other Documents Accompanying the Planning Applications

- 1.9 A number of other documents accompany the CADP1 and CADP2 planning applications. Where relevant, these are referred to in the CES and/or reproduced in the appendices to it. They include:
- 1. Planning Statement, **updated by the Planning Statement Addendum, March 2014;**
 - 2. CADP Scheme Description;
 - 3. Application Drawings now updated, **updated by ~~CADP~~ Revision to Application Drawingsq March 2014;**
 - 4. Design and Access Statement (DAS), **updated by the DAS Addendum, January 2014;**
 - 5. Design Code (for Hotel application CADP2 only);
 - 6. Transport Assessment and Travel Plan;

7. Need Statement;
8. Statement of Community Involvement;
9. Energy and Low Carbon Strategy, updated by the Energy and Low Carbon Addendum, March 2014;
10. Sustainability Statement; and
11. Health Impact Assessment (HIA), updated by the HIA Addendum, May 2014

Project Team

- 1.10 The Airport has appointed a specialist Project Team for the proposed CADP. The consultants involved in the EIA process are listed below.

Table 1.1: EIA and Project Team

Organisation	Consultant Role
RPS	EIA coordination and principal authors of the ES. Technical authors of the chapters on: Cultural Heritage; Ground Conditions and Contamination; Townscape and Visual Impacts; Ecology and Biodiversity; Water Resources and Flood Risk; Waste; Climate Change; Sustainability Statement; and. Health Impact Assessment (HIA)
Quod	Planning Consultants
York Aviation LLP	Socio-economics, Recreation and Community Traffic Forecasting, Simulations, Need Case Assessment
Eddowes Aviation Safety Ltd	Assessment of Public Safety Zones (PSZ) and authors of report on Safeguarding (Appendix 2.2 of CESA) .
Bickerdike Allen Partners (BAP)	Noise and Vibration
Air Quality Consultants (AQC)	Air Quality
Vectos	Traffic and Transportation
Pascall + Watson	Lead CADP Architects (Terminal Buildings and Forecourt design) Author of the DAS
Allies and Morrison	Hotel Architects
TPS Consult	Airfield Engineers and construction advisors.
Atkins	Mechanical, Electrical, Structural and Drainage Engineers. Energy and Low Carbon Strategy
LDA Design	Landscaping

The Need for the proposed CADP

- 1.11 By virtue of its existing planning permission granted by the London Borough of Newham (LBN) in July 2009, the Airport can operate up to 120,000 noise factored aircraft movements per year. The Airport is not seeking to increase this maximum number of movements nor to change

its hours of operation, but to enhance its essential infrastructure and passenger facilities. Furthermore, all **relevant** existing environmental and operational controls set out in the 2009 Planning Agreement will continue to apply (**and/or be re-imposed under a new planning permission and Section 106 Agreement with LBN**) and some of these, such as the Sound Insulation Scheme (SIS), are to be enhanced subject to discussion with LBN and the grant of planning permission for CADP1. **Additionally, a new noise Quota Count (QC) system is proposed which will apply to different aircraft types. This new system of aircraft noise control, which will be brought forward in accordance with the Aircraft Categorisation Review (ACR), is described in Part C of the CESA. This is expected to be agreed with LBN before any planning permission for the CADP is implemented.**

- 1.12 The CADP1 application is required to enable the Airport to respond to forecast growth in both aircraft and passenger numbers (particularly at peak periods) and to accommodate new generation aircraft which are physically larger, but also more fuel efficient and quieter than the current fleet. The need for the proposed CADP is summarised in the table below:

Table 1.2: CADP Challenges and Solutions: Peaks, Planes and People

Challenge	Solution
Business travellers (majority of all passengers) want to travel in morning and evening . the Airport runway is almost full in the peak period. New routes need peak runway slots and additional stands . without them growth is limited.	Parallel taxiway, increasing peak runway utilisation and new stands.
New generation aircraft are getting larger e.g. the Bombardier CS100 will be at the Airport in 2016 . this aircraft will not fit on current stands.	New and upgraded larger stands.
Larger aircraft and increased demand for business travel means more passengers . current terminal infrastructure is nearing capacity. Without extra space, growth will be constrained.	Extended Terminal and ancillary infrastructure.

- 1.13 The ability of the Airport to enhance its infrastructure and facilities is constrained by its dockside location (see Figure 1.1 below) and the proximity of other constraints including the Docklands Light Railway (DLR) to the south. Accordingly, the CADP proposes to extend the Airport infrastructure eastwards by constructing a suspended concrete deck over approximately 7.54 hectares (ha) of King George V (KGV) Dock.

Figure 1.1: Aerial View of London City Airport (looking east, with KGV dock to the right)



- 1.14 In 2012 the Airport handled 70,502 total aircraft movements and 3.03 million passengers. The Airport has the highest proportion of business travellers of any major UK airport according to CAA survey data for 2012¹ (the Airport's own surveys place the proportion even higher²). The volume of business travel in 2012 was adversely affected by the Jubilee and the Olympics, so the underlying proportion is likely to be higher in practice. Even so, this compares to around 30% at Heathrow and 15% at Gatwick. This means that activity is and will continue to be focussed around weekday activity in the morning and evening busy periods, when business travellers need to fly. As the Airport becomes busier it will be more challenging to accommodate the passengers and aircraft movements at the concentrated morning and afternoon peaks. This concentration of aircraft movements in the peak hours is illustrated in Figure 1.2 below.
- 1.15 The Department for Transport (DfT) anticipate the Airport reaching 104,000 aircraft movements (take off and landings) and handling approximately 4.9 million passengers by 2020, rising to 120,000 movements and 6.2 million passengers by 2030, based on the current infrastructure³. The Airport's own forecasts predict that if the CADP planning application were to be granted then the Airport could handle 107,000 scheduled aircraft movements⁴ and cater for approximately 5.87 million passengers by 2023. However, if the proposed CADP were not to proceed then there would be approximately 88,000 scheduled aircraft movements and around 4.44 million passengers by 2023.

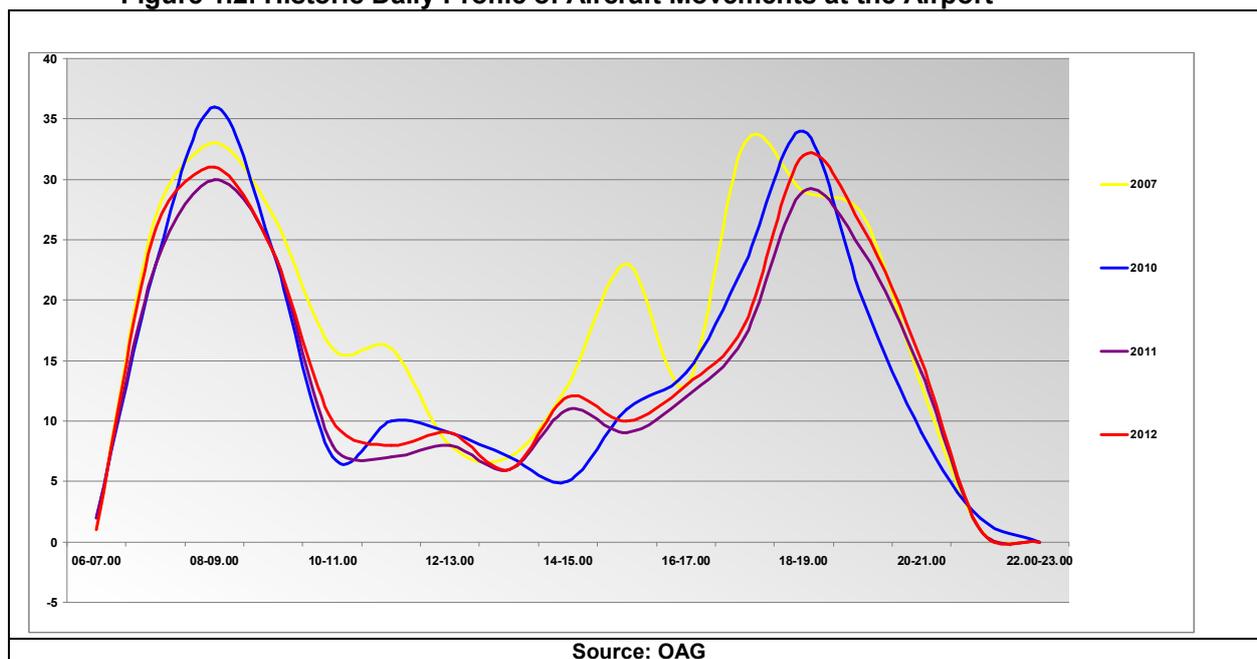
1 Civil Aviation Authority (CAA) Airport Statistics 2012.

2 Previous CAA survey data for 2010 showed 63% business travel, and the Airport's own surveys suggest the current proportion of business travel is 61%.

3 Department for Transport, (2013); UK Aviation Forecasts. DfT.

4 Aircraft movements are defined in the 2009 Planning Agreement with LBN.

Figure 1.2: Historic Daily Profile of Aircraft Movements at the Airport

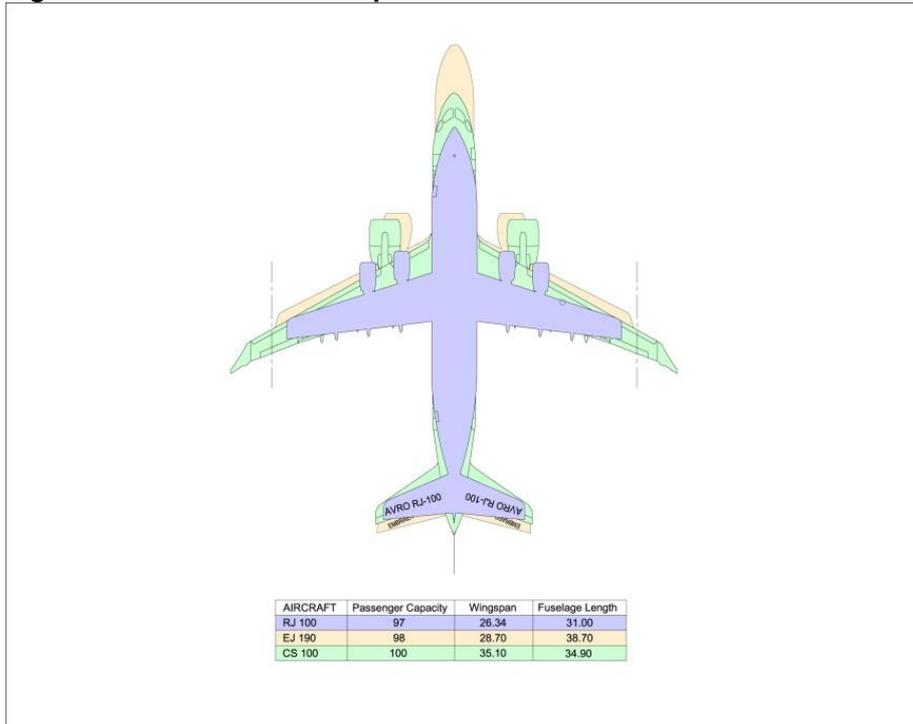


Source: OAG

Matching Infrastructure to Future Aircraft Sizes

- 1.16 Financial pressures and a greater awareness of sustainability imperatives are encouraging the airlines to increase the average size of aircraft and also to choose more fuel efficient and quieter planes when replacing their existing older fleets. These larger planes are generically referred to as larger Code C aircraft, reflecting their categorisation according to the Civil Aviation Authority (CAA). As explained below, such aircraft are physically larger than the current Airport infrastructure can deal with.
- 1.17 New generation Code C aircraft offer the potential for even greater fuel efficiency and carbon emissions (CO₂) savings, as measured on a per passenger/ km basis. This is because they incorporate more advanced airframe and engine technology and have a wider wingspan, which provides better lift than older, smaller and proportionally heavier jets currently in operation.
- 1.18 As the Airport becomes progressively busier it will become more challenging to accommodate passengers and aircraft movements during the critical morning and early evening peak periods. Moreover, the continuing trend towards larger Code C aircraft using the Airport will exert pressure on the efficient use of the runway, the availability of adequately sized stands and manoeuvring space, and other airport infrastructure. For instance, existing aircraft such as the British Airways A318 and the proposed Swiss International Airlines Bombardier C-Series (to be introduced in 2016) are unable to use the taxiway in front of the West Pier at the Airport. In addition, there are presently only 4 stands (Stands Nos. 21-24) which can accommodate these larger Code C jets.
- 1.19 Figure 1.3 below provides a comparison between an RJ100 (an older aircraft in operation for many years), the larger Embraer EJ190 (introduced at LCY in 2010) and the Bombardier CS100 (due to be introduced at LCY in 2016). The Embraer EJ190 (including the newer, quieter variants) and Bombardier CS100 (also a quieter aircraft than the present ones at the Airport) are forecast to make up an increasing proportion of the fleet over the next decade.

Figure 1.3: Aircraft Size Comparison



- 1.20 In addition to a lack of suitably sized stands, the modern larger Code C aircraft are not able to use the taxilane at the western end of the airfield and are also required to back-track on the runway, both on arrival and on departure, as they can only use one of the taxi links. This has the effect of slowing down the rate at which aircraft can take-off or land as they have to wait for the runway to be vacated. As the number and proportion of larger aircraft increase, it will therefore erode the Airport's ability to handle airline and passenger demand, particularly in the important peak periods. Therefore, if the Airport is to remain competitive and be able to accommodate such aircraft, its infrastructure must be upgraded as proposed by the CADP.

Matching Terminal Capacity to Passenger Numbers

- 1.21 The current Terminal infrastructure is nearing capacity and, without extra space, growth will be constrained. The larger size of aircraft expected to be operating from the Airport will carry more passengers than the aircraft they will replace. Hence, there will be more passengers seeking to use the Terminal building, particularly in the peak morning and early evening periods. These increased passenger numbers cannot be handled within the existing Terminal whilst maintaining the fast transit expected by business travellers in particular - the target transit time from entering the Airport to reaching the departure lounge is 20 minutes for departing passengers; the target arrival times are 15 minutes for passengers with carry-on luggage disembarking the aircraft to leaving the Terminal. Maintaining this customer proposition (which, in reality, is frequently bettered) is an important factor in the need for the proposed CADP.
- 1.22 A key part of the CADP1 proposal is the construction of two extensions to the existing Terminal - the Western Terminal Extension (WTE) and the Eastern Terminal Extension (ETE), incorporating a new 3 storey passenger Pier (the East Pier) to provide circulation, waiting and ancillary facilities for departing and arriving passengers. This extension of the Terminal will, in turn, permit the reconfiguration and upgrades to essential airport functions such as baggage

processing, immigration, security and staff facilities. It will also deliver more space and better facilities for passengers in line with modern service standards and guidance from the Civil Aviation Authority (CAA).

1.23 In summary, the proposed CADP will allow the Airport to make best use of its existing runway and:

- a) Respond to the growing business demand for peak hour flights;
- b) Provide for the more fuel efficient and quieter new generation of larger aircraft;
- c) Mitigate the impact of aircraft back tracking on the runway;
- d) Provide contingency aircraft stands to allow the Airport to manage aircraft movements efficiently; and
- e) Provide for the increasing number of passengers through improved space and facilities in the extended Terminal building in order to meet passenger amenity expectations and respond to growing security and other requirements.

Proposed CADP Development Scenarios

1.24 The methodology and approach to the EIA of the CADP proposals has been informed by the annual passenger and aircraft traffic forecasts for the years 2017, 2019, 2021 and 2023, for both With Development and Without Development scenarios. These and other assessment years and cases were considered through the EIA process in order to identify the environmental effects under these scenarios and at different points in time.

1.25 Table 1.3 summarises the forecast aircraft movements, passenger numbers and load factors (i.e. the % average available seats expected to be full per flight) in the With and Without development cases, as compared to the current (2012) baseline.

Table 1.3: Summary of Forecast Passenger and Aircraft Movement Forecasts

	2012 Baseline	2017 With Dev.	2019 With Dev.	2019 W/O Dev	2021 With Dev.	2021 W/O Dev	2023 With Dev.	2023 W/O Dev.
Scheduled Movements	64,775	92,149	98,802	84,941	104,901	88,822	107,119	87,713
Passengers	3,029,013	4,304,000	4,871,000	4,154,000	5,512,000	4,391,000	5,874,000	4,435,000
Average Load Factor	60.8%	57.40%	58.8%	58.5%	60.2%	60.2%	60.8%	61.7%
Business Aviation Movements	5,727	7,700	8,100	8,100	6,400	8,500	3,920	9,000

Source: York Aviation, June 2013. Note: Test and Training Movements are excluded.

1.26 Without the proposed CADP, both scheduled aircraft movement numbers and passenger numbers would be curtailed by the existing infrastructure and Terminal capacity constraints, some elements of which are expected to reach a saturation point over the next few years. This would make the future performance of the Airport less certain and would be contrary to the Government's priority for the aviation industry to make much better use of existing runway capacity at UK airports over the short to medium term. Current forecasts anticipate that these constraints would be removed by the proposed CADP. The proposed infrastructure and extended Terminal capacity has been sized explicitly to accommodate the projected growth in aircraft numbers and passengers to 2023. Any significant further growth over the longer term

(to, say, 2030) would not be possible within the constraints of the 120,000 noise factored movement cap established through the 2009 planning permission, nor would there be surplus capacity in the proposed CADP infrastructure (aircraft stands or Terminal facilities) to cater for any such growth.

- 1.27 The most likely Principal Case forecast of approximately 111,000 aircraft movements by 2013 (comprising 107,000 scheduled and 4,000 business aviation movements) underpins the environmental impact assessment work presented in the July 2013 ES and its two subsequent addendums - the ESA of March 2014 and the ESSA of May 2014. Due to the fact that certain aircraft are allocated a noise factor of 1.26 movements (known as Category A aircraft), these 111,000 movements translate to 120,000 noise factored movements (NFM) which is the limit placed on the Airport through its 2009 planning permission. Additionally, with the Principal Case forecast mix of aircraft, the runway and other infrastructure will be fully utilised during peak hours by 2023 with the CADP.
- 1.28 Nonetheless, it is also quite possible that some airlines could retain smaller aircraft in their fleets for longer than anticipated and introduce higher frequency operations on some routes, so spreading the peak to some degree. At the same time, other airlines might accelerate the rate of introduction of larger and quieter aircraft like the C-Series, within the limits presented in the original Need Statement submitted with the CADP1 planning application. In these circumstances, the slot allocation rules would see these additional commercial services displace more of the business jet operations than previously considered likely. If this were to happen, there could be virtual parity between the number of actual and the number of noise factored movements at 120,000. This is considered a plausible alternative scenario consistent with current planning controls, albeit with lower probability than the most likely Principal Case. It has therefore been considered in Part B of the CESA under the title '120,000 Movement Sensitivity Test'.
- 1.29 This 120,000 Movement Sensitivity Test constitutes a technical assessment which acts to supplement the CES. It is similar to the two previous sensitivity tests already contained in the July 2013 ES - the Fleet Mix Sensitivity Test (2023 Higher Passenger Case) completed at the request of Transport for London (TfL) and Public Safety Zones (PSZs) (2023 Higher Risk Case) completed at the request on the Greater London Authority (GLA) and LBN.
- 1.30 The results of the 120,000 Movement Sensitivity Test (described in Part B of the CESA) show that such a scenario would not give rise to unacceptable environmental effects and/or impacts which are materially different to those identified in the ES. It also illustrates how the proposed noise Quota Count (QC) system would be more effective and equitable than the existing NFM system in controlling aircraft noise, because the budget of noise quota points would not permit any further increase in aircraft noise over time. As such, it represents an effective means of incentivising quieter aircraft to use the Airport in the future, in accordance with the aims of the ACR. The proposed QC system has been subject to a number of stress tests to illustrate its effectiveness, as described more fully in Part C of the CESA

Proposed CADP Timing and Likely Sequence

- 1.31 The proposed CADP will be developed out in a sequential manner in response to the forecast demand in aircraft fleet mix and passenger numbers, as shown by Table 1.4 below.
- 1.32 The first 3 replacement stands are currently expected to be built out and operational by the end of 2016 (the Interim CADP) and the entire CADP completed by 2021 (the Completed CADP). However, it is commercially important for the Airport to retain some flexibility in the implementation of the development.

Table 1.4: Likely CADP Sequence.

CADP Description (indicative chronological order)	Indicative Development Phasing
<ul style="list-style-type: none"> • 3 new stands and reconfiguration of existing stands 21-24 • Partial extension of the taxilane running adjacent to the runway. • Temporary Facilitating Works including Coaching Facility, extension to existing Out Bound Baggage (OBB) facility, and temporary noise barrier. • Temporary Construction Noise Barrier at Woodman Street and an additional temporary noise barrier along the southern edge of KGV dock. • Western Terminal Extension Phase 1 (WTE1) • Western Energy Centre 	<p>Interim CADP (2016 to 2017) including 3 stands and the first section of the parallel taxilane; Phase 1 of the Western Terminal Extension (WTE1); construction of the Western Energy Centre; and Temporary Facilitating Works</p>
<hr/> <ul style="list-style-type: none"> • 4 additional new stands (providing a total of 11 larger code C stands) • Completion of taxilane. • New entry/exit link to the runway • Eastern Terminal Extension (ETE) • East Pier • Noise barrier extending from the new East Pier to the end of the concrete deck • New Terminal forecourt • Construction of Hotel (subject to commercial demand) • Landside passenger and staff parking, car hire parking and associated facilities, taxi feeder park and ancillary and related work . progressively built out to match demand • Eastern Energy Centre; 	<p>Transitional Phase (2019) including construction of the 4 additional stands and final phase of the parallel taxilane. Depending on the progression of the Eastern Terminal Extension and East Pier, the Coaching Facility would become redundant and would be demolished to allow for stands 21-24 to be enlarged to assume their ultimate configuration. At this stage all of the eastern stands would be capable of accommodating the larger new generation of aircraft.</p>
<hr/> <ul style="list-style-type: none"> • Completion of Western Terminal Extension Phase 2 (WTE2) • Provision of landside RVP access pontoon. • Works to upgrade Hartmann Road. 	<p>Completed CADP/ Design Year (2021): likely completion date for all physical works associated with the CADP.</p>

- 1.33 Further information on the construction programme is included within Part A, Section 2 of the CESA, which describes the *Improved Construction Programme - August 2014* (Appendix 2.1),

and within the replacement Chapter 6 of the CES. This *Improved Construction Programme* has been developed in order to further reduce the environmental impacts of these works to local residents and other receptors. The programme and associated tables and figures in the CESA highlight the substantial reduction in the duration and extent of construction works which need to take place in the more sensitive out-of-operational hours (abbreviated to OOOH). OOOH periods include weekday night-time hours (after 22.00) and the 24 hour weekend period (12.00 Saturday to 12.30 Sunday) when the Airport is normally closed.

- 1.34 Following a detailed feasibility study by the Airport and its consultants (informed by ongoing discussions with LBN, construction contractors and other parties) the OOOH works have been reduced as far as practicable, taking into account the overriding engineering, operational and safety considerations which apply to the Airport. Consequently, the programme now includes the following headline reductions:
- a) **A reduction in the amount of night time piling from 70% to 30%;**
 - b) **A reduction in the duration of night time works by 21 months throughout the overall CADP construction period;**
 - c) **A reduction in the number of night time construction activities and frequency of others;**
 - d) **A significant reduction in the duration of night time piling of approximately 10 months (45 weeks) - reducing from 77 weeks to 32 weeks;**
 - e) **A reduction in the overall duration of noisier night time deck works of over 6 months (29 weeks);**
 - f) **A reduction in the number of deck work activities occurring at night, including a reduction in frequency of a number of those remaining activities at night;**
 - g) **All construction activities previously occurring at night south of KGV Dock moved to daytime hours, including the construction of the hotel, car parks and forecourt works; and**
 - h) **Provision of an additional temporary construction noise barrier south of KGV Dock to reduce construction noise impacts in the communities south of the Airport, including North Woolwich.**
- 1.35 In assessing the construction methodology for the proposed future development of the CADP, the safeguarding experts at the Airport have undertaken an objective risk based assessment which has in turn informed the preparation of a construction methodology (for piling) that enables a temporary relaxation of the Transitional Surfaces (TS) of the Airport during operational hours. As reported in Section 2 of the CESA, the Airport's consultant Eddowes Aviation Safety Limited has undertaken a bespoke risk assessment that demonstrates that the proposed works, involving some temporary penetrations of the OLS, will meet an appropriate target level of safety. In summary, the Airport is satisfied from this provisional assessment that the proposed temporary penetrations of the Transitional Surface (TS), associated with the use of cranes and other taller items of construction plant on a temporary basis, are safe and will be acceptable to the CAA.
- 1.36 Whilst the extent and duration of such OOOH construction is substantially reduced when compared to the original construction programme (i.e. compared to that presented in the July 2013 ES) certain construction activities, such as work within the airfield, must still take place when the runway and apron areas are not operational. Further detail concerning the nature of

these activities and an explanation of why they must take place in the OOOH periods is provided in Part A, Section 3 of the CESA, in response to Item 1 of LBN's Regulation 22 letter of 20th August.

- 1.37 Improvements to the construction programme are also reflected within the replacement versions of Chapter 6: Development Programme, Demolition and Construction and Chapter 8: Noise & Vibration, which are included in the CES (November 2014).
- 1.38 The colour-coded plan below (Figure 1.4) shows the spatial extent of OOOH works and demonstrates the degree to which such works have been reduced to avoid or lessen associated impacts on residents proximate to the Airport.
- 1.39 The green shading illustrates daytime only works, which stretch across the landside areas to the south of KGV Dock, closest to the communities south of the Airport including North Woolwich. The areas of mostly OOOH (> 75%) are shown in dark pink. These essential OOOH works are largely contained within the airfield and adjoining areas in KGV Dock (i.e. some distance from residents to the south). The exceptions are works to the terminal building associated with the Eastern Terminal Extension (ETE) and Out Bound Baggage (OBB) facility. The other areas of partial OOOH works (<50%) are shown in bright blue, and occasional OOOH works (<25%) shown in light blue, occur within KGV Dock, as described in Section 3 of the CESA. Some of the occasional works would only occur during certain nights and only if absolutely necessary. Finally, the hatched area denotes the dedicated Contractors Compound to which night time access will be required by construction vehicles during particular phases of work.

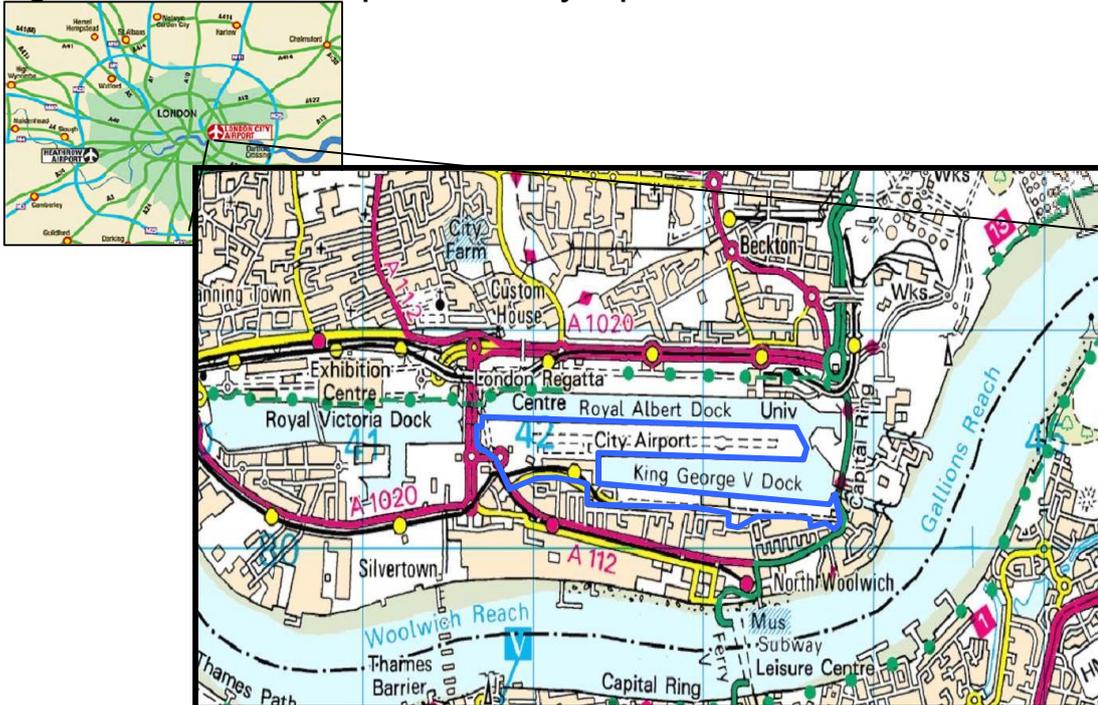
Figure 1.4 - Estimated Need for OOOH Works



Site Context

- 1.40 The Airport is a city centre airport that lies within the administrative area of the London Borough of Newham (LBN). The Airport is approximately 6 miles east of the City of London, approximately 2 miles east of Canary Wharf and 0.5 miles away from the ExCeL Exhibition and Conference Centre. The surrounding area comprises of a mix of residential, industrial and commercial uses. There is also a significant amount of planned development and regeneration in the vicinity of the Airport.

Figure 1.5: Site Location Map of London City Airport



- 1.41 The existing layout of the Airport is summarised below and presented in Figure 1.6. This replicates the Site Plan (No1) included with the Planning Application Drawings.

Airport Layout and Current Infrastructure

- 1.42 The Airport opened in 1987 and occupies an area of approximately 48.5 hectares. It has one runway and there are no parallel taxiways so aircraft arriving and departing have to back-track on the runway in order to take-off.
- 1.43 The Airport has 18 approved stands for scheduled aircraft at the Airport. Eleven of these were original to the initial opening of the Airport, with three more provided when the western apron was reconfigured in 2002 and another four on the completion of the Eastern Apron Extension in 2008. Since mid-2011 the Airport has been operated under the sub-optimal situation of having only 17 stands in place due to the original Stand 11 needing to be removed following the remarking out of aircraft stands 1-10 to allow the Airport to accommodate larger aircraft such as the Embraer EJ190. Accordingly, the Airport applied for and was subsequently granted planning permission from LBN on 8th April 2013 to re-provide this stand to the west of the

airfield (planning reference 13/00267/FUL). ~~This replacement stand has since been built out. is scheduled to be built out and operational by the end of 2013.~~

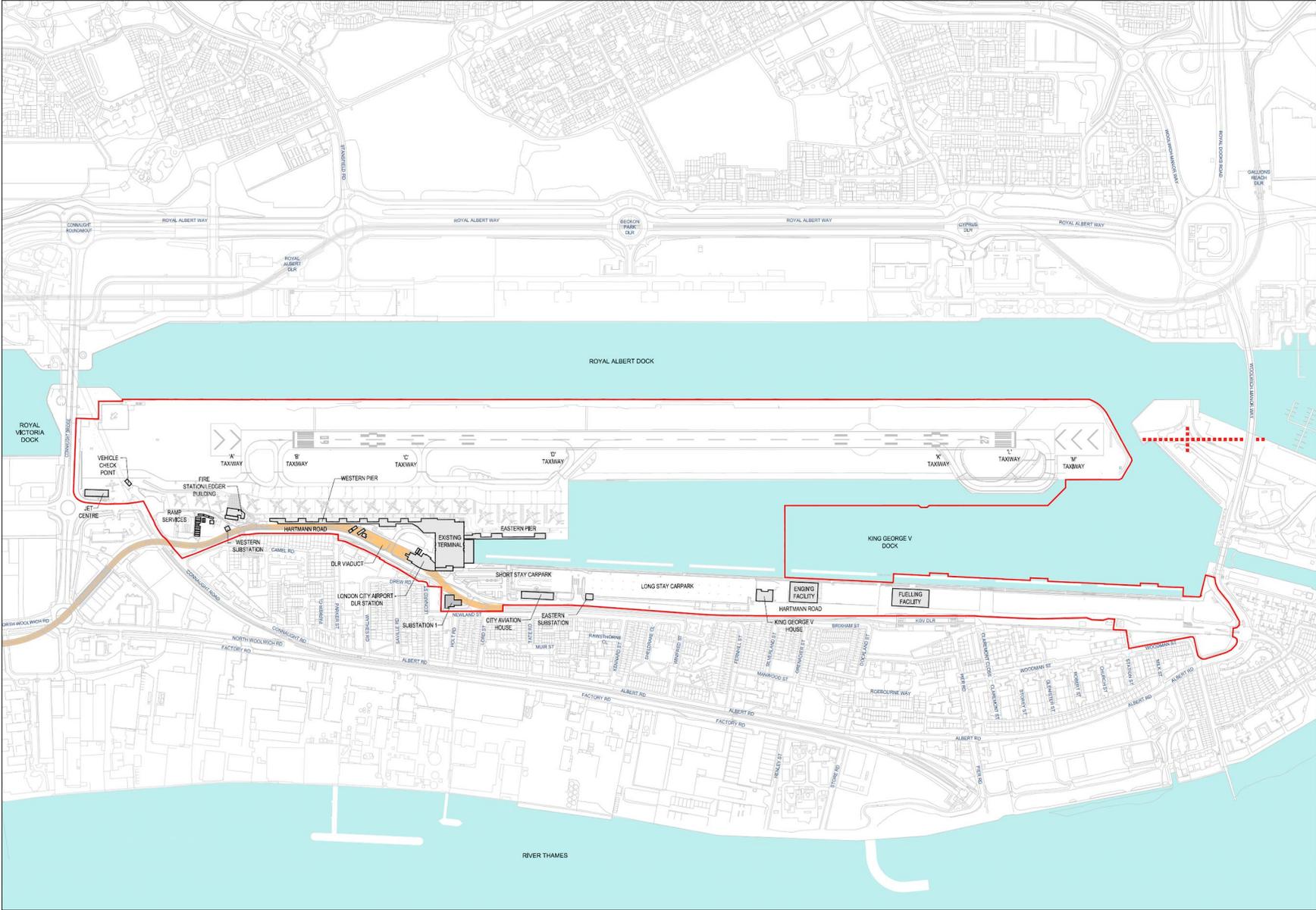
Terminal and Other Buildings

- 1.44 The existing Airport Terminal is a flat roofed building of approximately 13 m in height with a conning air traffic control (ATC) tower at a maximum height of 15 m, located at the western end of KGV Dock. It contains check-in facilities, ticket desks, security processing, a departure lounge, a departure and arrival pier, departure gate areas, domestic and international baggage reclaim, immigration and customs, shops, a business centre and catering outlets. The total floorspace taken up by the existing terminal and piers is 17,991m².
- 1.45 To the south of the Terminal, there are drop-off and pick-up facilities, car rental facilities, as well as the Airport's staff office accommodation within the 4 storey City Aviation House (CAH). To the east of CAH is KGV House which is used for offices and as a staff training facility. Further east along the dockside is the LCY Engineering Building and the LCY Fuelling Facility. The remaining land in the Application Site, to the east towards Woolwich Manor Way, is either vacant or used for goods storage and heavy vehicle parking.

Surface Access

- 1.46 The Airport is well connected to London's public transport rail system via its on-site Docklands Light Railway (DLR) station, which links directly into the Airport terminal building. As a result, it has the highest public transport mode share of any UK airport.
- 1.47 The main strategic road connections to the Airport are the east-west A13 and the A406 North Circular that connects with the M11 and M25 motorways. The Airport is approximately 1 mile from the A13, 3 miles from the A406 and 15 miles from the M25.
- 1.48 The Airport can also be easily accessed via walking, cycling, taxi/mini cabs or buses.
- 1.49 There are two main car parking areas within the Airport, shared between passengers and staff. The short stay car park is located closest to the terminal building; and the main stay car park adjacent to east of this. The short-stay car park has 148 spaces whilst the main stay car park has 644 spaces. Fifty-two spaces are provided the western staff car park, whilst 10 spaces are provided in the triangle staff car park. In addition, 120 parking spaces are allocated to car hire companies. These are located within the Forecourt and in an area adjacent to Hartmann Road.

Figure 1.6: Existing Site Plan



Scheme Description

- 1.50 As mentioned above, the works proposed by the CADP are formed of two planning applications. With the exception of a landside Hotel, detailed planning permission is being sought for the proposed CADP and is described as Application ~~£~~CADP1q CADP 1 extends to 60.1 hectares and includes the existing Airport boundary and areas outside (principally to the south) required for the implementation of the proposed CADP. It overlaps with the 0.59 hectare application site for the proposed Hotel (CADP2) to ensure integration between the two proposals. Collectively, the combined site (CADP1 and CADP2) is referred to as 'the Application Site' throughout the ES unless otherwise noted.
- 1.51 A description of the works proposed for CADP1 is given below and the proposed site plan is presented at Figure 1.6, which replicates the Key Plan (No4) included with the Planning Application Drawings.

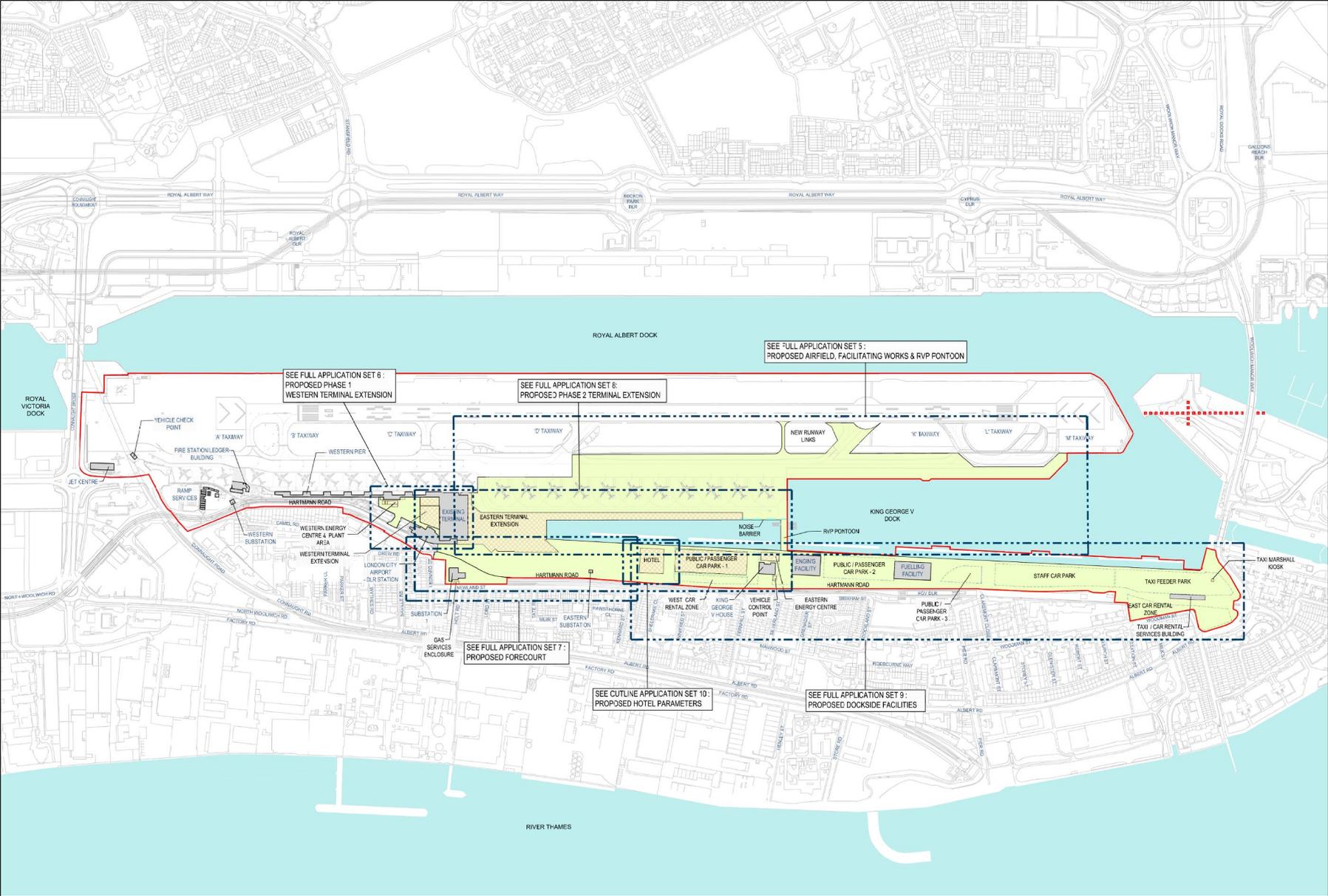
Stands and Deck over King George V Dock

- 1.52 New aircraft stands, the extended taxilane and the Eastern Terminal Extension will be largely situated on a 7.4 hectare deck or platform over King George V (KGV) Dock which extend to 24 hectares. The deck will sit just above the water line of the Dock.
- 1.53 It is proposed to enlarge existing stands 21-24 (located to the east of the existing terminal building) and provide 7 additional stands to the east of these stands. One of the enlarged stands and all of the new stands will sit on the deck over KGV Dock. The proposed stands are intended to allow larger new generation aircraft to manoeuvre into position unassisted. The works will create an eastern parallel taxilane to the south of the runway allowing aircraft, in certain situations, to taxi from the aircraft parking stands to the take-off and landing position without having to use the runway; thereby improving operational efficiency.

Temporary ~~£~~Facilitating Worksq

- 1.54 Temporary ~~£~~Facilitating Worksq are proposed in conjunction with the initial phase of the proposed CADP, which is likely to include the completion of 3 additional stands. The Facilitating Works comprise:
- a) A Temporary Coaching Facility . providing 3 coaching gate rooms close to the existing terminal for passenger convenience and reduced passenger walking distances;
 - b) A Temporary Outbound Baggage Extension . comprising an extension to the existing concrete deck to provide additional baggage processing space. The area will be enclosed with a new lightweight fabric structure; and,
 - c) Temporary **Construction Noise Barriers** . ~~this is~~ an extension of the noise barrier to the east of stands 21-24 ~~and~~ has been designed to attenuate aircraft noise prior to the construction of a new passenger pier. **An additional temporary construction noise barrier is also proposed along the southern edge of the KGV Dock in order to shield residents adjacent to this area from construction noise. Final details of the design of the barrier will be secured by planning condition.**

Figure 1.7: Proposed CADP Site Layout



Western Terminal Extension (WTE) and related works

- 1.55 The Western Terminal Extension (WTE) will be built in two stages. The Interim CADP will comprise new landside and catering uses in an extension at ground floor, with a new security area on the first floor, thereby enabling the first floor of the existing Terminal to be extensively reconfigured for airside passenger circulation, seating and retail and catering areas. The second floor of the proposed extension will comprise Airport related office accommodation. It is also proposed to build the Western Energy Centre (producing up to 35 kWt) together with a Western Service Yard. **The external envelope of the WTE will be clad in metallic materials to complement the appearance of the Eastern Terminal Extension (see below).**
- 1.56 The second stage of the WTE (the Completed CADP) will provide additional Airport related office accommodation that is partly required due to the need to relocate staff from the demolished CAH building, which sits in the location of the proposed Forecourt.
- 1.57 The height of the proposed WTE building is approximately 12.75m from the average ground level at the base of the building to the top of the perimeter facade parapet. The width (east-west) is approximately 36.2m. The length of the western facade is approximately 30.3m (excluding the projecting solar shading hood), whilst the length of the eastern facade is approximately 43.6m due to the kinked shape. Aesthetically, the building will have white, smooth-faced cladding behind silver (natural anodised) expanded aluminium panels, with lapped joints between sheets, such that the panels appear as continuous and the impression of any modulation is minimised.

Forecourt

- 1.58 A new passenger Forecourt area is proposed to the south and east of the enlarged Terminal. To meet security requirements there will be a 30m wide landscaped vehicle-free zone in front of the enlarged Terminal building. The Forecourt will include a black taxi pick-up and drop-off facility, a private vehicle pick-up and drop-off facility and bus stops for London Buses.

Eastern Terminal Extension, including East Pier

- 1.59 The proposed Eastern Terminal Extension (ETE) will be dedicated to passenger arrivals, with the existing Terminal reconfigured for departing passengers.
- 1.60 Key components of the ETE are the following:
- a) Ground Floor . Airside: baggage reclaim, customs and ancillary areas; Landside: arrivals concourse, retail, catering (food and beverage) and ancillary areas;
 - b) First Floor . Transfers Security, Immigration, office and public toilets;
 - c) Second Floor . Airside: passenger lounges and passenger circulation areas & offices; Landside: offices, staff facilities and ancillary areas.
- 1.61 The ETE will also include a reconfigured outbound baggage processing area.
- 1.62 The Main Processor Building of the ETE will range from approximately 17m to 18.5m in height (from the average level of the ground upon which the buildings sit) and will be 146m in length (from the

eastern facade of the existing Terminal to the furthest eastern extremity of the East Pier) and 36m wide. The Arrivals Concourse Building is approximately 11m in height, 130m in length by 20.5m wide (excluding the projecting solar shading).

- 1.63 To serve the new and upgraded aircraft stands to the east of the extended Terminal Building, a 3 storey East Pier is proposed. The building will be approximately 16m in height (from the average level of the ground upon which the buildings sit), 510m in length (from the eastern facade of the existing Terminal) and 14m wide (at its widest) and will provide circulation, waiting and ancillary facilities for departing and arriving passengers.
- 1.64 A permanent Noise Barrier (13.5 m AOD) is proposed at the end of the East Pier to mitigate noise impacts principally from aircraft using the end stand.
- 1.65 The external treatment of the ETE runs as a series of metallic elements designed to distinguish between internal functional and processing divisions as follows (and see Figure 1.7):
 - a) Silver-coloured metals (such as, but not exclusively: anodised aluminium, zinc, stainless steel) are to be used to indicate Departures-related functions; and
 - b) Brass Gold-coloured metals (such as, but not exclusively: brass gold-coloured anodised aluminium, ~~actual copper-zinc~~ copper-aluminium alloy) are to be used to indicate Arrivals-related functions.

Figure 1.8: Visualisation of the completed CADP as seen from the south-west (Revised Figure, March 2014)



Eastern Energy Centre

- 1.66 An Eastern Energy Centre, to the south of the Rendezvous Point (RVP) access pontoon located in the Dockside, will house the CCHP and heating plant for the entire CADP Development, allowing for the relocation of similar plant from within the Western Energy Centre. It will also provide additional space for the heat exchangers to allow connectivity to a future district heating system, as and when this becomes available in the area.
- 1.67 The space allowance in this facility includes circulation, maintenance and operational space, fire escape routes, combustion and ventilation air intake louvers, and exhaust flues for the CCHP plant. Water and drainage facilities and a gas intake will also be provided and pipework will run from the Eastern Energy Centre to the Eastern Terminal Extension (ETE) and Hotel via a services trench.

Landside Parking and Ancillary Areas

- 1.68 The main existing vehicle access point to the Airport from the western end of Hartmann Road will be maintained and supplemented by a new permanent access from the eastern end of Hartmann Road at its junction with Woolwich Manor Way. The existing traffic controlled junction will be upgraded and Hartmann Road enhanced along its length.
- 1.69 Between Hartmann Road and KGV Dock to the south of the proposed Hotel, it is proposed to include decked (485 spaces) and surface level (264 spaces) car parking, to be used by Airport passengers and staff. An additional 300 space staff car parking area also provided. The West car rental (48 spaces) and East car rental (102 spaces) parking areas and a taxi feeder park (326 spaces) will also be included, together with various ancillary landside buildings.
- 1.70 A temporary Construction Noise Barrier (3m high) is proposed along part of the southern boundary of the site to mitigate noise impacts for residents to the south of the eastern end of Woodman Street during the construction process.
- 1.71 A further 3m high Construction Noise Barrier will be located south of KGV Dock to shield residents from noise, visual and other impacts of the works. The extent of this second barrier will vary according to the phasing of construction, with the relevant part of the barrier installed for each phase as the construction progresses across the site. The location and extent of the barrier is shown on drawings in Appendix 4.2 of Part A of the CESA.

CADP2 . the Hotel

- 1.72 Outline planning permission is being sought for the Hotel in order to provide the necessary flexibility for the detailed design of the scheme at a later date. The Hotel will include up to 260 bedrooms and has been designed to include retail and catering uses and a business centre.
- 1.73 At the request of LBN, alternative sites have been considered for the hotel (refer to Section 7 of the CESA and Chapter 4 of the CES). This exercise demonstrated that the proposed Hotel is in the most appropriate and suitable location on the application site in order to meet the specific requirements of an airport-centred facility.

- 1.74 Figure 1.9 below provides a visualisation of the proposed CADP as seen from the south-east, with the illustrative Hotel in the lower right foreground.

Figure 1.9: Illustration of the proposed CADP with Hotel in Foreground (Revised Figure, March 2014)



Approach to assessing the likely significant effects of the CADP project

- 1.75 The requirements for undertaking an Environmental Impact Assessment (EIA) are set out in the EU Directive and implemented in the UK through the Environmental Impact Assessment Regulations 2011.
- 1.76 The purpose of undertaking an EIA is to assess the likely socio-economic and environmental effects brought about by the CADP, should the proposals be granted planning permission. This is so that appropriate measures can be put in place, where necessary, to prevent or reduce adverse effects and to optimise the likely positive benefits or environmental enhancements that the proposed development would bring about. The main stages of the EIA and preparation of the resulting ES were:
- Establishing the existing environmental conditions by review of the planning history, operations and environmental controls in force at the Airport;
 - Gathering of third party data and obtaining other information and data held by LBN and other public bodies (e.g. for; employment and socio-economic statistics, ecological records, background air quality data);
 - Identification of existing sensitive receptors from the Airport (including residents, listed buildings, ecologically sensitive areas), as well as future potential receptors such as planned developments in the area (those with planning consent or development allocations);
 - Production and submission of a Scoping Report to LBN on 8th October 2012;

- e) Receipt of Scoping Opinion from LBN on 4th December 2012;
- f) Ongoing consultation with statutory and non-statutory consultees in relation to the EIA;
- g) Examination of the aircraft movements and passenger forecasts produced by York Aviation;
- h) Review of detailed scheme drawings, parameter plans and other design information;
- i) Assessment of the likely significant environmental effects, by comparing the differences between the ~~With~~ and ~~Without~~ development scenarios for relevant assessment years;
- j) Taking account of the effects brought upon by other proposed development in the area which have not yet been constructed . the cumulative effects;
- k) Identification and incorporation of any mitigation that will be implemented in the final CADP design;
- l) Identification of the residual (remaining) effects after mitigation measures and any further enhancements are implemented; and,
- m) Preparation and submission of the ES in support of the planning application.

1.77 As stated above, the EIA process for the CADP continued after the planning application and ES were submitted to LBN in July 2013, in order to respond to the Council's three separate requests for further information and clarification on various matters. The component assessments and findings of this extended EIA exercise are therefore reported within both the CES and the CESA (November 2014), which provides a composite account of all further environmental information provided to LBN since the July 2013 ES was submitted.

Assessment Criteria

- 1.78 The likely environmental effects and socio-economic impacts of the proposed CADP have been predicted for each relevant environmental topic and compared to the baseline and ~~base case~~ environmental conditions (i.e. those existing at present and those in the future without the proposed CADP). A summary of these effects are presented in the subsequent sections of this NTS.
- 1.79 The effects of the proposed CADP are predicted in relation to the effect upon (the change to) environmental receptors, including people (e.g. local residents), built resources (e.g. the historic dock structures) and natural resources (e.g. features of ecological interest).
- 1.80 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 1.5 has generally been used within the ES to describe the relative significance of identified effects.

Table 1.5 - Levels of Significance - Terminology and Explanation

Level of Significance	Description
Substantial/ 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 discernable above the natural levels of variation.

Socio-Economics, Community & Recreation

- 1.81 This chapter of the ES provides an assessment of the likely significant socio-economic effects arising from the proposed CADP.
- 1.82 A Study Area was defined which encompasses the London Boroughs of Barking and Dagenham, Bexley, Greenwich, Hackney, Havering, Lewisham, Newham, Redbridge, Southwark, Tower Hamlets, and Waltham Forest, as well as the District of Epping Forest.

Baseline Conditions

- 1.83 The London Borough of Newham (LBN) had an unemployment rate of 5% at the end of 2012; this is the percentage of working age group that were unemployed and claiming benefits at that time. The average rate of unemployment for the Study Area as a whole in December 2012 was 4.6%, higher than for London as a whole (3.9%) and than the UK average (3.7%). There were approximately 89,000 jobs in LBN in 2012, but a job density (ratio of jobs to population) of only 0.41, as opposed to 0.88 in London as a whole. The Study Area had a lower percentage of qualified people of working age in NVQ Level 1 and 2 when compared with London as a whole, and a higher percentage with no qualifications at all. LBN had the highest level of working age population with no qualifications at 15.3%.
- 1.84 In December 2012, 2,055 people were employed on-site at the Airport (full time and part time positions), with 61% of on-site employees coming from the Local Area. The Airport takes steps to ensure that jobs at the Airport are accessible to local people.
- 1.85 In order to understand the economic and social importance of the Airport to business in London, Civil Aviation Authority (CAA) survey data has been used to examine the types of passengers using the Airport and their journey origins and destinations. The majority of passengers are travelling for business purposes through London City Airport, which is substantially higher than the average for the other London airports. Approximately 27% of passengers using the Airport for business travel were foreign residents, compared with around 17% using Heathrow.

- 1.86 An assessment of the Airport's contribution to the wider economy found that it is an essential part of the proposition that has brought much needed inward investment that will continue to support London's growth eastwards, while still acting as an important gateway for the City of London.
- 1.87 A Social Survey undertaken demonstrated that the local area in which the Airport is located continues to gain in popularity as a place to move into, and the Airport was viewed more as a positive than a negative when considering this move. A substantial proportion of respondents also felt that the Airport was important for bringing people in to visit East London and that the Airport is supportive of the wider London economy.

Assessment of Potential Effects

- 1.88 The proposed CADP will support an additional 960 direct onsite full time equivalent (FTE) jobs at 2023 compared with the baseline level of direct onsite FTE jobs. The proposed CADP will support an additional 700 direct onsite FTE jobs and 126 indirect FTE jobs at 2023 when compared with no development, resulting in an additional 910 FTE jobs overall at 2023 including induced employment. This would be a **substantial beneficial** effect
- 1.89 The proposed CADP will support an additional £98.8m of Gross Value Added (GVA) in the Study Area at 2023 compared with the baseline impact. The additional GVA impact at 2023 with the proposed CADP, as compared with Without CADP scenario, is £51m. This would be a **substantial beneficial** effect.
- 1.90 It is estimated that 344 FTE direct onsite construction jobs will be supported over the life of the construction project, with a further 103 indirect and induced FTE jobs, making a total of 448 FTE jobs. This equates to around £234m of direct income and £70m of indirect and induced income, making a total of £304m. These effects would constitute a **moderate beneficial** effect
- 1.91 The Hotel proposals could support up to 130 additional direct (onsite) jobs from the point when the Hotel is opened and produce £5.8m GVA. This would constitute a **moderate beneficial** effect.
- 1.92 Overall, taking all types of employment into account, the CADP proposals would generate an increase in local employment of approximately 1,500 compared to 2012, when the full impact of the proposed Hotel is taken into account. This is made up of 1,250 jobs as a result of the increase in operational activity at the Airport and around 200 jobs in total related to the Hotel and other elements of CADP2.
- 1.93 The effect of the potential expansion of the Public Safety Zones (PSZs) at either end of the runway as a result of the increase in aircraft movements and the change to the fleet mix has been considered. Whilst smaller than the projected ~~Without Development~~PSZs, some development sites in the area could be partially infringed by the projected ~~With Development~~PSZ. This would reduce the net number of additional FTEs at 2023 by 160 and the GVA by £7.1m. However, the enlarged PSZ would be greater ~~Without Development~~and hence the impact would also be more adverse in this scenario, reducing the number of additional FTEs at 2023 by 300 and the GVA by £13.3m. It is therefore considered that the potential effect of the enlarged PSZ on employment and GVA in the ~~With Development~~scenario would constitute a **moderate beneficial** effect.

- 1.94 The impact of additional retail development at the Airport on retail businesses in Woolwich is judged **not to be significant**. There will be continuing growth in the wider economy supported or facilitated by the proposed CADP.
- 1.95 Although it is not possible to quantify all of the wider economic benefits that would accrue from the Airport's ability to reach its movement limits through the proposed CADP, there can be little doubt that the proposed CADP will facilitate continued economic growth and inward investment in Newham and the wider East London economy. This would therefore constitute a **substantial beneficial** effect.

Summary of 120,000 Movement Sensitivity Test for Socio-Economics (forming Part B of the CESA)

- 1.96 The assessment of the likely significant effects of the 120,000 Movement Sensitivity Test is based on the same methodology as is set out in Chapter 7 of the CES and as described in Part B of the CESA.
- 1.97 With the Airport accommodating 120,000 annual aircraft movements, the Airport is expected to generate an additional 880 direct onsite FTE jobs in 2023 when compared to the Without Development case, and an additional 1,140 FTE jobs overall. Income would rise to £64.4m additional GVA at 2023. Both of these benefits to the local and wider economy would continue to constitute **substantial beneficial** effects.
- 1.98 Employment derived during the CADP construction and that associated with the proposed Hotel are unaffected by the Sensitivity Test.
- 1.99 The aircraft fleet mix used in the Sensitivity Test would not result in an enlarged PSZ compared to that predicted for the ~~With Development~~Principal Case, presented and discussed in Chapter 7 of the ES. As such, this is likely to have a negligible impact on the PSZ and associated socio-economic effects.

Conclusions

- 1.100 It can be concluded that the likely socio-economic effects of the proposed CADP would constitute a **substantial beneficial** effect and therefore no mitigation is required. **This conclusion remains unchanged in light of the findings of the 120,000 Movement Sensitivity Test.**

Noise and Vibration

- 1.101 This chapter of the ES considers the significant effect of noise and vibration predicted to arise from the construction of the proposed CADP as well as the noise effects associated with the operation of the Airport (With and Without the proposed CADP).
- 1.102 Specifically, the assessment considers the operational noise associated with **the construction of the CADP (construction noise)**, flights into and out of the Airport (air noise), aircraft operations at the Airport (ground noise) and Airport related road traffic movements (road traffic noise).
- 1.103 **As discussed in the introduction to this NTS, ES Chapter 8: Noise & Vibration has been replaced in its entirety and is included in the CES (November 2014). This was considered necessary due to the**

extent of the further information on construction noise and mitigation (consequent upon the *Improved Construction Programme – August 2014*) and the various supplementary assessments undertaken in respect of air noise and ground noise, as set out the CESA. Where this further information alters the original summary of the EIA noise assessments, this is highlighted (in red text) below. This also includes additional text on the outcome of the 120,000 Movement Sensitivity Test.

Baseline Noise and Vibration Conditions

- 1.104 Baseline vibration conditions in the vicinity of residential buildings around the Airport are generally dictated by localised road traffic conditions. For dwellings along major roads, heavy vehicles such as buses and lorries have the potential, when passing, to produce perceptible vibration levels within them.
- 1.105 Noise survey work was carried out at various locations in North Woolwich and Beckton in 2011/2012. The noise environment at any given location will depend on its proximity to a major or minor road, the DLR, industrial areas and the Airport.

Air Noise

- 1.106 In 2012, there were a total of 70,502 aircraft movements during the year comprising a mixture of turbo-prop and turbo-jet aircraft types.
- 1.107 Noise models demonstrate that those areas where noise from aircraft would represent high levels of community annoyance are completely contained within the Airport site and associated dock area, thus avoiding any residential locations. The area representing moderate levels of annoyance extends south into the Camel Road area and just encroaches into the Millennium Mills site at Royal Victoria Dock. The area representing the onset of significant community annoyance extends into Thamesmead to the east, Canning Town to the north and Blackwall to the west. To the south, some properties south of the Airport's Terminal building and piers are also exposed to these levels of noise.

Ground Noise

- 1.108 The absolute baseline ground noise impact varies significantly. For most of the residential receptors to the south of the Airport, the impact is rated as negligible to minor. Significant to substantial baseline noise impacts are predicted for the worst-case top floor flats who benefit less from the screening provided by the existing Eastern Pier and Noise Barrier.
- 1.109 Three unscreened receptors to the north of the Airport are also exposed to higher baseline levels of ground noise. These are: one existing office (Newham Council Offices), one proposed development site (the Royal Docks Business Park which is currently undeveloped) and the University of East London.
- 1.110 2.1% of the 2390 receptors assessed are currently exposed to substantial levels of baseline ground noise. These are located on the upper storeys of the tower blocks close to the Airport and those in the University of East London halls of residence.

Road Traffic Noise

- 1.111 For the relatively few properties that are located within 10 metres of local roads around the Airport, the absolute noise levels are currently sufficiently high as to give rise to a substantial impact. However, most properties are located farther back from the roads than 10 metres, where road traffic noise levels are lower with correspondingly less impact. Also, a proportion of those properties will have received treatment under the Airport's existing Sound Insulation Scheme.

Assessment of Potential Effects

Air Noise

- 1.112 Comparing the ~~With~~ and ~~Without~~ development cases in 2023, there is only a slight increase in noise level resulting from the proposed CADP, generally in the range of 0.5 to 1.0 dB, giving rise to a **negligible** impact when comparing the two scenarios directly and considering the change in impact. A negligible change of this magnitude has **no significance**.
- 1.113 More people are predicted to become affected by aircraft noise as a result of increasing activity at the Airport and therefore could potentially become annoyed by noise. An estimate of the increase in the number of people likely to be highly annoyed as a result of air noise in 2023, should the proposed CADP proceed, is 2% when compared to the population within the noise contours for the ~~Without Development~~ case in 2023.
- 1.114 Modern aircraft, implemented as a result of the proposed CADP, will be quieter in operation. As a result, beyond 2023, as the proportion of more modern aircraft increases at the Airport with the proposed CADP in place, the air noise is expected to reduce. Comparing the noise situation should the proposed CADP not proceed, on a like for like basis in terms of number of aircraft movements operating per annum, this shows that the air noise resulting with the proposed CADP in place would be less than if the proposed CADP were not to be built. Therefore, based on a post-2023 possible aircraft mix, the number of people likely to be highly annoyed by aircraft noise would reduce under the proposed CADP.
- 1.115 The Airport will continue to operate and, where appropriate, seek to improve the various noise mitigation measures in place at the Airport. These have successfully ensured that noise effects to the local community have been, and will continue to be, controlled to acceptable levels.
- 1.116 For those people close to the Airport, and thus most affected by noise, protection has for most properties already been provided as a result of the Sound Insulation Scheme provided for many years by the Airport. The Airport will continue to operate the Sound Insulation Scheme using the most stringent UK airport daytime trigger limit of 57 dB LAeq,16h as a First Tier eligibility criterion, whilst also continuing to apply a Second Tier eligibility criterion offering an enhanced scheme at 66 dB LAeq,16h and thereby protecting all eligible housing and community buildings that come into these contours.
- 1.117 In addition, the Airport will improve the Sound Insulation Scheme by **introducing a two tier system. The previous scheme (prior to 2009) which offered sound insulation treatment to eligible residential properties within the 57 dB LAeq,16h noise contour continues is now supplemented by a second tier, where eligible residential properties within the 66 dB LAeq,16h noise contour are offered an**

enhanced sound insulation package offering secondary glazing or a contribution towards high performance thermal double glazing, as well as sound insulating ventilators. ~~offering those people most affected by noise, that is, those within the 66 dB LAeq,16h contour, secondary glazing or a 100% monetary contribution towards high acoustic performance thermal double glazing, together with acoustic ventilation.~~ This will ensure that all of those most affected by noise are afforded the maximum noise protection opportunity.

Summary of results of LAMP Air Noise Assessment (contained in Part A of the CESA)

- 1.118 Phase 1a of the London Airspace Management Programme (LAMP) represents the first stage of the Future Airspace Strategy to modernise the airspace over the South East of England by 2020 and was the subject of a public consultation completed in January this year (2014). Further elements of LAMP Phase 1a will involve modernisation of London City Airport flight departure and arrival procedures below 4000ft.
- 1.119 In its Regulation 22 letter of 20th August 2014, LBN requested that the Airport consider the likely impact of LAMP on air noise and air quality surrounding the Airport. This assessment is provided in Part A, Section 5 of the CESA and the replacement Chapter 8 of the CES.
- 1.120 As a result of the proposed airspace changes under LAMP, new aircraft departure routes would be slightly different to current standard instrument departure routes (SIDs) that informed the air noise contours in the July 2013 ES. Accordingly, the assessment reported in Section 5 of the CESA and Chapter 8 of the CES has considered the proposed amended routes which essentially replicate where aircraft fly today. The centrelines of the routes used to generate noise contours in this assessment are therefore derived from a consideration of actual flight paths. This has been achieved by using statistical data gathered from the Airport's noise monitoring and flight track keeping (NTK) system as well as information on proposed routes provided by the Airport.
- 1.121 This assessment indicates that there is no material difference between the areas of the key noise contours and the dwelling and population counts contained within them; whether calculated from the Airport's published SIDs (as used in the original ES) or the mean actual departure tracks as determined from the Airport's NTK system, and in line with those proposed under LAMP. Therefore, the conclusions regarding air noise effects of the CADP (as presented in CES Chapter 8) remain unchanged upon consideration of LAMP.

Summary of 120,000 Movement Sensitivity Test for Air Noise (contained in Part B of the CESA)

- 1.122 As previously described, under the 2023 With Development (Principal Case) forecast, there is predicted to be 111,000 actual aircraft movements by 2023, equating to the 120,000 noise factored movement (NFM) limit established by the 2009 planning permission. Under this scenario, further growth to achieve the 120,000 actual movement cap could not occur with the same proportion of Noise Exposure Category A aircraft in the fleet mix, at least until quieter variants of these larger aircraft (such as the C-series and re-engined E190s) are introduced. However, under the 120,000 Movement Sensitivity Test fleet mix, a greater proportion of Turbo-prop aircraft and a degree of peak spreading of these aircraft is assumed. Under the existing NFM noise control system, such aircraft are normally categorised as Category B which are thereby allocated a factor of 0.63

movements (i.e. compared to a factor of 1.26 movements for Category A aircraft). As such, in this plausible but less likely fleet mix, the 120,000 movement operational limit could be met by 2023.

- 1.123 As explained in the CES, It is important to note that the NFM system does not dictate the noise contours around the Airport as these are calculated more precisely using noise performance data for individual aircraft, which are in turn calibrated and adjusted by direct measurement from noise monitors situated around the Airport. Therefore, whilst the Sensitivity Test fleet would achieve parity between 120,000 actual and 120,000 noise-factored movements, it is also appropriate to model the resulting noise contours to compare these to the *With* and *Without Development* in 2023, as presented in the ES.
- 1.124 The 57 dB $L_{Aeq,16h}$ average mode noise contour for the 120,000 Movement Sensitivity Test aircraft mix is provided in Part B, Appendix 9.1 of the CESA. This reveals that there would be a slight reduction (3%) in the size of the 57 dB noise contour as compared to that predicted in 2023 using the Principal Case With Development aircraft mix, assuming the CADP is in place. Comparing this noise contour to the Without Development case (of only 96,700 aircraft movements) shows an increase in the size of the contour of 13%. The associated area, dwelling and population counts are also presented in Part B of the CESA for comparison purposes.
- 1.125 The general finding is that there is little change in the impacts arising from air noise under the 120,000 Movement Sensitivity Test as compared to the 111,000 Principal Case assessed in the ES. The conclusions of the ES in relation to air noise therefore remain unaltered and this assessment finds no change to the environmental noise impact descriptions provided in Chapter 8 of the CES.

Summary of results of N70 Air Noise Assessment

- 1.126 In response to a report prepared for the GLA by its noise consultant Temple, N70 contours have been prepared and are presented and discussed in Chapter 8 of the CES.
- 1.127 N70 contours depict the number of times that the maximum noise level produced by an aircraft (in this case 70 dB $L_{Amax,S}$) is exceeded during the course of a day of operations at the Airport. The contours have been produced for three cases . for the baseline year of 2012 and for the Principal Assessment Year of 2023 in both the *With* and *Without Development* scenarios.
- 1.128 The N70 contours provide no indication of the overall noise exposure at these locations since they take no account of other quieter events, nor do they record to what extent aircraft events exceed 70 dB $L_{Amax,S}$ on the ground
- 1.129 There is no conventionally accepted method of assessing impacts arising from N70 contours. Notwithstanding this, a comparison of different N70 contours, for example those giving rise to 25, 50, 100 and 200 events per day, provides an illustration of how the noise maxima produced by aircraft over time is likely to vary.
- 1.130 Comparing the With and Without Development N70 contours in 2023, the differences between contour areas are smaller than for the Baseline of 2012, as would be expected. For the 25 event case for example, the contour areas change from 21.1 km² without CADP to 24.6 km² with the CADP, an increase of around 17%. This matches the predicted increase in the (equivalent) 57 dB $L_{Aeq,16h}$ average summer noise exposure contours presented in Chapter 8 of the CES.

- 1.131 For the 120,000 movement sensitivity mix, slightly smaller N70 contours arise as compared to the 2023 principal assessment mix for 111,000 movements per annum. This reflects the fact that quieter aircraft are introduced into the mix to achieve the 120,000 annual movement throughput, without increasing the overall noise exposure to the community.

Conclusion

- 1.132 In conclusion, more people will become affected by noise as the Airport continues to grow within its permitted limits, irrespective of whether the CADP is built or not. This will give rise to a moderate adverse impact with or without the CADP. The introduction of the CADP, as compared to without it, will give rise to a negligible change in noise level with a corresponding **negligible** impact. Taken as a whole, it is envisaged that the air noise impacts associated with the CADP will be of a **minor adverse** nature. *These conclusions are unchanged by the further analysis and air noise assessments presented in the consolidated CESA, as presented in Chapter 8 of the CES.*
- 1.133 *In addition, the further analysis of air noise taking account of airspace changes proposed under LAMP (described in Part A of the CESA); the 120,000 Movement Sensitivity Test fleet mix (described in Part B of the CESA); and, by the application of the N70 methodology (described in Chapter 8 of the CES), reveal no material differences to the impacts presented in the July 2013 ES.*

Ground Noise

- 1.134 For most of the key receptors the proposed development results in **no significant** change in ground noise. However two receptors are exposed to significant changes in ground noise level. The Newland Street receptor will be exposed to a significant reduction in ground noise. This is due to the increased noise screening provided by the CADP development. The Brixham Street receptor will be exposed to a significant increase in ground noise. This is due to the closer proximity of this site to the new aircraft stands for the ~~With development~~case.
- 1.135 The detailed assessment demonstrates that in 2023, with the development complete, around an additional 38 receptors will be exposed to a significant moderate absolute level of ground noise with around 24 additional receptors experiencing a significant substantial absolute level as compared to the no development scenario
- 1.136 The above assessment demonstrates that the proposed development will result in both beneficial and adverse impacts. The bulk (84%) of the receptors will be exposed to a negligible or minor decrease or increase in ground noise.
- 1.137 210 (or 9%) of the receptor locations will benefit from a significant reduction in ground noise levels. These are generally located in the North Silvertown residential area close to the airport Terminal. This area will benefit as a result of the substantial noise barrier provided by the terminal extension.
- 1.138 A similar number, 165 (or 7%) of the receptor locations will be adversely affected by a significant increase in ground noise. These are generally located in the North Woolwich residential area close to the eastern end of the proposed apron extension. Use of the additional stands will result in increases at these locations. Despite this significant increase in noise, the absolute levels of noise at these locations will be low.

- 1.139 The overall ground noise impact of the proposed CADP has been assessed as **negligible to minor adverse** with a small number of properties exposed to significant adverse increase in ground noise. Many of the mitigation measures forming the design of the proposed CADP had already been taken into account when assessing the impact. The receptors exposed to significant adverse impacts due to an increase in ground noise will have been provided with sound proofing either from the Airport or as required by planning condition.
- 1.140 The majority, 90%, of receptors are currently exposed to **negligible or minor** noise impacts. A small proportion, 10%, is currently exposed to significant levels of ground noise. Noise sensitive receptors around the Airport comprise both recently constructed buildings and those constructed long before the Airport was operational. Nearby receptors will have either been offered mitigation works through the Sound Insulation Scheme or have been required to incorporate adequate sound insulation measures by planning condition to meet local standards.

Summary of 120,000 Movement Sensitivity Test for Ground Noise (contained in Part B of the CESA)

- 1.141 In addition to the assessment of air noise effects of the 120,000 Movement Sensitivity Test fleet mix, ground noise modelling has been carried on this mix using the same methodology as applied within the ES, taking into account an update to the assessment model since the publication of the ES. Therefore, the 2023 ~~With~~and ~~Without~~ Development~~q~~assumption models have been re-calculated using the updated model to enable direct comparison with the results of the 120,000 sensitivity assessment.
- 1.142 The results of the modelling are presented in both tabulated form and as ground noise contours in Part B of the CESA, and its associated Appendices. These indicate a small, albeit ~~negligible~~ increase in ground noise with the 120,000 Movement Sensitivity Test fleet mix compared to the 111,000 Principal Case fleet mix assessed in the ES. This is because the original fleet mix contains a greater proportion of operations by modern turbo-fan type aircraft, which are generally quieter when taxiing and manoeuvring than the turbo-prop aircraft.

Conclusion

- 1.143 The residual ground noise impact is therefore assessed as **negligible to minor adverse**.
- 1.144 An assessment of ground noise under the 120,000 Movement Sensitivity Test has been completed, as summarised above and presented in Part B of the CESA. This indicates that the ground noise impacts would not be materially different from those identified and reported in the ES for the 2023 Principal Case.

Road Traffic Noise

- 1.145 In 2023, with the exception of properties on Woodman Street, changes in road traffic noise are predicted to generate a change of less than 1.6 dB, giving rise to a minor adverse impact when considered in the short term, and a **negligible adverse** impact over the long term.
- 1.146 Some areas considered in this assessment will see a reduction in traffic noise as a result of the proposed development of up to 0.9 dB due to a reduction of traffic forecast to the west of the Airport. This is a result of the easterly access road being opened up taking traffic away from roads to the

west. Although properties located on Woodman Street (the closest residential area to the new access road) will be exposed to a new traffic source, properties west of Woodman Street will benefit from the purpose built noise barrier created for the Docklands Light Railway (DLR). Properties at the eastern end of Woodman Street in contrast will have a direct line of sight to the new access road. However, these properties are within the Airport's Sound Insulation Scheme, and should therefore have the benefit of treatment under this scheme.

- 1.147 As the eastern access road is not currently used, once it is opened under the proposed CADP, it will give rise to a substantial increase in road traffic noise for these few properties at the eastern end of Woodman Street. The absolute levels of road traffic noise are low however and not considered to be significant.

Summary of 120,000 Movement Sensitivity Test for Road Traffic Noise (contained in Part B of the CESA)

- 1.148 As described in the Transport section of this Updated NTS (see below), road traffic flows have been recalculated by the Airport's transport consultants (Vectos) to account for the additional 350,000 passengers per annum which would arise under the 120,000 movement sensitivity case.
- 1.149 The assessment indicates that for all receptors there will be no noticeable change in noise as a result of the minor change in road traffic resulting from the Airport accommodating 120,000 annual movements. Some areas will see a slight increase in traffic flow, primarily towards the west and east of the Airport, whilst other areas, such as to the north of the Airport on Royal Albert Way, will experience a slight decrease due to a redistribution of traffic on the road network.
- 1.150 The general finding is that there is little change in the impacts arising from road traffic under the 120,000 movements and 6.25 mppa sensitivity case as compared to the ES 'With Development' Principal Case of 111,000 movements and 5.87 mppa. The conclusions of the ES in relation to road traffic noise therefore remain unaltered and this assessment finds no change to the environmental noise impact classification.

Conclusion

- 1.151 The residual road traffic noise impact has been assessed as **negligible adverse**.
- 1.152 An assessment of the change to road traffic noise levels under the 120,000 Movement Sensitivity Test has been completed, as summarised above and presented in Part B of the CESA. This indicates that the traffic noise impacts would not be materially different from those identified and reported in the ES for the Principal Assessment Year of 2023.

Construction Noise and Vibration

- 1.153 Part A, Section 4 of the CESA draws together and expands upon the essential elements of the construction noise assessment undertaken since the July 2013 ES. The assessment takes account of the various improvements to the construction programme and planned Out Of Operational Hours (OOOH) works, as described in the introduction to this NTS and set out in detail in Sections 2 and 3 of the CESA, as well as the replacement Chapter 8 of the CES.

- 1.154 In the original July 2013 ES, the construction noise assessment was undertaken in a conventional manner by including a consideration of the worst affected receptors around the development site and predicting the construction noise levels for a variety of different phases of the CADP construction programme. The predictions were made over a typical one hour period, as is the normal convention.
- 1.155 LBN, while not disputing the conventional nature of this approach, has asked the Airport to provide further information on the evening and night-time construction noise levels, citing the duration of construction and the significant amount of works to be undertaken outside normal hours.
- 1.156 Part A, Section 4 of the CESA reports on the latest assessment which draws together all previous assessments and re-produces a ~~Book of Noise Maps~~(Appendix 4.1), as an update to the noise maps produced as part of the ESA. These maps indicate, in 3 month slices of time throughout the construction of the CADP, the noise levels expected at a typical bedroom receptor height for the OOOH periods identified in the *Improved Construction Programme*. They are based on a 15 minute assessment period as requested at Item 2 of LBN's letter of 20th August 2014 and include noise effects from the haul road that extends along Hartmann Road East in order to be consistent with the noise assessment presented in the ESSA. The assessment also considers all construction activities throughout the CADP construction, as opposed to focussing on sensitivity testing of those potentially noisier works such as the piling and deck works, as was the case in the ESSA.
- 1.157 Due to the significant improvements in the proposed Improved Construction Programme and resultant OOOH programme (CESA Appendix 2.1) significantly less construction activity is now proposed at night.
- 1.158 The analysis within CESA Section 4 provides a ~~worst case~~ assessment of those receptors that may be impacted by noise during OOOH construction activities throughout the CADP build. It is considered a ~~worst case~~ assessment because predictions relate to a shorter than standard assessment period (15 minutes as opposed to 1 hour) as well as assuming that many construction activities that may occur occasionally are all happening at the same time during a 15 minute period.
- 1.159 A detailed assessment has been undertaken as part of the CESA to identify those activities that require particular attention in terms of mitigation to minimise noise impacts, such as piling and deck works in mid 2016.
- 1.160 Landside infrastructure concrete and general works also have the potential to cause short term significant adverse noise impacts when works are carried out close to the nearby dwellings during evening/weekend/night periods when more stringent noise limits apply.
- 1.161 There will be a relatively small number of properties untreated under the Airport's Sound Insulation Scheme that will be exposed to potentially significant levels of out-of-hours (OOOH) construction noise. The Airport has already committed to offering those properties exposed to night time construction noise levels in excess of 50 dB LAeq, a further opportunity to accept its First Tier Sound Insulation Scheme (SIS) measures ahead of carrying out noisy night time works. Moreover, Second Tier Works (secondary or contribution towards high acoustic performance thermal double glazing) will be made available to properties predicted to exceed 55 dB LAeq regularly.

- 1.162 In view of the location of the site compound and haul road in the vicinity of the eastern end of Woodman Street a temporary Construction Noise Barrier is required. This will **comprise a barrier close to Woodman Street as well as a perimeter barrier around the construction compound, to mitigate the combined significant impact of construction compound and haul road noise.**
- 1.163 Piling will take place during the construction of the new apron (the location of where aircraft are parked, unloaded or loaded, refueled, or boarded). Auger piling is to be the method that is adopted as levels of vibration associated with this method are low.
- 1.164 Vibration levels are predated to be well below those likely to cause any damage to buildings. Occupants of buildings located approximately 10m away would experience some slight impacts. Ground-borne vibration levels can be expected to decrease with distance. All residential buildings surrounding the development site will be located further than 10m from the piling works thus if any impact arises, this will only be slight. Therefore no significant adverse impacts are predicted from construction vibration.
- 1.165 Mitigation measures will be adopted as part of the Construction Environmental Management Plan (CEMP) and the **Construction Noise and Vibration Management and Mitigation Strategy (CNVMMS)** to help minimise noise impacts during construction, including:
- a) Community Relations . keeping local people informed of progress and treating complaints fairly and expeditiously.
 - b) Site Personnel Training . informing site personnel about the need to minimise noise and advising on the proper use and maintenance of tools and equipment and the positioning of machinery to reduce noise emission to the neighbourhood.
 - c) Site Location . setting noise emission limits with due regard to the proximity of noise sensitive premises.
 - d) Duration of Site Operations . local residents may be willing to accept higher levels of noise if they know that such levels will only last for a short time.
 - e) Type of Plant . consideration should be given to using quiet techniques taking account of practical site constraints and best practicable means.
- 1.166 **Furthermore, through the more detailed assessment of the construction methodology and programme, as reported in the CESA, the following key improvements have been identified to reduce onstruction related disturbance during out-of-operational hours:**
- a) **A reduction in the amount of night time piling from 70% to 30%;**
 - b) **A reduction in the duration of night time works by 21 months throughout the overall CADP construction period;**
 - c) **A reduction in the number of night time construction activities and frequency of others;**
 - d) **A significant reduction in the duration of night time piling of approximately 10 months (45 weeks) - reducing from 77 weeks to 32 weeks;**
 - e) **A reduction in the overall duration of noisier night time deck works of over 6 months (29 weeks);**
 - f) **A reduction in the number of deck work activities occurring at night, including a reduction in frequency of a number of those remaining activities at night;**
 - g) **All construction activities previously occurring at night south of KGV Dock moved to daytime hours, including the construction of the hotel, car parks and forecourt works; and**
 - h) **Provision of an additional temporary construction noise barrier south of KGV Dock to reduce construction noise impacts in the communities south of the Airport, including North Woolwich.**

Conclusion

- 1.167 The further construction noise assessment presented in Part A, Section 4 of the CESA has sought to demonstrate, in terms of absolute levels, the resultant daytime construction noise levels (in tabular form and with noise map examples); night-time construction noise levels (as a book of OOOH noise maps and night-time piling and deck works duration graphs). It also takes into account the *Improved Construction Programme* and evaluates the effectiveness of the temporary construction noise barrier.
- 1.168 On the basis of the technical noise assessments carried out in the CESA, the further assessment proposed under the CNVMMS and taking account of the reduction in the duration of OOOH works and the number of receptors likely to be affected by construction noise, as well as the extensive mitigation measures proposed (as summarised above), it is considered that the overall residual effects of CADP construction activities would be a **minor adverse** impact in relation to OOOH works (night time and weekends). The CNVMMS, as well as appropriate planning conditions, will ensure these mitigation measures are implemented to safeguard the amenity of the surrounding community. The recent review and improvements to the construction programme have eliminated many night time activities and substantially reduced most others in terms of duration and/or intensity.
- 1.169 Based on the *Improved Construction Programme*, this assessment has reviewed in further detail the number of receptors and the extent to which they are likely to be affected by construction noise over the key noise-producing periods including during OOOH works (night time and weekends). In addition, it has taken account of the extensive noise mitigation measures that are being offered as part of CADP and as set out in CESA to safeguard the amenity of the surrounding community. Based on this more detailed information, with the offered mitigation, the residual construction noise effects will give rise to a **negligible** impact during daytime operational hours and **minor adverse** impact during Out of Operational Hours.
- 1.170 The Airport will continue to operate and, where appropriate, seek to improve the various noise mitigation measures in place at the Airport that have successfully ensured that noise effects to the local community have been, and will continue to be, controlled to acceptable levels. More people will become affected by noise as the Airport continues to grow within its permitted limits, irrespective of whether the CADP is built or not. This will give rise to a moderate adverse impact with or without the CADP. The introduction of the CADP, as compared to without it, will give rise to a negligible change in noise level with a corresponding negligible impact. Taken as a whole, it is envisaged that the air noise impacts associated with the CADP will be of a **minor adverse** nature.
- 1.171 The small number of dwellings exposed to significant adverse impacts due to an increase in ground noise will have been provided with sound proofing either from the Airport or as required by planning condition. Therefore the residual ground noise impact is assessed as **negligible to minor adverse**.
- 1.172 With the exception of the properties at the eastern end of Woodman Street, no significant adverse road traffic noise impacts are predicted. Properties in Woodman Street will only be exposed to minor absolute levels of road traffic noise and will have qualified for noise protection treatment under the Airport's Sound Insulation Scheme. The residual road traffic noise impacts have been assessed as **negligible adverse**.

Air Quality

- 1.173 This chapter in the ES describes the likely significant effects of the proposed CADP with respect to local air quality, during both the construction and operational phases.

Baseline Conditions

- 1.174 The LBN states that statutory objectives are not being met for two pollutants, nitrogen dioxide (NO₂) and particulate matter (PM₁₀), and has therefore designated an Air Quality Management Area (AQMA) extending alongside the major roads in the Borough including North Woolwich Road, Connaught Crossing, Silvertown Way, Royal Albert Way and Royal Docks Road. However, the Airport and the roads to the south of it, including Hartmann Road and Albert Road, lie outside the AQMA boundary.
- 1.175 Information on existing pollutant concentrations in the vicinity of the Airport has been obtained by collating the results of monitoring carried out by both the Airport and the local authorities. All predicted annual mean NO₂, PM₁₀ and PM_{2.5} concentrations are below the objective. All of the predicted annual mean NO₂ concentrations are well below the threshold identified by Defra, and thus exceedences of the 1-hour mean objective are unlikely. These results are consistent with the measured concentrations in the Airport's AQMP.
- 1.176 The highest predicted concentrations of odour are at Hartmann Road, to the south of the terminal. This is below the threshold for complaints related to moderately offensive odours, and is consistent with the very small number of complaints related to airport odours.

Assessment of Potential Effects

Construction Stage

- 1.177 Dust from construction related activities such as the demolition, earthworks, construction and track-out activities are likely to occur. The dust emission class for the construction related works is judged to be **large**.
- 1.178 During demolition and construction it will be necessary to apply a package of measures to minimise dust emissions, as part of the proposed CADP Construction Environmental Management Plan (CEMP). The IAQM guidance on monitoring during demolition and construction is used to set out mitigation measures. For dust, a Dust Management Plan which is approved by LBN will be implemented which is to include monitoring of dust through daily on-site and off site inspections and recording dust and complaints.
- 1.179 There is still a risk of slight adverse dust effects during both demolition and construction works even with mitigation. However, the effects are likely to be short lived and only occur during dry and windy periods; therefore the residual effects are assessed as **slight adverse**.

Operational Stage

- 1.180 The predicted annual mean concentrations of measured air pollutants in 2019, 2021 and 2023 without or without the proposed development are lower than in 2012 at all receptor locations, even

with the assumption that there is no reduction in road traffic emission factors. This is principally due to existing and agreed measures at both the national and international levels to reduce emissions of nitrogen oxides from a wide range of sectors. A large number of properties would experience imperceptible increases to pollutant concentrations; however, with the introduction of the new eastern access to Hartmann road, those properties at the western access point (close to Camel Road) would experience a reduction in concentrations. The impacts are described as **negligible** at all receptors.

- 1.181 The CADP proposals would generate an increase in Airport-related NO_x emissions of 22% in 2019 and 35% in 2023, when compared to the Without Development scenario; this increase is in broad proportion to the number of passengers and scheduled aircraft movements. However, it must be borne in mind that a large proportion of these emissions are released at height (up to 915 metres) and will have little impact on ground-level concentrations.
- 1.182 A number of properties in close proximity to the extended apron (where aircraft are parked, unloaded or loaded, refuelled, or boarded) are at risk of being affected by odours due to the increased number of aircraft movements. Predicted odour unit concentrations at properties close to the proposed CADP boundary are well below the thresholds at which complaints are likely, and the spatial change to emissions sources is not likely to be significant. However, predicted odour unit concentrations are higher in 2023 than in 2012. The impact of odour emissions is therefore judged to be **negligible to slight adverse**, and the overall impact is **insignificant**.
- 1.183 The Airport has already instigated a programme of measures within its Air Quality Action Plan which will further minimise any impacts in future years. In addition, a number of measures to reduce pollutant emissions have been embedded in the CADP proposals. These include the provision of FEGP to all new stands; the introduction of measures to prohibit idling by stationary taxis; the reduction of traffic flows along the western part of Hartmann Road by provision of the eastern access point; the provision of new Energy Centres with a high level of NO_x abatement; and the development of an updated Airport Travel Plan.
- 1.184 The proposed CADP is consistent with national and local policies. It does not conflict with any elements of the Council's Air Quality Action Plan, and it is concluded that there are no air quality constraints to the Development. The mitigation measures embedded in the existing Action Plan or within the CADP proposals have been taken into account in the air quality assessment. With regard to the London Councils guidance, it is judged that residual effects on air quality are **insignificant**.

Summary of results of LAMP Air Quality Assessment (contained in Part A of the CESA)

- 1.185 By convention, pollutant emissions from aircraft are calculated within the Landing and Takeoff (LTO) cycle, which includes all aircraft operations during arrival and departure, up to a ceiling height of 3000 feet. In reality, however, emissions from aircraft at altitudes of more than a few hundred feet will have an imperceptible impact on ground-level pollutant concentrations. The proposed RNAV replications will therefore not affect ground-level pollution concentrations, and there are no local air quality implications for the CADP proposals.
- 1.186 The proposed RNAV replications will potentially allow aircraft to plan smoother descent patterns on arrival which will result in a small reduction in fuel burn, and corresponding pollutant and CO₂

emissions. Thus, the total pollutant emissions calculated within the LTO cycle for future years may be lower than stated within Chapter 9 of the CES, but any benefit is expected to be small.

Summary of 120,000 Movement Sensitivity Test for Air Quality (contained in Part B of the CESA)

- 1.187 The emissions of both NO_x and PM₁₀ are lower for the 120,000 Movement Sensitivity Test, for both the total LTO Cycle, and when Climb-out and Approach emissions are excluded. This is primarily due to the lower emissions of the turbo-prop aircraft (e.g. Bombardier Q400, which form a greater proportion of the fleet) as compared with the turbo-jet aircraft such as the Embraer E170. This difference in aircraft types more than offsets any increase due to higher number of aircraft movements.
- 1.188 It can be confidently concluded that the contribution of aircraft and Auxiliary Power Units (APU) emissions with the assumed Sensitivity Test for 120,000 movements would be lower than those predicted in Chapter 9 of the CES. The results in Chapter 9 of the CES therefore represent a worst-case assessment of the 120,000 aircraft movements per annum Sensitivity Test, and with this proviso, no further analysis is required.
- 1.189 With regard to road traffic vehicle emissions, the 120,000 Movement Sensitivity Test has been explicitly modelled using ADMS-Roads, based on the same methodology as set out in Chapter 9 of the ES. The predicted changes to annual mean pollutant concentrations and the number of days where fine particulates (PM₁₀) exceeds >50 µg/m³ are imperceptible. Therefore, the conclusions of Chapter 9 of the original ES remain unchanged.

Conclusion

- 1.190 An assessment of the change to air quality under both LAMP and the 120,000 Movement Sensitivity Test has been completed, as summarised above and presented in Part B of the CESA. This indicates that the air quality impacts from the CADP under these scenarios would remain insignificant and would not be materially different from those identified and reported in the CES for the Principal Case.

Townscape and Visual Effects

- 1.191 This chapter assesses the likely significant effects of the development of the proposed CADP, on townscape character and views experienced by people. The likely impacts are assessed during both the construction and operation of the proposed CADP.
- 1.192 The conclusions of the original assessment remain unchanged.. The further information provided in the CESA, including the 120,000 Movement Sensitivity Test, has no bearing on townscape and visual effects of the proposed CADP.
- 1.193 The additional temporary construction noise barrier to the south of KGV Dock (as described in Part A, Section 2 and Appendix 4.2) is considered to have an additional beneficial effect of shielding residents to the south from direct views of the construction works. However, this does not change the overall conclusion of the original townscape and visual assessment presented in Chapter 10 of the July 2013 ES.

Baseline Conditions

- 1.194 The area lies within the Thames Basin and is drained by the River Thames which runs west-east through the Study Area. Most of the land within the Study Area is low lying and relatively flat, the exception being parts of Charlton and Woolwich to the south.
- 1.195 The land is in urban use with a mixture of clearly defined zones including residential and industrial/commercial areas. A significant proportion of land is residential. The Application Site is located within an extensive urban area, the night-time character of which is strongly influenced by artificial light from buildings and street lighting. The illuminated buildings of Canary Wharf and central London are prominent night time features.
- 1.196 The softest parts of the Study Area with green open space and trees, include parkland to the north of Royal Albert Way at Beckton, the Royal Victoria Gardens bordering the Thames at Silvertown and the Thames Barrier Park. There is also a significant area of parkland at Charlton in the south-western part of the Study Area and in the south-east at Thamesmead. A belt of trees planted along the north side of the Royal Albert Way is also a notable feature of the area.
- 1.197 The proposed CADP is located within and adjoining KGV Dock. This Dock is enclosed to the south and south-west by elevated sections of, and boundary treatment to the DLR together with a number of existing buildings. To the west, north and east the Application Site is also enclosed by a variety of existing structures, buildings and vegetation. Accordingly, the Zone of Theoretical Visibility (ZTV) for the proposed CADP would be relatively small, being restricted largely to the area of open Docks enclosed by Woolwich Manor Way, the DLR, Connaught Bridge and Royal Albert Way. Beyond these structures the proposed CADP would only be visible from a few localised areas at ground level and from upper floor windows of a number of buildings.

Assessment of Potential Effects

Construction Stage

- 1.198 Construction phase effects will be relatively short term, covering a seven year period. Certain construction works will need to be performed at night and during the weekend period when the Airport is closed. Therefore both day and night-time effects are assessed. It is not envisaged that tower cranes will be used because these would breach of Airport policy. The heights of mobile cranes are not envisaged to be taller than 30m.
- 1.199 Impacts from views arise primarily from close proximity to demolition or construction operations and from increased visibility of visual detractors such as scaffolding and mobile cranes. Receptors at the opposite side of the River Thames at the Royal Arsenal, may experience a **minor adverse** visual daytime effect during the construction phase rather than the **negligible** effect identified in the operational phase due to the marginally greater increased visual intrusion arising from demolition of City Aviation House.
- 1.200 **Substantial adverse effects** were identified at a very small number of dwellings (2nd and 3rd floor apartments) on the north side of Silvertown. 2nd floor residential properties on Newland Street experience **moderate to substantial adverse** day and night-time effects during the construction

phase due to the proximity of demolition works on City Aviation House and the works on the proposed Hotel.

- 1.201 ~~During the construction phase it is recommended that additional screen fencing is provided on the southern site boundary in the Newland Street / Leonard Street area of Silvertown.~~ As described above, 3m high Temporary Construction Noise Barrier will be located south of KGV Dock to shield residents from noise, visual and other impacts of the construction works. The extent of this second barrier will vary according to the phasing of construction, with part of the barrier installed for the Interim Works and part for the Completed Works as the works progress eastwards across the site. The location, extent and appearance of the barrier is shown on drawings in Appendix 4.2 of Part A of the CESA. This will act to screen construction works to the Terminal building and Forecourt area from adjacent residential areas. However the screening is unlikely to be sufficient to alter the magnitude of visual effects completely; therefore likely significant visual effects remain for a small portion of dwellings located in Silvertown.
- 1.202 The small number of residential properties experiencing likely significant visual effects from the construction phase are all located within 100m of the Application Site and represent a very small proportion of the residential properties within the Silvertown area to the south of the Airport. Other visual receptors identified as experiencing a likely significant visual effect during the construction phase would be pedestrians and other recreational users of the dockside on the north side of Royal Albert Dock.

Operational Stage

- 1.203 The East Pier, extended Terminal and Hotel will be the most visually intrusive parts of the proposed CADP and will obstruct existing open views from a few locations to the south. These buildings will also be clearly visible from Dockside areas and from residential areas including areas in relative close proximity at Silvertown to the south. The appearance of these buildings will therefore be of importance to the townscape character of the Docks area and in views experienced from locations around the Docks. A high quality of design is therefore proposed, as described in the DAS prepared by the architects, supplemented by the DAS Addendum submitted to LBN with the ESA in March 2014.
- 1.204 Within 500m of the Application Site, likely significant visual effects from the proposed CADP have been identified from publicly accessible locations on the north side of Royal Albert Dock. Also, a small number of apartments with north facing 2nd or 3rd floor windows located within 100m of the Application Site in Silvertown, to the south of the Airport, would experience likely significant adverse effects.
- 1.205 However, these receptors represent a very small proportion of the total number of dwellings in Silvertown, the majority of which would experience effects ranging between **negligible** and **minor to moderate adverse**. No dwellings in any other part of the Study Area would experience any likely significant adverse effect as they are generally screened by intervening buildings and the boundary wall of the elevated DLR, and even where there is no such screen, the majority of dwellings are orientated with windows facing east or west rather than towards the proposed CADP in the north.

- 1.206 No significant visual effects have been identified beyond 500m of the Application Site and no significant visual effects were identified on the long distance east to west, open views experienced down the Docks from publicly accessible locations in the vicinity of Woolwich Manor Way and Connaught Bridge.
- 1.207 Ten townscape Character Areas (CAs) have been identified within the area covered by the ZTV of which only one (the Royal Docks CA) would be directly affected by the proposed CADP. None of the effects on townscape character including those on the Royal Docks CA, are regarded as significant.
- 1.208 The planting strategy for the proposed CADP includes a minimum of 5% planting in the parking layouts with shrubs and low hedges and small areas of planting at the end of parking rows. Some cube-headed Hornbeam trees will also be planted to the south of the Terminal and within the proposed Forecourt. Planting will provide the benefit of some localised screening of the parking areas and other structures. Larger specimen trees, whilst offering the potential benefit of better visual screening, could attract nesting birds and, moreover, are considered an alien feature in the historic dockside environment.
- 1.209 The proposed landscaping is unlikely to fully mitigate or reduce adverse townscape or visual effects due to the operational constraints of the airfield. The small number of dwellings that would experience significant views during construction would have slightly more attractive moderate to substantial adverse views during the operational phase due to the completed buildings.
- 1.210 Within the docks area, the most sensitive visual receptors are residents and recreational users of paths and open spaces. From these locations, open dockland water would continue to dominate the foreground view and extended long views down the docks would be retained. Most visual receptors would therefore not experience significant adverse effects due to the distance from the proposed CADP.

Surface Transport and Access

- 1.211 This chapter of the ES assesses the significance of the effects on surface access and the environment arising from the proposed CADP.
- 1.212 A supplemental assessment of the likely transport effects of the CADP were provided in Section 6 and 9 (d) of the Environmental Statement Addendum (ESA, March 2014). This further information and matters of clarification included:
- An assessment of the impact of construction workers on the DLR;
 - Clarification on the qualitative assessment of effects on bus passengers, rail, walking and cycling;
 - The effect of High Speed Rail on the demand for air travel;
 - An explanation of the Minor Beneficial impact of the CADP on public transport modes;
 - An assessment of public transport impacts both prior to, and with mitigation;
 - An assessment of knock-on effects to the wider DLR network;

- The implications of the proposed new vehicular access to the site from the A117 Woolwich Manor Way/ Fishguard Way.
- Technical and functioning details of the proposed Taxi Feeder Park, including a Framework Taxi Management Plan;
- The feasibility of opening up a northern access point to the King George V DLR station;
- Additional evidence that the majority of vehicular trips will remain from Hartmann Road/ Connaught Road, rather than Woolwich Manor Way/ Fishguard Way; and,
- Further details of the Draft Parking Management Plan.

1.213 Relevant extracts of this further information and supplemental assessment are now reproduced in Part D of the CESA and Chapter 11 of the CES.

Baseline Conditions

- 1.214 The main strategic road connections to the Airport are the east-west A13 and the A406 North Circular that connects with the M11 and M25 motorways. The Airport is approximately 1.5 kilometres from the A13 (Prince Regent Lane junction), five kilometres from the A406 and 25 kilometres from the M25.
- 1.215 The short-stay car park has 148 spaces whilst the main stay car park has 644 spaces. 52 spaces are provided in the western staff car park, whilst 10 spaces are provided in the triangle staff car park.
- 1.216 DLR operates between 05:30 and 00:30 on Monday to Saturdays and between 07:00 and 23:30 on Sundays.
- 1.217 There are three bus stops adjacent to the readyhire car parking area outside the Airport terminal building on Hartmann Road and adjacent to the Jet Centre (used by staff, crew and passengers). The Airport is served by two London bus routes, the 473 and the 474.
- 1.218 Other modes of transportation to the Airport include, taxis, private hire cars, walking and cycling.
- 1.219 Crossrail is being constructed and is anticipated to open by 2019. Whilst the current proposal does not include a Crossrail station at the Airport, DLR forecasts show that some DLR passengers will transfer their journey from DLR to Crossrail. This increases the spare capacity on the Airport branch of the DLR network.

Assessment of Potential Effects

Construction Stage

- 1.220 Deliveries during construction will be undertaken by both road and river. Additional traffic on the local highways network will result from the deliveries of construction related material. The river will be used where possible in order to minimise the effects on the local road network. For example, it is anticipated that a number of large precast units will be delivered by barge.

- 1.221 Pedestrians and cyclists will continue to be able to access the Airport and surrounding area during the construction works. Where necessary, appropriate diversions will be put in place which will be agreed with the local highway authority.
- 1.222 Bus services will continue to serve the Airport during the construction works, with temporary bus stops provided on Hartmann Road if necessary.
- 1.223 ~~The peak number of HGV vehicle movements is anticipated to be in the region of 626 two-way trips per month during Year 4 to the middle of Year 7 of the construction programme. The peak number of construction staff vehicle movements is anticipated to be 125 two-way trips per day.~~
- 1.224 Construction vehicle (HGV) movements associated with the *Improved Construction Programme* have been re-considered, as reported in Part A, Section 2 of the CESA. The peak number of HGV vehicle movements is anticipated to be in the region of 773 two-way trips per month during the ~~Completed Works~~(Phase 2) of the construction programme. This compares to 626 two-way trips per month reported previously in the original July 2013 ES and within the Transport Assessment (TA). This increase is primarily due to the revised assumptions on the form of the proposed Hotel construction (CADP 2) as it is now anticipated that the hotel will be constructed with a concrete rather than a steel frame, necessitating more HGV deliveries. This method of construction will no longer require out-of-operational hours (OOH) working unlike the previously proposed method.
- 1.225 The peak number of construction staff vehicle movements has also been calculated at 194 two-way trips per day, which is again a small uplift on the ~~average~~ movements previously assumed. However, these small increases in traffic flows are considered to have a **negligible** impact on local roads including Woolwich Manor Way. Furthermore, only a small proportion of the daily construction traffic will occur at peak times. There will be no change to the amount of HGV movements during the ~~Interim Works~~(Phase 1) of the CADP.
- 1.226 A Construction Logistics Plan (CLP) will be prepared and agreed with LBN in order to provide appropriate mitigation measures, this will specify designated construction traffic routes to / from the Airport and proposed dust and noise suppression measures.
- 1.227 With the implemented mitigation measures set out in the CLP some residual effects are likely to remain for traffic and transport, therefore there is likely to be **temporary, minor adverse** effects.

Operational Stage

- 1.228 The CADP proposes to create a further permanent access and vehicle link to the Airport from the junction with the A117 Woolwich Manor Way / Fishguard Way. This will provide a direct connection between the eastern end of Hartmann Road and the signalised junction with the A117 Woolwich Manor Way / Fishguard Way.
- 1.229 Parking provision are proposed to increase from 974 spaces to 1,252 spaces i.e. a 29% increase. This compares with passenger numbers which will be increasing by 87% and staff numbers which will be increasing by 59%, compared to 2011. The car parking will also serve a 260 bedroom hotel (CADP 2).

- 1.230 The transport assessment demonstrates will be an increase in traffic on some links and a reduction in traffic on other links. This is because of the creation of an additional vehicle access point to the Airport from Woolwich Manor Way through to Hartmann Road (East), which results in a redistribution of Airport-related traffic and a reduction in traffic on some links.
- 1.231 The greatest proportional reduction in traffic is forecast for Royal Albert Way (East) with a -14.7% reduction and **minor beneficial** effect, and Royal Albert Way (west) with a -13.1% reduction and **minor beneficial** effect.
- 1.232 For the majority of links in the vicinity of the Airport, the overall increase in daily traffic flows on existing roads resulting from the proposed CADP is less than 30%. For these links, it is considered that the effect on severance would be **negligible**.
- 1.233 There would not be a significant change in driver delays across the road networks. Consequently, the increased vehicular activity at the Airport should not lead to a net increase in pedestrian delay.
- 1.234 The proposed CADP will provide a new dockside path, creating a new pedestrian link from the east and additional cycle parking will also be provided to encourage cycling. Consequently, the proposed CADP is anticipated to have considered a **minor beneficial** effect on pedestrian amenity.
- 1.235 The Airport has implemented a Travel Plan to reduce single occupancy car journeys to and from the Airport. This contains targets to encourage sustainable travel by car sharing as well as non-car modes. The Staff Travel Plan will also look to encourage staff to travel to work sustainably.
- 1.236 A Taxi Management Plan (TMP) will be implemented to manage the arrangements for black taxis and private hire minicabs, minimising the effects on the road network and on Hartmann Road in particular. **The Airport submitted a Framework Taxi Management Plan (TMP) to TfL on 15th January 2014. This is included as an Appendix to Volume III Part D of the CESA.**
- 1.237 **In addition, a Draft Parking Management Plan (PMP) has also been prepared which provides details of the proposed parking provision for all users at the Airport. This is included as an Appendix to Volume III Part D of the CESA.**
- 1.238 A Delivery and Servicing Plan (DSP) will also be prepared and will be implemented to ensure that delivery and servicing activity can take place in a safe, efficient and sustainable manner.
- 1.239 With the implementation of the Travel Plans, TMP, **PMP** and DSP, overall, the residual effect from the change in traffic flows is **minor adverse**.
- 1.240 The proposed CADP would generate an increase in number of journeys by public transport, and bring about a **minor beneficial** impact in the form of increased revenue to the public transportation networks. Furthermore, crowding on the DLR will not be significantly exacerbated by the proposed CADP.
- 1.241 With the continued effect of the Travel Plan in promoting sustainable transport modes, as well as the creation of an additional vehicle access to the Airport, the likely residual effects on the environmental effects such as Severance, Pedestrian Delay, Pedestrian Amenity and Fear and Intimidation are expected to be **negligible**.

Summary of 120,000 Movement Sensitivity Test for Transport (Contained in Part B of the CESA)

- 1.242 The impact of the 120,000 Movement Sensitivity Test fleet mix, deriving approximately 350,000 additional passengers per annum, on all relevant surface modes of transport has been assessed by the Airport Transport Consultants, Vectos
- 1.243 The Sensitivity Test demonstrates there will be an increase in traffic on some links and a reduction in traffic on other links. This is because of the creation of an additional vehicle access point to the Airport from Woolwich Manor Way through to Hartmann Road (East). This results in a redistribution of Airport-related traffic and a reduction in traffic on some links in the With Development Principal Case compared to the Without Development Case.
- 1.244 The greatest proportional reduction in traffic is forecast for Hartmann Road (West) with a -15.9% reduction and a **minor beneficial effect**, and Connaught Road (East) with a -15.7% reduction and a **minor beneficial effect**. This represents a slight betterment on the original transport assessment, but still within the same significance category.
- 1.245 The greatest proportional increase in traffic flows are forecast for Hartmann Road (East) which records a 100% increase in traffic and scores a notional **substantial adverse** effect, which is the same as recorded in the July 2013 ES and TA. It is proposed to provide a new vehicle link to the Airport from Hartmann Road (East), which is currently closed to traffic. This explains why there is a 100% increase in traffic, compared to the Without Development case. This is followed by Woolwich Manor Way South, which will experience a **moderate adverse** effect with a +45.7% increase, and North Woolwich Road (West) which will experience a **minor adverse** effect with a +10.2% increase. Whilst traffic increases marginally on these roads under the Sensitivity Test, these impacts remain within the same category of significance as reported in the ES.
- 1.246 In conclusion, the assessment of the 120,000 Movement Sensitivity Test traffic flows reveals that there is no significant difference in traffic flows compared to the CADP 2023 Principal Case. There is also no change in the significance category for any of the links.
- 1.247 The revised assessment concludes that the impact of the CADP proposals on the DLR, considering the network as a whole, is minimal and therefore it has **negligible adverse** effect.
- 1.248 On the basis of the assessment undertaken within the Transport Assessment and application of professional judgement by Vectos, the environmental effect of CADP on bus services is also considered to remain **Negligible**.
- 1.249 The effect of CADP on walking and cycling modes is considered to remain as **Minor Beneficial**.

Conclusion

- 1.250 The impact of the Sensitivity Test on surface transport modes and access has been compared to the Principal Case assessed in the original ES. The assessment indicates only minor differences compared to what was originally presented and no change in the level of significance of the environmental effects.

Water Resources and Flood Risk

- 1.251 This chapter considers the proposed CADP in terms of its potential impact on the hydrological regimes of the Application Site and its surroundings, in particular the likely significant effects on flood risk and water quality.
- 1.252 **The further information provided in the CESA, including the 120,000 Movement Sensitivity Test, has no bearing on water resources and flood risk matters.**

Baseline Conditions

- 1.253 The nearest surface water features to the Airport are KGV Dock located directly to the south and the Royal Albert Dock located directly to the north. The maximum water level in KGV Dock is 4.24 m and the minimum water level in the dock is 3.44 m.
- 1.254 The Airport is located within Flood Zone 3 associated with tidal flooding from the River Thames. Based on the presence of the River Thames flood defences (including the Thames Barrier), the risk of flooding associated with the Airport is a residual risk.
- 1.255 Flood defences along the River Thames in proximity to the Application Site are all raised, man made and privately owned. The Environment Agency (EA) inspects these defences at least twice a year to ensure that they remain fit for purpose.
- 1.256 The landside area of the Application Site (including the area of the proposed Western Terminal Extension, Forecourt, Eastern Terminal Extension and Dockside) is drained by a number of existing surface water drainage sewers. A large proportion of the proposed CADP Dockside area to the east of the Terminal building does not have a positive drainage system. However, it is evident from existing topography and lack of drainage infrastructure that a proportion of the area drains to the sewers in Hartmann Road by overland flow.

Assessment of Potential Effects

Construction Stage

- 1.257 During construction works there is potential for a tidal flood to occur and, uncontrolled surface water runoff from the Application Site.
- 1.258 There is potential for construction materials, fuels, lubricants, debris and sediment entering the water as a result of construction activities, or by accident. There is also the potential for sediments to be washed off-site within runoff, and cause silting within KGV Dock.
- 1.259 Piling may pose the risk of the release of contaminated sediment. As well as contaminants entering KGV Dock from washed away stockpiling and cause silting within the dock, which could consequently threaten the aquatic habitat.
- 1.260 The existing surface water drainage gullies will be maintained and used as long as possible during construction. The majority of the development is either over KGV Dock or not positively drained at present. However, an effective CEMP will help to ensure that sediment, oils, lubricants and other contaminants will not be released.

- 1.261 A water quality monitoring regime will be established during the piling works to inform the process and any action necessary to ensure that no adverse effects arise, this will involve: The prevention of silt-laden run-off and mud entering the site surface water drains, and KGV Dock and, good housekeeping (i.e. appropriate storage of construction materials, fuels/lubricants and waste).
- 1.262 The residual effects associated with surface water runoff and water quality are therefore considered to be **negligible**.

Operational Stage

- 1.263 Whilst the Airport is located within an area at risk of flooding, the risk is ~~residual~~based on the presence of the River Thames defences. There will be no loss in floodplain storage and no alteration of flood flow routes as a result of the proposed CADP.
- 1.264 Modelling indicates potential for an increase in surface flooding of the airfield and some landside areas during extreme storm events. However this increase is not considered to be excessive to the Airport operation and will only occur for a short time period after an extreme flood event.
- 1.265 Existing flow rates are proposed to be reduced through the Proposed Surface Water Drainage Strategy. A number of options for drainage of the CADP site have been explored and the drainage strategy consists of a range of suitable Sustainable Drainage Systems (SUDS), which will aim to limit flows to the existing sewers as far as possible. The strategy centres on the use of attenuation tanks with oil separators across the site, appropriately sized to reduce the existing flow to greenfield runoff rates. The new East Passenger Pier and the Arrivals Building roof drainage is intended to discharge directly to the dock due to the clean nature of this discharge. A rainwater harvesting system is also proposed, which stores rainwater collected from the new Terminal roof and provides water to irrigate the landscaping in the forecourt area.
- 1.266 The proposed Strategy identifies that discharge flow rate to the existing sewer network will be reduced in the magnitude of 60% to 65% for the 1 in 30 year plus 20% allowance for climate change event and up to 86% for the 1 in 100 year plus 20% allowance for climate change event.
- 1.267 The proposed CADP will incorporate flood mitigation measures and a Flood Management Plan as detailed within the Flood Risk Assessment. The Airport is registered with the EA's Flood Warning Service for the River Thames, as detailed within the Flood Risk Assessment. This ensures there is sufficient time to evacuate in the unlikely occurrence of an extreme flood event.
- 1.268 It is therefore considered that overall there will be a **negligible** effect on flood risk to the new East Pier, Eastern and Western Terminal extensions, the hotel and other occupied buildings within the Airport.
- 1.269 The Proposed Surface Water Drainage Strategy identifies that discharge flow rates to the existing sewer network will be reduced. This reduction is considered to be a **moderate beneficial** effect.

Ecology and Biodiversity

- 1.270 This chapter of the ES provides an assessment of the likely significant ecological effects of the proposed CADP, taking into account mitigation and enhancement measures.

- 1.271 The further information provided in the CESA, including the 120,000 Movement Sensitivity Test, has no bearing on Ecology and Biodiversity.
- 1.272 Part A, Section 3 of the CESA does provide a brief account of the ecological impacts of other construction methods such as infilling KGV Dock. These radical alternatives are considered to have the potential for much greater ecological impacts than for the proposed method of piling and decking over the Dock.

Baseline Conditions

- 1.273 The Application Site does not lie within 2 km of any internationally or nationally statutory designated sites for nature conservation. However, the Application Site is part of the Royal Docks Site of Borough Importance for Nature Conservation (SBINC) and is within 2 km of a Local Nature Reserve (LNR) and a number of non-statutory sites.
- 1.274 A Phase 1 Habitat survey was undertaken in 2007 and repeated in 2013 along with a tree survey. The main habitat types identified on the Application Site include: poor semi-improved grassland; short perennial/ephemeral; ruderal weeds such as Butterfly-bush; scattered trees (such as London Plane); and Privet and Laurel hedges.
- 1.275 No plants of conservation interest were recorded at the Application Site, nor is it considered that the site contains habitat suitable to support statutorily protected species or species of conservation interest.
- 1.276 The Royal Docks, of which KGV Dock is an integral and connected component part, support a variety of fish species such as Grey Mullet, Tench, Pike and Sea Bass.
- 1.277 Neither amphibians, nor reptiles were recorded during the phase 1 habitat survey walkover survey. No habitat exists on the Application Site suitable for mammals such as Otter, Water Vole and Badger and the data search did not provide any records for these species within the Study Area, extending 2 km from the Site.
- 1.278 The Airport operates numerous bird scaring techniques to enable its safe operation and reduce the risk of bird strike, in accordance with Civil Aviation Authority requirements. These are implemented by a Bird Control Unit managed by Airport Operations. The Application Site is therefore considered as having limited potential for breeding birds, with most of the species observed during walkover surveys being common breeding species. The Application Site, including the open water and edges of KGV Dock, does not support any specially protected species and the buildings within the site perimeter are unsuitable for breeding or roosting birds.
- 1.279 Considering the size and location of the Royal Docks, they are not heavily used by waterbird; this is due to the depth and sheer sides of the docks which support little or no aquatic vegetation, an important food source to the majority of waterbird species.

Assessment of Potential Effects

Construction Stage

- 1.280 Although the Application Site is part of the SBINC, it has overall low biodiversity value, partly due its urbanised nature within a heavily urbanised area and partly as result of the management of the Airport to minimise the risk of bird strikes.
- 1.281 The walls of KGV Dock support a significant biomass of invertebrates and this will be lost when the wall is covered over by the Eastern Apron. The invertebrates are a potential food source for the fish population and it is proposed to create a replacement habitat in the form of screens along the side of the Eastern Apron.
- 1.282 The limnology of the site was found to be uniform in both open and covered water areas presenting a water column stratified with respect to salinity and oxygen. Measures will be implemented as part of the construction process to ensure that the stratification is not disrupted
- 1.283 There will be no activities associated with the proposed CADP construction phase that would damage any of the habitats considered to be of interest for breeding birds.
- 1.284 To compensate for the loss of Dock wall habitat, the CADP proposes to introduce replacement substrate in the form of parallel wire mesh screens, suspended at the water surface down to a depth of 3.0 m below the high water level. The detailed design of this artificial habitat will be discussed and agreed with both the Environment Agency and the Royal Docks Management Authority (RoDMA). The construction for this is likely to occur prior to the demolition/ construction of the new apron to allow enough time for the habitat to grow.
- 1.285 Where appropriate, existing trees will be checked for nesting birds prior to their removal in accordance with the Wildlife and Countryside Act. Mechanisms will be put in place, through a Construction Environmental Management Plan (CEMP), which will ensure that degradation to the Royal Docks SBINC is avoided. Measures will also be taken to ensure that the quality of any water discharged into KGV Dock during the construction works is free of contamination and silt. Drainage during construction will form part of the site-wide surface water pollution prevention system which will be developed as part of the CEMP. As a result of the mitigation measures in place there is likely to be **no significant impact**.
- 1.286 The introduction of the wire mesh screen will provide refugia for fish fry. However given that the final details of this mitigation have not yet been agreed or finalised, an assessment is made of the significance of impact without the mitigation. On this basis, it is considered that the direct loss of Dock wall habitat as a result of the proposed CADP will have a minor adverse impact on the aquatic invertebrates and fish fauna.
- 1.287 For all other impacts, there is likely to be **no significant residual effect** after taking account of the proposed mitigation.

Operational Stage

- 1.288 The proposed CADP will result in the direct loss of approximately 75,000m² of surface water area (approximately 18% of the total existing water area in KGV Dock) and approximately 1,800m² of dock wall habitat from KGV Dock where the new stands and eastern taxilane will be constructed. This support a significant biomass of invertebrates which are potential food source for the fish population. To compensate for the loss of this Dock wall habitat, it is proposed to introduce

replacement substrate in the form of wire mesh sheeting (artificial fish refugia) which will facilitate the colonisation and build up of algae and associated detritus. This will be implemented before construction with enough time for this potential food source to be re-instated.

- 1.289 It is concluded that whilst there will a loss of area of aquatic habitat that is exposed to sunlight from KGV Dock, in ecological terms the direct loss of habitat will not affect the functionality or viability of the SBINC. Therefore, the direct loss of habitat resulting from the completed CADP is a **negligible** permanent adverse impact on the aquatic habitat that is **not significant**.
- 1.290 All other potential effects to ecology and biodiversity are judged to be **not significant**.
- 1.291 Measures will be taken to ensure that the quality of all drainage water discharged into KGV Dock meets appropriate discharge limits, such Biological Oxygen Demand (BOD), and does not create any adverse effects to the ecology of KGV Dock. A discharge permit and conditions will be agreed with the Environment Agency and RoDMA.
- 1.292 The completed CADP will not provide any habitats to encourage breeding or wintering birds, due to overriding safety concerns and the requirement to minimise the risks of bird strike to aircraft on the ground or in the air. The strict management of terrestrial habitats within the Application Site to maintain aviation safety will continue once the proposed CADP is built out and operational. Therefore there is **no significant impact**.
- 1.293 For all other impacts, there is likely to be **no significant residual effect** after taking account of the proposed mitigation

Cultural Heritage

- 1.294 This chapter provides an assessment of the potential effects of the proposed CADP on heritage assets within the Application Site and within a one kilometre search area. This includes the potential impact on both buried archaeology and built heritage assets.
- 1.295 **The further information provided in the CESA, including the Improved Construction Programme and the 120,000 Movement Sensitivity Test, has no bearing on Cultural Heritage.**

Baseline Conditions

- 1.296 There are no Scheduled Ancient Monuments within the Study Area. There are however eight listed buildings within the Study Area. There are also a number of locally listed buildings within the vicinity of the Application Site.
- 1.297 The docks are not listed and are not within a designated Conservation Area. Neither are there any proposals to designate the area of the docks as Conservation Areas.
- 1.298 The development of the Newham area has been tied up with industry and its docks, with its riverside districts being absorbed into the dock complexes during the 19th and early 20th centuries. The Royal Victoria Dock was constructed in the 1850s and was the first in the country to be connected to the main railway system. The Royal Albert Dock to the north opened in 1880 and KGV Dock

opened in 1921. The docks were a commercial success, becoming London's principal docks during the first half of the 20th century.

- 1.299 There are no specific archaeological entries for the KGV Dock in the Greater London Historic Environment Record, although there is an entry which refers to documentary evidence, maps and recent developments indicating the presence of a substantial natural harbour or creek in the area of the Royal Albert and KGV Docks.

Assessment of Potential Effects

- 1.300 Structural remains are visible in the dock, in the form of fixed jetties known as ~~D~~Dolphins. The Dolphins are not identified as a heritage asset and have been subject to significant change through the loss of cranes and other original features listed above. The western-most Dolphin will be partially removed as part of the proposed CADP works, this can be assessed as major. The remaining six Dolphins will be left in-situ. The assessment of the effect that the impact may have on the entirety of the surviving six Dolphins is assessed to be **minor**.
- 1.301 The significance of any buried archaeological deposits is currently unknown. Current design information suggests that impacts on buried archaeological deposits and remains may potentially vary from **negligible** to **major**. However, information provided within the desk-based assessment (DBA) would suggest that any archaeological deposits and remains, that may be present, will vary from Low to Medium significance leading to an effect that could vary from **neutral to moderate**.
- 1.302 7 Grade II and 1 Grade II* listed building have been identified within the Study Area. Grade II listed buildings are regarded as being of Medium Significance. Of the 7, 2 have the potential to be ~~at~~ at risk but would not be physically affected by the CADP itself.
- 1.303 Development of the proposed CADP will affect views from the western end of the south of KGV Dock to the Grade II listed Central Buffet and Central Offices; this is assessed as having **minor impacts on setting**.
- 1.304 Eight locally listed buildings have been identified in the Study Area. Locally listed buildings are of Low Historic Building Significance. The closest locally listed building is the Abutments to the Sir Stephen Redgrave Bridge. The setting of this locally listed structure will not be affected by the proposed CADP. The effect on all locally listed buildings/ structures will therefore be **neutral**.

Conclusions

- 1.305 The Airport and Application Site is located within a LBN designated Archaeological Priority Area. The Priority Area specifically excludes the area of the water of the Royal Albert Dock and KGV Dock. Much of the development would occur over the latter.
- 1.306 Discussions with the Archaeological Adviser to LBN have indicated that approaches to evaluation and mitigation, plus historic building recording, can be discussed when detailed designs of the outline elements of the proposed CADP are further advanced through reserved matters applications. This is likely to take the form of planning conditions requiring ~~historic~~ historic building recording and archaeological recording being attached to any planning permission granted at this stage.

- 1.307 The magnitude of impact on the setting of the Dock has been assessed to be **moderate**, with the overall effect on setting being a **minor effect**.
- 1.308 The majority of direct effects on the individual structural components of KGV Dock are considered to be minor, although the effects on buried archaeological remains could vary from negligible to high. However, information provided within the DBA suggests that any archaeological deposits and remains, that may be present, will vary from low to medium significance, leading to an effect that could vary from **neutral** to **moderate**.
- 1.309 Publication of the results of historic building recording will enhance knowledge of recently identified heritage assets and the LBN Archaeological Priority Area.

Waste Management

- 1.310 This chapter reports on the assessment of the likely significant environmental effects of waste generation associated with the proposed CADP. This includes the effects of waste produced as a result of demolition and construction activities and the potential additional waste to be generated during operation of the new development due to the predicted increase in passenger numbers.
- 1.311 The further information provided in the CESA, including the *Improved Construction Programme*, has no bearing on waste generation as the same construction activities are proposed (albeit for different durations and time periods).
- 1.312 The implications of the increase in passengers and aircraft movements through the 120,000 movement Sensitivity Test has been considered in regard to the net uplift in waste generation at the Airport, as presented in Part B of the CESA. This finds that the increase in waste would be proportional to the number of additional passengers and would not be significant. Therefore, the effect would remain **negligible** to **minor adverse** in line with the original conclusion in the ES.

Baseline Conditions

- 1.313 The majority of Airport waste is currently produced by airlines, tenants and retail concessions. This includes in-flight waste, terminal waste, aircraft maintenance waste, catering waste and general waste from passengers. Furthermore, waste is produced by Airport staff, tenants (office waste) and retail concessions.
- 1.314 An estimated total of 946 tonnes of waste arose at the Airport during 2012. Of this total, 459 tonnes (48%) comprised general waste, 487 tonnes (51%) was recycled and 0.9 tonnes (0.1%) was classified as hazardous. The waste was managed by the specialist waste contractor. A total of 3.03 million passengers passed through the Airport during 2012, which equates to approximately 312 grams of waste being produced per passenger.
- 1.315 The Airport currently recycles a range of waste materials including paper, cardboard, cans, and plastic packaging. This is segregated on site at a central storage area (the waste hub) and removed by the waste contractor on a daily basis. During 2012, the recycling rate for the Airport was recorded estimated to be 51%, which exceeds the 2015 recycling target of 45% as set out in the London Plan (2011) and the Airport's own target to increase waste recycling rates to 20% by summer 2011 and then to reach 45% over the following three years.

- 1.316 Various initiatives to increase recycling rates have recently been implemented at the Airport, including the transfer of waste using clear bags to assist in the identification of waste types. Furthermore, a number of workshops have been run to increase waste recycling awareness amongst staff, concessions and the waste contractor.

Assessment of Potential Effects

Construction Stage

- 1.317 The one-off volume of demolition, earthworks, piling and foundation spoil, and other construction waste will exceed the current baseline waste volume. However, this is unlikely to significantly impact the existing and proposed waste management infrastructure.
- 1.318 Where possible construction waste will be re-used on-site; over 90% of waste material is to be targeted to be re-cycled, re-used or otherwise diverted away from landfill.
- 1.319 During the construction phase, waste will be segregated and stored on-site within a dedicated compound pending its onward transfer. Within Greater London, there is a significant commitment to improving the existing waste management infrastructure in order to deal with increasing waste generation across the capital and achieve the targets set by the London Plan.
- 1.320 Overall, environmental effects from waste produced during the construction phase would be **negligible to minor adverse** (at worst).

Operational Stage

- 1.321 Waste production at the Airport will inevitably increase under the CADP due to the increase in the number of arriving and departing passengers, and the associated enlargement of passenger facilities within the terminal buildings. Assuming maximum passenger numbers of 5.9 million during the Principal Assessment Year (2023), the volume of operational waste that will be produced at the Airport is predicted to reach 1,834 tonnes per year. This will exceed the current (2012) baseline volume of waste of approximately 946 tonnes, and generate 449 tonnes of additional waste in 2023 compared to the Without Development scenario. In addition, the hotel to be constructed as part of CADP2 will result in the order of 66 tonnes of additional waste per annum. These predicted volumes do not take into consideration potential reductions in waste production at source, as a consequence of the targeted improvements in waste management at the Airport which are set out in the Airport Sustainability Strategy and Action Plan (2012).
- 1.322 Volumes of waste generated as a result of the proposed CADP are considered to be relatively small. Additional waste is therefore not likely to adversely impact existing and proposed infrastructure.
- 1.323 Within the Airport's Sustainability Strategy & Action Plan (2012), the Airport propose to minimise operational waste production and promote sustainability by monitoring waste leaving the Airport more closely, raise awareness to staff on recycling, and develop ways to monitor how and where waste is generated at the Airport.

- 1.324 Overall, environmental effects from waste produced during the operational phase would be **negligible to minor adverse** (at worst). **This conclusion remains the same under the Sensitivity Test.**

Ground Conditions and Contamination

- 1.325 This chapter reports on the assessment of the effects of the proposed CADP relating to ground conditions and contamination.
- 1.326 **The further information provided in the CESA, including the *Improved Construction Programme*, has no bearing on ground conditions and contamination.**

Baseline Conditions

- 1.327 There are no recommended or potential Regionally Important Geological Sites (RIGS) or Locally Important Geological Sites (LIGS) within the LBN.
- 1.328 Numerous former industrial land uses were present approximately 100m to the south of the Application Site. A former gas works was located approximately 100m to the south of the site from at least 1873, and to the east of this a sewage works and chemical factory, from 1896.
- 1.329 The Application Site is predominantly comprised of hard surfaces. Some limited soft-standing exists to the north-west of the site, in the vicinity of the fire training ground.
- 1.330 A tank farm, operated by the Airport, is located within a fenced enclosure behind the western end of the West Pier. Four above-ground storage tanks (AST) totalling 710,000L capacity are understood to store aviation fuel. Approximately 152,000L of aviation fuel is pumped into the ASTs each day via delivery tankers. There are some general hazardous waste storage, including waste oils and ~~jet~~ slops associated with the tanks.
- 1.331 Potential sources of contamination relate to bulk fuel storage and aircraft maintenance, including refuelling and de-icing. The areas of fuel storage, aircraft maintenance and fire training ground were well maintained and managed with surface run-off draining to dedicated interceptors.

Assessment of Potential Effects

Construction Stage

- 1.332 The removal of hardstanding could potentially cause contaminants to migrate off-site via wind-blown dust and soil particles. Arisings generated during land-side piling activities could pose an environmental risk if not stored and disposed of in a responsible manner.
- 1.333 The piling process has the potential to generate preferential pathways for the vertical migration of contaminants within shallow soils, the dock sediments or perched groundwater, and could also disturb dock sediment releasing previously unidentified contaminants.
- 1.334 Hydrocarbons were detected locally within shallow soils at concentrations that may permeate utility pipes. Without mitigation, there is the potential for a permanent adverse effect on site infrastructure.

- 1.335 Waste soils arising from the site, including pile arisings, will be disposed of in accordance with the relevant statutes and Duty of Care Regulations. A Site Waste Management Plan (SWMP), adherence to the CEMP and relevant legislative requirements, will significantly reduce any risks posed to construction site workers by minimising the risk of inhalation, ingestion or contact with contaminated soil, sediment, dust, groundwater or contaminated surface water run-off.
- 1.336 A watching brief will be carried out during construction for previously unidentified contamination. Any contamination encountered during the works will be investigated and dealt with appropriately through disposal or containment.
- 1.337 In conclusion, there are potential risks to sensitive receptors, such as construction workers, end users and controlled waters, from the disturbance and mobilisation of ground contamination. However, these can be appropriately mitigated through the implementation of the SWMP, CEMP and other best practice procedures. Furthermore, any residual near surface contamination identified during the construction works will be removed. Therefore, the residual effects are considered to be **negligible** or **minor beneficial**.

Operational Stage

- 1.338 A number of materials and substances will be stored, including aviation fuel, de-icing fluid and waste materials (e.g. waste oil and jet slops) which could potentially impact the quality of water resources. New areas for the storage of oils fuel and chemicals will be therefore designed and managed according to current best practice and in compliance with prevailing legislation and Environment Agency guidance. The new site drainage system will be fitted with oil interceptors and other pollution controls which will be regularly monitored, cleaned and maintained.
- 1.339 No significant soil or groundwater contamination has been identified and therefore risks are considered to be low.
- 1.340 The risks to surface water receptors are also considered to be low due to the absence of significant contamination within the development area and because the neighbouring docks are lined, preventing migration of contamination into these water bodies.
- 1.341 The proposed CADP will predominantly be surfaced with building and hardstanding. There is therefore limited potential for off-site migration of contamination within airborne soil particles or dust to human and ecological receptors.
- 1.342 No on-going issues are anticipated following redevelopment of the site and the existing management procedures in place at the Airport will ensure that the operation of the built-out CADP will not result in future adverse effects.
- 1.343 Assuming the proposed mitigation measures are adopted, residual effects arising from ground conditions at the site are considered to be of **negligible** or **minor beneficial** significance

Climate Change

- 1.344 This chapter presents a carbon footprint calculation for the Airport's baseline (present-day operations) and future year (2023) with and without the proposed CADP.

- 1.345 Following the submission of the ES, LBN requested clarification on the calculated Greenhouse Gas Emissions (GHG) per passenger, under the With and Without Development scenarios. This was provided in Section 7 of the March 2014 ESA. For the sake of completeness, this response is also reproduced in Part D (Volume III) of the CESA.
- 1.346 The implications of the increase in passengers and different aircraft within the Sensitivity Test fleet mix has been considered in regard to the changes to GHG emissions and a summary of the findings is presented at the end of this section.

Baseline Conditions

- 1.347 Aircraft fuel combustion in the land and take off cycle comprises by far the largest proportion of the carbon footprint (88%). Within the scope of energy and fuel use by the Airport itself, electricity consumption is the most significant emissions source, followed by use of red diesel.

Assessment of Potential Effects

- 1.348 The design of the proposed CADP has not progressed to a point at which details of the precise amounts of construction materials can be estimated, however, it is likely that construction-phase embodied carbon and transport emissions would be of relatively low significance compared to the Airport's cumulative emissions over ongoing years of operation, with or without the development. Scope for mitigation of construction phase Greenhouse Gas (GHG) emissions exists in the form of efficient materials use (including recycled materials), use of efficient delivery options, and use of well-maintained, fuel-efficient construction plant.
- 1.349 Excluding aircraft emissions (looking just at the Terminal operations), emissions per passenger decrease by 47% with the proposed CADP compared to the baseline year, due to the energy efficiency and renewable generation measures of the proposed new and refurbished buildings.
- 1.350 The composition of the fleet of aircraft using the Airport is predicted to change in the future years, with and without development. Changes are expected to include a greater prevalence of larger, more fuel efficient aircraft, which can have less GHG emissions per passenger carried. Nevertheless, the expected changes in fleet composition in the future year coupled with the forecast additional demand are estimated to lead to a small increase in Landing and Take-Off (LTO) GHG emissions per passenger, compared to the baseline year.
- 1.351 The carbon assessment demonstrates that although the Airport's growth, driven by increasing passenger demand, leads to greater total GHG emissions than in the baseline year, this would be the case with or without the proposed CADP due to the forecast additional demand.
- 1.352 Importantly however, with development, total emissions on a per-passenger basis are predicted to be only slightly greater (2.4%) in the future year with the CADP, compared to the future year without development, and they would be slightly less (-4.9%) when compared with the baseline GHG emissions per passenger.
- 1.353 This is due to the fact that the CADP will allow the Airport to accommodate greater passenger numbers in energy-efficient new Terminal buildings, and the fact that in the future year, the composition of the fleet of aircraft using the Airport (with development) is predicted to include an

increased number of larger and more efficient models, which have less LTO GHG emissions per passenger.

- 1.354 No further mitigation is recommended, as the proposed CADP will allow the Airport to meet increased passenger demand while keeping GHG emissions per passenger stable.

Conclusion

- 1.355 Overall, it is predicted that the proposed CADP will enable the Airport to accommodate the predicted 32% increase in passenger numbers with only a small increase in GHG emissions per passenger (within the assumptions of the assessment), compared to if the development did not proceed.
- 1.356 In the future year (2023), the Airport's GHG emissions with the proposed CADP are estimated to be greater than if the development did not proceed. However, the proposed CADP will allow the Airport to accommodate greater passenger numbers and aircraft movements, as consented by the 2009 planning permissions, than if the development did not proceed and will also allow greater use of new, more efficient aircraft models. GHG emissions on a per-passenger basis With development, therefore, are predicted to be marginally lower in the future year compared to the baseline year and only slightly greater compared to the without development scenario.

Summary of 120,000 Movement Sensitivity Test for Climate Change (contained in Part B of the CESA)

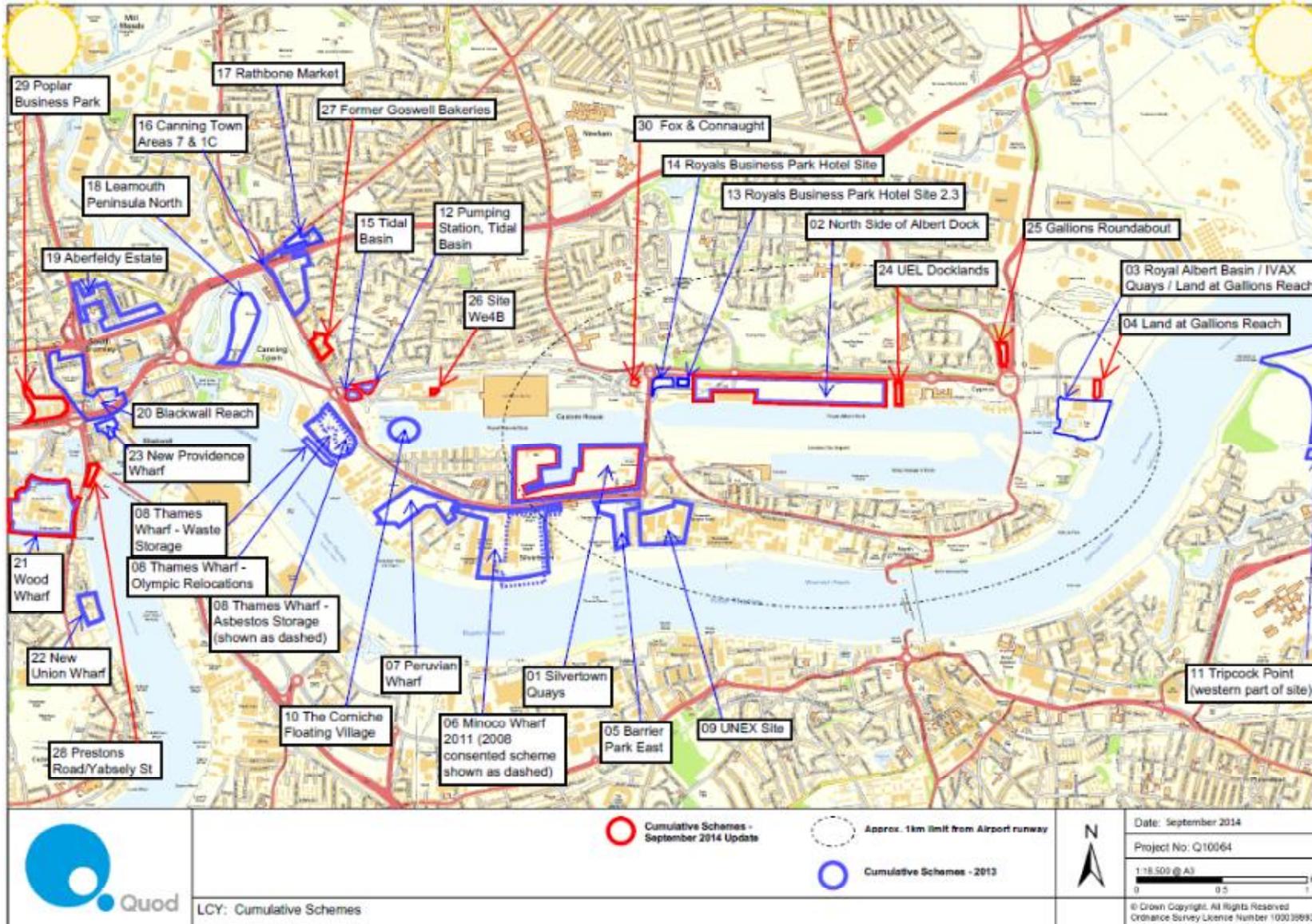
- 1.357 Aircraft emissions for the 120,000 aircraft movements Sensitivity Test are lower than those calculated for the ES 2023 With Development scenario. This is due to the differences in aircraft fleet mix between the two scenarios, with lower CO₂ emissions associated with the Bombardier Q400 (which has increased movements under the Sensitivity scenario) compared with the Embraer E170 (which had comparatively more movements under the ES scenario). This effectively offsets any increase resulting from the higher number of aircraft movements.
- 1.358 Emissions associated with the Terminal building energy and water consumption remain broadly the same under both the Principal and Sensitivity Test With Development scenarios, as the proposed development of new buildings for the CADP does not change.
- 1.359 However, the Sensitivity Test actually reverses the conclusion of Chapter 17 of the ES, from a small 2.4% increase in GHG emissions per passenger in the With Development scenario compared to the Without Development scenario, to instead a 7.2% decrease in total emissions under the Sensitivity Test forecast. This is due to both the lower emissions of the aircraft in the fleet and a slight improvement in emissions from terminal operations on a per passenger basis (i.e. more passengers pass through the terminal buildings without any significantly higher energy consumption to accommodate this increase).
- 1.360 As such, it can be concluded that there will be **negligible** environmental effects and/or climate change impacts associated with the 120,000 movements in the Sensitivity Test. Moreover, such effects will not be materially worse than those identified in the ES.

Cumulative Effects

- 1.361 Chapter 18 of the ES assesses the likely significant effects of the two types of cumulative effects with the proposed CADP:
- Type 1 - The combined effects of individual residual impacts of the proposed development on a particular sensitive receptor, for example, the consequence of increased traffic flows on air quality and noise, and the effects of increased employment on travel patterns. These are sometimes known as interactive effects and
 - Type 2 - The combined effects from several developments in the area which individually might be insignificant, but when considered together, could result in a significant cumulative effect.
- 1.362 The selection process for these cumulative schemes was first informed by the air noise contours prepared by BAP to identify those proposed developments which would fall within 57dB_{LAeq,16hr} With Development_{air noise contour for 2023}; and secondly, the supplementary screening criteria used in the original ES, namely:
- Developments that are within 1km of the boundary of the Airport boundary;
 - Comprise more than 10,000 sqm of development and/ or 100 or more residential units and/ or are of a particularly sensitive nature (e.g. new schools or hospitals);
 - Expected to be built-out at the same time as the CADP and with a defined phasing and construction programme;
 - Developments which are considered likely to result in significant environmental effects of some nature, often signified by being subject to EIA; and,
 - Developments that have planning permission or a resolution to grant planning permission.
- 1.363 Item 8 of LBN's letter of 20th August 2014, includes the request for further consideration to be given to the cumulative (in combination) effects of the CADP with the most recent development proposals in proximity to the Airport, namely: the Silvertown Quays planning application for a mixed use scheme (LBN Ref: 14/01605/OUT) and the Fox & Connaught hotel application (Ref: 14/00986/FUL).
- 1.364 Including the two recent schemes referred to above, a total of nine additional developments have been identified since the completion of the July 2013 ES which may have the potential to generate cumulative effects in combination with the CADP.
- 1.365 This request has been addressed by a further revision to the cumulative effects assessment update which is presented in Part A, Section 6 of the CESA. By providing a full update to the cumulative effects assessment, all relevant and extant development schemes which have been granted planning consent since the CADP ES was completed in July 2013 are now accounted for. In addition, for the sake of completeness, the whole of ES Chapter 18: Cumulative Effects has been replaced in the CES to account for these additional developments.
- 1.366 The schedule of cumulative schemes (previously forming ES Table 18.2) and the figure showing the location of these schemes in relation to the CADP (previously ES Figure 18.1) have been updated in Chapter 18 of the CES. Figure 1.9 a below shows the range of developments which have been considered in this assessment - the schemes illustrated in blue have previously been considered in

the original July 2013 ES. The schemes with a red boundary are recent applications or variations that are now considered in the CESA and Chapter 18 of the ES.

Figure 1.9a: Updated Map Showing Location of Schemes Considered for Cumulative Assessment



- 1.367 The assessment of air noise impacts in the cumulative effects assessment update shows only minor changes to the dwelling and population counts within the noise contours, as compared to those presented in the July 2013 ES. Within the 57 dB contour, a small decrease in the number of dwellings arises. For example, in 2023 without the CADP development, the number of dwellings inside the 57 dB contour now decreases to 23,000 from 26,400. With the CADP in place in 2023, the number now decreases to 27,500 from 30,600 in the CADP ES, a reduction of 3,100 dwellings.
- 1.368 Additional development changes that have arisen since the completion of the CADP ES in July 2013 do not materially affect the number of dwellings and population that will be affected by the CADP. Therefore, this change has no impact on the air noise conclusions of the CADP ES which still remain valid.
- 1.369 As summarised in the Table below, this assessment demonstrates that none of these additional developments in proximity to the Airport will give rise to any materially different or otherwise significant cumulative effects to those as described in ES Chapter 18 and Chapters 7-16.

Table 1.6 Summary of Cumulative Impacts

Potential Impact Areas	Cumulative Impact Identified in CADP ES (July 2013)	Cumulative Impact accounting for additional developments granted consent or submitted after July 2013.
Socio Economics	Moderate Beneficial (except for potential adverse effect of enlarged PSZ)	Moderate Beneficial
Noise	Negligible	Negligible
Air Quality	Negligible to Minor Adverse	Negligible to Minor Adverse
Townscape and Visual	Minor Beneficial	Minor Beneficial
Traffic and Transportation	Negligible	Negligible
Water Resources and Flood Risk	Negligible	Negligible
Ecology and Biodiversity	Negligible	Negligible
Cultural Heritage	Negligible	Negligible
Waste	Negligible to Minor Adverse	Negligible to Minor Adverse
Ground Contamination	Negligible	Negligible

- 1.370 It is acknowledged that the construction works have the greatest potential to result in cumulative effect interactions, particularly in view of the relative proximity of the ABP and Silvertown Quays sites to the Airport and the extended duration of both construction programmes. However, for the reasons set out in the relevant section of the CESA, such effects are likely to be no worse than minor adverse including cumulative noise effects.
- 1.371 It is evident from the Environmental Statements supporting both of these major mixed-use regeneration schemes that they have been designed in full knowledge of the CADP proposals. Accordingly, the applicants have proposed appropriate designs and other mitigation measures to ensure that acceptable environmental conditions are achieved and maintained throughout

the construction works and during the subsequent occupation and operation of the developments.

1.372 Consistent with prevailing environmental legislation and planning policy requirements, it is likely that the Fox & Connaught scheme and the other developments identified and assessed in Part A, Section 6 of the CESA will adopt suitable mitigation measures to avoid any adverse effects from their construction and operation; for example, by the implementation of a Construction Method Statement (CMS), Construction Logistics Plan (CLP) and/or Construction Environmental Management Plan (CEMP) to control traffic, noise, dust and other potential environmental effects of those works.

1.373 In conclusion, there would be no significant adverse cumulative impacts as a result of the proposed CADP in combination with the developments considered in the updated cumulative effects assessment presented in the CESA and in replacement Chapter 18 of the CES.

1.374 The combined effects of different types of effects, or effect interactions, from the proposed development on particular receptors, has been considered during the assessment of the demolition and construction works and set out in subsequent chapters of the ES.

1.375 Table 1.6 below summarises the potential for cumulative effects from the proposed development and other projects within the zone of influence.

Table 1.6 Summary of potential cumulative effects (including an update)

Potential Impact Areas	Overall Cumulative Impact	Overall Cumulative Impact including schemes within the update (Section 5 of the ESSA)
Socio-Economics	Moderate Beneficial (except for potential adverse effect of enlarged PSZ)	Moderate Beneficial (except for potential adverse effect of enlarged PSZ)
Noise	Negligible	Negligible
Air Quality	Negligible to Minor Adverse	Negligible to Minor Adverse
Townscape and Visual	Minor Beneficial	Minor Beneficial
Traffic and Transportation	Negligible	Negligible
Water Resources and Flood Risk	Negligible	Negligible
Ecology and Biodiversity	Negligible	Negligible
Cultural Heritage	Negligible	Negligible
Waste	Negligible	Negligible
Ground Contamination	Negligible	Negligible

~~1.376 A positive outcome if the proposed developments shown on Figure 1.9 were to be built would be the screening effect that some of the buildings would provide to the current residents in the vicinity of the Airport. In addition, the cumulative socio-economic effect of a large number of construction projects and new development is considered to be beneficial to the local community through potential employment and income generation.~~

~~1.377 It is acknowledged that the construction works are the greatest potential cause of effect interactions, particularly for a site of this nature within an urban context and close to a number of sensitive receptors. However, it can be assumed that each of these developments identified above 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 imposition of a Construction Environmental Management Plan (CEMP) to control emissions or other pollution during this phase.~~

~~1.378 There would be no significant adverse cumulative impacts as a result of the proposed developments combined impacts and together with the proposed development in the area.~~

Residual Effects

1.379 This **Updated** NTS concludes with a summary of all the residual effects identified through the EIA process and provides a description of the main mitigation measures.

Construction Stage

1. **Socio Economics, Recreation and Community** . The proposed CADP would bring about additional demolition and construction jobs; which is likely to have a **substantial beneficial** residual effect.
2. **Noise and Vibration** . **As a result of the Improved Construction Programme and the extensive noise mitigation measures that are being offered as part of CADP and as set out in the CESA and Chapter 8 of the CES**, the residual construction noise impact has been assessed as **negligible adverse** for the daytime and **minor adverse** for evening/night time/weekend works. **No significant** adverse impacts are predicted from construction vibration.
3. **Air Quality** . There is a risk of slight adverse dust effects during both demolition and construction works even with mitigation. However, the effects are likely to be short lived and only occur during dry and windy periods, therefore the residual effects are assessed as **slight adverse**.
4. **Townscape and Visual** . The proposed screening is unlikely to be sufficient to alter the magnitude of visual effects completely; therefore likely significant visual effects remain for a small portion of dwellings located in Silvertown.
5. **Traffic and Transportation** . Deliveries of construction related material will increase traffic on the local highways network. Where possible, deliveries will be made by river to reduce these impacts. The incorporated Construction and Logistics (CLP) plan will provide appropriate mitigation measures, impacts are likely **minor adverse** of a **temporary** nature.

6. **Water Resources and Flood Risk** . Some potential for tidal flooding due to the location of the Airport. There is a risk of release of contaminated sediment impacting on the water quality from piling during construction and construction related materials entering the water. A water quality monitoring regime will be established during the piling works to inform the process and any action necessary to ensure that no adverse effects arise. The residual impacts are assessed as **negligible**.
7. **Ecology and Biodiversity** . The introduction of the wire mesh screen will provide refugia for fish fry. However given that the final details of this mitigation have not yet been agreed or finalised, an assessment is made of the significance of impact without the mitigation. On this basis, it is considered that the direct loss of Dock wall habitat as a result of the proposed CADP will have a **minor** impact on the aquatic invertebrates and fish fauna. For all other impacts, there is likely to be **no significant** residual effect after taking account of the proposed mitigation.
8. **Cultural Heritage** - Archaeological remains are presently unknown at the site. Significance ranges from **negligible** to **high** is found. LBN have suggested mitigation of these impacts can be addressed through the placing of archaeological planning conditions on any consent. There are no Scheduled Ancient Monuments within the Study Area and there are eight listed buildings and a number of locally listed buildings. The docks are not listed and are not within a designated Conservation Area. Therefore the impact on setting is **minor**.
9. **Waste** - Where possible construction waste will be re-used on-site, over 90% of waste material is to be targeted to be re-cycled, re-used or otherwise diverted away from landfill. However, it is likely that there will be some waste that will not be able to be re-used. Waste will be segregated and stored on-site within a dedicated compound pending its onward transfer. Within Greater London, there is a significant commitment to improving the existing waste management infrastructure in order to deal with increasing waste generation across the capital, therefore residual effects are likely to be **negligible** or **minor adverse** (at worse).
10. **Ground Contamination** . Piling during construction may release contaminated sediment. The removal of hardstanding may potentially cause contaminants to migrate off-site via wind blown dust soil particles. Waste soils arising from the site, including pile arisings, will be disposed of in accordance with the relevant statutes and Duty of Care Regulations., therefore the residual effects are **negligible** to or **minor beneficial**.
11. **Climate Change** - Construction phase impacts have not been assessed but due to their temporary nature they are assumed to be minor. Reduction in construction phase GHG emissions exists in the form of efficient materials use (including recycled materials), use of efficient delivery options, and use of well-maintained, fuel-efficient construction plant.

Completed Development

1. **Socio Economics, Recreation and Community** - The proposed CADP will support an additional 960 direct onsite jobs and generated an additional £98.8m within the Study Area as of 2023. This is assessed as **moderate beneficial** impacts. Some proposed developments within the area would be located within the Public Safety Zone (PSZ), this is assessed as **moderate adverse** as the population within the PSZ should not increase.

2. **Noise and Vibration** . More people are predicted to become annoyed by aircraft noise, however there will be continued restriction flights outside the daytime periods and therefore there are no residual effects. Some dwelling will experience a reduction in noise due to the screening by the development; the 16m terminal extension will act as a sound barrier, while others will see an increase due to the proximity of the new stands. The small number exposed to adverse impacts will be provided with sound proofing, therefore residual ground noise impacts are likely to be **negligible to minor adverse**. There will be a reduction and an increase to some dwellings in the area from traffic noise, this is due to the new access road. Some dwellings in Woodman Street will be exposed to **minor** absolute levels of road traffic noise and will have qualified for noise protection treatment under the Airports Sound Insulation Scheme. Therefore the residual road traffic noise impact has been assessed as **negligible adverse**.

3. **Air Quality** - The assessment has predicted no significant air quality or odour impacts during operation of the proposed CADP. Considering the Airports current mitigation, no further mitigation is necessary and therefore the effects remain **unchanged**.

4. **Townscape and Visual** . Within 500m of the Application Site, likely significant visual effects from the proposed CADP have been identified from publicly accessible locations on the north side of Royal Albert Dock. Also, a small number of apartments, within 100m of the Application Site, with north facing 2nd or 3rd floor windows, in Silvertown to the south of the Airport, would experience likely significant adverse effects. However, these receptors represent a very small proportion of the total number of dwellings in Silvertown. The Eastern Pier, Terminal Extensions and Hotel will be the most visually intrusive parts of the proposed CADP and will obstruct existing open views from a few locations to the south, therefore a high quality of design is therefore proposed. The residual effects are assessed as **moderate to slightly adverse**.

5. **Traffic and Transport** . No significant change in driver delays and crowding on the DLR will not be exacerbated by the proposed CADP. A new dockside path, creating a new pedestrian link from the east and additional cycle parking will also be provided to encourage cycling. Travel plans will be implemented to encourage site uses and staff to travel sustainably; car sharing or non car modes of transportation. Therefore the residual effects are likely to be **minor adverse to negligible**.

6. **Water Resources and Flood Risk** . Negligible risk to flooding due incorporate flood mitigation measures and a Flood Management Plan Existing flow rates are proposed to be reduced through the proposed drainage strategy. The new drainage system as part of the proposed drainage strategy will reduce discharge rate flows by 60-65%, this is considerate to be **moderate beneficial**.

7. **Ecology and Biodiversity** . There is likely to be **no significant impacts** to ecology and biodiversity due to the replacement habitat on the eastern apron wall supporting a replenished food source for the aquatic habitat,

8. **Cultural Heritage** . 8 listed buildings will experience **minor** impacts. Discussions with the Archaeological Adviser to the LBN have indicated that approaches to mitigating impacts on setting of historical features of the KGV Docks could be addressed by the placing of historic building recording+planning conditions on any planning permission.

9. **Waste** . Due to increased numbers using the Airport, waste will in turn increase. The Airport's Sustainability Strategy will aim to minimise operational waste production and promote sustainability, therefore the residual effects are **negligible to minor adverse** (at worst).
10. **Ground Contamination** - A number of materials and substances will be stored, including aviation fuel, de-icing fluid and waste materials (e.g. waste oil and jet slops) which could potentially impact the quality of water resources. The new site drainage system will be fitted with oil interceptors and other pollution controls which will be regularly monitored, cleaned and maintained. Assuming the proposed mitigation measures are adopted, residual effects are likely to be **negligible or minor beneficial** significance.
11. **Climate Change** - Overall, it is predicted that the proposed CADP will enable the Airport to accommodate the predicted 32% increase in passenger numbers with only a **small increase** in GHG emissions per passenger

Conclusion

- 1.380 It has been concluded that there is a need for the proposed CADP in order to support broader economic objectives and, consistent with Government aviation policy, to optimise the use of existing runway capacity at airports in the short to medium term. Without the proposed CADP, growth at the Airport will be less sustainable and there would be an adverse impact on business travel demand, particularly inbound business travellers to London.
- 1.381 The proposed CADP will enable the Airport to respond to forecast growth in both aircraft and passenger numbers (particularly at peak periods) and to accommodate new generation aircraft which are physically larger, but also more fuel efficient and quieter than the current fleet.
- 1.382 The ES concludes that the various environmental effects of the proposed CADP will be both positive and negative, ranging in significance from **negligible** to **substantial**. Importantly, no significant adverse effects have been identified which could not be adequately mitigated through appropriate environmental controls, including those already in place at the Airport and incorporated through the 2009 planning permission and Planning Agreement. With regard to the key impacts of noise, air quality and climate change, the proposed CADP will result in absolute increases in these emissions. However, the impacts will be proportionately less than in the **Without Development** scenario and no breaches in statutory limits are predicted. They are therefore not assessed as being significant.
- 1.383 With regards to noise in particular, the Airport has provided protection to those people close to the Airport, and thus most affected by noise, via the Sound Insulation Scheme, which has been in place for many years. The Airport will continue to operate the Sound Insulation Scheme using the most stringent UK airport daytime trigger limit of 57 dB LAeq,16h as a First Tier eligibility criterion, whilst also continuing to apply a Second Tier eligibility criterion offering an enhanced scheme at 66 dB LAeq,16h thereby protecting all eligible housing and community buildings that come into these contours. In addition, the Airport will improve the scheme by offering those people most affected by noise, that is, those within the 66 dB LAeq,16h contour, secondary glazing or a 100% monetary contribution towards high acoustic performance thermal double glazing, together with acoustic ventilation. This will ensure that all of those most affected

by noise are afforded the maximum noise protection opportunity. Furthermore, due to the significant improvements in the proposed *Improved Construction Programme* in addition to the various mitigation proposed, substantially less construction activity is now proposed at night than originally planned, reducing the previously Minor to Significant Adverse construction noise impacts predicted for Outside-of-Operational Hours works to a Minor Adverse impact.

- 1.384 At the local level, a small number of apartments with north facing 2nd or 3rd floor windows within 100m of the Application Site in Silvertown (to the south of the Airport) would experience likely significant adverse visual effects. However, these receptors represent a very small proportion of the total number of dwellings in Silvertown and no dwellings in any other part of the Study Area are considered likely to experience significant adverse effects. In addition, the visual effect should be seen within the context of the existing Airport and its urbanised surroundings, as a degree of impact on all views would continue to occur with or without the proposed development.
- 1.385 There will be significant economic, environmental and sustainability benefits brought forward by the proposed CADP. Some of these beneficial effects are described more fully within other documents submitted with the planning application, including the Planning Statement, Need Statement, Transport Assessment and Design and Access Statement. In summary, the ES has identified that the proposed CADP development will deliver the following key benefits:
- a) Construction of seven new aircraft stands to accommodate larger, more fuel efficient aircrafts, allowing the Airport to reach its optimum potential consistent with Government policy towards airports in securing the better use of an existing runway.
 - b) Overall, taking all types of employment into account, the CADP proposals would generate an increase in local employment of approximately 1,500 compared to 2012, when the full impact of the hotel is taken into account.
 - c) The Proposed Surface Water Drainage Strategy identifies use of attenuation tanks and suitable Sustainable Drainage Systems (SUDS) to reduce the existing discharge flow rate to greenfield runoff rates.
 - d) Bespoke wire mesh fish refugia constructed to the dock wall will help re-instate the fish food source that would be otherwise be lost from the construction of the extended apron.
 - e) The provision of a new dockside path, creating a new pedestrian link from the east, and additional cycle parking to help encourage walking and cycling over use of the private car. The Travel Plans will promote sustainable modes of transportation to and from the Airport.
 - f) The proposed CADP is also expected to generate increased revenue to public transportation links due to increased passenger numbers, with beneficial knock-on effects for users of the local bus and tube services. In the UK the Airport currently has the highest proportion of passengers using public transport (69%) among all airports. This is expected to rise to 72% with the proposed CADP.
- 1.386 Where impacts have been identified as part of the assessment of effects during either the construction or the operational stage of the proposed development, appropriate mitigation measures have been recommended in order to minimise these effects to acceptable, non significant levels.
- 1.387 The full realisation of the identified social, economic and environmental benefits of the proposed development will be taken forward through the detailed design process, including the confirmation of mitigation and enhancement measures recommended in this ES, in consultation with appropriate statutory and non-statutory stakeholders. Where necessary, additional

technical and environmental assessments will be undertaken to support these detailed designs, which will be the subject of Section 106 planning agreements with LBN. This will ensure that the environmental effects of the proposed development will remain consistent with, or improve upon, those concluded within this ES.

ES Availability

1.388 The **Consolidated** ES and all application documentation are available for review on LBN's public access system⁵. Additional copies of the ES and Technical Appendices can be provided at a cost of £200 for each volume (excluding postage and packing). Alternatively a CD Rom version in Acrobat pdf file format is available for an administration charge of £5 (including postage and packing).

1.389 The **Updated** Non-Technical Summary can be provided free of charge as an electronic copy upon request. All ES documents are available from:

RPS Planning and Development
14 Cornhill
London
EC3V 3ND
Tel: 020 7280 3200

1.390 **Copies of the CESA (November 2014) can be obtained from RPS for a cost of £200.**

1.391 Comments on the planning applications should be forwarded to the London Borough of Newham in writing at the address below:

London Borough of Newham
Strategic Regeneration and Olympic Legacy
Newham Dockside
1000 Dockside Road
London E16 2QU

1.391.1 Alternatively emails can be sent to the Planning Case Officer:

sunil.sahadevan@newham.gov.uk

⁵ <http://pa.newham.gov.uk/online-applications/search.do?action=simple&searchType=Application>

Glossary and Abbreviations

Acronym	Meaning
AOD	Above Ordnance Datum
AQMA	Air Quality Management Area
AQMP	Air Quality Management Plan
AST	Above-Ground Storage Tanks
BOD	Biological Oxygen Demand
CA	Character Area
CAA	Civil Aviation Authority
CADP	City Airport Development Programme
CAH	City Aviation House
CEMP	Construction Environmental Management Plan
CLP	Construction Logistics Plan
CO ₂	Carbon Dioxide
DAS	Design and Access Statement
dB	Decibel
DBA	Desk Based Assessment
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DLR	Docklands Light Railways
EA	Environment Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESA	Environmental Statement Addendum
ESSA	Environmental Statement Second Addendum
ETE	Eastern Terminal Extension
EU	European Union
ExCeL	Exhibition and Conference Centre
FEGP	Fixed Electrical Ground Power

FTE	Full-Time Equivalent
GHG	Greenhouse Gases
GLA	Greater London Authority
GVA	Gross Value Added
Ha	Hectares
HDV	Heavy Duty Vehicles
HGV	Heavy Good Vehicles
HIA	Health Impact Assessment
IAQM	Institute of Air Quality Management
KGV Dock	King George V Dock
km	Kilometres
LBN	London Borough of Newham
LCY	London City Airport (the Airport)
LIGS	Locally Important Geological Sites
LNR	Local Nature Reserve
LTO	Landing and Takeoff Cycle
M	Metres
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NTS	Non-Technical Summary
PM ₁₀ and PM _{2.5}	Fine Particles
PSZ	Public Safety Zone
RIGS	Regionally Important Geological Sites
RoDMA	Royal Docks Management Authority
SBINC	Site of Borough Importance for Nature Conservation
SIS	Sound Insulation Scheme
SuDS	Sustainable Urban Drainage Systems
sqm	Square Metres
TA	Transport Assessment

WTE	Western Terminal Extension
ZTV	Zone of Theoretical Visibility

Term	Meaning
Aircraft Categorisation Review	The future system of aircraft noise control at the Airport, as required by the Section 106 Agreement between the Airport and LBN which accompanied the 2009 Permission (ref 07/01510/VAR)
Air Noise	Refers to the noise pollution produced by any aircraft or its components, during various phases of a flight.
Aircraft Movements	Any aircraft take-off or landing at an airport. These could be either commercial or non-commercial flights. For airport traffic purposes one arrival and one departure are counted as two movements.
Aircraft Stands	Parking position for an aircraft.
Airfield	An area of land set aside for the takeoff, landing, and maintenance of aircraft.
Airside	The side of an airport terminal from which aircraft can be observed; the area beyond security checks and passport and customs control.
Apron	That part of an airport, other than the manoeuvring areas intended to accommodate the loading and unloading of passengers and cargo, the refuelling, servicing, maintenance and parking of aircraft, and any movement of aircraft, vehicles and pedestrians necessary for such purposes. Also referred to as the Ramp
Arrivals Concourse	Landside area receiving arriving passengers who have emerged from the baggage reclaim or customs facilities, usually containing a queue area and greeters areas as well as retail and other support functions.
Auxiliary Power Units	An auxiliary power unit (APU) is a device on a vehicle that provides energy for functions other than propulsion.
Baggage Reclaim	The baggage claim area is an airport terminology that describes the area of an airport terminal where one claims checked-in baggage.
Baseline	2012 constitutes the most reliable and robust baseline year and ensures a full calendar year of data can be assessed.
Bombardier CS100	The Bombardier C Series is a family of narrow body, twin-engine, medium range jet airliners
Code C aircraft	A standard of aircraft size specified by the International Civil Aviation Organization.
Crossrail	A railway construction project under way mainly in central London. Its aim is to provide a high-frequency commuter/suburban passenger service.
Design year	This year represents the completion of the CADP1 and CADP2 works.
Dolphins	Structural remains are visible in the dock, in the form of fixed jetties known as Dolphins
Eastern Ancillary Buildings	including: Taxi /Car Rental Services Building, Taxi Marshall Kiosk, Vehicle Control Point facility, and Eastern Energy Centre;

Eastern Energy Centre	(Specific to the Airport) Proposed Energy Centre situated in the eastern Dockside area and housing various elements of plant that service the proposed Eastern Terminal Extension and proposed Forecourt. Part of the Completed CADP.
Eastern Terminal Extension	(Specific to the Airport) Proposed Eastern Extension of the main Terminal, including the Arrivals Concourse Building, the Main Processor Building, the Outbound Baggage Extension, the Eastern Pier and Noise Barrier. Part of the Completed CADP.
Facilitating Works	(Specific to the Airport) Part of the Interim CADP, including the temporary Coaching Building and associated link bridge, airside road alterations, extension of the concrete deck for an expanded outbound baggage facility (OBB), a new light-weight enclosure for expanded OBB, and Noise Barrier. Part of the Interim CADP.
Fish Refugia	(Specific to the Airport) Wire screens to replace otherwise destroyed habitat, which in turn provide a shelter for fish fry.
Flood Zone 3	An area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded: from the sea by a flood that has a 0.5 per cent (1 in 200) or greater chance of happening each year; or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year.
Forecourt	(Specific to the Airport) Proposed new multi-modal transport area including pick-up and drop-off accommodation for buses, taxis, and private cars, as well as landscaped areas adjacent to the Eastern Terminal Extension. Part of the Completed CADP.
Ground Noise	Noise referred to by aircrafts on the ground
Hazardous Waste	A hazardous waste is waste that poses substantial or potential threats to public health or the environment.
Hotel	(Specific to the Airport) Dockside facility with up to 260 bedrooms, submitted as a separate outline application: Planning Application CADP2q
Interim CADP	(Specific to the Airport) The compliment of projects that includes: Phase 1 Western Terminal Extension, Western Energy Centre, temporary OBB extension, temporary Coaching Facility, temporary Noise Barrier, additional 3 stands, and a portion of taxi lane. These elements are submitted as a separate detailed application: Planning Application CADP1q
Jet Centre	Corporate Aviation Centre located at the western side of the Airport.
KGV Dock	King George V Dock, the last of the Royal Docks to be constructed, situated to the south of the Airport runway and the Royal Albert Dock.
L _{A90}	Statistically the LA90 value is often used to describe background noise levels and is defined as the level exceeded for 90% of the measured time.
L _{Aeq}	The Equivalent Continuous sound Level (L _{Aeq}) is the level of a notional steady sound, which at a given position and over a defined period of time would have the same A-weighted acoustic energy as the fluctuating noise.
Lift	Lift is the force that directly opposes the weight of an aircraft and holds the aircraft in the air.

Load Factors	The average assumed passenger occupancy of a flight, expressed as a percentage.
Noise Barrier	A physical barrier to provide noise insulation
Noise Contours	A continuous line on a map that represents equal levels of noise exposure.
Noise Factored Movements	A numerical factor applied to a noise source, dependent on the time, type or level of noise produced which have an effect of limiting the number a aircraft using the Airport
Outbound Baggage	Baggage that has been checked-in by passengers who are departing on a flight, and that is to be screened, sorted and prepared for conveyance to the aircraft.
Parameter Plans	Plans and elevations setting out the proposed restrictions on the location and scale of a particular development being submitted under an outline planning application.
Pier	A building housing departing gate areas, departures corridors, as well as arrivals corridors that permit the circulation of passengers to and from the aircraft stands in a controlled fashion.
Phase 1 habitat Survey	A standardised system to record semi-natural vegetation and other wildlife habitats. The approach is designed to cover large areas of countryside relatively rapidly.
Phase 1 Western Terminal Extension (Phase 1 WTE)	(Specific to the Airport) Proposed interim extension containing passenger processing, office, and kitchen facilities, and situated within the existing  Service Yard. Part of the Interim CADP.
Phase 2 Western Terminal Extension (Phase 2 WTE)	(Specific to the Airport) Proposed completed extension containing an expanded and reconfigured goods and waste facility, as well as storage and other minor support facilities, and situated within the existing  Service Yard. Part of the Completed CADP.
Piling	Post like foundation driven into the ground to support a structure.
Public Safety Zone	Areas of land at the end of runways established at the busiest airports in the UK, within which certain planning restrictions apply.
Regeneration	Land redevelopment in areas of moderate to high density urban land use.
Residual Effect	The remaining effects of an impact after mitigation has been implemented
Service Yard	(Specific to the Airport) The triangle-shaped external space between the west extent of the existing Terminal building and Hartmann Road utilised for temporary accommodation and service deliveries. Otherwise known as the 
Stockpiling	Stored construction related material so that security and the inventory can be maintained
Study Area	Designated area defined for an assessment.
Taxilane	Zone for circulation of aircraft moving between the runway and the stands.
Terminal	(Specific to the Airport) A temporary two-storey structure comprising three coaching gate room for departing passengers, and linked to the main terminal departures lounge at the upper level. Part of the Interim CADP.

Thames Barrier	London's flood defence due to the tidal element of the River Thames.
Transitional Phase	During 2019, the majority of the proposed CADP works will be under construction. This year therefore represents an interim scenario ongoing construction and partial operation of the CADP. The forecasts that have been calculated are based on the infrastructure that will be in place at this time.
Triangle	(Specific to the Airport) See Service Yard
Western Energy Centre	(Specific to the Airport) Proposed Energy Centre situated in the western Service Yard and housing various elements of plant that services the Western Terminal Extension and the Facilitating Works Coaching Facility.