

CITY AIRPORT DEVELOPMENT PROGRAMME
(CADP) S73 APPLICATION

APPENDICES TO PROOF OF EVIDENCE OF SEAN BASHFORTH - PLANNING

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**London City Airport - Appeal against the
refusal of Section 73 application
22/03045/VAR**

Technical Note on Air Quality Issues

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1 Introduction

- 1.1 This Technical Note on Air Quality issues has been prepared by Stephen Moorcroft. I hold a Bachelor of Science degree in Biology and a Master of Science degree in Environmental Technology. I am a Member of the Institution of Environmental Sciences, a Member of the Institute of Air Quality Management, and a Chartered Environmentalist. I have over 40 years' experience in environmental pollution studies, predominantly in the field of air quality management and assessment. I currently hold the position of Director with Air Quality Consultants Ltd (AQC). I have made numerous presentations to conferences and workshops on air quality issues, and I have presented expert evidence to many public inquiries.
- 1.2 I have been a member of various Government expert groups, including the Department of the Environment, Food and Rural Affairs' ("Defra") *Quality of Urban Air Review Group* (QUARG) and the *Air Quality Expert Group* (AQEG); both of these expert groups published detailed reports on nitrogen dioxide and particulate matter whilst I was a member. I was a member of the Department for Transport's *Project for the Sustainable Development of Heathrow (PSDH)* which was set up to help develop tools to assess the air quality impacts of expansion at Heathrow Airport. I was appointed by the National Institute for Health and Care Excellence (NICE) to become a topic expert member to the Public Health Advisory Committee on Outdoor Air Pollution, and I am currently an Expert Advisor to the NICE Centre for Guidelines.
- 1.3 I have been responsible for programmes of work involving monitoring, modelling and assessment of the effects of new developments on ambient air quality. More specifically, I have carried out numerous studies related to airports including the preparation of air quality assessments, the review of air quality assessments, auditing of environmental obligations, and the development of monitoring and management strategies. These studies have been carried out for Liverpool (John Lennon), Doncaster (Robin Hood), Bristol (Filton), East Midlands, London Stansted, London Luton, London Gatwick, London City, London Heathrow, Birmingham International, Bournemouth International, Dublin, Gibraltar and Hong Kong airports.
- 1.4 I was commissioned to assist in the delivery of the Air Quality Appraisal for the Airports Commission. I had the responsibility for compiling the emissions inventories for Heathrow and Gatwick airports and completing the modelling assessments for the airport-related sources. I acted as lead author for the report *Module 6: Air Quality Local Assessment – Detailed Emissions Inventory and Dispersion Modelling*, and I presented the outcomes of the study to the Commissioners.
- 1.5 I have been working for London City Airport (the "Airport") on a variety of projects since 2006. Between 2007 and 2009, I provided assistance on air quality matters in respect of the application for expansion to 120,000 movements, which was granted planning approval in 2009. In 2012, I was commissioned by the Airport to prepare the Air Quality Chapter (and subsequent updates) for the Environmental Statement(s) to accompany the planning application for the City Aviation Development Programme

(CADP1) proposals. CADP1 was granted planning permission by the Secretaries of State for Communities and Local Government and Transport in July 2016 following an appeal and public inquiry which was held in March / April 2016, and to which I presented expert evidence.

- 1.6 I was appointed by the Airport in November 2021 to assist in the Section 73 application (“S73 Application”) which is the subject of this appeal, for which I prepared the Air Quality Chapter for the Environmental Statement. The evidence which I have prepared and provide within this Technical Note is true and I confirm that the opinions expressed are my true and professional opinions.

2 Scope of Technical Note

- 2.1 On 10 July 2023 the London Borough of Newham (LBN) resolved to refuse planning permission for the S73 Application (22/03045/VAR) (the “Proposed Amendments”) based on grounds related to noise (subject to referral to the Mayor of London) [CD4.3.1]. The Environmental Statement (ES) submitted in support of the S73 Application concluded that the air quality effects would be not significant in EIA terms (ES Chapter 9, CD1.16). The ES was extensively reviewed by LBN’s technical advisors (led by Land Use Consultants) and whilst they disagreed with some of the methodology used, LUC agreed with the overall conclusions that the air quality effects of the Proposed Amendments would be not significant [CD4.5.10]. The Officers Report to the Strategic Development Committee [CD4.3.1] reflected the conclusions of LBN’s technical advisors, and air quality was not recommended to the Committee as a reason for refusal.
- 2.2 On 20 July 2023, the Mayor of London confirmed that he was content to allow the planning authority to determine the case itself. However, within the Stage 2 Report [CD4.5.5], Greater London Authority (GLA) officers “*maintain the view that full compliance with the London Plan Policy SI1 has not been demonstrated due to the increase in emissions, in line with the spirit of the air quality neutral approach*”. I give specific consideration to this issue in Section 7 of this Technical Note.
- 2.3 Within this Technical Note I set out the approach taken in the ES in respect of air quality, and summarise the conclusions that were drawn. The topics that are covered include:
- Operational air quality impacts on health-sensitive receptors associated with airside operations and surface access (including construction traffic in the DC scenarios); and
 - Odour impacts associated with airport operations.
- 2.4 Topics that were scoped out of the assessment (NRMM emissions during construction, Energy Centre emissions, construction dust impacts, impacts on designated habitats, and impacts associated with Ultra Fine Particles) are justified in detail in Table 9.3 of the ES [CD1.16], and are not replicated here.

Statement of Case of LBN

- 2.5 The Statement of Case [CD10.2] issued by the London Borough of Newham on 21 September 2023 does not raise any matters related to air quality

Statement of Case of HACAN East

- 2.6 The Statement of Case [CD10.3] issued by HACAN East on 29 September 2023 does not raise any matters related to air quality.

3 Legislative Context and Planning Policy

Legislation

Environment Act (1995)

- 3.1 Part IV of the Environment Act 1995 [CD3.1.6] requires that Local Authorities periodically review air quality within their individual areas. This process of Local Air Quality Management (LAQM) is an integral part of delivering the Government's Air Quality Objectives (AQOs). Local Authorities must produce an Annual Status Report summarising the outcome of their review and assessment.
- 3.2 Review and assessments of local air quality aim to identify areas where national policies to reduce vehicle and industrial emissions are unlikely to result in air quality meeting the Government's AQOs by the required dates.
- 3.3 For the purposes of determining the focus of review and assessment, Local Authorities should have regard to those locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective.
- 3.4 Where the assessment indicates that some or all of the objectives may be potentially exceeded, the Local Authority has a duty to declare an Air Quality Management Area (AQMA). The declaration of an AQMA requires the Local Authority to implement an Air Quality Action Plan, to reduce air pollution concentrations so that the required AQOs are met. Local authorities do not have a legal duty to achieve the objectives.

Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations (2002)

- 3.5 The Air Quality (England) Regulations (2000) (SI 2000 No, 928) [CD3.6.2] and the Air Quality (England) (Amendment) Regulations (2002) (SI 2002 No, 3043) [CD3.6.3] specify the objectives to be met, and dates when they are to be met, by local authorities through the LAQM process defined in the Environment Act (1995) (as amended).

Air Quality Standards Regulations (2010)

3.6 The Air Quality Standards Regulations 2010 (SI 2010 No 1001) [CD3.6.10] came into force on 11 June 2010. They transpose European Union Directive 2008/50/EC into UK legislation and are part of retained law. The limit values in Directive 2008/50/EC are transposed into the Air Quality Standards Regulations 2010 with attainment dates in line with the Directive. The limit values in the Air Quality Standards Regulations 2010 are legally binding limits on concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The limit values are based on the assessment of the effects of each pollutant on human health (including the effects on sensitive groups) or on ecosystems.

3.7 The legal duty under the Air Quality Standards Regulations (2010) is on the Secretary of State to ensure the limit values are met. This is in contrast to the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations (2002), which impose duties on local authorities to meet the objectives. Limit values are therefore not the same as objectives in legal terms, although many are numerically the same.

3.8 The Air Quality Standards Regulations (2010) define ambient air as:

"...outdoor air in the troposphere, excluding workplaces where members of the public do not have regular access."

3.9 The Air Quality Standards Regulations 2010 prescribe locations where compliance with the limit value does not need to be assessed:

"Compliance with limit values directed at the protection of human health does not need to be assessed at the following locations—

(a) any location situated within areas where members of the public do not have access and there is no fixed habitation;

(b) on factory premises or at industrial locations to which all relevant provisions concerning health and safety at work apply;

(c) on the carriageway of roads and on the central reservations of roads except where there is normally pedestrian access to the central reservation. "

Environment Act (2021)

3.10 The UK's legal framework for protection of the natural environment, the Environment Act 2021 [CD3.1.5], passed into UK law in November 2021. The Act gives the Government the power to set long-term, legally binding environmental targets. It also establishes an Office for Environmental Protection (OEP), responsible for holding the Government to account and ensuring compliance with these targets.

- 3.11 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 [CD3.6.11] set legally binding targets for fine particulate matter (PM_{2.5}) to be achieved by 2040. These include:
- A maximum annual mean concentration target (AMCT)¹ of 10 µg/m³; and
 - A population exposure reduction target (PERT)² of 35% compared to 2018.
- 3.12 In addition, the Environmental Improvement Plan 2023 [CD 3.6.7] sets interim (non-statutory) targets to be achieved by the end of January 2028:
- A maximum annual mean concentration target (AMCT) of 12 µg/m³; and
 - A population exposure reduction target (PERT) of 22% compared to 2018.
- 3.13 However, in March 2023, the Department for Levelling-Up, Housing and Communities (DLUHC) wrote to all Chief Planning Officers in England advising that guidance was progressing on how these new targets should be integrated into the planning system, but that until such guidance is published, local authorities should continue to assess local air quality impacts in accordance with existing guidance. It is, thus, not appropriate to consider these new targets until such guidance has been published.

National policy and guidance: Planning

National Planning Policy Framework (2021)

- 3.14 The National Planning Policy Framework (NPPF) [CD3.2.1] sets out planning policy for England. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which (Paragraph 8c) is an environmental objective:

“to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy”.

- 3.15 To prevent unacceptable risks from air pollution, Paragraph 174 of the NPPF states that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by ... preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air quality”.

- 3.16 Paragraph 185 states:

¹ The AMCT will be met, if at every relevant monitoring station, the annual mean concentration of PM_{2.5} in ambient air is equal to or less than 10 µg/m³ in the calendar year of 2040

² The PERT will be met if there is at least a 35% reduction in population exposure by the end of 31 December 2040 as compared with the average population exposure in the three-year period from 1 January 2016 to 31 December 2018.

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development”.

3.17 More specifically on air quality, Paragraph 186 makes clear that:

“Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan”.

Planning Practice Guidance (2019)

3.18 The NPPF is supported by Planning Practice Guidance (PPG) [CD3.6.12], which includes guiding principles on how planning can take account of the impacts of new development on air quality. The PPG states that:

“[Defra] carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant Limit Values. It is important that the potential impact of new development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit, or where the need for emissions reductions has been identified”.

3.19 Regarding plan-making, the PPG states:

“It is important to take into account air quality management areas, Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity where there could be specific requirements or limitations on new development because of air quality”.

3.20 The role of the local authorities through the LAQM regime is explained, with the PPG stating that a local authority Air Quality Action Plan *“identifies measures that will be introduced in pursuit of the objectives and can have implications for planning”*. In addition, the PPG makes clear that *“Odour and dust can also be a planning concern, for example, because of the effect on local amenity”*.

3.21 Regarding the need for an air quality assessment, the PPG states that:

“Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality

in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity”.

- 3.22 The PPG sets out the information that may be required in an air quality assessment, making clear that:

“Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific”.

- 3.23 The PPG also provides guidance on options for mitigating air quality impacts, as well as examples of the types of measures to be considered. It makes clear that:

“Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented”.

National Policy: Air Quality

Air Quality Strategy (2007)

- 3.24 The Air Quality Strategy [CD3.6.8] published by the Department for Environment, Food, and Rural Affairs (Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the Local Air Quality Management (LAQM) regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an Air Quality Management Area (AQMA), and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

Reducing Emissions from Road Transport: Road to Zero Strategy (2018)

- 3.25 The Office for Low Emission Vehicles (OLEV) and Department for Transport (DfT) published a Policy Paper in July 2018 [CD3.6.13] outlining how the government will support the transition to zero tailpipe emission road transport and reduce tailpipe emissions from conventional vehicles during the transition. This paper affirms the Government’s pledge to end the sale of new conventional petrol and diesel cars and vans by 2040, and states that the Government expects the majority of new cars and vans sold to be 100% zero tailpipe emission and all new cars and vans to have significant zero tailpipe emission

capability by this year, and that by 2050 almost every car and van should have zero tailpipe emissions. It states that the Government wants to see at least 50%, and as many as 70%, of new car sales, and up to 40% of new van sales, being ultra-low emission by 2030.

- 3.26 The paper sets out a number of measures by which Government will support this transition but is clear that Government expects this transition to be industry and consumer led. The Government has since announced that the phase-out date for the sale of new petrol and diesel cars and vans will be brought forward to 2030 and that all new cars and vans must be fully zero emission at the tailpipe from 2035. If these ambitions are realised then road traffic-related NO_x emissions can be expected to reduce significantly over the coming decades, likely beyond the scale of reductions forecast in the tools utilised in carrying out the air quality assessment for the ES.

Clean Air Strategy (2019)

- 3.27 The Clean Air Strategy [CD3.6.5] sets out a wide range of actions by which the UK Government, in partnership with the Governments of Scotland, Wales and Northern Ireland, will seek to reduce pollutant emissions and improve air quality. Actions are targeted at four main sources of emissions: Transport, Domestic, Farming and Industry. Aviation is briefly discussed, but the Clean Air Strategy largely defers to the Aviation Strategy (discussed below) on this matter.
- 3.28 At this stage, the expected future benefits to background air quality conditions have not been quantified. The assessment for the ES uses the latest available forecast background concentrations, which do not take into account measures proposed within the Clean Air Strategy. This means the assessment is expected to be conservative.

Ten Point Plan (2020)

- 3.29 The Government's Ten Point Plan for a Green Industrial Revolution [CD3.6.14] is primarily focused on decarbonising the UK economy through measures such as cleaner energy production and increased electrification. Many of these policies also tend to improve air quality, notably Point 5: Green Public Transport, Cycling and Walking.
- 3.30 Of particular relevance is Point 6: Jet Zero and Green Ships, which aims to encourage the use of SAF, and proposed to consult on a SAF mandate. The consultation ran in summer 2021, and resulted in a policy for at least 10% of jet fuel to be made from sustainable sources (achieving at least 50% greenhouse gas savings relative to fossil jet fuel) by 2030. Building on this, a further consultation took place in spring 2023 to consider overarching targets to be set for 2030 and beyond; the results of this consultation are currently being analysed by the Government.

Air Quality Strategy 2023

- 3.31 The Air Quality Strategy: Framework for Local Authority Delivery 2023 [CD3.6.15] sets out the strategic air quality framework for local authorities and other Air Quality Partners in England. It sets out their

powers and responsibilities, and actions the government expects them to take. It does not replace other air quality guidance documents relevant to local authorities.

National Policy: Aviation

Aviation Policy Framework (2013)

- 3.32 The Aviation Policy Framework [CD3.5.1] sets out the Government's high-level strategy and overall objectives for aviation, and replaces the 2003 Air Transport White Paper. With regards to air quality, the policy is to seek improved international standards to reduce emissions from aircraft and vehicles, and to work with airports and local authorities to improve air quality, including encouraging transport operators to introduce less polluting vehicles. The Framework places a particular importance on areas where the EU Limit Values and air quality objectives are exceeded, but recognises that nitrogen oxides (NO_x) concentrations from aviation-related activities reduce rapidly beyond the immediate area of the runway, and places emphasis on reducing emissions associated with surface access. In particular, the preparation of Airport Surface Access Strategies (ASASs) is strongly encouraged, together with the development of targets to reduce the air quality impacts of surface access.

Airports National Policy Statement (2018)

- 3.33 The Airports NPS [CD3.5.2] provides the primary basis for decision making on development consent applications for a Northwest Runway at Heathrow Airport, and will be an important and relevant consideration in respect of applications for new runway capacity and other airport infrastructure in London and the south east of England. It declares that, with regard to the Heathrow Airport proposals:

"The Secretary of State will consider air quality impacts over the wider area likely to be affected, as well as in the vicinity of the scheme. In order to grant development consent, the Secretary of State will need to be satisfied that, with mitigation, the scheme would be compliant with legal obligations that provide for the protection of human health and the environment."

- 3.34 The Airports NPS states that air quality considerations are likely to be particularly relevant where the proposed scheme:

- *is within or adjacent to Air Quality Management Areas, roads identified as being above limit values, or nature conservation sites (including Natura 2000 sites and Sites of Special Scientific Interest);*
- *would have effects sufficient to bring about the need for new Air Quality Management Areas or change the size of an existing Air Quality Management Area, or bring about changes to exceedances of the limit values, or have the potential to have an impact on nature conservation sites; and*
- *after taking into account mitigation, would lead to a significant air quality impact in relation to Environmental Impact Assessment and / or to a deterioration in air quality in a zone or agglomeration."*

- 3.35 The Airports NPS does not affect Government policy on wider aviation issues, as set out in the 2013 Aviation Policy Framework.

Beyond the horizon: The future of UK aviation: Making Best Use of Existing Runways (2019)

- 3.36 Beyond the Horizon - The Future of UK Aviation: Making Best Use of Existing Runways [CD3.5.3] confirms the Government's support for airports beyond Heathrow making best use of their existing runways, subject to consideration of economic and environmental impacts. It states (at paragraph 1.22/23):

“The government recognises the impact on communities living near airports and understands their concerns over local environmental issues, particularly noise, air quality and surface access. As airports look to make the best use of their existing runways, it is important that communities surrounding those airports share in the economic benefits of this, and that adverse impacts such as noise are mitigated where possible.

For the majority of local environmental concerns, the government expects these to be taken into account as part of existing local planning application processes.”

Aviation 2050 Consultation (2019)

- 3.37 In 2018–2019, the Government consulted on its Green Paper, Aviation 2050 [CD3.5.4]. In relation to air quality, the consultation proposed the following measures:

- Improving the monitoring of air pollution, including ultrafine particles (UFP), in order to improve understanding of aviation's impact on local air quality;
- Ensuring comprehensive information on aviation-related air quality issues is made available to better inform interested parties;
- Requiring all major airports to develop air quality plans to manage emissions within local air quality targets;
- Validation of air quality monitoring to ensure consistent and robust monitoring standards that enable the identification of long-term trends; and
- Supporting industry in the development of cleaner fuels to reduce the air quality impacts of aviation fuels.

- 3.38 These proposals do not represent adopted policy. The Government issued a response on certain aspects of the Aviation 2050 consultation, related to airspace change proposals, but other aspects were effectively superseded or subsumed by the Flightpath to the Future policy (see below).

Flightpath to the Future (2022)

- 3.39 ‘Flightpath to the Future’ [CD3.5.6] is described as a strategic framework for the aviation sector that supports the Department for Transport’s vision for a modern, innovative and efficient sector over the next 10 years. It builds on the responses to the Aviation 2050 consultation. It sets out a ten-point plan to support growth in the aviation sector while *“continuing to lead the way globally on key issues such as decarbonisation, safety and security”* and bringing benefits to the UK and users. Among the ten points are:

“3. Support growth in airport capacity where it is justified, ensuring that capacity is used in a way that delivers for the UK – airport expansion has a key role to play in enhancing the UK’s global connectivity and we remain supportive of sustainable airport growth...”

4. Put the sector on course to achieve Jet Zero by 2050... We will also continue to work with the sector to reduce the localised impacts of aviation from noise and air pollution.”

Jet Zero Strategy (2022)

- 3.40 In 2022 the Government published the Jet Zero Strategy [CD3.5.7]. Focussed on decarbonising the aviation industry, it recognises that Sustainable Aviation Fuels (SAF) are one of the key technologies available to government and industry to achieve Jet Zero. In respect of SAF, the document identifies four Strategic Objectives as follows:

- A commitment to have a SAF mandate in place by 2025, reducing greenhouse gas emissions of aviation fuel by the equivalent of at least 10% SAF use by 2030;
- Working with the private sector to build a thriving domestic SAF industry, with a commitment to have at least five commercial scale UK plants under construction by 2025;
- Working in partnership with industry and investors to build long term supply; and
- Establishing world-class testing and certifying facilities for SAF in the UK.

- 3.41 The Strategy also recognises the future, potential benefits of zero emission flights (ZEF), and identifies six Strategic Objectives as follows:

- Grow UK share of the global aerospace manufacturing market as new forms of aircraft emerge;
- Facilitate collaboration between aviation, other transport modes and sectors of the economy on the adoption of hydrogen;
- Ensure parallel development of aircraft with the energy and ground infrastructure required for their cooperation;
- Ensure the aviation sector workforce is prepared for the introduction of new aircraft;

- Stimulate future innovation by promoting diversity and accessibility in the sector; and
- Put in place the policy and regulatory system to enable zero emission aircraft to enter commercial service and deliver the Government’s aspiration of zero emission routes connecting different parts of the United Kingdom to be realised by 2030.

Regional (Greater London) policy

The London Plan (2021)

3.42 The London Plan [CD3.3.1] sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The key policy relating to air quality is Policy SI 1 Improving air quality, Part B1 of which sets out three key requirements for developments:

“Development proposals should not:

- a) lead to further deterioration of existing poor air quality*
- b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits*
- c) create unacceptable risk of high levels of exposure to poor air quality”.*

3.43 The Policy then details how developments should meet these requirements, stating:

“In order to meet the requirements in Part 1, as a minimum:

- a) development proposals must be at least Air Quality Neutral*
- b) development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures*
- c) major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1*
- d) development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure”.*

3.44 Part C of the Policy introduces the concept of Air Quality Positive for large-scale development, stating:

“Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the

area of the proposal as part of an air quality positive approach. To achieve this, a statement should be submitted demonstrating:

- 1) how proposals have considered ways to maximise benefits to local air quality, and*
- 2) what measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.”*

3.45 Regarding construction and demolition impacts, Part D of Policy SI 1 of the London Plan states:

“In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance”.

3.46 Part E of Policy SI 1 states the following regarding mitigation and offsetting of emissions:

“Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated”.

3.47 The explanatory text around Policy SI 1 of the London Plan states the following with regard to assessment criteria:

“The Mayor is committed to making air quality in London the best of any major world city, which means not only achieving compliance with legal limits for Nitrogen Dioxide as soon as possible and maintaining compliance where it is already achieved, but also achieving World Health Organisation targets for other pollutants such as Particulate Matter.

The aim of this policy is to ensure that new developments are designed and built, as far as is possible, to improve local air quality and reduce the extent to which the public are exposed to poor air quality. This means that new developments, as a minimum, must not cause new exceedances of legal air quality standards, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits. Where limit values are already met, or are predicted to be met at the time of completion, new developments must endeavour to maintain the best ambient air quality compatible with sustainable development principles.

Where this policy refers to ‘existing poor air quality’ this should be taken to include areas where legal limits for any pollutant, or World Health Organisation targets for Particulate Matter, are already exceeded and areas where current pollution levels are within 5 per cent of these limits³”.

3.48 The WHO targets referred to in the final paragraph quoted above are understood to be the WHO guideline current at the time the London Environment Strategy was published, namely an annual mean of 10 µg/m³ for PM_{2.5}.

3.49 Policy T8 on Aviation, Part B states

“the environmental and health impacts of aviation must be fully acknowledged and aviation-related development proposals should include mitigation measures that fully meet their external and environmental costs, particularly in respect of noise, air quality and climate change”.

3.50 Paragraph 10.8.5. further states

“any airport expansion proposals should not worsen existing air quality or contribute to exceedances of the air quality limits, nor should they seek to claim or utilise air quality improvements resulting from unrelated Mayoral, local or national policies and actions. Airport expansion should also incorporate air quality positive principles to minimise operational and construction impacts”.

London Environment Strategy (2018)

3.51 The London Environment Strategy [CD3.6.16] was published in May 2018. The strategy considers air quality in Chapter 4; the Mayor’s main objective is to create a “zero emission London by 2050”. Policy 4.2.1 aims to “reduce emissions from London’s road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport”. The strategy sets a target to achieve, by 2030, the guideline values for PM_{2.5} which were set by the World Health Organisation (WHO) in 2005. An implementation plan for the strategy has also been published which sets out what the Mayor will do between 2018 and 2023 to help achieve the ambitions in the strategy.

Air Quality Neutral (2023)

3.52 The GLA’s London Plan Guidance Air Quality Neutral, 2023 [CD3.6.6] sets out guidance on how an ‘air quality neutral’ assessment should be undertaken. The guidance sets benchmarks for building emissions (emissions from equipment used to supply heat and energy to buildings) and for transport emissions (for private vehicles travelling to and from the development). It is important to note that the transport emissions benchmarks (TEB) only consider car or light van trips, and that “*deliveries and servicing, taxis or heavy vehicle movements from non-occupiers’ assessment of these trips, for*

³ In this regard, the London Plan has misinterpreted the EPUK/IAQM impact descriptors. Negligible impacts occur where the incremental change is less than 0.05 µg/m³ (i.e. less than 0.5% of the guideline) regardless of the absolute concentration.

example, should be captured in the wider air quality impact assessment where one is required and should therefore be excluded from the TEB calculations”.

- 3.53 The Guidance issued by GLA sets no benchmarks for transport sources other than car or light van trips, and does not include emissions from Heavy Duty Vehicles, rail, shipping or aviation.

Air Quality Positive (2023)

- 3.54 The London Plan details expectations regarding an ‘Air Quality Positive’ approach. The GLA’s London Plan Guidance Air Quality Positive, 2023 [CD3.6.17] sets out guidance on how an ‘air quality positive’ statement should be prepared, and can be summarised as follows:

Air quality should be considered at an early stage in the project design;

Existing good practice measures should be drawn together in a holistic fashion to identify which options deliver the greatest improvement to air quality, both in terms of on-site exposure and off-site impacts;

A statement should be developed setting out how air quality can be improved across the proposed area of the development;

These measures should be incorporated into the design; and

Delivery of an air quality positive approach is project specific and relies on the opportunities on site or in the surrounding area to improve air quality.

Mayor’s Transport Strategy (2018)

- 3.55 The Mayor’s Transport Strategy [CD3.3.32] sets out the Mayor’s policies and proposals to reshape transport in London over the next two decades. The Strategy focuses on reducing car dependency and increasing active sustainable travel, with the aim of improving air quality and creating healthier streets. It notes that development proposals should “*be designed so that walking and cycling are the most appealing choices for getting around locally*”.

Local policy

- 3.56 The London Borough of Newham (LBN) published an updated Air Quality Action Plan [CD 3.6.4] in November 2019. It presents modelled pollutant concentrations from the London Atmospheric Emissions Inventory (2016) and notes that:

- Nitrogen dioxide concentrations exceed the air quality objective in the locality of all major roads in the borough;
- PM₁₀ concentrations exceed the objective around some major roads, with the most significant source of PM₁₀ being road transport and other sources associated with central London; and

- Concentrations of PM_{2.5} exceed the 2005 WHO guideline of 10 µg/m³ across the borough. Levels in the vicinity of major roads are higher, particularly in Stratford, Canning Town and at Prince Regent Lane.

3.57 The key 10 priorities identified in the Action Plan are:

- Enforcing the Non-Road Mobile Machinery (NRMM) Low Emission Zone;
- Promoting and enforcing smoke control zones;
- Promoting and delivering energy efficiency retrofitting projects in workplaces and homes;
- Supporting alert services such as airTEXT and promoting the Mayor's air pollution forecasts;
- Reducing pollution in and around schools, and extending school audits;
- Installing Ultra Low Emission Vehicle infrastructure;
- Improving walking and cycling infrastructure;
- Regular car free days/temporary road closures in high footfall areas;
- Reducing emissions from Council fleets; and
- Ensuring Master planning and development areas are aligned with Air Quality Positive and Healthy Streets approaches.

Other Guidance

- 3.58 The Environment Agency has produced a horizontal guidance note (H4) on odour assessment and management [CD3.6.1], which is designed for operators of Environment Agency-regulated processes. The H4 guidance document is primarily aimed at methods to control and manage the release of odours, but also contains a series of recommended assessment methods which can be used to assess potential odour impacts.
- 3.59 Guidance on odour assessments has also been published by the Institute of Air Quality Management (IAQM) [CD3.6.18]. The IAQM guidance sets out assessment methods which may be utilised in the assessment of odours for planning applications. The IAQM guidance endorses the use of multiple assessment tools for odours, stating that, "*best practice is to use a multi-tool approach where practicable*". This is in order to improve the robustness of the assessment conclusions. Some of the approaches outlined in the IAQM guidance have been adopted in the odour assessment included in the ES.
- 3.60 The International Civil Aviation Organization (ICAO) has published the Airport Air Quality Manual [CD3.6.19] which sets out guidance for the compilation of emissions inventories at airports. This

guidance has been followed as far as practicable (the guidance does not address the compilation of emissions inventories in future years).

- 3.61 Defra has published Policy Guidance (LAQM.PG22) [CD3.6.20] and Technical Guidance (LAQM.TG22) [CD3.6.21] to assist local authorities in the discharge of their Local Air Quality Management duties. Whilst not specifically intended to advise on assessments that support the development control process, it provides guidance on modelling approaches that are not covered elsewhere. GLA has published a London-specific version of this guidance (LLAQM.TG19) [CD3.6.22].
- 3.62 With specific regard to construction NRMM emissions, IAQM guidance states: *“experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur”*.
- 3.63 The approach developed jointly by Environmental Protection UK (EPUK) and IAQM [CD3.6.23] has been used to describe the modelled impacts. The approach identifies impacts at individual receptors based on both the percentage change in concentrations relative to the relevant air quality objective/target and the absolute concentration relative to the objective/target. The approach also offers guidance with regard to the determination of the significance of effects.

4 Assessment Criteria

- 4.1 This section sets out the criteria that are relevant to assess the air quality effects of a project related to human health and the amenity impacts related to odours. I compare the predicted pollutant concentrations associated with the Proposed Amendments with these published criteria.
- 4.2 The focus is upon two pollutants - nitrogen dioxide and fine particulate matter (PM₁₀ and PM_{2.5}). These are the pollutants for which LBN has declared an Air Quality Management Area. There is no evidence that the limit values or objectives for any other pollutant are currently exceeded in the vicinity of London City Airport or, indeed, any other UK airport.
- 4.3 The issue regarding Ultra Fine Particles (UFP – those particles below 100 nanometres in diameter) was raised by LBN during the application process. However, there are no national, regional or local policies that refer to the assessment of UFP with regard to determining development proposals. There is currently no robust methodology to construct an emissions inventory for UFP (associated with aircraft emissions or any other combustion source such as road traffic), and consequently it is not possible to predict UFP concentrations. In addition, there are currently no standards or guidelines in place against which measured or modelled UFP concentrations could be compared.

- 4.4 LBN requested that a qualitative assessment for UFP be carried out, which has been provided in Chapter 12: Public Health and Wellbeing, of the ES [CD1.19]. This assessment concluded that the effects would be minor adverse (not significant); LBNs technical advisers (LUC) noted that *“given the nature of the S73 application, the conclusion that there will be a minor adverse effect this does not seem unreasonable”*. On this basis, the Officers Report concluded that *“concerns around UFP can be addressed with an appropriate condition”*. The proposed condition relates to monitoring of UFP and has been agreed by the Airport in principle, and which mirrors the approach taken in recent appeal decisions for Stansted and Bristol Airports [CD8.2 and CD8.1, respectively].

Health-based criteria

- 4.5 The Government has established a set of air quality standards and objectives to protect human health. The Air Quality Strategy 2007 defines ‘standards’ as “the concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on assessment of the effects of each pollutant on human health including the effects on sensitive subgroups or on ecosystems”. They are based purely upon the scientific and medical evidence of the effects of an individual pollutant. The ‘objectives’ set out the extent to which the Government expects the standards to be achieved by a certain date. They take account of economic efficiency, practicability, technical feasibility and timescale. The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations (2000) [CD3.6.2] and the Air Quality (England) (Amendment) Regulations (2002) [CD3.6.3].
- 4.6 The Air Quality Standards Regulations (2010) set limit values for nitrogen dioxide, PM₁₀ and PM_{2.5}, based on those in EU Directive 2008/50/EC. Achievement of the limit values is a national obligation (on the Secretary of State) rather than a local one. In the UK, only monitoring and modelling carried out by UK Central Government meets the specification required to assess compliance with the limit values. Central Government does not normally recognise local authority monitoring or local modelling studies when determining the likelihood of the limit values being exceeded, unless such studies have been audited and approved by Defra and DfT’s Joint Air Quality Unit (JAQU).
- 4.7 The limit values for nitrogen dioxide and PM₁₀ are numerically the same as the objectives for England. PM_{2.5} has a UK limit value (20 µg/m³) but no numerical objective has been set.
- 4.8 The GLA has set a target in its London Environment Strategy to achieve an annual mean PM_{2.5} concentration of 10 µg/m³ by 2030. This target was derived from an air quality guideline set by WHO in 2005.
- 4.9 In 2021, WHO published new air quality guidelines for nitrogen dioxide, PM₁₀ and PM_{2.5} that are considerably more stringent than those published in 2005, and which are widely exceeded across London and large parts of the UK. These guidelines have not been incorporated into any national,

regional or local policies or regulations, and it is not appropriate to consider them within the air quality assessment. This approach was agreed with LBN during the scoping process.

- 4.10 The relevant air quality criteria for this assessment are provided in Table 1. For the purposes of this assessment, the PM_{2.5} limit value of 20 µg/m³ has been used as the primary metric (in accordance with the Air Quality Standards Regulations), with the GLA target of 10 µg/m³ given consideration as a secondary metric, bearing in mind this is an ambition to be achieved by 2030.
- 4.11 While reference is made to the short-term criteria for nitrogen dioxide and PM₁₀ (e.g. the 1-hour and 24-hour mean metrics), this is for the purpose of completeness. It has been agreed with LBN (within the Statement of Common Ground [CD 11.2]) that these short-term metrics can be assessed by reference to proxies associated with annual mean concentrations.

Table 1 - Assessment Criteria for Human Health

Pollutant	Time Period	Criterion	Type
Nitrogen dioxide	1-hour Mean	200 µg/m ³ not to be exceeded more than 18 times a year	Objective, limit value
	Annual Mean	40 µg/m ³	Objective, limit value
PM₁₀	24-hour Mean	50 µg/m ³ not to be exceeded more than 35 times a year	Objective, limit value
	Annual Mean	40 µg/m ³	Objective, limit value
PM_{2.5}	Annual Mean	20 µg/m ³	UK Limit value
	Annual Mean	10 µg/m ³	GLA target

Descriptors for Air Quality Impacts and Assessment of Significance

- 4.12 There is no official guidance in the UK on how to describe the nature of air quality impacts, nor how to assess their significance in relation to development control. The approach developed jointly by Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) has therefore been used. This includes defining descriptors of the impacts at individual receptors which take account of the percentage change in concentrations relative to the Air Quality Assessment Level (AQAL), rounded to the nearest whole number, and the absolute concentration relative to the AQAL. In the context of this appeal, the AQAL is represented by either the limit value or the objective. The overall significance of the air quality impacts is then determined using professional judgement taking into account the impact descriptors. In this regard it is important to recognise the difference between

the terms “impacts” and “effects”; the term impact is used to describe a change in pollutant concentration at a specific location, whereas the term effect is used to describe an environmental response resulting from an impact, or series of impacts.

- 4.13 The impact descriptors express the magnitude of incremental change as a proportion of the relevant assessment level, and then examine this change in the context of the new, total concentration, and its relationship to the assessment criterion.
- 4.14 The approach to assessing the significance of effects is addressed in Chapter 7 of the guidance (CD3.6.23), and is based on the frequency, duration and magnitude of the predicted impacts and their relationship to the relevant air quality criteria, taking into account the following factors:
- the existing and future air quality in the absence of the development;
 - the extent of current and future population exposure to the impacts;
 - the influence and validity of any assumptions adopted when undertaking the prediction of impacts;
 - the potential for cumulative impacts to occur. Several impacts that are described as “slight” individually could, taken together, be regarded as having a significant effect. Conversely, “moderate” or “substantial” impacts may be regarded as having no significant effect if confined to a very small area and where they are not obviously the cause of harm; and
 - the judgement of significance relates to the consequences of the impacts. Will they have an effect on human health that could be considered as significant? In the majority of cases the impacts from an individual development will be insufficiently large to result in measurable changes in concentrations in health outcomes that could be regarded as significant by health care professionals.

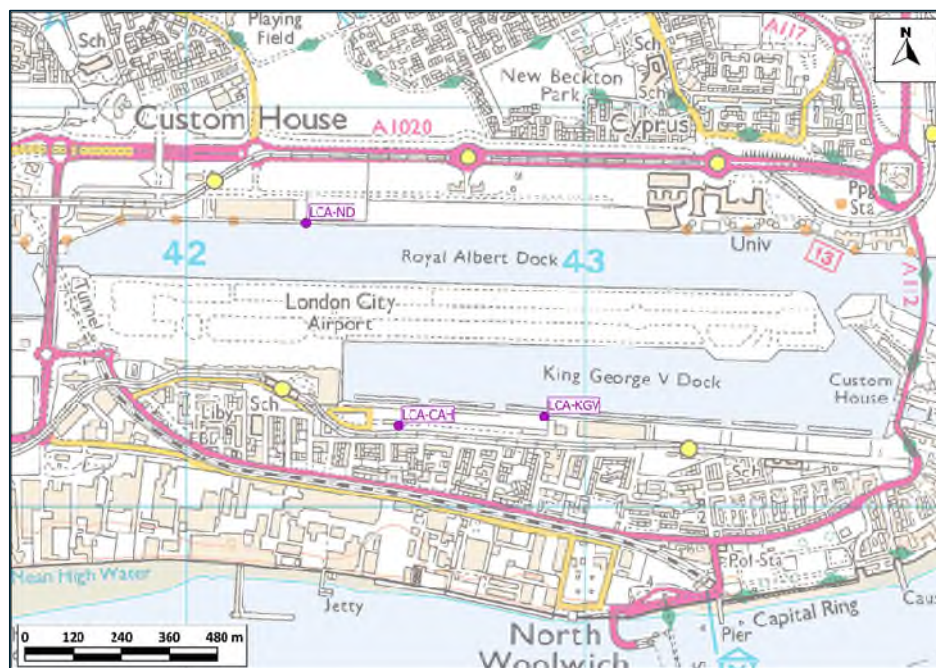
Odours

- 4.15 Issues regarding odours are solely related to the potential impacts on loss of amenity. Guidance Note H4 published by the Environment Agency (CD3.6.1) provides a useful approach to quantifying odour effects. Odour concentrations are measured in European odour units (OU_E/m^3). By definition, the odour concentration at the detection threshold is $1 \text{ OU}_E/\text{m}^3$. Guidance Note H4 (Appendix 3) suggests that there is a likelihood of unacceptable odour pollution where the 98th percentile of 1-hour mean odour concentrations exceeds $1.5 \text{ OU}_E/\text{m}^3$ for the most offensive odours, $3 \text{ OU}_E/\text{m}^3$ for moderately offensive odours and $6 \text{ OU}_E/\text{m}^3$ for less offensive odours.
- 4.16 The perception of the offensiveness of odours is highly subjective but airport-related odours cannot reasonably be classified as most offensive (a category which includes decaying animal remains and septic effluent). It is, therefore, reasonable to assume the airport-related odours fall within the less to moderately offensive categories.

5 Baseline Conditions

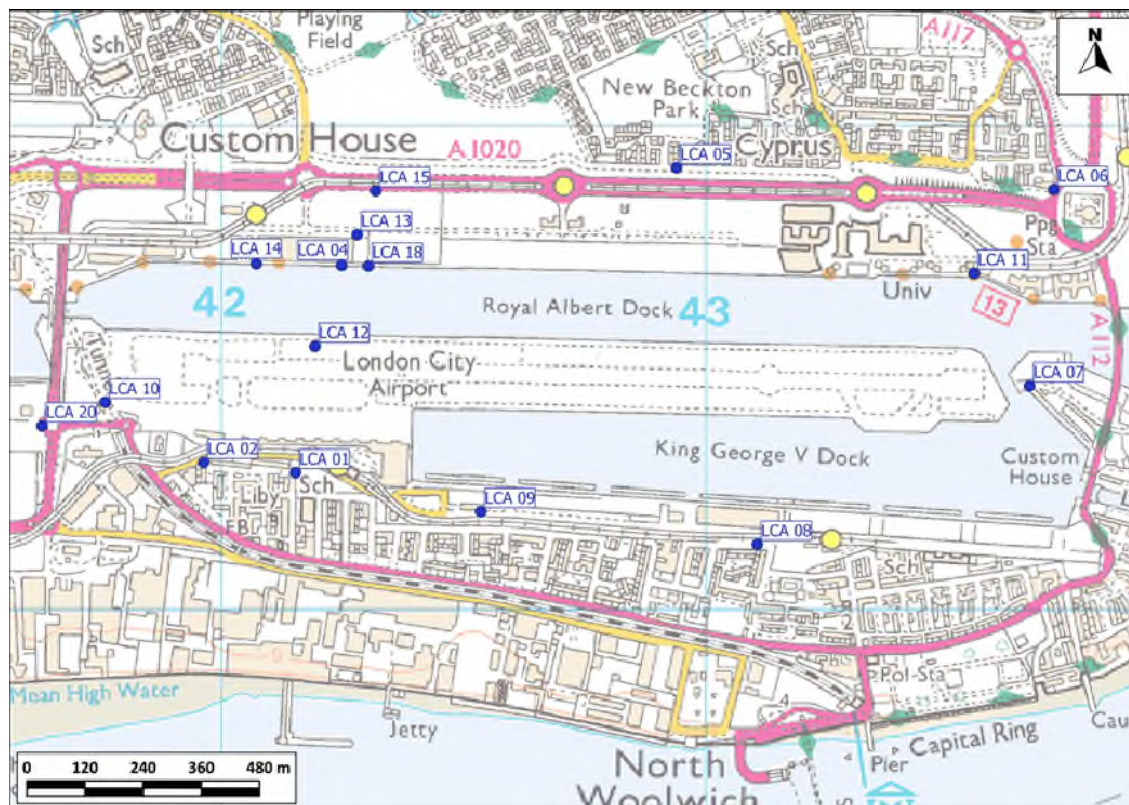
- 5.1 LBN has investigated air quality within its area as part of its responsibilities under the LAQM regime, and has identified road traffic as the primary source of poor air quality in the Borough. In 2002, the Council declared an Air Quality Management Area (AQMA) in relation to exceedances of two air quality objectives – the annual mean objective for nitrogen dioxide and the daily mean objective for PM₁₀. The AQMA encompassed the major roads in the Borough including North Woolwich Road, Connaught Crossing, Silvertown Way, Royal Albert Way and Royal Docks Road. The AQMA was subsequently extended to encompass the entire Borough in 2019.
- 5.2 The Airport operates an extensive network of monitoring sites within, and in the vicinity of the Airport. Additional monitoring is also carried out by LBN and the neighbouring local authorities. My focus on monitoring data has been over the period 2015-2019. Whilst monitoring continued in 2020 and 2021, pollution levels were significantly affected by the Covid-19 pandemic and associated restrictions on activity, and so are not representative of typical conditions.
- 5.3 The Airport's monitoring network (in 2019) included three automatic stations as described in Figure 1:
- one on the roof of City Aviation House (LCA-CAH), measuring nitrogen dioxide and PM₁₀;
 - one adjacent to the LBN offices at Newham Dockside (LCA-ND), measuring nitrogen dioxide; and
 - one at KGV House (LCA-KGV) measuring PM₁₀ and PM_{2.5}.

Figure 1: Location of the Airport's automatic monitoring sites



- 5.4 There is also a network of nitrogen dioxide tubes around the Airport and close to local housing, as described in Figure 2.

Figure 2: Location of the Airport's Diffusion Tube Network



- 5.5 In summary:

- The annual mean nitrogen dioxide objective ($40 \mu\text{g}/\text{m}^3$) and 1 hour mean objective (no more than 18 exceedances of $200 \mu\text{g}/\text{m}^3$) were not exceeded at LCA-CAH or LCA-ND in 2019 or in any previous year since monitoring commenced in 2006 (nitrogen dioxide is not monitored at LCA-KGV);
- The annual mean PM_{10} objective ($40 \mu\text{g}/\text{m}^3$) and the daily mean objective (no more than 35 days above $50 \mu\text{g}/\text{m}^3$) was not exceeded in 2019 at any of the stations or in any previous year since monitoring commenced in 2006;
- The annual mean UK limit value for $\text{PM}_{2.5}$ ($20 \mu\text{g}/\text{m}^3$) was not exceeded at LCA-KGV in 2019. The GLA target of $10 \mu\text{g}/\text{m}^3$ (to be achieved by 2030) was marginally exceeded ($10.6 \mu\text{g}/\text{m}^3$);
- The annual mean nitrogen dioxide concentrations measured at the diffusion tube sites ranged from 25 to $35 \mu\text{g}/\text{m}^3$ compared to the objective value of $40 \mu\text{g}/\text{m}^3$. There have been no recorded exceedances of the objective at any site since 2013. As the measured concentrations are well below $60 \mu\text{g}/\text{m}^3$, it is highly unlikely that the 1-hour mean objective will have been exceeded.

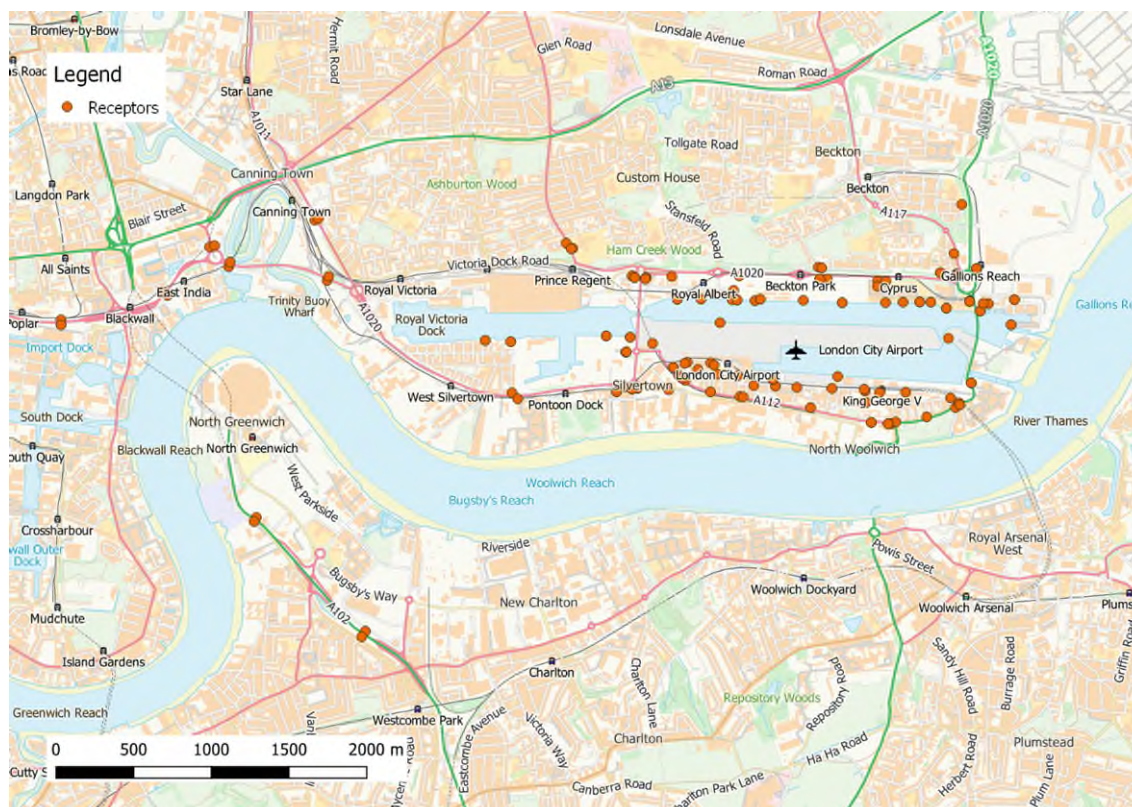
- 5.6 Continuous monitoring is carried out at seven local authority sites (in Newham, Greenwich and Tower Hamlets) in the proximity of the Airport. In 2019, there were exceedances of the annual mean nitrogen dioxide objective at three roadside sites, but none of these locations will be affected by the Proposed Amendments.
- 5.7 I have also carried out a detailed analysis of trends in nitrogen dioxide concentrations. There is a statistically significant downward trend at the Airport and local authority sites over the period 2007 to 2019.

6 Assessment of Impacts and Effects

Method of Assessment

- 6.1 Sensitive receptors within the study area are locations where members of the public might be expected to be regularly present over the averaging periods of the objectives/limit values.
- 6.2 A total of 71 receptors were identified across the study area (Figure 3), within approximately 1km of the Airport and along the road network potentially affected by the Proposed Amendments. Where appropriate, these included receptors at height to account for blocks of flats. A further 16 receptors were identified to determine compliance with the limit values; these were located 4m from the kerbside of roads identified by Defra as exceeding the limit value for nitrogen dioxide in 2019.

Figure 3: Study Area and Receptor Locations



- 6.3 A detailed description of the approach used to develop the emissions inventory, and to predict pollutant concentrations at the identified receptors, is provided in Appendix 9.3 of the ES [CD1.45] and is not repeated here in full.
- 6.4 Pollutant emissions arise from a number of Airport-related sources, and the following were taken into consideration in the assessment:
- Aircraft main engines operating within the Landing and Take-off (LTO) Cycle, Auxiliary Power Units (APUs) and engine testing;
 - Airside support vehicles and plant;
 - Airport boiler plant;
 - Fire training ground;
 - Staff and passenger vehicle movements within the car parks; and
 - Road traffic on Airport landside roads and on the local road network (for both operation and construction).
- 6.5 Emissions were calculated using a bottom-up approach, based on multiplying activity levels by appropriate emission factors. Data on forecast aircraft activity levels were provided by York Aviation and data on road traffic were provided by Steer. Emission factors were derived from standard published sources.
- 6.6 Emissions were assigned to spatial elements based on published airport mapping and aerial views, and according to standard aviation operational practice (for example for runway assignments). The spatially-defined emissions were then entered into the dispersion modelling tool ADMS-Airport (or ADMS-Roads for road sources), which calculates concentrations of pollutants at receptors.
- 6.7 The resulting concentrations and deposition rates were assessed against the established assessment criteria as described in Section 4 of this Technical Note.
- 6.8 The assessment was carried out for a Baseline Year (2019) and three future years (2025, 2027 and 2031) for the Development Case (DC - with the Proposed Amendments) and the Do-Minimum case (DM – without the Proposed Amendments). An additional scenario was included for 2029 as the worst-case year for construction traffic.
- 6.9 Two further sensitivity tests were also considered. The Slower Growth scenario for 2033 would result in lower air quality impacts than the DC scenario in 2031, and so no detailed analysis was required. The Faster Growth scenario for 2029 was quantified as for the other core scenarios.

Outcome of Assessment

6.10 A summary of the results for each scenario is set out in Table 2 and described further in the paragraphs below. Concentrations are annual means, and represent the highest or greatest change values for each scenario and pollutant, and the impact descriptor (based on the EPUK/IAQM criteria).

Table 2 - Summary of Results (all values as annual mean $\mu\text{g}/\text{m}^3$)

Pollutant	Criterion	Receptor	DM	DC	Impact
2023 Assessment Year					
Nitrogen dioxide	Objective	R4 (Newland St)	28.4	28.5	Negligible
Nitrogen dioxide	Limit Value	A102 (LV13)	32.6	32.6	Negligible
PM₁₀	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
PM_{2.5}	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
PM_{2.5}	GLA Target	R60 (Royal Docks)	12.2	12.2	Negligible
2027 Assessment Year					
Nitrogen dioxide	Objective	R4 (Newland St)	27.7	28.0	Negligible
Nitrogen dioxide	Limit Value	A102 (LV13)	30.6	30.6	Negligible
PM₁₀	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
PM_{2.5}	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
PM_{2.5}	GLA Target	R60 (Royal Docks)	12.2	12.2	Negligible
2029 Assessment Year					
Nitrogen dioxide	Objective	R4 (Newland St)	27.1	27.4	Negligible
Nitrogen dioxide	Limit Value	A102 (LV13)	28.4	28.4	Negligible
PM₁₀	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
PM_{2.5}	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
PM_{2.5}	GLA Target	R60 (Royal Docks)	12.2	12.2	Negligible
2031 Assessment Year					
Nitrogen dioxide	Objective	R4 (Newland St)	26.7	27.2	Negligible
Nitrogen dioxide	Limit Value	A102 (LV13)	27.2	27.2	Negligible
PM₁₀	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
PM_{2.5}	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
PM_{2.5}	GLA Target	R1 (Camel Road)	11.2	11.3	Moderate Adverse

2019 Baseline Year

- 6.11 Concentrations of nitrogen dioxide above the objective ($40 \mu\text{g}/\text{m}^3$) in 2019 are confined to small parts of the airfield, where there is no public access and the objective therefore does not apply (in accordance with the Air Quality Regulations and LLAQM.TG19). In the vicinity of the Airport, concentrations are well below the objective. The highest predicted concentration of annual mean nitrogen dioxide at any receptor with relevant human exposure is $33.8 \mu\text{g}/\text{m}^3$ or 84% of the objective, at the R4 (Newland Street (opposite entrance to LCY car park)) receptor.
- 6.12 The greatest modelled annual mean nitrogen dioxide concentration at any of the receptors included for comparison against the Limit Value is $43.4 \mu\text{g}/\text{m}^3$ or 108% of the Limit Value at the A1261 Aspen Way west of the A1206 Cotton Street/Preston's Road roundabout, approximately 3.5km west of the airport.
- 6.13 The highest predicted concentration of PM_{10} is $20.2 \mu\text{g}/\text{m}^3$ or 51% of the objective at the R60 receptor (Royal Docks Academy). The highest predicted concentration of $\text{PM}_{2.5}$ is $13.2 \mu\text{g}/\text{m}^3$ or 66% of the objective at the same receptor. There are no predicted exceedances of the objectives.
- 6.14 Predicted concentrations of $\text{PM}_{2.5}$ exceed the GLA target of $10 \mu\text{g}/\text{m}^3$ at all receptors in 2019.

2023 Assessment Year

- 6.15 Concentrations of nitrogen dioxide above the objective ($40 \mu\text{g}/\text{m}^3$) in the 2025 DC scenario are confined to small parts of the airfield, where there is no public access and the objective therefore does not apply. Away from the airfield, concentrations are well below the objective.
- 6.16 The predicted annual mean concentrations of nitrogen dioxide in both the 2025 DM and DC scenarios are lower than in 2019 at all receptors. The highest predicted concentration in the DM scenario is $28.4 \mu\text{g}/\text{m}^3$ (71% of the objective) and for the DC scenario is $28.5 \mu\text{g}/\text{m}^3$ (71% of the objective), both occurring at the R4 (Newland Street (opposite entrance to LCY car park)) receptor. The difference between the DM and DC scenarios is $0.1 \mu\text{g}/\text{m}^3$ or 0.2% of the objective. At all receptors, the magnitude of change in annual mean nitrogen dioxide concentrations between the DM and DC scenarios is less than 1% of the objective and the impacts are all negligible.
- 6.17 The highest modelled annual mean nitrogen dioxide concentration at any of the receptors included for comparison against the Limit Value is $32.6 \mu\text{g}/\text{m}^3$ or 82% of the Limit Value (for both the DM and DC scenarios) at the A102 Tunnel Avenue (LV13). The magnitude of change is $0.01 \mu\text{g}/\text{m}^3$ (less than 0.1% of the Limit Value) and the impact is negligible.
- 6.18 Predicted concentrations of PM_{10} and $\text{PM}_{2.5}$ are lower in both the 2025 DM and DC scenarios than in 2019 at all receptors. The highest predicted concentration of PM_{10} is $18.7 \mu\text{g}/\text{m}^3$ or 47% of the objective at the R60 (Royal Docks Academy) receptor, for both the DM and DC scenarios, where the increase between the scenarios is $0.01 \mu\text{g}/\text{m}^3$. The highest predicted concentration of $\text{PM}_{2.5}$ is $12.2 \mu\text{g}/\text{m}^3$ or

61% of the objective at the same receptor, for both DM and DC scenarios. There are no predicted exceedances of the PM₁₀ or PM_{2.5} objectives, and all predicted impacts are negligible.

- 6.19 Predicted concentrations of PM_{2.5} exceed the GLA target of 10 µg/m³ at all receptors in both DM and DC Scenarios. The greatest change between the DM and DC scenarios is 0.02 µg/m³ or 0.2% of the target, and all impacts are negligible.

2027 Assessment Year

- 6.20 Concentrations of nitrogen dioxide above the objective (40 µg/m³) are confined to small parts of the airfield where there is no public access and the objective therefore does not apply. Away from the airfield, concentrations are well below the objective.
- 6.21 The predicted annual mean concentrations of nitrogen dioxide in both the 2027 DM and DC scenarios are lower than in 2019 at all receptors. The highest predicted concentration in the DM scenario is 27.7 µg/m³ (69% of the objective) and for the DC scenario is 28.0 µg/m³ (70% of the objective), both occurring at the R4 (Newland Street (opposite entrance to LCY car park)) receptor. The difference between the DM and DC scenarios is 0.3 µg/m³ or 1% of the objective. At all receptors, the magnitude of change in annual mean nitrogen dioxide concentrations between the DM and DC scenarios is, at most 2% (rounded to the nearest percentage point) of the objective, and the impacts are all negligible.
- 6.22 The highest modelled annual mean nitrogen dioxide concentration at any of the receptors included for comparison against the Limit Value is 30.6 µg/m³ or 77% of the Limit Value (for both the DM and DC scenarios) at the A102 Tunnel Avenue (LV13). The magnitude of change is 0.02 µg/m³, less than 0.1% of the Limit Value, and the impact is negligible.
- 6.23 Predicted concentrations of PM₁₀ and PM_{2.5} are lower in both the 2027 DM and DC scenarios than in 2019 at all receptors. The highest predicted concentration of PM₁₀ is 18.7 µg/m³ or 47% of the objective at the R60 (Royal Docks Academy) receptor, for both the DM and DC scenarios, where the increase between the scenarios is just 0.01 µg/m³. The highest predicted concentration of PM_{2.5} is 12.2 µg/m³ or 61% of the objective at the same receptor, for both the DM and DC scenarios. There are no predicted exceedances of the PM₁₀ or PM_{2.5} objectives, and all predicted impacts are negligible.
- 6.24 Predicted concentrations of PM_{2.5} exceed the GLA target of 10 µg/m³ at all receptors in both DM and DC scenarios. The greatest change between the DM and DC scenarios is 0.04 µg/m³ or 0.4% of the target, and all impacts are negligible.

2029 Assessment Year

- 6.25 Concentrations of nitrogen dioxide above the objective (40 µg/m³) are confined to small parts of the airfield where there is no public access and the objective therefore does not apply. Away from the airfield, concentrations are well below the objective.

- 6.26 The predicted annual mean concentrations of nitrogen dioxide in both the 2029 DM and DC scenarios are lower than in 2019 at all human health receptors. The highest predicted concentration in the DM scenario is 27.1 $\mu\text{g}/\text{m}^3$ (68% of the objective) and for the DC scenario is 27.4 $\mu\text{g}/\text{m}^3$ (68% of the objective), both occurring at the R4 (Newland Street (opposite entrance to LCY car park)) receptor. The difference between the DM and DC scenarios is 0.3 $\mu\text{g}/\text{m}^3$ or 1% of the objective. At all receptors, the magnitude of change in annual mean nitrogen dioxide concentrations between the DM and DC scenarios is, at most 2% (rounded to the nearest percentage point) of the objective, and the impacts are all negligible.
- 6.27 The highest modelled annual mean nitrogen dioxide concentration at any of the receptors included for comparison against the Limit Value is 28.4 $\mu\text{g}/\text{m}^3$ or 71% of the Limit Value at the A102 Tunnel Avenue (LV13) in both the DM and DC scenarios. The magnitude of change is just 0.02 $\mu\text{g}/\text{m}^3$, less than 0.1% of the Limit Value, and the impact is negligible.
- 6.28 Predicted concentrations of PM_{10} and $\text{PM}_{2.5}$ are lower in the 2029 DM and DC scenarios than in 2019 at all receptors. The highest predicted concentration of PM_{10} is 18.7 $\mu\text{g}/\text{m}^3$ or 47% of the objective at the R60 (Royal Docks Academy) receptor, for both the DM and DC scenarios, where the increase between the scenarios is just 0.01 $\mu\text{g}/\text{m}^3$. The highest predicted concentration of $\text{PM}_{2.5}$ is 12.2 $\mu\text{g}/\text{m}^3$ or 61% of the objective at the same receptor for both scenarios. There are no predicted exceedances of the PM_{10} or $\text{PM}_{2.5}$ objectives, and all predicted impacts are negligible.
- 6.29 Predicted concentrations of $\text{PM}_{2.5}$ exceed the GLA target of 10 $\mu\text{g}/\text{m}^3$ at all receptors in both DM and DC scenarios. The greatest change between the DM and DC scenarios is 0.04 $\mu\text{g}/\text{m}^3$ or 0.4% of the target, and all impacts are negligible.

2031 Assessment Year

- 6.30 Concentrations of nitrogen dioxide above the objective (40 $\mu\text{g}/\text{m}^3$) are confined to small parts of the airfield where there is no public access and the objective therefore does not apply. Away from the airfield, concentrations are well below the objective.
- 6.31 The predicted annual mean concentrations of nitrogen dioxide in both the 2031 DM and DC scenarios are lower than in 2019 at all human health receptors, by between approximately 5 $\mu\text{g}/\text{m}^3$ and 9 $\mu\text{g}/\text{m}^3$. The highest predicted concentration in the 2031 DM scenario is 26.7 $\mu\text{g}/\text{m}^3$ (67% of the objective) and for the DC scenario is 27.2 $\mu\text{g}/\text{m}^3$ (68% of the objective), both occurring at the R4 (Newland Street (opposite entrance to LCY car park)) receptor. The greatest difference between the DM and DC scenarios is 1.4 $\mu\text{g}/\text{m}^3$ or 3% of the objective, at the R2 (Camel Road) receptor, where the total concentration in the DM scenario is 25.4 $\mu\text{g}/\text{m}^3$ and in the DC scenario is 26.8 $\mu\text{g}/\text{m}^3$. The impacts are classified as negligible at all receptors.
- 6.32 The highest modelled annual mean nitrogen dioxide concentration at any of the receptors included for comparison against the Limit Value is 27.2 $\mu\text{g}/\text{m}^3$ or 68% of the Limit Value at the A102 Tunnel Avenue

in both the 2031 DM and DC scenarios. The magnitude of change is just $0.03 \mu\text{g}/\text{m}^3$ or less than 0.1% of the Limit Value, and the impact is negligible.

- 6.33 The predicted annual mean concentrations of PM_{10} in both the 2031 DM and DC scenarios are lower than in 2019 at all receptors, by between $1.2 \mu\text{g}/\text{m}^3$ and $1.6 \mu\text{g}/\text{m}^3$. The highest predicted PM_{10} concentration is $18.7 \mu\text{g}/\text{m}^3$ or 47% of the objective, at the R60 (Royal Docks Academy) receptor, for both the DM and DC scenarios. The greatest difference between the DM and DC scenarios is $0.1 \mu\text{g}/\text{m}^3$ or 0.2% of the objective, at the R2 (Camel Road) receptor, where the total concentration in the DM scenario is $16.9 \mu\text{g}/\text{m}^3$ and in the DC scenario is $17.0 \mu\text{g}/\text{m}^3$. The impacts are classified as negligible at all receptors.
- 6.34 The predicted annual mean concentrations of $\text{PM}_{2.5}$ in both the 2031 DM and DC scenarios are lower than in 2019 at all receptors, by between $0.9 \mu\text{g}/\text{m}^3$ and $1.1 \mu\text{g}/\text{m}^3$. The highest predicted concentration in the 2031 DC scenario is $12.2 \mu\text{g}/\text{m}^3$ or 61% of the objective, at the R60 (Royal Docks Academy) receptor, for both the DM and DC scenarios. The greatest difference between the DM and DC scenarios is $0.1 \mu\text{g}/\text{m}^3$ or 0.4% of the objective, at the R2 (Camel Road) receptor, where the total concentration in the DM scenario is $11.2 \mu\text{g}/\text{m}^3$, and in the DC scenario is $11.3 \mu\text{g}/\text{m}^3$. The impacts are classified as negligible at all receptors.
- 6.35 Predicted concentrations of $\text{PM}_{2.5}$ exceed the GLA target of $10 \mu\text{g}/\text{m}^3$ at all receptors in both DM and DC scenarios. The greatest change between the DM and DC scenarios is $0.1 \mu\text{g}/\text{m}^3$ (or $0.07 \mu\text{g}/\text{m}^3$ to 2 significant figures) or 0.7% of the target. Impacts on the target are negligible at all receptors except at R1 (Camel Road/Hartmann Road) and R2 (Camel Road/Parker Street), which experience moderate adverse impacts because the increment is 1% (when rounded to the nearest percentage point) of the target.

Significance of Effects

- 6.36 I judge the operational air quality effects in 2025, 2027, 2029 and 2031 to be not significant in EIA terms. This is based on my professional judgement in accordance with the factors recommended by EPUK/IAQM (as described in Section 3 of this note). Concentrations are predicted to be below the objectives/limit values for all future years assessed, and the impacts with regard to the objectives/limit values are all negligible. Whilst moderate adverse impacts are predicted against the non-statutory GLA target for $\text{PM}_{2.5}$ in 2031 at two receptors, this is a consequence of the elevated background values and a rounding of the incremental change. $\text{PM}_{2.5}$ concentrations in 2031 are lower than in 2019 for both the DM and DC scenarios.
- 6.37 The assessment I have described above has described the likely significant effects of the DC scenario in comparison to the DM scenario (future baseline + CADP1). A fully quantitative assessment against a future baseline without CADP1 is not possible or proportionate as the permission has already been implemented and the new infrastructure is being utilised. A semi-quantitative analysis is provided below.

6.38 In terms of the absolute concentrations in future years, this is fully described by the DC scenarios. However, as described in Section 3 of this note, the EPUK/IAQM guidance is founded on “impact descriptors” that describe the magnitude of change at individual receptors in combination with the absolute concentrations. It is not straightforward to compare the outcomes of the 2015 Updated Environmental Statement (that accompanied the CADP application) [CD2.6.4] and this assessment for a number of reasons, principally that:

- The Principal Assessment Year in the 2015 UES was 2025, but it is now 2031;
- The fleet mixes for the Principal Assessment Year are different; and
- There have been many changes to the assessment methodology since the 2015 UES was completed.

6.39 Nonetheless, I have drawn a qualitative comparison as to whether there are new or materially different effects from those identified in the 2015 UES.

6.40 The 2015 UES predicted a slight adverse impact at one receptor (Newland Street) for annual mean nitrogen dioxide in 2025, with an absolute concentration of 23.3 $\mu\text{g}/\text{m}^3$. Given that the absolute concentrations are less than 75% of the objective, it would require a substantial contribution from the Proposed Amendments to shift the descriptor to moderate adverse, and even if this occurred it would not change the overall conclusion. For similar reasons, the potential to shift negligible impacts to slight adverse is limited to a very small number of receptors, and again, this would not change my overall conclusion about the significance of the proposed development.

6.41 Predicted annual mean concentrations of PM_{10} and $\text{PM}_{2.5}$ were all well below the objectives in the 2015 UES, with the impacts all described as negligible. For the reasons set out above, there very limited potential for any impacts to be reclassified as slight adverse, and even if this occurred it would not change my overall conclusion.

6.42 It should also be borne in mind that concentrations and incremental changes predicted for 2025 in the UES would be expected to be lower in 2031.

6.43 I therefore conclude there are no new or materially different effects from those identified in the 2015 UES.

Sensitivity Test – Faster Growth Scenario

6.44 Impacts in the 2029 Faster Growth Scenario are potentially greater than in other scenarios, as the faster growth leads to higher Airport-related emissions before background concentrations have fallen as much as in the 2031 DC scenario. Road traffic NO_x emissions in 2029 are slightly higher in the Faster Growth Scenario than in the 2031 DC Scenario, because emission factors will not have reduced as much by 2029 as 2031. Predicted emissions for the 2029 Faster Growth Scenario were modelled

and compared to the 2029 DM scenario already considered. At all receptors, concentrations of nitrogen dioxide, PM₁₀ and PM_{2.5} remain well below their respective limit values/objectives, and impacts are all negligible. Concentrations of PM_{2.5} are above the GLA target in both the Faster Growth and DM Scenarios in 2029, and impacts at three receptors (R1, R2 and R50a) are classified as moderate adverse; impacts at all other receptors are negligible.

Odours

- 6.45 The odour modelling results indicate that the highest 98th percentile of hourly mean odour concentration at any relevant receptor is 2.7 OU_E/m³ in the baseline year of 2019. This concentration is below the value of 3 OU_E/m³ at which moderately offensive odours may become unacceptable.
- 6.46 In future years, odour concentrations decline, and this is particularly so in the DC scenario. At all receptors and in each future year, odour concentrations are lower in the DC Scenario than in the DM scenario, and the reduction is sharper in the DC scenario from 2027 onwards. These results may be attributed to the introduction of newer, cleaner aircraft in the DC scenario which outweighs the impact of greater aircraft activity. According to the ICAO Engine Emissions Databank, the PW1500G engine fitted to Airbus A220 aircraft and the PW1921G engine fitted to Embraer E190 E2 and E195 E2 aircraft have very low unburnt hydrocarbon emission rates at idle compared to other engines, just 0.1 g/kg compared to (for example) 4.3 g/kg for the CF34-10E engine fitted to the Embraer E190 E1.
- 6.47 Modelled odour concentrations remain below the threshold at which moderately offensive odours may become unacceptable for all DM and DC scenarios. I therefore conclude that odour effects from the proposed development would not be significant.

Air Quality Neutral Assessment

- 6.48 Air Quality Neutral is a term for developments that do not contribute to air pollution beyond allowable benchmarks that have been established for buildings and transport (car or light van trips), and as defined in GLA guidance.
- 6.49 The revised energy strategy for the Proposed Amendments is founded on the use of air source heat pumps combined with photovoltaics. This will be achieved either through on-site plant or connection to a District Heat Network. As such, there will be no emissions associated with the energy strategy and, by definition, the Proposed Amendments meet the Building Emissions Benchmarks.
- 6.50 The Transport Emission Benchmarks (TEBs), as specified in the Air Quality Neutral guidance, are based on the number of trips generated by different land-use classes. The documentation provides no specific TEBs for airport operations. Whilst the Airport does include land uses such as offices, retail and restaurants/cafes, these are not used in a standard manner i.e. passengers do not drive to the Airport to specifically to access these facilities – they drive to the airport to use air travel. As such, the application of the TEBs to an airport is subject to some uncertainty.

- 6.51 The approach taken mirrors that in the 2015 UES and is a methodology that was agreed with LBN at that time. Trip generation data are normally obtainable from the Transport Assessment, as this is the basis for the calculation of Annual Average Daily Traffic (AADT) data. However, a bespoke, first principle approach was used in this case, with the trip data derived from passenger profiles (provided by York Aviation) and staff numbers.
- 6.52 Steer have advised that the Proposed Amendments would add an additional 2,171,740 one-way trips per annum. This remains below the calculated TEB (2,402,333 trips) and accordingly the scheme remains air quality neutral.

Air Quality Positive

- 6.53 Policy SI1 (C) of the London Plan states that developments subject to an EIA should prepare an Air Quality Positive statement. However, it is not clear from the Policy or the supporting guidance how Section 73 applications (for a minor, material amendment) are to be considered, as the original CADP application pre-dated the requirement for Air Quality Positive. Nonetheless, an Air Quality Positive statement [CD1.47] was submitted with the ES for the S73 Application. GLA in their Stage 2 report conclude that *“it is agreed that the application does meet the requirements of the London Plan in terms of air quality positive”*.

7 GLA Stage 2 Report

- 7.1 As briefly stated in paragraph 1.7, the GLA Stage 2 report considers that the S73 Application is not in full compliance with Policy SI1 of the London Plan, as the increase in emissions is not *“in line with the spirit of the air quality neutral approach”*. I strongly disagree with this statement and set out my reasoning below.
- 7.2 The GLA has published updated guidance on how a development should demonstrate that it is compliant with Air Quality Neutral. Paragraph 1.1.1 of this guidance states that *“an air quality neutral assessment is one that meets, or improves upon, the Air Quality Benchmarks set out in this document”*.
- 7.3 These benchmarks have been derived for NO_x emissions associated with gas combustion in buildings and NO_x and PM_{2.5} emissions associated with road transport. As the Proposed Amendments do not increase NO_x emissions associated with on-site combustion, compliance with the Building Emissions Benchmark can be disregarded.
- 7.4 With respect to the Transport Emissions Benchmarks (TEB) the guidance states (paragraph 4.1.4) that the *“TEB only estimates car or light van trips undertaken directly by the development occupiers”*. The TEB does not include trips generated by a development for other types of road vehicles (e.g. HGVs or coaches) or any other form of transport (i.e. rail, shipping or aircraft).

- 7.5 It is also important to note that compliance with the TEB does not guarantee that there will be no increase in emissions; it simply guarantees that the number of car/van trips generated by a new scheme do not exceed those for a typical scheme in London, based on the land-use category, size of the scheme and location. By way of example, the trip rates for Inner London for non-residential uses range from 1 trip/m² (GIA) for “Offices/light industrial” to 139 trips/m² (GIA) for “Retail (Convenience)” – Table 4.1 of the guidance. Compliance with air quality neutral does not, therefore, prevent an increase in emissions associated with a change in land use.
- 7.6 AQC has undertaken numerous air quality neutral assessments since the original guidance was published in 2014. These have included many schemes where there has been an increase in HGV trips which are not included in the TEB. I am not aware that GLA officers have ever questioned the outcomes of these assessments with regard to air quality neutral, and I am not aware that transport emissions that lie outside of the TEB have ever been queried, on any scheme that I know of.
- 7.7 There is nowhere within Policy SI1 or the Air Quality Neutral guidance that suggests that the “*spirit of the air quality neutral approach*” should be applied to transport emissions for which a TEB has not been defined.
- 7.8 An air quality neutral assessment was carried out for the ES, and it was concluded that the Proposed Amendments were compliant (as I have described in Section 6 of my Proof). This issue was not questioned by LBN or its technical advisers, or indeed by GLA in its Stage 1 Report (para 62) [CD4.5.4] and I assume they were in full agreement with my conclusions.
- 7.9 It is concluded that the Proposed Amendments are compliant with the air quality neutral approach.

8 Conclusions

- 8.1 Air quality conditions in the vicinity of the Airport are generally good, with levels below the air quality objectives/limit values for nitrogen dioxide, PM₁₀ and PM_{2.5} at most locations (in 2019). There are some exceedances (in 2019) of the objectives/limit values at some roadside locations.
- 8.2 It has been demonstrated that annual mean nitrogen dioxide concentrations have fallen in recent years (between 2007 and 2019).
- 8.3 A detailed modelling assessment was carried out to assess the effects of the Proposed Amendments, and I conclude that there are no significant effects associated with the critical pollutants. Levels will continue to reduce in future years, and will be below the objectives/limit values at all locations considered. There is potential for the GLA non-statutory PM_{2.5} target to be exceeded, but this is widespread across London and compliance will not be affected by the Proposed Amendments.
- 8.4 The potential for odour impacts will reduce in future years, and especially with the Proposed Amendments, as cleaner aircraft (with lower hydrocarbon emissions) are introduced at an earlier stage.

- 8.5 The Proposed Amendments are air quality neutral in accordance with the benchmarks published by GLA, and an air quality positive statement has been agreed with GLA.
- 8.6 Air Quality Monitoring and Air Quality Management Strategies (2023-2026) were submitted to and approved by LBN on 31 July 2023. These set out commitments to continue to measure air quality levels in the vicinity of the Airport, and to implement a range of measures to minimise air quality impacts.
- 8.7 The Proposed Amendments are consistent with all relevant national, regional and local policies and that there are no constraints to the S73 Application.

APPEAL BY LONDON CITY
AIRPORT LTD

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City Airport Development Programme
(CADP1) S73 Application

(REF APP/G5750/W/23/3326646)

Topic Paper: Climate Change

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Annex A: Jet Zero Data

Glossary of abbreviations

Abbreviation	Definition
ACA	Airport Carbon Accreditation
ATM	Air Traffic Movement
CB6	Sixth Carbon Budget
CCC	Climate Change Committee
CH ₄	Methane
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
DC	Development Case
Defra	Department of Environment, Food and Rural Affairs
DfT	Department for Transport
DM	Do Minimum
EEA	European Economic Area
ES	Environmental Statement
EU	European Union
EU ETS	European Emissions Trading Scheme
IAQM	Institution of Air Quality Management
IAS	International Aviation and Shipping
ICAO	International Civil Aviation Organisation
IEMA	Institute of Environmental Management and Assessment
KPI	Key Performance Indicators
KtCO ₂ e	Thousand Tonnes of carbon dioxide equivalent
LBN	London Borough of Newham
LCY	London City Airport
MBU	The UK Government strategy, "Beyond the horizon: The future of UK aviation: Making best use of existing runways", published 5 June 2018

MJ	Mega Joule
mppa	Million Passengers Per Annum
MtCO₂e	Million Tonnes of carbon dioxide equivalent
NPPF	National Planning Policy Framework
NO_x	Nitrogen oxides
ppm	Parts Per Million by volume
RTFC	Renewable Transport Fuel Certificate
RTFO	Renewable Transport Fuel Obligations Order
SAF	Sustainable Aviation Fuel
TCFD	Taskforce On Climate-Related Financial Disclosure
UK	United Kingdom
UK ETS	UK Emissions Trading Scheme
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America

1. Introduction

1.1 Qualifications and Experience

- 1.1.1 This Topic Paper has been prepared by Matthew Peter Paul Ösund-Ireland. I hold a BSc(Hons) in Combined Science from the Polytechnic of Wales and a PhD in local air quality management and climate change tools for joined up policy from the University of Greenwich. I am a Chartered Environmentalist, a Member of the Institute of Air Quality Management (IAQM) and a Member of the Institute of Environmental Sciences. I am a Director of Susteer AB responsible for air quality, climate resilience and carbon management assessments undertaken by the company.
- 1.1.2 I have worked as a professional environmental scientist for 30 years. I have been responsible for conducting air quality and carbon studies for transport schemes, including road, rail, shipping and aviation, and schemes in the oil and gas, energy, industry, mining and commercial development sectors. I have worked on numerous airport projects including Birmingham, Bournemouth International, Bristol, Heathrow, London City, London Luton, the proposed airport at Cliffe in Kent and airports outside the UK. Most recently I was retained by London Luton Airport to advise on carbon matters concerning its appeal proposal to increase capacity from 18 million passengers per annum (mppa) to 19 mppa, and in 2021 I was appointed in a similar capacity by Bristol Airport Limited concerning its successful appeal proposal to increase capacity from 10 mppa to 12 mppa.
- 1.1.3 As a member of the IAQM, I am bound by its Code of Professional Conduct which requires that members *“maintain professional integrity at all times and be guided by the principle of applying the most appropriate science/practice for any given task. This requires members to display objectivity and refrain from being selective or partial when presenting data or facts for a written report or in oral form.”*

1.2 Scope of this Topic Paper

- 1.2.1 Although climate change has not been listed as one of the main topics for consideration at the Inquiry by the Inspector in the post-CMC note dated 12 October 2023, this topic paper has been prepared in support of the planning evidence prepared by Mr Bashforth (APP/3) for the Appellant.
- 1.2.2 In referring to evidence provided by the aviation expert retained by LBN, the Statement of Case for LBN¹ states *“The evidence will show that consideration of passenger handling capacity at the other London airports indicates that the extra passenger demand of 2.5 mppa sought by this application could be accommodated up to at least 2031 at the other London airports. Although not a ground for LBN’s refusal of the application, LBN does note that carbon emissions would be materially lower if this demand were handled at other airports at which aircraft with lower emissions per passenger operate and which LBN’s aviation expert considers would have capacity to take up demand.”* (para 5.18). This is not addressed in this Topic Paper but in the evidence presented by Ms Louise Congdon (APP/1) for the Appellant.
- 1.2.3 The Statement of Case for LBN refers to the inclusion in the Core Documents of *“the officer’s report to Committee in respect of this Appeal application, which provides additional background information and the Decision Notice”* (para 2.10). This is described further in the planning evidence prepared by Mr Bashforth for the Appellant.
- 1.2.4 HACAN East is registered as a Rule 6 party and identifies *“climate change impact of the Appeal Proposal is a material planning consideration, relevant in particular to compliance with the Development Plan”* (para 6.1) in its Statement of Case². HACAN East summarises its case on climate change as *“... the Appeal Proposal has not adequately demonstrated*

¹ CD10.2

² CD10.3

that it is compatible with Development Plan policies around climate change or national and regional targets for the reduction of greenhouse gas (“GHG”) emissions” (para 6.2).

This is then followed by a series of statements, referring to Policy T8(B) of the London Plan, the Mayor’s policy document ‘London Net Zero 2030: An Updated Pathway’³ and emissions in 2031 and beyond reported in the Environmental Statement (“2022 ES”) submitted with the Section 73 Application (“S73 Application”) which is the subject of this Appeal . Each of these points is addressed in the planning evidence prepared by Mr Bashforth for the Appellant.

1.2.5 The Mayor of London has not submitted a Statement of Case but has provided comments at the planning application stage. These are described further in the planning evidence prepared by Mr Bashforth for the Appellant.

1.2.6 Details of the climate change assessment for the Development Case are provided in the following documents:

- a. Volume 1 Chapter 11 of the 2022 ES which includes an assessment of the significance of carbon emissions and the resilience of the development to climate change⁴;
- b. Appendix 11.1 of the 2022 ES which includes a description of the greenhouse gas footprint methodology⁵;
- c. Appendix 11.2 of the 2022 ES which includes the detailed greenhouse gas assessment results⁶;
- d. Appendix 11.3 of the 2022 ES which includes and an outline Carbon and Climate Change Action Plan (CCCAP)⁷; and

³ CD3.9.6

⁴ CD1.18

⁵ CD1.49

⁶ CD1.50

⁷ CD1.51

- e. A Revised Energy and Low-Carbon Strategy included in the S73 Application⁸.

1.2.7 This Topic Paper follows the nomenclature of the 2022 ES, referring to the future operation of the existing Airport under the CADP1 planning permission as the “Do Minimum” (DM) and to the operation of the Airport with the amendments to the CADP1 planning permission proposed under the S73 Application as the “Development Case” (DC).

1.2.8 Although Volume 1 Chapter 11 of the 2022 ES refers to both carbon emissions and resilience to climate change, this Topic Paper is limited to the assessment of the significance of carbon emissions.

1.3 Structure of this Topic Paper

1.3.1 This Topic Paper has been structured to include:

- a. Section 2: A summary of the policy and legislative context, including relevant guidance;
- b. Section 3: A summary of the assessment results presented in the 2022 ES; and
- c. Section 4: Conclusions.

⁸ CD1.65

2. Legislative and Policy Context

2.1 Introduction

2.1.1 The construction, operation and decommissioning of the Airport will generate emissions of greenhouse gases (collectively referred to as “carbon”) with the operation of aircraft also giving rise to “non-CO2 effects” which have an additional influence on climate change. There is a clear distinction between “aviation” (i.e. aircraft) and “non-aviation” emissions, with the former being subject to national legislation and policy and the latter also being subject to regional and local planning policy. Regional (Mayor of London) and local (London Borough of Newham) policies regarding non-aviation emissions are described in the evidence of Mr Sean Bashforth (APP/3) and hence, this section has been structured to consider the legislative and policy context of carbon in terms of:

- a. National legislation regarding aviation and non-aviation emissions;
- b. National policy regarding aviation emissions; and
- c. National policy regarding non-aviation emissions.

2.1.2 Section 3 of this Topic Paper provide a summary of the assessment results presented in the 2022 ES, demonstrating how the S73 Application complies with national legislation and policies relevant to carbon.

2.2 National Legislation: aviation and non-aviation emissions

Climate Change Act and Carbon Budgets

2.2.1 Since 1 December 2008 when the Climate Change Act 2008 came into force, the Secretary of State for Energy Security and Net Zero has had a legal duty to progressively reduce

emissions in accordance with successive carbon budgets. In 2019 the Climate Change Act was amended, committing the UK to being carbon net zero by 2050⁹.

- 2.2.2 The first three carbon budgets, for the periods 2008-2012, 2013-2017 and 2018-2022, were implemented via the Carbon Budgets Order 2009¹⁰. The fourth carbon budget (2023-2027) was set at 1,950 MtCO₂e and the fifth budget (2028-2032) was set at 1,725 MtCO₂e¹¹. All of these budgets formally exclude international aviation and international shipping, but were set at a level that took international aviation into account:

“Emissions from international aviation should continue to be allowed for by setting the budget on the path to meeting the 2050 target with international aviation emissions included. However, the accounting for these emissions remains uncertain, so they should not be formally included in the fifth carbon budget”¹².

- 2.2.3 The Climate Change Act 2008 also established the Climate Change Committee (CCC) whose advice the Government is required to consider but not follow when setting carbon budgets.

- 2.2.4 In 2009 the CCC published its Report on Meeting the UK aviation target – options for reducing emissions to 2050¹³ in response to a January 2009 request from Government to provide advice on options for reducing CO₂ emissions from UK aviation (including both domestic and international flights) down to, or below, 2005 levels by 2050. UK aviation CO₂ emissions in 2005 were estimated to be 37.5 MtCO₂ on a bunker fuels basis¹⁴. This

⁹ CD3.9.9

¹⁰ CD3.9.10

¹¹ CD3.9.11

¹² ibid

¹³ CD3.9.12

¹⁴ Bunker fuel is a collective term for fuel consumed for international marine and aviation transport. Emissions from ‘bunker fuel’ used for international flights and sold in the UK are attributed to the UK.

aviation target for 2050 later became known as the ‘*planning assumption*’ in the context of carbon budgets one to five.

2.2.5 The 2009 CCC Report goes on to state that:

“... given prudent assumptions on likely improvements in fleet fuel efficiency and biofuels penetration, demand growth of around 60% would be compatible with keeping CO₂ emissions in 2050 no higher than in 2005”;

and

“Future technological progress may make more rapid demand growth than 60% compatible with the target, but it is not prudent to plan on the assumption that such progress will be achieved”.

2.2.6 The sixth carbon budget, for the period 2033-2037, was set at 965 MtCO₂e and, for the first time, includes emissions from international aviation¹⁵.

2.2.7 Carbon emissions associated with aviation, including emissions from construction, aircraft, surface access, ground support services and buildings at the airport, are taken into account along with other sectors within UK commitments to reaching carbon net zero by 2050. Emissions up to and including 2032 are the subject of the relevant carbon budget and the planning assumption for international aviation. Emissions from 2033 to 2037 are subject to the sixth carbon budget with no separate planning assumption as emissions from international aviation are included within the budget. Emissions beyond 2038 are reasonably expected to be subject to successive carbon budgets up to 2050 with no planning assumption in relation to aviation as both domestic and international aviation emissions will be included within those budgets.

¹⁵ CD3.9.13

2.2.8 The latest CCC Progress Report to Parliament was published in June 2023¹⁶ and includes an appraisal of aviation emissions. The CCC reported that aviation emissions in 2022 remained below 2019 levels, reflecting the continued impact of COVID 19 and the rising cost of living. The Report refers to the publication of the Jet Zero Strategy in July 2022¹⁷ which *“recommits to 70% passenger demand growth by 2050 on 2018 levels, relying heavily on technology to compensate for the increased emissions”* (p267).

2.2.9 In referring to airport expansion, the CCC reaffirms its Sixth Carbon Budget Advice which recommended no net expansion of UK airports to ensure aviation can achieve the required pathway for UK aviation emissions (p267). However, it is worth noting the full policy recommendation: *“There should be no net expansion of UK airport capacity unless the sector is on track to sufficiently outperform its net emissions trajectory and can accommodate the additional demand”* (Table 8.1, p162 of ‘Policies for Sixth Carbon Budget and Net Zero’, CCC, December 2020). This appears to remain the CCC position as the Progress Report 2023 goes on to state *“Net airport expansion should only proceed if the carbon-intensity of aviation is outperforming the Government’s pathway and can accommodate this additional demand. Current Government policy is not delivering an outcome consistent with this. The Committee recommends that there should be no expansion of UK airport capacity until an airport capacity management framework is in place”* (Box 10.1, p276).

2.2.10 The UK Government response to the CCC Progress Report was published in October 2023¹⁸. This response includes five points relevant to the aviation sector:

- a. *“Airport expansion: The Government has always been clear that the expansion of any airport must meet our climate change obligations. Any planning application submitted by an airport will be judged by the relevant planning authority, taking*

¹⁶ CD3.9.2

¹⁷ CD3.5.7

¹⁸ CD3.9.23

careful account of all relevant considerations, including environmental impacts and proposed mitigations. We will review our Jet Zero Strategy every five years to ensure the aviation sector is on track to achieve net zero by 2050, and, if appropriate, we will consider reviewing our policy frameworks for airport planning to ensure they remain compatible with achieving our net zero target.” (page 26)

- b. *“Sustainable Aviation Fuel (SAF): The Government has previously committed to have the SAF mandate legislation in place by 2025 and we are on track to deliver this. The government will confirm its final sustainability criteria in the government response to the second SAF mandate consultation by the end of 202.” (pages 26-27)*
- c. *“Announced tighter limits on industrial, power and aviation emissions: The UK Emissions Trading Scheme (UK ETS) Authority responded to the consultation it held in Spring 2022 on the development of the scheme. The response confirmed the ETS cap would be tightened to align with net zero from 2024, there would be no reductions to industry free allocations before 2026 and that free allowances for domestic aviation would be phased out in 2026, and the scheme would be expanded to cover emissions from domestic maritime and energy from waste from 2026 and 2028 respectively.” (page 22)*
- d. *“Announced further plans for Greenhouse Gas Removals: Confirmed that the UK Emissions Trading Scheme (UK ETS) is an appropriate long-term market for GGRs. The UK ETS may also be an appropriate market for high quality nature-based GGRs, subject to further work to consider permanence, costs, and wider land management impacts.” (pages 22-23)*
- e. *“GGR Business Models: In the Net Zero Strategy, we committed to developing GGR technologies at scale. Business model support will be crucial to overcome immediate barriers to deployment. We consulted at the end of 2022 and responded in June this year confirming we are minded to progress work on a GGR business model based on*

a ‘contract for difference’ structure to enable a portfolio of GGR technologies to deploy at commercial scale in the UK this decade subject to affordability and value for money. We also intend to include engineered GGRs in the UK ETS, subject to further consultation, a robust MRV regime being in place, and management of wider impacts.” (pages 27-28)

UK Emissions Trading Scheme

- 2.2.11 As part of the withdrawal from the European Union (EU), the UK ETS replaced the UK’s participation in the EU ETS on 1 January 2021. The UK ETS was established through the 2020 Greenhouse Gas Emissions Trading Scheme Order¹⁹. Both the UK ETS and EU ETS are ‘cap and trade’ schemes with the total number of allowances in either scheme being capped and reduced, year on year. When the UK ETS was established, the number of allowances was reduced to the equivalent of 95% of the UK ‘share’ of EU allowances.
- 2.2.12 The aviation scope for the UK ETS covers UK domestic flights, flights between the UK and Gibraltar, and flights from the UK to the European Economic Area (EEA). All airlines operating such flights need to secure sufficient UK ETS allowances equivalent to the carbon emissions from those flights.
- 2.2.13 On 26 May 2021, the Air Navigation (Carbon Offsetting and Reduction Scheme for International Aviation) Order 2021²⁰ came into force providing details of the requirements for monitoring, reporting and verification of emissions for the purposes of complying with the Greenhouse Gas Emissions Trading Scheme Order
- 2.2.14 The Explanatory Memorandum which accompanies the 2020 Greenhouse Gas Emissions Trading Scheme Order makes it clear that the UK Government’s intention is that the UK

¹⁹CD3.9.14

²⁰CD3.9.4

ETS and EU ETS can operate side by side, which could increase opportunities for emissions reduction and cost-efficiency of emissions trading.

2.2.15 In March 2022 the UK Government launched a consultation on developing the UK ETS²¹. The consultation closed in June 2022 and culminated in two regulatory amendments²² which include the following that are relevant to aviation:

- a. Where necessary for free allocation for installations, allowances may be created from the flexible share (40,984,970 allowances) in addition to the annual cap. The Government committed to setting the annual cap in line with a pathway to net zero emissions in 2050, and wanted to make these changes no later than January 2024. This would have required a significant drop in allowances reaching the market in 2024 compared to previous years. This amendment enables a portion of 2021-2023 unallocated allowances and/or flexible share to auction to smooth the transition to the net zero consistent cap;
- b. New values for the global warming potentials (in tonnes of carbon dioxide equivalent) of certain greenhouse gases covered by the UK ETS (i.e. nitrous oxide; N₂O, carbon tetrafluoride; CF₄ and hexafluoroethane; C₂F₆) are adopted for the 2023 and subsequent scheme years;
- c. From 1 July 2024, verifiers of emission reports must be accredited to a new standard. Verifiers of aircraft operators' emission reports may, with the approval of the regulator, carry out "virtual" site visits whether or not force majeure prevents a physical site visit; and
- d. Extending the scope of the UK ETS to include flights to Switzerland with no change to the overall cap.

²¹ CD3.9.28

²² CD3.9.30 and CD3.9.31

2.2.16 The UK ETS was established and continues to be regulated by the UK Emissions Trading Authority (UK ETA) which is made up of the UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland. In July 2023 the UK ETA published its decisions following consultation on the future of the UK ETS²³. The opening sentence of the Executive Summary of this publication states clearly:

“When the UK Emissions Trading Scheme (UK ETS) was established in January 2021 our aim was to align it with the UK’s world leading net zero commitment. This document sets out the important structural changes to the scheme that will deliver on this goal.”

2.2.17 The UK ETA decisions include tighter limits for aviation emissions (CD3.9.3, p61), demonstrating clear controls on aviation emissions at the national level:

“The Authority has decided to phase-out aviation free allocation by 2026.

In order to ensure that aircraft operators are able to prepare for the transition, the aviation free allocation entitlement will continue to reduce at the existing fixed amount of 2.2% annually in 2024 and 2025 until full auctioning in 2026.

The Authority has decided not to update the aviation free allocation methodology and not to account for new entrants in light of the decision to phase-out aviation free allocation by 2026.

The Authority has decided to implement a cap on the maximum amount of free allocation aircraft operators are eligible to receive during the phase-out period. From the 2024 scheme year, aircraft operator’s entitlement will be capped to 100% of their verified emissions.”

2.2.18 The strengthening of the UK ETS is further referred to in the Government’s response to the CCC Progress Report (see paragraph 2.2.10.c above).

²³ CD3.9.3

CORSIA

2.2.19 Emissions from international flights not included in the UK ETS are covered by CORSIA developed by the International Civil Aviation Organization (ICAO). In 2010, the 37th Session of the ICAO Assembly adopted two aspirational goals: (1) to improve energy efficiency by 2% per year until 2050; and (2) to achieve carbon neutral growth from 2020 onwards. These goals are to be met with the implementation of a basket of measures that includes technological innovations, operational improvements, sustainable aviation fuels, and market-based measures. At the 39th Session of the ICAO Assembly in 2016, States adopted a global market-based measure scheme for international aviation, CORSIA, to address the increase in total CO₂ emissions from international aviation above the 2020 levels (now revised, following COVID, to 2019 levels). CORSIA is being implemented in three phases: a pilot phase from 2021 to 2023, a first phase from 2024 to 2026, and a second phase from 2027 to 2035. For the pilot and first phase (2021 to 2026), participation is voluntary. As of 29 August 2023, 115 States, including the UK, are participating, representing more than 77% of international aviation. CORSIA requires all airlines operating a route between two participating States (e.g., UK and USA) to monitor, report and verify the emissions from flights on that route, and for those emissions to be offset using CORSIA eligible emission units²⁴.

2.2.20 At the 41st Assembly in October 2022, the ICAO agreed a Long Term Aspirational Goal (LTAG) for international aviation to be carbon net zero by 2050²⁵. Starting with the goal for international aviation emissions to stabilise from 2020 (i.e. to be equal to or less than 2019 levels), the baseline has been adjusted to being equivalent to 85% of 2019 emissions, applicable from 2024 onwards.

2.2.21 LTAG includes three scenarios: (1) high readiness/attainability and low aspiration; (2) middle readiness/attainability and middle aspiration; and (3) low readiness/attainability

²⁴ CD3.9.4

²⁵ CD3.9.24

and high aspiration. Scenario 1 represents the 2021 expectation of future technology, operational efficiencies and fuel availability and includes the expectation that policy will support development in these three areas. Scenario 2 is described as an ‘increased ambition’ scenario and considers that these improvements will have a faster rollout. Scenario 3 *“represents the maximum possible effort in terms of future technology rollout, operational efficiencies and fuel availability. It assumes maximum policy enablers for technology, operations and fuels.”*

- 2.2.22 The UK ETS as currently enacted is due to run until 2030 and will not run into the period of the Sixth Carbon Budget in 2033. Similarly, CORSIA runs until 2035. This indicates an offsetting gap beginning in the next decade. However, the UK Emissions Trading Authority is clear in providing a strong signal to the market on the Government’s intent that the UK ETS continues²⁶23:

“The Call for Evidence was the first stage of a two-stage approach to develop proposals on future UK ETS markets policy. Following the Call for Evidence we are currently reviewing future markets policy and aim to consult on detailed policy proposals in due course. As outlined in the Call for Evidence, we are considering future markets policy holistically. Our policy development in the coming months will therefore consider the future of market stability mechanisms, including the ARP [auction reserve price], the CCM [cost containment mechanism] and examining the potential merits of a supply adjustment mechanism, as well as broader market functioning. In stating our intent to explore these policy areas, we note that any changes proposed in a future consultation will depend on our assessment of policy options during policy development.”

²⁶ CD3.9.17

2.2.23 This signal by the UK Emissions Trading Authority and the adoption of the Long Term Aspirational Goal by the parties of ICAO²⁷²⁵ supports the view that mechanisms such as the UK ETS, CORSIA or similar will continue to be available to address aviation carbon emissions. This is also reiterated in the Government's response to the CCC Progress report (paragraph 2.2.10.c above).

SAF Mandate

2.2.24 In July 2021, the DfT issued a consultation on introducing a mandate to increase the use of SAF in aviation. Following a consultation launched in July 2021, the Government published its decisions in July 2022²⁸ which are summarised as follows:

"This response confirms that the Government will mandate SAF supply in the UK by introducing a bespoke SAF mandate, separate from the Renewable Transport Fuel Obligation (RTFO). In line with our original consultation proposals, the mandate will obligate aviation fuel suppliers to reduce the greenhouse gas (GHG) emissions intensity of jet fuel delivered to the UK. They will be able to achieve this by blending an increasing proportion of SAF into their jet fuel supply and will receive an incentive to do so in the form of a number of credits, proportional to the GHG emissions saved by the SAF supplied. These credits can then be sold or bought to meet the obligation."

"We would like to introduce a SAF mandate that is world leading and as ambitious as possible. To that end, we can confirm that the obligation on suppliers to reduce the carbon intensity of jet fuel will start in 2025 and will grow to reach the equivalent of at least 10% SAF use by 2030. Our expectation is that this will deliver emission reductions in the order of 3 MtCO₂e in 2030."

Further analysis is required to ensure we set yearly targets before and after 2030 at an appropriate level to avoid creating any unintended consequences. We will consult

²⁷ CD3.9.24

²⁸ CD3.9.1

further on our yearly mandate targets in the second consultation and review our SAF trajectory to 2050 within the first five-year review of the Jet Zero Strategy in 2027.”

2.2.25 SAF can be blended with jet fuel and used in existing aircraft, resulting in reduced carbon emissions with little or no change in fuelling infrastructure required at airports. The UK Government is keen to develop domestic production of SAF as a means of increasing energy security as well as generating employment and extending the lifetime of fuel refining and distribution infrastructure. To date, The UK Government has committed to more than £600 million to support SAF²⁹²⁸.

Taskforce on Climate-related Financial Disclosure

2.2.26 The Taskforce on Climate-related Financial Disclosure (TCFD) was established in 2015 by the Financial Stability Board, an international body that monitors and makes recommendations about the global financial system. The principal aim of climate related financial disclosure is to promote the communication of how the physical and transition risks and opportunities of climate change are being managed by a business or organisation. From April 2022, over 1,300 of the largest UK-registered companies and financial institutions are required to disclose climate-related financial information on a mandatory basis. This includes many of the UK’s largest traded companies, banks and insurers, as well as private companies with over 500 employees and £500 million in turnover. By 2025, this mandate will have extended across the economy³⁰. For LCY this means annual disclosure of progress made in reducing emissions from its own operations, surface access and aviation, the effect of decarbonisation legislation and policy on its markets and the extent of climate change adaptation being considered.

2.3 National Policy: aviation emissions

²⁹ CD3.9.1 and CD3.5.10

³⁰ CD3.9.32

Making Best Use

- 2.3.1 *Beyond the Horizon – Making Best Use of existing runways*³¹ (MBU) was published by the Department of Transport in 2018 and remains current UK Government policy on aviation and climate change.
- 2.3.2 Paragraphs 1.8 to 1.12 of MBU clearly differentiate between local and national planning requirements, with carbon emissions from air traffic being a matter of national policy.
- 2.3.3 The DfT considers two scenarios to illustrate how aviation emissions could be tackled if all regional airports are allowed to make best use of their existing runway capacity. The carbon traded scenario assumes the use of global offsets (i.e. the Carbon Offsetting and Reduction Scheme for International Aviation described in Section 2.4 below) which would enable growth in aviation to continue without impact on global emissions. The carbon capped scenario uses a combination of carbon pricing and specific measures (e.g. single engine taxiing and renewable aviation fuel) to limit emissions to within the CCC recommended 37.5 MtCO₂ limit. This is the so called ‘planning assumption’.
- 2.3.4 In the 2021 Appeal Decision for Stansted³², the Planning Inspectors noted in paragraph 18:

“The in-principle support for making best use of existing runways provided by MBU is a recent expression of policy by the Government. It is given in full knowledge of UK commitments to combat climate change, having been published long after the Climate Change Act 2008 (CCA) and after the international Paris Agreement.”

³¹ CD3.5.3

³² CD8.2, page 10

- 2.3.5 MBU was also referenced in the 2022 Secretary of State decision for Manston Airport³³ (paragraph 42), the 2022 Southampton Airport High Court judgment ³⁴ (paragraph 111), the 2023 Bristol Airport High Court judgment ³⁵ and in the 2023 Secretary of State decision for Luton Airport³⁶ (paragraph 8.18), reinforcing the view that MBU remains a most recent national policy statement and as such is a material consideration.

Airports National Policy Statement

- 2.3.6 Airports National Policy Statement for new runway capacity and infrastructure at airports in the South East of England³⁷ was published by the Department of Transport in 2018, on the same day as MBU. Paragraph 5.72 states:

"The Climate Change Act says that the Government must "take into account" the estimated amount of reportable emissions from international aviation for the budgetary period or periods in question "when setting carbon budgets". The Committee on Climate Change has interpreted the requirement to take these emissions into account as requiring the UK to aim to meet a 2050 target which includes these emissions, and has made its recommendations for the levels of the existing carbon budgets on this basis".

Decarbonising Transport: A Better, Greener Britain

- 2.3.7 Published by the Department for Transport in July 2021, *Decarbonising Transport: A Better, Greener Britain*³⁸ includes the following commitments to decarbonise aviation (p11):

³³ CD8.4

³⁴ CD8.10

³⁵ CD8.8

³⁶ CD8.6

³⁷ CD3.5.2

³⁸ CD3.5.5

- a. To consult on our Jet Zero strategy, which will set out the steps we will take to reach net zero aviation emissions by 2050.
- b. To consult on a target for UK domestic aviation to reach net zero by 2040.
- c. To consult on a target for decarbonising emissions from airport operations in England by 2040.
- d. To further develop the UK Emissions Trading Scheme to help accelerate aviation decarbonisation.
- e. To aim to agree an ambitious long-term global emissions reduction goal in the International Civil Aviation Organization by 2022.

Jet Zero Strategy

2.3.8 On 19 July 2022 the Government published the policy paper Jet Zero Strategy: delivering net zero aviation by 2050³⁹ (Jet Zero Strategy), described as the framework and plan for achieving net zero aviation by 2050. This strategy follows 12 months of consultation with over 1500 responses received by the Department for Transport (DfT).

2.3.9 The Government acknowledges the challenge of decarbonising the aviation sector but states (page 8):

“We will use the transition to Jet Zero to create new jobs, industries and technologies across the entire sector and the UK.”

2.3.10 The Government highlights (page 8):

“[We are] taking a leading role internationally, including negotiating for agreement on a long-term aspirational goal for the CO₂ emissions of international aviation that is aligned with the temperature goal of the Paris Agreement. The UK believes that it

³⁹ CD3.5.7

is paramount that ICAO adopt an ambitious long-term goal to help set the direction for future international and national policy, attract green investment, and show that the sector is taking credible action to tackle its emissions.”

2.3.11 The Jet Zero Strategy includes the following:

- a. Committing the sector to achieve Jet Zero by 2050, acknowledging there are multiple pathways to see it achieved.
- b. Introducing a CO_{2e} emissions reduction trajectory from 2025, that sets ambitious in-sector targets of 35.4 MtCO_{2e} in 2030, 28.4 MtCO_{2e} in 2040, and 19.3 MtCO_{2e} in 2050.
- c. Setting a target for domestic flights to reach net zero by 2040.
- d. Targeting airport operations to be zero emission by 2040. A Call for Evidence was made in autumn 2022 to gather information on the scope and implementation route to see this achieved.
- e. By 2025, committing to have at least five UK SAF plants under construction and a SAF mandate in place with a target of at least 10% SAF by 2030.

2.3.12 The Jet Zero Strategy states that progress against the trajectory will be published on an annual basis, followed by a major review of the Strategy every five years.

2.3.13 The six key measures identified for meeting the trajectory are: system efficiencies; SAF; zero emission flight; markets and removals; influencing consumers; and addressing non-CO₂.

2.3.14 The Jet Zero Strategy also highlights maximising opportunities – to use the Jet Zero transition to deliver wider benefits in jobs, skills, and investment that these new technologies will bring.

2.3.15 The Jet Zero Strategy is supported by the *Jet Zero Investment Flightpath*⁴⁰ which seeks to encourage investment in the UK to deliver low and zero emission technologies to decarbonise the aviation sector. The Jet Zero Investment Flightpath provides a 2035 Delivery Plan with a clear timeline and key milestones to measure implementation. The timeline includes 2025, with the start of the SAF mandate and the CO_{2e} emissions reduction trajectory, 2030 with zero emission domestic flights within the UK and at least 10% of UK jet fuel being SAF, and five year reviews of the Jet Zero Strategy in 2027 and 2032.

2.3.16 Underpinning the Jet Zero Strategy are four illustrative scenarios to net zero, taking into account: carbon price; system (airspace and fuel) efficiency improvements; uptake of SAF; uptake of zero emission propulsion technologies; and updated projections of air traffic movements (ATMs) and passenger movements (in millions of passengers per annum; mppa). The assumptions for each scenario are summarised in Table 2.1 .

TABLE 2.1 : Jet Zero Scenarios

Scenario	¹ Demand	² Carbon Price	³ Fuel efficiency improvements	SAF uptake	⁴ Zero Emission technology uptake
Scenario 1 (current trends)	74%	⁵ 'Mid' ETS price ⁶ 'Low' CORSIA price	1.5% per annum	2% by 2030 4% by 2040 10% by 2050	None by 2050
Scenario 2 (high ambition)	70%	'Mid' ETS price ⁷ 'Mid' CORSIA price	2.0% per annum	10% by 2030 22% by 2040 50% by 2050	None by 2030 5% by 2040 27% by 2050
Scenario 3 (high ambition, SAF breakthrough)	70%	As per Scenario 2	As per Scenario 2	10% by 2030 32% by 2040 100% by 2050	As per Scenario 2
Scenario 4 (high ambition, zero emission aircraft breakthrough)	70%	As per Scenario 2	As per Scenario 2	As per Scenario 2	None by 2030 11% by 2040 38% by 2050
Notes: 1. UK Terminal, growth in passengers, 2018 to 2050) 2. 2020 prices 5. £150/t in 2030, £378/t in 2050 6. £6/t in 2030					

⁴⁰ CD3.5.21

3. Efficiency improvement per annum, from 2017 to 2050	7. £6/t in 2030, £378/t in 2050
4. In terms of ATMs	

2.3.17 The first Jet Zero scenario “*represents a continuation of current trends in UK aviation*” with passenger demand increasing by 74% in 2050 from a UK total of 283 mppa in 2018. From a baseline of 34.83 MtCO₂e in 2018, in-sector emissions in Scenario 1 would increase to 37.01 MtCO₂e in 2050. The impact of carbon price, fuel efficiency improvements and SAF uptake would result in 37 MtCO₂e of residual emissions to be removed.

2.3.18 The second Jet Zero scenario “*high ambition*” includes higher carbon pricing and greater improvements in fuel efficiency, SAF uptake and zero emission technology. Passenger demand increases by 70% in 2050. In-sector emissions in Scenario 2 would reduce to 19.29 MtCO₂e in 2050. Scenario 2 was used in the Jet Zero Strategy to develop the in-sector carbon trajectory (see paragraph 2.3.21) and was also used as the basis for the GHG assessment presented in the 2022 ES.

2.3.19 The third and fourth Jet Zero scenarios build on Scenario 2, assuming greater uptake in SAF and zero emission technologies, respectively. By 2050, in-sector emissions in these scenarios would reduce to 8.55 and 11.28 MtCO₂e.

2.3.20 The Jet Zero Strategy dataset underpinning the development of these scenarios includes assumptions on airport capacity. These are reproduced in Annex A of this Topic Paper, including the footnote describing how this information should be interpreted. The Jet Zero Strategy assumes passenger numbers at the Airport could increase from 6.5 mppa in 2019 to 11 mppa by 2030 and this provides some context in terms of the S73 Application to increase capacity from 6.5 mppa to 9 mppa.

2.3.21 The Jet Zero Strategy also includes an in-sector trajectory of emissions, providing a benchmark for assessment. This trajectory is reproduced in Figure 2.1 below. The trajectory assumes emissions in 2050 would be 54% of those in 2027.

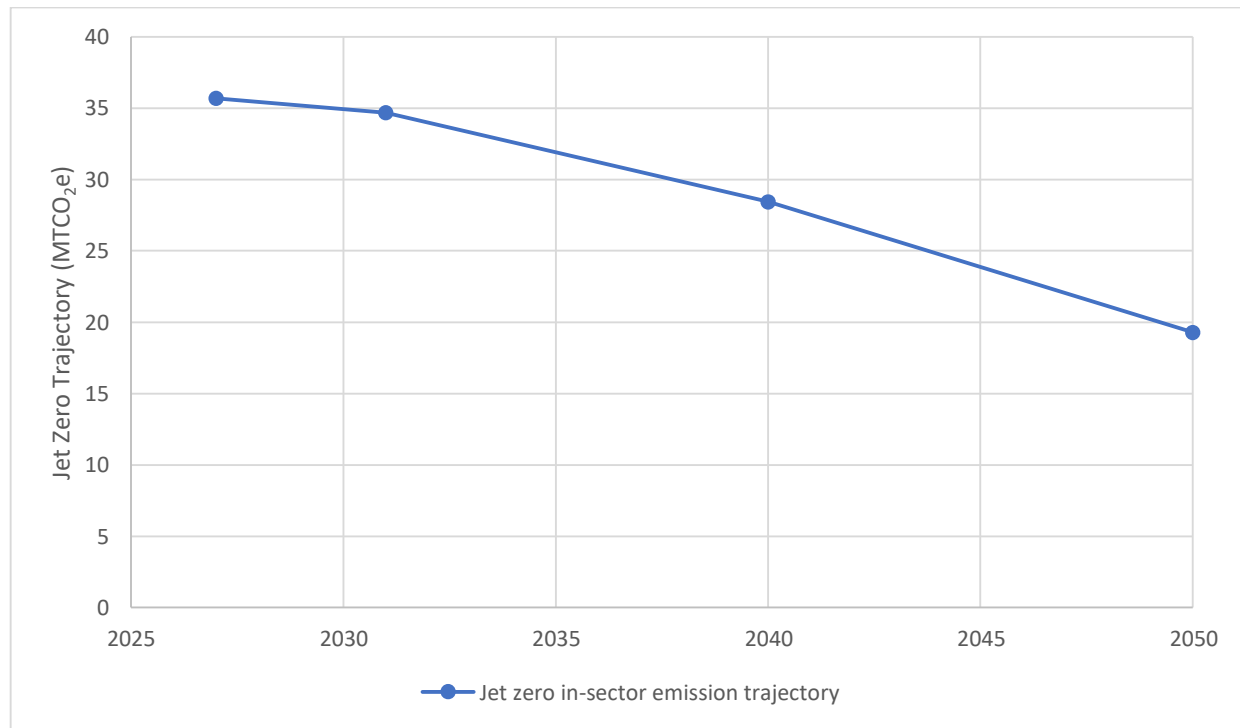


Figure 2.1 : Jet Zero Strategy in-sector trajectory

2.3.22 The Jet Zero Strategy includes a policy commitment to (page 74): *“support airport growth where it can be delivered within our environmental obligations”*. The approach to implementing this policy is clearly stated on the same page:

“The Government’s existing policy framework for airport planning in England – the Airports National Policy Statement (ANPS) and Beyond the horizon, the future of UK aviation: Making best use of existing runways (MBU) – have full effect, as a material consideration in decision making on applications for planning permission. Our analysis shows that it is possible to achieve our goals without the need to restrict people’s freedom to fly.”

2.3.23 In October 2021, the UK Government published its Net Zero Strategy to build back greener⁴¹, drawing on the Jet Zero Strategy with respect to aviation. An independent review of the Net Zero Strategy was published in September 2022⁴², concluding that the plan set out in the Net Zero Strategy was the right one and providing recommendations to strengthen delivery.

2.3.24 In July 2023, the UK Government provided a progress report on the implementation of the Jet Zero Strategy⁴³ highlighting the following achievements:

- a. [With the UK playing a leading role], the ICAO adopted the net zero 2050 CO₂ emissions goal for international aviation;*
- b. ZeroAvia reaches key milestone for zero emission flight;*
- c. Launched the 2040 Zero Emission Airport Target Call for Evidence;*
- d. [Announced] a significant package of announcements on SAF including: publication of the second SAF mandate consultation, outlining the proposed detailed design of a scheme that will seek to generate demand for SAF, provide an incentive to SAF producers and deliver carbon savings; launching a further round of the Advanced Fuels Fund, making a further £55.8m available to support UK SAF projects through to construction; and announcing the University of Sheffield as the delivery partner for the UK SAF Clearing House;*
- e. The [Jet Zero] Council published its Two-Year Plan showing the action needed in the coming years to support the delivery of Jet Zero by 2050; and*

⁴¹ CD3.9.25

⁴² CD3.9.26

⁴³ CD3.5.10

f. Published the government response to the Developing the UK ETS consultation, setting out a range of commitments including a tighter emissions cap and the future of aviation free allocation.

2.3.25 The Jet Zero – One Year On report also highlights (page 28) *“The New Aviation Propulsion Knowledge and Innovation Network (NAPKIN), a coalition of manufacturers, airports and universities, [who] published a report in November 2022 on the potential for hydrogen as a fuel for zero emission flight, with a focus on modelling the introduction of zero emission aircraft into regional and short- haul aviation within the UK.”* London City Airport is one of three UK airports that are part of NAPKIN.

2.3.26 The Jet Zero – One Year On report also *“confirmed that we believe the UK ETS is an appropriate long-term market for GGRs, subject to robust monitoring, reporting and verification and the management of wider impacts.”* (page 29) and *“continued to fund scientific research into aviation’s non-CO₂ effects”* (page 33).

2.3.27 Chapter 11 of the 2022 ES (CD1.18) confirms (Table 11-2, page 6) that *“the GHG assessment (Part A) has taken into account key government policies set out in the Net Zero Strategy for decarbonising the economy including the transport and power sectors both of which are relevant to the proposed development. Details on assumptions adopted are presented in Appendix 11.1”*

2.3.28 The Secretary of State for Transport’s decision on Manston Airport⁴⁴ published in August 2022 refers to both the Decarbonising Transport and Jet Zero strategies (see paragraphs 2.3.7 – 2.3.8 of this Topic Paper).

2.3.29 The Manston Decision highlights the conclusion reached by the Examining Authority that (paragraph 148):

⁴⁴ CD8.4

“.. the Development’s Carbon Dioxide contribution of 730.1 Kt CO₂ per annum (N.B. at full capacity on a worst-case scenario assessment), would according to the Applicant have formed 1.9% of the total UK aviation carbon target of 37.5 Mt CO₂ for 2050, will have a material impact on the ability of Government to meet its carbon reduction targets, including carbon budgets [ER 8.2.74]. The Examining Authority concluded that this weighs moderately against the case for development consent being given.”

2.3.30 The Manston Decision goes on to state (paragraph 149):

“However, the Secretary of State is satisfied that Government’s Transport Decarbonisation Plan and the Jet Zero Strategy, which set out a range of non-planning policies and measures that will help accelerate decarbonisation in the aviation sector, will ensure Government’s decarbonisation targets for the sector and the legislated carbon budgets can be met without directly limiting aviation demand. For this reason, he does not accept the Examining Authority’s view that carbon emissions is a matter that should be afforded moderate weight against the Development in the planning balance, and considers that it should instead be given neutral weight at the most.”

Non-CO₂ impacts

2.3.31 The UK Government acknowledges the non-CO₂ impact of aviation and recognises this impact is potentially greater than from CO₂ alone. In January 2021, research supported by the Department for Transport was published⁴⁵, highlighting the contribution to climate change made by carbon dioxide (CO₂), NO_x, water vapor, soot, sulfate aerosols and increased cloudiness due to contrail formation. The results of this work are summarised in Figure 2.2 below which compares the effective radiative forcing (i.e. the potential to contribute to global warming) of CO₂ and non-CO₂ components of air traffic movements. Some of these components have a global warming effect and some have a global cooling effect. The impact of CO₂ emissions on global warming is long term (100+ years) whereas

⁴⁵ CD3.9.33

non-CO₂ effects are shorter-lived and largely depend on sustained aviation activity to maintain them. Moreover, the magnitude of these effects can depend on the conditions under which the activity occurs (e.g. the extent that contrails are formed depends on the temperature and moisture content of the atmosphere), unlike for well-mixed GHGs which affect the climate independently of where they occur. Overall, the non-CO₂ impact of aviation is potentially greater than from CO₂ alone.

2.3.32 There is considerable uncertainty in the data and, with reference to paragraph 3.95 of Aviation 2050⁴⁶, the Government's view on non-CO₂ remains that it:

"continues to support work on non-CO₂ emissions, their trade-offs with CO₂ and possible mitigation measures, none of which are yet well enough understood to be able to form policy with confidence that aviation's total climate impact would be reduced".

2.3.33 The January 2021 research cited in paragraph 2.3.31 above was part of a wider analysis of the non-CO₂ climate impacts of aviation⁴⁷ which identifies a number of technology and operational options for limiting or reducing non-CO₂ impacts and potential policy measures. This work advises against using a single CO₂ emissions equivalent multiplier to account for non-CO₂ impacts as: (1) the magnitude of the multiplier depends on the metric chosen, and mostly, the time horizon considered; and (2) the use of a multiplier does not incentivise reductions of non-CO₂ emissions independently of CO₂ emissions, neither at the global/regional fleet level nor on an individual flight-by-flight basis (pp 8-9). The key mitigation options identified in this work included: reducing NO_x emissions; avoiding the formation of contrail cirrus; and reducing soot particle emissions (measured by number rather than by mass).

⁴⁶ CD3.5.4

⁴⁷ CD3.9.34

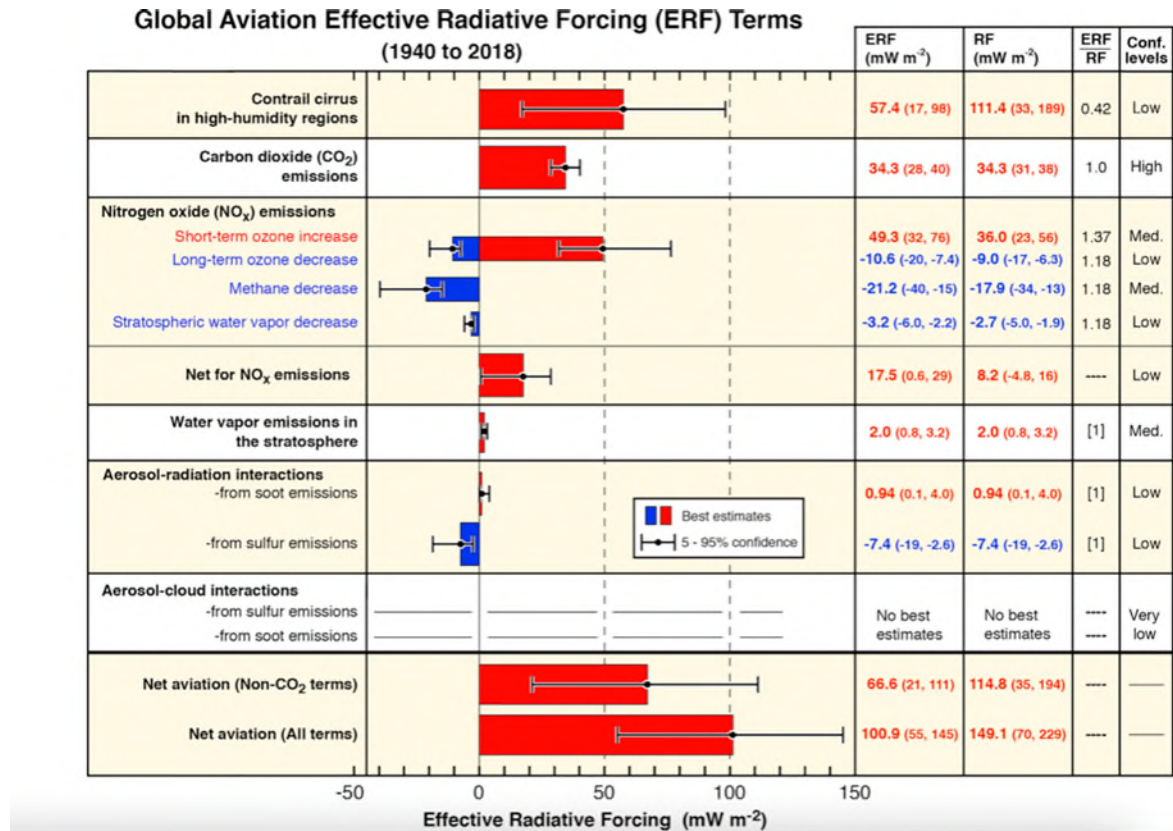


Figure 3.2 : Global Aviation Effective Radiative Forcing (ERF) Terms 1940 to 2018
(CD3.9.33)

2.3.34 In providing decisions on how to develop the UK ETS, the Government stated that⁴⁸:

The UK Government is committed to working with industry and academia to explore a means of estimating and tracking the non-CO₂ impacts from the UK aviation industry, and is scoping out a research programme to support this commitment. Through the programme, we will look to improve scientific understanding of aviation's non-CO₂ climate impacts. We are also aiming to investigate methods for monitoring and modelling these non-CO₂ impacts and evaluate the suitability of existing and alternative CO₂ equivalent conversion metrics to inform future policy development.

⁴⁸ CD3.9.3, p76

The UK ETS could play a meaningful role in better understanding and accounting for aviation's non-CO₂ impacts, for example, through introducing a monitoring and reporting system, and we will further explore the feasibility of this as an initial step towards pricing non-CO₂ impacts. The Authority would carry out a consultation exercise before bringing aviation's non-CO₂ impacts within scope of the UK ETS."

2.3.35 Examples of measures that can reduce non-CO₂ effects are listed in the CCC Sixth Budget report (p375) including: planning flight trajectories to avoid areas of meteorology that would give rise to increased contrail cirrus formation, although this requires consideration of the trade off with increased fuel consumption associated with route diversions; and the use of sustainable aviation fuels (SAF) which reduces volatile particulate emissions due to their lower aromatic and sulphur content⁴⁹.

2.4 National Policy: non-aviation emissions

Jet Zero Strategy

2.4.1 The Jet Zero Strategy⁵⁰ was published in July 2022 with policy commitments that include (page 65): *"our ambition remains for all airport operations in England to be zero emission by 2040"*. Supporting this is a Government funded technical report by Mott MacDonald and Connected Places Catapult⁵¹ which identifies how the top ten airports in England, including the Airport, could become carbon zero by 2040. Carbon zero specifically excludes the use of carbon removals or offsets (page 7, second paragraph). The scope of a carbon zero airport excludes flights and surface access journeys to/from the Airport (page 13, second paragraph, first numbered point). The plans to reduce carbon emissions at the Airport, based on the Airport's Net Zero Plan published in 2020, are listed on pages 26-27 of the Mott MacDonald / Connected Places Catapult report. These do not include

⁴⁹ CD3.9.13

⁵⁰ CD3.5.7

⁵¹ CD3.9.35

the Outline Carbon and Climate Change Action Plan prepared in support of the Application.

- 2.4.2 The Mott MacDonald / Connected Places Catapult report also considers each source in turn, identifying how each of these sources could become carbon zero. In almost all cases, the technology is available, or expected to be available. However, the Mott MacDonald / Connected Places Catapult report highlights the role of the Civil Aviation Authority (CAA) and commercial factors, including access to finance and affordability, as well as the role of Government in providing a regulatory framework. These are factors beyond the control of the Airport.

Decarbonising Transport

- 2.4.3 Published in July 2021, the UK Government's transport decarbonisation plan⁵² provides a series of commitments addressing: active transport (walking and cycling); zero emission buses, coaches, cars, vans, motorcycles and scooters; decarbonising railways; accelerating the decarbonisation of shipping and aviation, zero emission freight and logistics centres; local transport planning and funding; sustainable low carbon fuels; hydrogen; and research and development. A Progress Report has since been published, setting out what was achieved⁵³.
- 2.4.4 With respect to decarbonising aviation, the UK Government's transport decarbonisation plan includes the following commitments:
- a. We will consult on our Jet Zero strategy, which will set out the steps we will take to reach net zero aviation emissions by 2050.*
 - b. We will consult on a target for UK domestic aviation to reach net zero by 2040.*

⁵² CD3.5.5

⁵³ CD3.5.22

- c. *We are supporting the development of new and zero carbon UK aircraft technology through the Aerospace Technology Institute (ATI) programme.*
- d. *We will fund zero emission flight infrastructure R&D at UK airports.*
- e. *We will kick-start commercialisation of UK sustainable aviation fuels (SAF).*
- f. *We will consult on a UK sustainable aviation fuels mandate.*
- g. *We will support UK airspace modernization.*
- h. *We will further develop the UK Emissions Trading Scheme (ETS) to help accelerate aviation decarbonization.*
- i. *We will work with industry to accelerate the adoption of innovative zero emission aircraft and aviation technology in General Aviation.*
- j. *We will aim to agree an ambitious long-term global emissions reduction goal in the International Civil Aviation Organization by 2022.*

2.4.5 The Progress Report goes on to state that the Spending Review 2021 included announcements for: *£180m to support development of UK SAF for three years; a £400m partnership with Breakthrough Energy to support net zero technology, including advanced SAF; and £685m for the Aerospace Technology Institute (ATI) programme for three years.*

2.4.6 The Progress Report also states the Government's intentions: *to launch and deliver the new £165m SAF industry competition over the next three years and clarify our position on a SAF mandate and its development; and to work with other states to secure agreement at ICAO's 41st Assembly to an ambitious long- term aspirational goal for international aviation CO₂ emissions.*

Net Zero Strategy

2.4.7 In October 2021 the UK Government published its Net Zero Strategy⁵⁴ setting out policies and proposals for meeting carbon budgets, the 2030 Nationally Determined Contribution

⁵⁴ CD3.9.25

(NDC) and a vision for a decarbonised economy in 2050. The Strategy will be submitted to the United Nations Framework Convention on Climate Change (UNFCCC) as the UK's second Long-Term Low Greenhouse Gas Emission Development Strategy under the Paris Agreement.

2.4.8 The Net Zero Strategy is based on a range of scenarios (p17, my emphasis):

“Whilst there are a range of ways in which net zero could be achieved in the UK, we set out a delivery pathway showing indicative emissions reductions across sectors to meet our targets up to the sixth carbon budget (2033-2037). This is based on our current understanding of each sector’s potential, and a whole system view of where abatement is most effective. But we must be adaptable over time, as innovation will increase our understanding of the challenges, bring forward new technologies and drive down the costs of existing ones.”

2.4.9 Chapter 11 of the 2022 ES⁵⁵ confirms (Table 11-2, page 7) that *“the GHG assessment (Part A) has taken into account key government policies set out in the Net Zero Strategy for decarbonising the economy including the transport and power sectors both of which are relevant to the proposed development. Details on assumptions adopted are presented in Appendix 11.1”*

National Planning Policy

2.4.10 Chapter 2 of the 2023 National Planning Policy Framework (NPPF)⁵⁶ states that the purpose of the planning system is to contribute to the achievement of sustainable development, including mitigating and adapting to climate change, and moving to a low carbon economy.

⁵⁵ CD1.18

⁵⁶ CD3.2.1

2.4.11 Paragraph 152 of the NPPF states that:

“The planning system should support ... shap[ing] places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience...”

2.4.12 Paragraph 153 of the NPPF states that:

“Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.”

2.4.13 This paragraph also includes a footnote to explain that *“the risk of overheating from rising temperatures”* refers to being in line with the objectives and provisions of the Climate Change Act 2008.

2.4.14 Paragraphs 155 and 156 of the NPPF refer to increasing the use and supply of renewable and low carbon energy and heat, and to support community-led initiatives for renewable and low carbon energy.

2.4.15 In terms of national planning policy on carbon emissions, the UK aviation sector is responding to the need to decarbonise, with targets for UK airport operations to be carbon net zero by 2040 and the sector as a whole to be carbon net zero by 2050.

2.4.16 In the Appeal Decision for Stansted Airport⁵⁷, the Inspectors noted:

“The aviation emissions assessments of the ES and ESA are reported as CO₂ only rather than in the wider terms of carbon dioxide equivalent emissions (CO₂e), which also

⁵⁷ CD8.2

includes nitrous oxide (N₂O) and methane (CH₄), and which the Government has adopted for its sixth Carbon Budget. While it may have been beneficial to have used CO₂e in preference to CO₂ in the ES and ESA, this was not a matter raised by the Council during scoping, nor at any other stage prior to the exchange of evidence. The approach of the ES and ESA, in this regard, is also consistent with the DfT's 2017 Forecasts and with the MBU policy. Consequently, the approach adopted in the ES and ESA is not flawed or incorrect as such. In any event, the evidence indicates that were N₂O and CH₄ to have been included in the ES and ESA assessments, the results would not change significantly on the basis that N₂O and CH₄ account for in the region of only 0.8 to 1.0% of total international aviation CO₂e emissions."

And

"In addition to carbon and carbon dioxide equivalent emissions, other non-carbon sources have the potential to effect climate change. Nonetheless, they are not yet fully understood, with significant uncertainties remaining over their effects and how they should be accounted for and mitigated. There is currently no specific Government policy regarding how they should be dealt with and uncertainty remains over what any future policy response might be. Moreover, no evidence was put to the Inquiry which clearly and reliably establishes the extent of any such effects."

And

"In this context, therefore, the potential effects on climate change from non-carbon sources are not a reasonable basis to resist the Appeal Proposal, particularly bearing in mind the Government's established policy objective of making the best use of MBU airports."

2.4.17 Non-CO₂ emissions cannot be ignored and need to be acknowledged today so choices made in the technologies used to reduce aircraft emissions do not result in non-CO₂ impacts increasing; as the scientific understanding increases, the choices of technology will become better informed. This is fully acknowledged by UK Government.

2.4.18 The CCCAP submitted as part of the ES⁵⁸ includes a commitment for LCY to track non-CO₂ emissions.

⁵⁸ CD/1.51

3. Environmental Assessment

3.1 Introduction

3.1.1 This section describes the assessment of aviation and non-aviation emissions of carbon presented in the 2022 ES. A brief overview of the methodology for calculating carbon emissions is provided with more detail given to describing the different tests for significance used to determine the significance of aviation and non-aviation emissions. The results are presented for aviation emissions with reference to these significance tests in the context of national legislation and policy. The results for non-aviation emissions are also presented with their significance in the context of national, regional and local planning policy being discussed within the planning evidence of Mr Sean Bashforth (APP/3) on behalf of the Appellant.

3.2 Methodology

3.2.1 The full methodology is described in Appendix 11.1 of the 2022 ES⁵⁹. However, it is worth noting:

- a. Emissions of seven key GHGs were modelled⁶⁰ and, with reference to their individual global warming potential over 100 years, expressed as carbon dioxide equivalent (CO₂e) and hence, collectively referred to as carbon emissions.
- b. The assessment of carbon emissions is based on three future scenario years:
 - i. **2027**, the year when the 6.5 mppa cap is forecast to be exceeded in the DC Scenario;
 - ii. **2031**, the year proposed capacity of 9 mppa is forecast to be reached in the DC Scenario, and is the year when the net change in operational emissions between the DM and DC scenario is the greatest; and

⁵⁹ CD1.10 / CD1.18

⁶⁰ Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).

- iii. **2050**, the year the UK is targeted to have reached net zero, and the timeframe for the Jet Zero Strategy.
 - c. Emissions were also modelled for each year between 2024 and 2050 to allow comparison to carbon budgets.
 - d. Two sensitivity cases are also considered within the DC scenario as described in Chapter 3 of the 2022 ES, a Faster Growth and a Slower Growth scenario. These are considered for the operational assessment only. The Faster Growth scenario sees the proposed 9 mppa capacity reached in 2029, and in the Slower Growth scenario, the proposed 9 mppa capacity is not reached until 2033.
 - e. Activities were scoped into the carbon assessment with reference to the GHG Protocol⁶¹ and the Airport Carbon Accreditation Scheme⁶². Activities were scoped out with reference to IEMA guidance⁶³ (p19). The scoping is summarised in Table 3.1 .
- 3.2.2 In summary, the method of calculating carbon emissions follows published guidance and is of sufficient detail to differentiate between aviation and non-aviation emissions to determine compliance with relevant legislation and policy.

⁶¹ CD3.9.27

⁶² CD3.9.37

⁶³ CD3.9.36

TABLE 3.1 : Carbon Calculations - activities scoped in and scoped out

Scope	Construction / Decommissioning Phases	Operational Phase
Scope 1: These include emissions from activities owned or controlled by the Airport that release GHG emissions into the atmosphere. They are known as direct emissions and can be controlled by the Airport.	-	• LCY natural gas consumption • Airside vehicles and plant • Fire training activity • Refrigerant loss
Scope 2: These include emissions released into the atmosphere associated with the Airport's consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of the Airport's activities. Whilst the Airport does not directly emit these emissions it can control them through its energy management and purchasing decisions.	-	• LCY electricity consumption (grid connection)
Scope 3: These include emissions that are associated with the Airport but occur from sources which are not owned or controlled by the Airport and are not classed as Scope 2 emissions. These are indirect emissions; the Airport can influence these emissions but not control them.	• Construction traffic • Construction plant and machinery • Embedded carbon on construction materials	• Aircraft Landing and Take Off (LTO) cycle • Aircraft Climb, Cruise and Descent (CCD) cycle • Airside Auxiliary Power Units (APU) • Aircraft engine testing • Tenant grid electricity consumption • Third party airside vehicles and plant • Waste management • Staff (surface) transport • Passenger (surface) transport • LCY business (surface) travel • LCY business (air) travel
Scoped out: individual activities with emissions that are less than 1% of total emissions and where the total of all such exclusions are no more than 5% of total emissions, can be scoped out of the assessment.	• Decommissioning	• Land use • Potable water supply and treatment • Surface water • Passenger consumables

3.3 Definitions of Significance: non-aviation emissions

3.3.1 The IEMA guidance provides examples of impact significance criteria which are summarised in Table 3.2 below. In environmental statement terms, impacts that are *major adverse*, *moderate adverse* or *beneficial* are considered significant. Impacts that are *minor adverse* or *negligible* are considered not significant. Note that the concept of local or regional budgets is not relevant for the assessment of aviation emissions.

TABLE 3.2 : IEMA examples of significance criteria

Significance level	IEMA example
<i>Significant</i>	
Major adverse	The project's GHG impacts are not mitigated or are only compliant with do-minimum standards set through regulation, and do not provide further reductions required by existing local and national policy for projects of this type. A project with major adverse effects is locking in emissions and does not make a meaningful contribution to the UK's trajectory towards net zero.
Moderate adverse	The project's GHG impacts are partially mitigated and may partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type. A project with moderate adverse effects falls short of fully contributing to the UK's trajectory towards net zero.
Beneficial	A project's net GHG impacts are below zero and it causes a reduction in atmospheric GHG concentration, whether directly or indirectly, compared to the without-project baseline. A project with beneficial effects substantially exceeds net zero requirements with a positive climate impact.
<i>Not significant</i>	
Minor adverse	Minor adverse: the project's GHG impacts would be fully consistent with applicable existing and emerging policy requirements and good practice design standards for projects of this type. A project with minor adverse effects is fully in line with measures necessary to achieve the UK's trajectory towards net zero.
Negligible	Negligible: the project's GHG impacts would be reduced through measures that go well beyond existing and emerging policy and design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050. A project with negligible effects provides GHG performance that is well 'ahead of the curve' for the trajectory towards net zero and has minimal residual emissions.

3.3.2 The IEMA significance criteria refer to consistency with applicable existing and emerging policy requirements, good practice design standards and alignment with the UK's trajectory towards net zero.

3.4 Definitions of Significance: aviation emissions

3.4.1 In using the IEMA guidance, the 2022 ES includes five tests of significance for aviation emissions:

- a. Comparing the net change in aviation emissions between the DM and DC scenarios with the "Planning Assumption" that was taken into account when setting the 4th and 5th carbon budgets;
- b. Comparing the net change in aviation emissions between the DM and DC scenarios with the 6th carbon budget;
- c. Comparing the net change in aviation emissions between the DM and DC scenarios with the DfT's Jet Zero Strategy's high ambition in-sector trajectory;
- d. Consistency with national policy to reduce aviation emissions to net zero by 2050 (i.e. Jet Zero); and
- e. Consistency with ANPS (para 5.82) which states that: *"Any increase in carbon emissions alone is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the project is so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets, including carbon budgets."*

3.4.2 Table 3.3 refers to recently approved planning applications for UK airports. For each airport, the incremental increase is expressed as a percentage of the 37.5 MtCO₂ planning assumption, ranging between 0.175% and 1.950%. This provides a useful benchmark for assessing the significance of a net change in emissions.

TABLE 3.3 : Significance of aviation emissions – recent planning approvals

Airport	Passenger Growth	2050 total aviation emissions (Proposed Scheme) KtCO₂/yr	2050 incremental increase in aviation emissions KtCO₂/yr	Increase in aviation emissions as a % of 37.5 MtCO₂ planning assumption	Status (all subject to S106 agreement)
London Stansted	8 mppa (35 to 43 mppa)	1130 – 1860	70 – 120	0.187 – 0.320	Approved with 43 mppa cap
Southampton International	1mppa (2 to 3mppa)	367	Cannot be determined	Cannot be determined	Approved with 3 mppa cap
Bristol	2mppa (10 to 12mppa)	413 – 488	66 – 78	0.175 – 0.207	Approved
Manston	Not applicable (freight only)	730 (in 2040)	730 (in 2040)	1.95	Approved
London Luton Airport	1mppa (18 to 19mppa)	¹ 208 - 955	¹ 6 - 28	¹ 0.017 – 0.074	Approved
Total	12mppa	2848 - 4400	872 - 956	2.325 –2.551	

3.5 Definitions of Significance: non-aviation emissions

3.5.1 Chapter 11 of the 2022 ES also refers to the IEMA guidance to assess the significance of non-aviation emissions in the context of:

- a. Compliance with national policy;
- b. Compliance with regional policy;
- c. Compliance with local policy; and
- d. The robustness, timeliness and efficacy of mitigation.

3.5.2 The results of assessing non-aviation emissions are reported in this Topic Paper only and addressed further in the planning evidence prepared by Mr Bashforth (APP/3) for the Appellant.

3.6 Results: aviation emissions

- 3.6.1 Projected aviation emissions are reported in Tables 3.4, 3.5 and 3.6, and in Figure 3.1 below.
- 3.6.2 For both scenarios, aviation represents more than 95% of total emissions associated with the airport in 2027 and 2031, and more than 82% in 2050. Similarly, aviation emissions represent more than 91% of total emissions during the fourth, fifth and sixth carbon budget periods.
- 3.6.3 Aviation emissions for the Do Minimum scenario are projected to fall by 25.4% from 2027 to 2050 and by 62.7% from 2027 to 2050. Compared to the same Do Minimum scenario emissions in 2027, the Development Case would see an increase of 2.2% in 2033 and a 49.2% fall by 2050 (see Table 3.4).
- 3.6.4 Aviation emissions associated with the Do Minimum scenario are projected to be less than 1% of the Planning Assumption applicable for aviation in the fourth and fifth carbon budget periods (see Table 3.5). This is also the case for the Development Case with the incremental increase being 0.14% of the planning assumption in the fifth budget period.
- 3.6.5 Projected aviation emissions and inclusion within the UK ETS are presented in Table 3.6. In both the Do Minimum and Development Case scenarios, 98.9% or more of aviation emissions are covered by UK ETS in 2027. This increases to 99.3% or more in 2031 and 2050. The remaining emissions would be covered by CORSIA.
- 3.6.6 Figure 3.1 compares the projected aviation emissions for the Do Minimum and Development Case scenarios with the Jet Zero in-sector trajectory. This is done by

normalising emissions relative to emissions in 2027⁶⁴. This analysis reveals that in the Do Minimum scenario, projected aviation emissions would initially be behind the Jet Zero trajectory but would then outperform the trajectory with emissions in 2050 being 85% below the Jet Zero target. Aviation emissions in the Development Case would also start behind the trajectory, and to a greater extent than the Do Minimum, but would also end well below (81%) the Jet Zero target.

TABLE 3.4 : Operational Emissions in 2027, 2031 and 2050

Scope	Source	GHG emissions (CO ₂ e), tonnes								
		Do Minimum			Development Case			Difference		
		2027	2031	2050	2027	2031	2050	2027	2031	2050
3	Aircraft	314,326	301,683	24,772	344,090	374,727	34,381	29,763	73,045	9,609

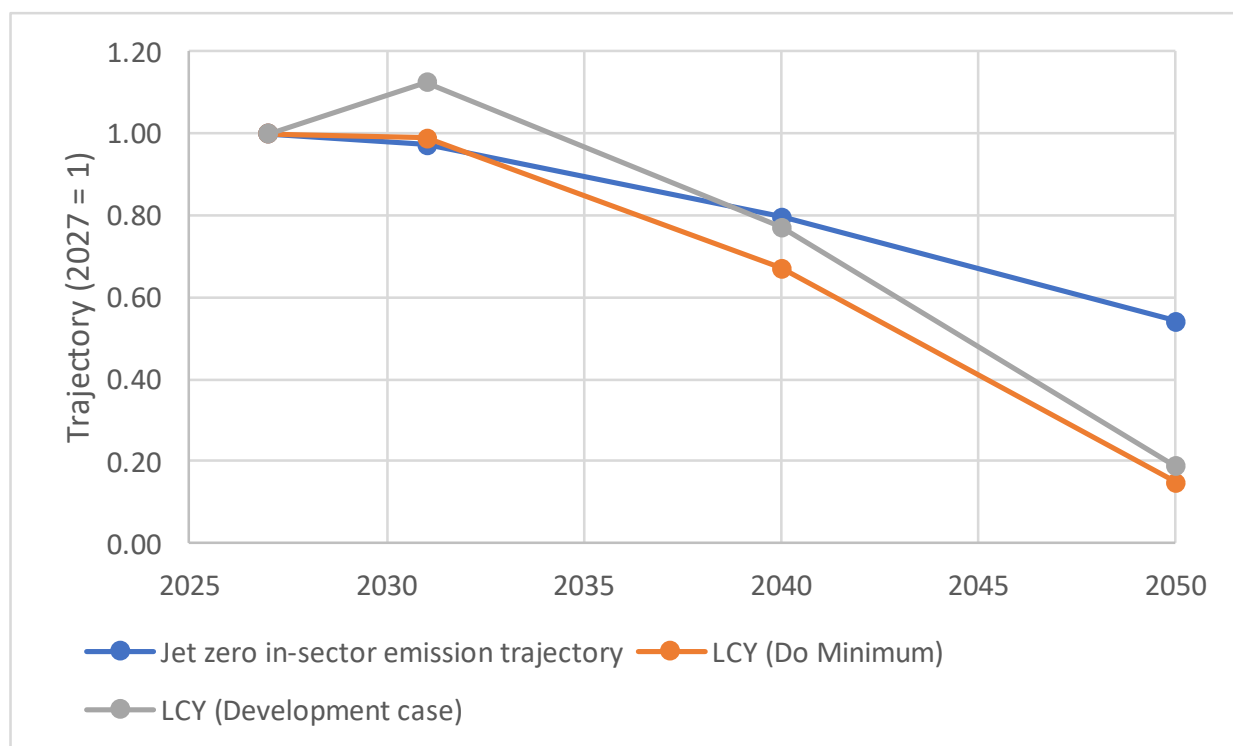
TABLE 3.5 : Operational Emissions in 4th, 5th and 6th Carbon Budget periods

Scope	Source	GHG emissions (CO ₂ e), tonnes								
		Do Minimum			Development Case			Difference		
		4 th 2023-2027	5 th 2028-2032	6 th 2033-2037	4 th 2023-2027	5 th 2028-2032	6 th 2033-2037	4 th 2023-2027	5 th 2028-2032	6 th 2033-2037
3	Aircraft	1,209,455	1,589,563	1,299,310	1,278,426	1,858,079	1,615,151	68,971	268,516	315,841
	<i>Aircraft emissions as a % of the planning assumption</i>	<i>0.65%</i>	<i>0.85%</i>	<i>na</i>	<i>0.68%</i>	<i>0.99%</i>	<i>na</i>	<i>0.04%</i>	<i>0.14%</i>	<i>na</i>

⁶⁴ Normalising the data involves dividing the emissions for each year by a reference year, in this case 2027. The normalized emissions for 2027 are therefore one (1).

TABLE 3.6 : Aircraft emissions and UK ETS

Destination	GHG emissions (CO ₂ e), tonnes								
	Do Minimum			Development Case			Difference		
	2027	2031	2050	2027	2031	2050	2027	2031	2050
UK ETS : Domestic	41,127 (13.1%)	39,366 (13.1%)	3,232 (13.1%)	41,252 (12.0%)	41,804 (11.2%)	3,836 (11.2%)	124	2,438	603
UK ETS: International	269,767 (85.8%)	260,081 (86.2%)	21,356 (86.2%)	299,509 (87.0%)	330,695 (88.0%)	30,341 (88.0%)	29,742	70,614	8.985
Not covered by UK ETS (covered by CORSIA)	3,432 (1.1%)	2,235 (0.7%)	184 (0.7%)	3,329 (1.0%)	2,228 (0.6%)	204 (0.6%)	-103	-7	21
Total	314,326	301,683	24,772	344,090	374,727	34,381	29,763	73,045	9,609

**Figure 3.1: Comparison with Jet Zero In-Sector Trajectory**

3.7 Results: construction emissions

3.7.1 Construction emissions were reported in the 2022 ES and are summarised in Table 3.7. Over the four year construction period, total emissions are estimated to be 47,148 TCO₂e during each of the fourth and fifth carbon budget periods with the majority (85.7%) associated with embedded carbon in materials.

TABLE 3.7 : Construction Emissions

Source	Construction Emissions (2025 to 2030) CO ₂ e (tonnes)	%
Construction site activity	5,156	5.5
Construction traffic	8,348	8.9
Embedded emissions in materials	80,791	85.7
Total	94,295	100

3.8 Results: operational emissions (non-aviation)

3.8.1 Operational emissions are reported in Chapter 11 of the 2022 ES and reproduced in Tables 3.8 and 3.9 below.

3.8.2 As the Airport moves to 100% renewable energy, operational emissions reduce to zero in 2031 and to zero in the sixth carbon budget period. Surface access emissions also decline as a result of increased electrification in the transport sector and the reduction in the carbon intensity of power generation.

In both the Do Minimum and Development Case, between 2027 and 2050, total airport emissions reduce by 63% and 59% in the Do Minimum and Development Cases, respectively.

TABLE 3.8 : Operational Emissions in 2027, 2031 and 2050

Scope	Source	GHG emissions (CO ₂ e), tonnes								
		Do Minimum			Development Case			Difference		
		2027	2031	2050	2027	2031	2050	2027	2031	2050
1 & 2	Airport Operational	1,634	0	0	1,911	0	0	276	0	0
3	Airport: other	264	207	74	321	265	100	57	58	25
	Surface access	12,597	10,604	5,336	15,851	14,527	7,258	3,254	3,922	1,922
Airport Total		14,495	10,812	5,410	18,082	14,792	7,357	3,587	3,980	1,947
3	Aircraft	314,326	301,683	24,772	344,090	374,727	34,381	29,763	73,045	9,609
All Sources Total		328,821	312,494	30,183	362,172	389,519	41,739	33,350	77,024	11,556

TABLE 3.9 : Operational Emissions in 4th, 5th and 6th Carbon Budget periods

Scope	Source	GHG emissions (CO ₂ e), tonnes								
		Do Minimum			Development Case			Difference		
		4 th 2023-2027	5 th 2028-2032	6 th 2033-2037	4 th 2023-2027	5 th 2028-2032	6 th 2033-2037	4 th 2023-2027	5 th 2028-2032	6 th 2033-2037
1 & 2	Airport Operational	7,647	3,250	0	8,240	3,713	0	593	464	0
3	Airport: other	1,179	1,147	758	1,294	1,411	976	114	263	218
	Surface access	61,508	54,952	41,801	64,762	71,398	57,160	3,254	16,446	15,359
	Construction	0	0	0	47,148	47,148	0	47,148	47,148	0
Airport Total		70,334	59,350	42,559	121,443	123,670	58,137	51,109	64,320	15,577
3	Aircraft	1,209,455	1,589,563	1,299,310	1,278,426	1,858,079	1,615,151	68,971	268,516	315,841
All Sources Total		1,279,789	1,648,913	1,341,869	1,399,870	1,981,749	1,673,287	120,081	332,836	331,418
<i>Aircraft emissions as a % of the planning assumption</i>		<i>0.65%</i>	<i>0.85%</i>	<i>na</i>	<i>0.68%</i>	<i>0.99%</i>	<i>na</i>	<i>0.04%</i>	<i>0.14%</i>	<i>na</i>
<i>All sources total as a % of the Carbon Budget</i>		<i>0.13%</i>	<i>0.17%</i>	<i>0.13%</i>	<i>0.15%</i>	<i>0.21%</i>	<i>0.17%</i>	<i>0.01%</i>	<i>0.03%</i>	<i>0.03%</i>

3.9 Assessment of significance: aviation emissions

3.9.1 With reference to the five tests of significance for aviation emissions included in the 2022 ES:

- a. The net change in aviation emissions between the Do Minimum and Development Case scenarios is 0.04% (2033) and 0.14% (2050) of the planning assumption taken into account when setting the fourth and fifth carbon budgets. This is considered very small and, when compared to the benchmark values in Table 3.3, not significant;

- b. The net change in aviation emissions between the Do Minimum and Development Case scenarios is 0.03% of the sixth carbon budget. This is considered very small and, when compared to the benchmark values in Table 3.3, not significant;
- c. The net change in aviation emissions between the Do Minimum and Development Case scenarios would extend the period that LCY would remain behind the Jet Zero in-sector trajectory but, by 2040, emissions would be increasingly ahead and, by 2050, would be 85% below the Jet Zero target. In the Development Case 99% of aviation emissions would be included within the UK ETS and the remainder within CORSIA. All of these emissions would be within the sixth carbon budget;
- d. The Jet Zero Strategy represents national policy to reduce aviation emissions to net zero by 2050 and was based on assumptions regarding the expansion of a number of UK airports, including LCY expanding to 11mppa by 2030 (see Annex A), and a range of decarbonisation measures including aircraft fuel efficiency, airspace management, use of SAF and the introduction of zero emissions aircraft. Both the Do Minimum and Development Cases are consistent with the Jet Zero Strategy; and
- e. Based on the above, the increase in carbon emissions associated with this development would not have a material impact on the ability of Government to meet its carbon reduction targets, including carbon budgets, and hence is consistent with the test set out in the ANPS.

3.10 Assessment of significance: non-aviation emissions

3.10.1 This is addressed in the planning evidence of Mr Sean Bashforth (APP/3) on behalf of the Appellant.

4. Conclusions

4.1.1 This Topic Paper shows, by reference to relevant legislation and policy, the 2022 ES, the outline CCCAP and the Revised Energy and Low Carbon Strategy, that:

- a. Aviation emissions are regulated at a national level, with reductions being driven by Government policies, incentives and participation in the UK ETS and CORSIA.
- b. Government aviation policy is to embrace innovation for a sustainable future, realising benefits for the UK.
- c. Government projections of how the UK aviation sector may reach carbon net zero include growth in passenger numbers, at London City and other airports.
- d. Reductions in surface transport emissions are being driven by national, regional and local transport planning.
- e. Using several tests of impact significance, the increase in airport capacity from 6.5 mppa to 9 mppa would not significantly increase carbon emissions and would not impede Government policy to achieve carbon net zero.
- f. In terms of non-CO₂ impacts, the Government position remains one of monitoring the science although inclusion of aviation emissions of NO_x within the UK ETS is being considered.

4.1.2 Overall, this Topic Paper concludes that aviation emissions of carbon is not a proper ground for refusing the application and the proposal complies with all relevant parts of national policy.

Annex A : Jet Zero Data

The screenshot below is taken from the 'AirportCapacities' tab of the Jet Zero Strategy Dataset

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1091868/jet-zero-strategy-dataset ods)

Air transport movement (ATM) and terminal passenger capacity assumptions by airport, 000s									
	Runway ATMs (000s)			Terminal passengers (000s)					
Airport	2019	2030	2040	2050	2019	2030	2040	2050	
Gatwick	291	346	383	386	0	0	0	0	2050
Heathrow	480	505	740	740	0	0	0	0	0
London City	111	151	151	151	6500	11000	11000	11000	11000
Luton	160	210	210	210	18000	32000	32000	32000	32000
Stansted	259	259	259	259	35000	43000	43000	43000	43000
Southampton	150	150	150	150	2500	3000	3000	3000	3000
Southend	53	53	53	53	0	0	0	0	0
Bournemouth	150	150	150	150	0	0	0	0	0
Bristol	150	150	150	150	10000	12000	12000	12000	12000
Exeter	150	150	150	150	0	0	0	0	0
Newquay	75	75	75	75	0	0	0	0	0
Cardiff	105	150	150	150	0	0	0	0	0
Norwich	175	175	175	175	0	0	0	0	0
Birmingham	206	206	206	206	0	0	0	0	0
East Midlands	264	264	264	264	0	0	0	0	0
Doncaster Sheffield	57	57	57	57	0	0	0	0	0
Humberside	150	150	150	150	0	0	0	0	0
Leeds-Bradford	150	150	150	150	5000	7000	7000	7000	7000
Liverpool	213	213	213	213	0	0	0	0	0
Manchester	324	400	500	500	0	0	0	0	0
Newcastle	213	226	226	226	0	0	0	0	0
Teesside	150	150	150	150	0	0	0	0	0
Aberdeen	175	225	225	225	0	0	0	0	0
Edinburgh	150	225	230	261	0	0	0	0	0
Glasgow	226	226	226	226	0	0	0	0	0
Inverness	150	150	150	150	0	0	0	0	0
Prestwick	150	150	150	150	0	0	0	0	0
Belfast City	48	48	48	48	0	0	0	0	0
Belfast International	260	260	260	260	0	0	0	0	0

Note: All scenarios presented in the Accompanying analytical document to the Jet Zero Strategy use the same airport capacity assumptions, as set out above. These assumptions do not represent any proposal for limits on future capacity growth at specific airports, nor do they indicate maximum appropriate levels of capacity growth at specific airports for the purpose of planning decision-making. These figures do not represent expected passenger numbers, just the upper limit assumed for each airport as an input to the modelling process.

LONDON CITY AIRPORT - CADP1 S73 APPLICATION - APPEAL

EIA Public Health and Wellbeing - Technical Note

12500
London City Airport -
CADP1 S73 Application
- Appeal
6.0
06 November 2023

REPORT

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1 INTRODUCTION

1.1 Qualifications and Experience

- 1.1.1 My name is Ryngan Pyper (MA PGDip CEnv MIEMA PFPH), Director of Health and Social Impact at RPS. I have over 18 years' experience as a professional consultant and am a competent expert for statutory assessment of Human Health as part of Environmental Impact Assessment (EIA).
- 1.1.2 I am an international expert on Health Impact Assessment (**HIA**), including health assessment integrated as part of EIA. I work with the private and the public sector, including to provide health input into major infrastructure schemes. I advise Government and professional bodies on good practice.
- 1.1.3 My approach to assessment includes a focus on vulnerable population groups and considering the potential for significant health inequalities. During my career I have provided assessments for vulnerable adults and children, including within the criminal justice system, for the homeless and for those taken into care by local authorities.
- 1.1.4 Notable publications:
- First author of the Institute of Environmental Management and Assessment (**IEMA**) Guides: Determining Significance for Human Health in EIA (IEMA, 2022b) and Effective Scoping of Human Health in EIA (IEMA, 2022a). These are the guidance documents for EIA health assessments in the UK.
 - First author of the World Health Organization research report: Learning from practice, Case studies of health in strategic environmental assessment and environmental impact assessment across the WHO European Region (World Health Organization, 2022).
 - First author of the Institute of Public Health guidance on Health Impact Assessment, Standalone HIA and health in Environmental Assessment. 2021. (Pyper et al., 2021)
- 1.1.5 Qualifications:
- Postgraduate Diploma (distinction) – Public Health, University of York. I specialised in epidemiology, health statistics, public health ethics, infection & disease, health & social behaviour, and qualitative methods.
 - Postgraduate Diploma (distinction) – Legal Practice, University of Oxford
 - MA & BA Hon – Biological Sciences, University of Oxford, including flight dynamics and quantitative methods.
- 1.1.6 Memberships:
- Honorary Research Fellow and Member of the World Health Organization Collaborating Centre on Health in Impact Assessment at the University of Liverpool.
 - Faculty of Public Health (FPH) – registered public health Practitioner and member of the European Public Health Association (EUPHA).
 - IEMA, Full Member, Health Working Group, Chartered Environmentalist.
 - International Association for Impact Assessment, Health Section Chair
- 1.1.7 My experience of aviation projects includes work for Heathrow, Gatwick, Leeds Bradford and Bristol Airport. As an expert witness on aviation projects, I have demonstrated robust health assessment. I am the author of the City Airport Development Programme (**CADP1**) S73 Application Environmental Statement (**ES**), Chapter 12: Public Health and well-being, December 2022 (CD1.19).

1.2 Scope of Technical Note

1.2.1 This Technical Note is provided on behalf of London City Airport Limited (“**LCY**” or the “**Airport**”). It relates to the Appeal against the London Borough of Newham (“**LBN**”) refusal of LCY’s Section 73 application reference 22/03045/VAR (“**Section 73 Application**”) for:

“variation of Conditions 2 (Approved documents), 8 (Aircraft Maintenance), 12 (Aircraft Take-off and Land Times, 23, 25, 26 (Daily limits), 35 (Temporary Facilities), 42 (Terminal Opening Hours), 43 (Passengers) and 50 (Ground Running) to allow up to 9 million passengers per annum (currently limited to 6.5 million), arrivals and departures on Saturdays until 18:30 with up to 12 arrivals for a further hour during British Summer Time (currently allowed until 12:30), modifications to daily, weekend and other limits on flights and minor design changes, including to the forecourt and airfield layout attached to planning permission 13/01228/FUL)”

1.2.2 The Section 73 Application relates to planning permission 13/01228/FUL which was allowed on appeal APP/G5750/W/15/3035673 on 26th July 2016 (“**CADP1**”) (CD2.7).

1.2.3 The Section 73 Application changes are referred to as the ‘Proposed Amendments’. The CADP1 scheme as amended by the Proposed Amendments constitutes the “Proposed Development”.

1.2.4 My evidence relates to the EIA Human Health effects of the Proposed Amendments, with a focus on responding, from the public health perspective, to confirm that LBN’s reason for refusal (“**RFR**”) 1, which cites potential for significant harm to residential amenity, is not health related harm. I also respond to health-related issues raised by Rule 6 parties and other third parties.

1.2.5 My evidence references health assessment for the Proposed Development set out in:

- Chapter 12 of the ES included with the 22/03045/VAR planning application, dated December 2022 (hereafter the “**Health Assessment**”) (CD1.19). The assessment is part of the EIA required under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended); and
- The 2015 Health Impact Assessment (HIA) (hereafter the “**2015 HIA**”) (CD2.1.4) undertaken alongside the 2015 Updated Environmental Statement (UES) relating to planning permission 13/01228/FUL allowed on appeal APP/G5750/W/15/3035673 dated 26th July 2016 (CD2.7).

1.2.6 Reference is made to LBN’s conclusions and technical review of the Health Assessment set out in:

- Review of the Environmental Statement for London City Airport, Final Report, prepared by LUC, June 2023 (hereafter the “**LUC ES Review**”) (CD4.5.10). The relevant paragraphs of the LUC ES Review for the Health Assessment are paragraphs 11.1 to 11.19 (the Health Assessment overall) and C.48 to C.86 (specific discussion of air quality health effects). It is noted that paragraphs C.48 to C.86 of the Final ES Review supersede paragraphs 11.20 to 11.67. Table 15.1 confirms the technical matters raised and resolved.
- LBN Officer’s Report (OR) to the LBN Strategic Development Committee dated 10th July 2023 (hereafter the “**OR**”) (CD4.3.1). Paragraphs 282 to 284 relate to the Health Assessment.

1.2.7 Reference is also made to agreement reached with LBN and their technical advisors set out in:

- The final Statement of Common Ground (“**SoCG**”) dated 23 October 2023 between LBN and LCY (CD11.2). Section 13 of which discusses the position agreed on Health and section 17 (item k) confirms the area where there is not agreement on health in noise policy terms, but that this does not relate to the conclusions of the Health Assessment, which are agreed.

1.3 Structure of the Technical Note

1.3.1 The Technical Note is structured as follows:

- Section 2: sets out the RFR, SoCG position and the role of the health evidence;
- Section 3: summaries the legislative and policy context, as well as relevant guidance;
- Section 4: sets out an overview of the Health Assessment;
- Section 5: sets out the health evidence responding to RFR 1;
- Section 6: sets out the health evidence responding to Rule 6 Party HACAN East;
- Section 7: sets out my conclusions; and
- Section 8: provides references.

1.4 Declaration

1.4.1 I adhere to Codes of Professional Conduct, including IEMA ("IEMA Code of Professional Conduct,"), Society for the Environment ("Society for the Environment Code of Professional Conduct,"), and the IAIA ("IAIA Professional Code of Conduct,"). My evidence is honest, and I have applied my knowledge and skills to the best of my ability.

1.4.2 The evidence which I have prepared and provide for this Appeal reference APP/G5750/W/23/3326646 in this technical note is true and has been prepared and is given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.

2 REASONS FOR REFUSAL (RFR)

RFR 1

2.1.1 The LBN Decision Notice 24th July 2023 (CD4.4.1) RFR 1 states:

“The proposal, by reason of the additional morning and Saturday flights, and reduction of the existing Saturday curfew would result in a new material noise impact which would result in significant harm to the residential amenity of nearby residential properties. This would be contrary to policies D13 and T8 of The London Plan (2021) and policies SP2 and SP8 of the Newham Local Plan (2018).” [Emphasis added].

SoCG

2.1.2 Section 13.0 of the final SoCG dated 23 October 2023 between LBN and LCY (CD11.2) confirms:

“13.1 LBN does not consider health impacts to be a reason for refusal...”

“There is agreement on the noise assessment conclusions (sections 12.9, 12.10, 12.20 and 12.21) in Chapter 12 of the ES (Public health and wellbeing) that there would be minor adverse (not significant) population health effects.”

2.1.3 LBN does not consider noise health impacts to be a reason for refusal subject to:

- 1) LBN considers the loss of Saturday afternoon curfew as significant in terms of noise policy; and
- 2) LBN considers that significant effects from noise may need to be identified where there is a 1 dB change or more above the relevant SOAEL threshold (based on the outcome of the Luton S73 decision).

“However, LBN has confirmed that these are noise policy matters covered earlier in [the] SoCG, they do not relate to amenity and they are not relevant to the community health assessment presented in Chapter 12 of the ES which is common ground.”

Role of the health evidence

2.1.4 Whilst the Health Assessment is not disputed by LBN and health is not cited as a reason for refusal by LBN; the health evidence provided herein:

- confirms that there is not a public health dimension to RFR 1;
- provides an input to the planning balance in relation to significant beneficial health effects; and
- responds to issues raised by Rule 6 and third parties relevant to health in their respective Statements of Case (**SoC**) and other representations.

3 LEGISLATIVE AND POLICY CONTEXT

3.1 Legislation

- 3.1.1 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (hereafter “**the EIA Regulations**”) at regulation 4(2) set out the health assessment requirement: “*The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors— (a) population and human health; ...*”.
- 3.1.2 A compliant assessment of Human Health has been undertaken under the EIA Regulations. This is not disputed by LBN in the Decision Notice (CD4.4.1) or the OR (CD4.3.1), by their consultants in the LUC ES Review (CD4.5.10), or in the SoCG dated 23 October 2023 between LBN and LCY (CD11.2).

3.2 Relevant National Planning Policy

- 3.2.1 This section considers key health related policy relevant to the Appeal. See ES Chapter 12 section 12.2 for further policy references (CD1.19).

National policy

- 3.2.2 The National Planning Policy Framework (“**NPPF**”) (September 2023) (CD3.2.1) (Ministry of Housing, Communities and Local Government, 2023) sets out the planning policies for England. Promoting healthy and safe communities is a central theme, whereby the NPPF states:

Paragraph	Policy wording [emphasis added]	Application to the Proposed Development
Paragraph 185	“ <i>Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment... In doing so they should: mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development, avoid noise giving rise to significant adverse impacts on health and the quality of life; identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason...</i> ”.	It has been shown that there are not significant adverse population health effects in this case. Whilst tranquil areas are to be preserved due to amenity value, there is no suggestion that the residential areas near the Airport are tranquil areas within the meaning of this policy.
Paragraph 188	“ <i>The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively.</i> ”	In this case that there is an existing airport indicates the use of land is acceptable (there is no additional land being developed).

Aviation Policy Framework (2013) (CD3.5.1)

- 1.1.1 The Aviation Policy Framework (Department for Transport, 2013) notes:

Paragraph	Policy wording [emphasis added]	Application to the Proposed Development
Paragraph 5	<i>"The aviation sector is a major contributor to the economy and we support its growth within a framework which maintains a balance between the benefits of aviation and its costs, particularly its contribution to climate change and noise..."</i>	Health benefits should be given weight within the planning balance and weighed against adverse impacts in respect of noise.
Paragraph 3.21	<i>"The NPPF expects local planning policies and decisions to ensure that new development is appropriate for its location and the effects of pollution – including noise – on health.... In the same way that some people consider themselves annoyed by aircraft noise even though they live some distance from an airport ..., other people living closer to an airport seem to be tolerant of aircraft noise and may choose to live closer to the airport to be near to employment or to benefit from the travel opportunities".</i>	This indicates that proximity alone is not definitive in terms of subjective response to noise. Furthermore, the benefits of airports are also part of people's response to aviation noise.

Policy Paper, Overarching Aviation Noise Policy, DfT, March 2023 (CD 3.5.8)

1.1.2 In March 2023 the Department for Transport published a short policy paper on their overarching aviation noise policy (CD3.5.8), as an interim statement of overarching noise policy to help frame the Night Restrictions objective for Night Restrictions Consultation that was launched, ahead of a full noise policy statement expected later in 2023.

1.1.3 The policy paper states (there are no paragraph numbers):

Paragraph	Policy wording [emphasis added]	Application to the Proposed Development
NA	'The impact of aviation noise must be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise' [emphasis added]. 'We consider that "limit, and where possible reduce" remains appropriate wording. An overall reduction in total adverse effects is desirable, but in the context of sustainable growth an increase in total adverse effects may be offset by an increase in economic and consumer benefits' [emphasis added]. 'In circumstances where there is an increase in total adverse effects, "limit" would mean to mitigate and minimise adverse effects, in line with the Noise Policy Statement for England.' <i>"...the environmental impact of aviation must be mitigated as much as is practicable and realistic to do so. We have ... introduced this phrase into our overarching policy."</i>	The policy confirms that mitigating and minimising adverse effects is appropriate in cases where there is an increase in noise. Noise increases may also be offset by economic and consumer benefits. The Proposed Development includes substantial and secured embedded mitigation and compensation including an enhanced sound insulation scheme. It would not be practical or realistic to mitigate effects in outdoor private spaces, though control at source is achieved though conditions discussed in detail in the proof of Richard Greer.

Noise Policy Statement for England (NPSE) (Department for Environment, Food & Rural Affairs, 2010) (CD3.7.2)

1.1.4 The NPSE represents the Government's policy position on noise management decisions (CD3.7.2).

Paragraph	Policy wording [emphasis added]	Application to the Proposed Development
Paragraph 2.1	"Noise is an inevitable consequence of a mature and vibrant society".	The context.
Paragraph 2.7	"... the application of the NPSE should enable noise to be considered alongside other relevant issues and not to be considered in isolation . In the past, the wider benefits of a particular policy, development or other activity may not have been given adequate weight when assessing the noise implications".	The socio-economic and consumer benefits must be considered alongside noise effects.
Paragraph 1.8	"The vision and aims of NPSE should be interpreted by having regard to the set of shared UK principles that underpin the Government's sustainable development strategy. ... [These include:] Ensuring a Strong Healthy and Just Society – Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity for all. ... Achieving a Sustainable Economy – Building a strong, stable and sustainable economy which provides prosperity and opportunities for all , and in which environmental and social costs fall on those who impose them (polluter pays), and efficient resource use is incentivised".	Noise effects must be placed in the context of a wider sustainable development agenda, including the diverse needs of all people, not just those neighbouring the Airport. This also includes that linked economic effects also need to be given weight when considering aviation noise.
Paragraph 2.18	"There is a need to integrate consideration of the economic and social benefit of the activity or policy under examination with proper consideration of the adverse environmental effects, including the impact of noise on health and quality of life. This should avoid noise being treated in isolation in any particular situation, ie not focussing solely on the noise impact without taking into account other related factors".	Noise effects, including on health and quality of life, must not be treated in isolation from the economic and social benefits of aviation.

3.3 Guidance

- 3.3.1 There is a clear basis for assessing Human Health in EIA and this is set out by the Institute of Environmental Assessment and Management (IEMA) in their two November 2022 publications:
- Pyper, R., Lamming, M., Beard, C., Waples, H., Birley, M., Buroni, A., Douglas, M., Turton, P., Hardy, K., Netherton, A., McClenaghan, R., Barratt, T., Bhatt, A., Fenech, B., Dunne, A., Hodgson, G., Gibson, G., Purdy, J., Cave, B. (2022) IEMA Guide: **Effective Scoping of Human Health in Environmental Impact Assessment**.(CD 3.8.3) ("IEMA, 2022a")
 - Pyper, R., Waples, H., Beard, C., Barratt, T., Hardy, K., Turton, P., Netherton, A., McDonald, J., Buroni, A., Bhatt, A., Phelan, E., Scott, I., Fisher, T., Christian, G., Ekermawi, R., Devine, K., McClenaghan, R., Fenech, B., Dunne, A., Hodgson, G., Purdy, J., Cave, B. (2022) IEMA Guide: **Determining Significance for Human Health in Environmental Impact Assessment**.(CD 3.8.2) ("IEMA, 2022b")
- 3.3.2 In addition to academic institutes, local government and private sector consultancies, the authors of these guides (as set out in their respective acknowledgement sections) include individuals from:
- UK Health Security Agency;
 - Department of Health and Social Care Office for Health Improvement and Disparities;
 - Institute of Public Health (covering Northern Ireland and Republic of Ireland);
 - Public Health Wales; and
 - Public Health Scotland.
- 3.3.3 The IEMA guidance is therefore established as a consensus position from across public health stakeholders for EIA as a technical assessment in the UK.
- 3.3.4 The IEMA guides adopt and build on the approach that was previously set out by the International Association of Impact Assessment (IAIA) and European Public Health Association (EUPHA) (Cave et al., 2020) (CD3.8.6) and by the Institute of Public Health (Pyper et al., 2021) (CD3.8.5).
- 3.3.5 The Health Assessment follows the IEMA guidance (IEMA, 2022b); (IEMA, 2022a). This is not disputed by LBN in the Decision Notice (CD4.4.1), OR (CD4.3.1) or by its consultants in the LUC ES Review (CD4.5.10).
- 3.3.6 The SoCG dated 23 October 2023 reflects that the methods of assessment, receptors (including close to the Airport), evidence cited, and conclusions reached for population health are agreed between LBN and LCY (CD11.2).
- 3.3.7 The National Planning Practice Guidance (NPPG) (Department for Levelling Up, Housing and Communities, 2022) supports the NPPF and provides guidance across a range of topic areas, including 'healthy and safe communities' (CD3.8.4)
- 3.3.8 As stated in the NPPG, engagement with individuals and/or organisations, such as the relevant Director(s) of Public Health, will help ensure local public health strategies and any inequalities are considered appropriately.
- 3.3.9 There has been engagement with the LBN Deputy Direct of Public Health on 14th and 20th September 2022 to agree the scope and methods of the Health Assessment, including consideration of local public health intelligence and priorities. This is set out in ES Chapter 12 (CD1.19). That there has been appropriate engagement with public health stakeholders is agreed between LBN and LCY in the SoCG dated 23 October 2023 (CD11.2).

4 OVERVIEW OF THE HEALTH ASSESSMENT

4.1 Framing conclusion on health in EIA

The context of a population health approach having been followed in the Health Assessment

- 4.1.1 Before getting into the conclusions of the Health Assessment, it is informative to consider the basis of assessment for Human Health in EIA. The Human Health assessment is not simply a collation and restating of the conclusions of other technical assessments of the ES; but rather provides further analysis to assess the public health implications of the finding of those other topic areas.
- 4.1.2 An area of general clarification is that Human Health in EIA takes a ‘population health’ approach.
- 4.1.3 Relevant definitions of health and population are as follows:
- ‘Health’ is a *“state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”* (CD3.8.13) (World Health Organization, 1948)
 - ‘Population health’ refers to the health outcomes of a group of individuals, including the distribution of such outcomes within the group (CD3.8.10) (Kindig and Stoddart, 2003).
- 4.1.4 The Faculty of Public Health is the UK professional body for public health professionals. Public health is *“the science and art of preventing disease, prolonging life and promoting health and wellbeing, through the organised efforts of society”* (CD3.8.8) (Faculty of Public Health, 2020). Public health practice is population-based (Faculty of Public Health, 2016) (CD3.8.9). Health impact assessment is a public health specialist area of practice (Faculty of Public Health, 2020).
- 4.1.5 I show that EIA takes a population health approach. I reference guidance, the academic and practitioner literature that a population health approach is normal, and indeed best and established, practice.
- 4.1.6 In relation to EIA Human Health analysis and conclusions, IEMA guidance (IEMA, 2022b) paragraph 1.9 states without ambiguity (CD3.8.2):
- “The guidance confirms that a population health approach should be taken when determining significance.”*
- 4.1.7 Additional discussion of why a population health approach is appropriate is set out in section 5, paragraph 5.2, of the guidance (IEMA, 2022b). This includes the statement that:
- “EIA analysis at the level of individuals would likely mean that all determinants of health conclusions, positive or negative, would be significant on all projects because of the effects to some particularly sensitive individuals. This would be contrary to supporting decision-makers in identifying the material issues. Assessment of EIA significance at the level of individuals is not proportionate”. (IEMA, 2022b, CD3.8.2)).*
- 4.1.8 In simple terms, medical doctors and other primary and secondary healthcare professionals deal with treating the health outcomes of individuals. Public health, including health impact assessment of development proposals, deals with the health outcomes of populations, including inequalities for vulnerable sub-populations.

The counterfactual position on population health

- 4.1.9 I am clear, as is guidance, that although populations are comprised of individuals, the utility of an EIA health analysis is in providing a population level understanding of effects. To do otherwise would be simply to restate for every health issue that there would be a wide range of individual

level responses based on behaviours, circumstances, genetics, chance etc. Such conclusions would have limited value.

- 4.1.10 Guidance (IEMA, 2022b); (IEMA, 2022a) and public health consensus (Cave et al., 2020); (Cave et al., 2021) is clear that a population health approach should be taken, however it is informative to explore the alternative.
- 4.1.11 A public health, population level, approach is distinct from some other EIA specialism methods, such as air quality and noise. Such assessments identify individual receptors, such as dwellings, in order to quantify the magnitude of effects at indicative locations. Such receptor level assessments can help in the characterisation of the magnitude of the population health effects, e.g. by broadly indicating population extent. However, to accurately conclude on health outcomes at individual receptor locations would require receptor level sensitivity data, e.g. individual medical histories. There are ethical considerations, and laws, that restrict access to individual medical histories and the publication of any subsequent, patient identifiable, conclusions.
- 4.1.12 To take a health assessment to an individual receptor level, whilst possible, would be a large and lengthy collaboration of specialisms, including from the NHS due to the sensitive nature of data. This would have substantial time and cost implications, likely exceeding the costs of most development projects. For a given development project, the output would likely be a demonstration of small changes in individual's risk factors, with high margins of error. Such data would also need to be aggregated and anonymised to inform a planning decision. This brings us back, the long way round, to a population health conclusion. It would rarely be proportionate for EIA to undertake such an individual level analysis.
- 4.1.13 By contrast there are anonymised population level statistics on relevant sensitivities. These allow a proportionate means of analysis to reach population level conclusions.
- 4.1.14 It is also worth noting that population level conclusions can also be more accurate. Both individual and population level analysis consider the change in 'risk factors' that affect health outcomes. This is a statement about how the project affects the probability of a change in health outcomes. In public health epidemiology this is termed 'relative risk'. Being a prospective assessment (before the event), EIA analysis is not able to state with certainty that such a change in health outcomes will in fact occur in a given individual. Such predictions can, however, be relatively accurate across a population, particularly where vulnerability is taken into account. At the individual level the uncertainties are higher.
- 4.1.15 My view, supported by consensus from public health and impact assessment publications, is that a project can respond to effects that are limited to the level of individuals, or small groups of individuals, through mitigation, including avoiding and reducing effects, or compensation as a last resort. However, to provide actionable information to decision makers, significance conclusions should be on the basis of whether or not there are likely to be population level effects, including sub-population analysis in relation to inequalities. This was the approach taken in the Health Assessment.
- 4.1.16 Notwithstanding the points made above advocating a population level approach, consistency in whatever method is adopted is important. If the view is advanced by Rule 6 or third parties that there are significant health effects on the basis of a very small minority of individuals within a population experiencing adverse effects, then it is only appropriate to take a consistent approach with beneficial effects.
- 4.1.17 For example, if the significant adverse effects are claimed based on the individuals who may be particularly sensitive within the population affected by the change, then a consistent approach should be taken in relation to those who would be particularly sensitive to the beneficial effects of the project.
- 4.1.18 If a consistent approach is taken in lowering the threshold for significance based on affected population size, this would need to be applied across the assessment. Although I do not take this

view, working this through by way of example shows: if the noise effects for vulnerable groups are considered to be moderate adverse, rather than minor, and therefore significant; then similarly the socio-economic benefits would be more significant. This would not change the overall balance of the conclusions presented in the ES.

- 4.1.19 To sum up this section. I am clear that the EIA Health Assessment considers the population health effects of a project. Public health and impact assessor consensus is that EIA takes a population health approach.
- 4.1.20 Even if effects to small numbers of individuals are given more weight; consistently applied, this should not change the balance of conclusions presented in the ES.

The context of vulnerable individuals and groups have been accounted for within the Health Assessment

- 4.1.21 Paragraphs 5.4 and 5.7 to 5.9 of the IEMA guidance (Pyper et al., 2022b) (CD 3.8.2) state:

“Within a defined population, individuals will range in level of sensitivity due to a series of factors such as age, socio-economic deprivation and pre-existing health conditions. Some groups of individuals may be particularly vulnerable to changes in biophysical and socio-economic factors (adversely or beneficially) whereby they could experience differential or disproportionate effects when compared to the general population. ...

The role of determining EIA levels of effect on health (including identifying significant effects) is therefore not to set a threshold of ‘no harm’ from development, but to show where, at a population or sub-population level, the harm should weigh strongly in the balance alongside the development’s benefits for health and other outcomes.

To provide actionable information to decisionmakers, significance conclusions should be on the basis of whether or not there are likely to be population-level effects, both positive and negative.”

- 4.1.22 The Health Assessment has considered effects to both the general population and the vulnerable sub-populations, including close to the Airport. It is common ground between LBN and LCY that there would not be significant health effects arising for this population, as reported in Chapter 12 of the ES (CD1.19). In relation to the Health Assessment of noise impacts, ES Chapter 12 discusses vulnerable groups at paragraphs 12.9.10; 12.9.19 to 12.9.21; 12.9.44; and 12.20.2 (CD1.19).

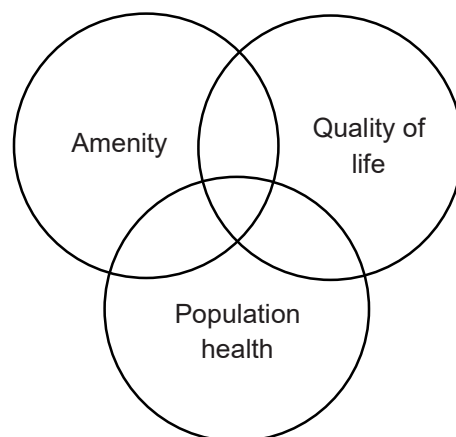
The context of health and associated effects to quality of life have been taken into account by the population health conclusions

- 4.1.23 As noted in section 3.2 above, the national policy wording around noise and health relates to ‘health and quality of life’ Noise Policy Statement for England (CD3.7.2) and the Overarching Aviation Noise Policy, March 2023 (CD3.5.8). Both ‘health’ and ‘quality of life’ have a bearing on ‘amenity’, for example the Aviation Policy Framework (HM Government, 2013) (CD3.5.1) paragraph 3.3 states “[The Government] want to strike a fair balance between the negative impacts of noise (on health, amenity (quality of life) and productivity) and the positive economic impacts of flights”. Whilst there is overlap, health, quality of life and amenity are also distinct and distinguishable concepts.
- 4.1.24 ‘Amenity’ is a key term within RFR 1. The Oxford English Dictionary defines amenity as either:
- “a desirable or useful feature or facility of a building or place e.g. the property is situated in a convenient location, close to all local amenities”; or

- “the pleasantness or attractiveness of a place e.g. developments which would clash with amenity”.

- 4.1.25 In both cases the meaning is linked to an attribute of the built environment. The first is related to the objective utility or value of a built environment feature; the second is related to people’s subjective experience of a place. The second definition is considered the most relevant to RFR 1. This reflects that the first definition is typically used to describe built environment features other than dwellings (such as benches or play areas) and the RFR has specifically stated that it relates to ‘residential amenity of nearby residential properties’. People’s subjective experience of place can reasonably be inferred to have a degree of influence on their wellbeing.
- 4.1.26 ‘**Quality of life**’ is a linked term to amenity in the Aviation Policy Framework (HM Government, 2013) (CD3.5.1).
- 4.1.27 The Oxford English Dictionary defines quality of life as: “the standard of health, comfort and happiness experienced by an individual or group”. There is therefore a health component, but that is not the totality of quality of life as a concept, though comfort and happiness may also reasonably be inferred to have a degree of influence on people’s wellbeing.
- 4.1.28 ‘Quality of life’ is considered in the IEMA 2022 Guidance on Health in EIA (IEMA, 2022b) to be part of the hierarchy of health severity which informs health magnitude. “*Whilst there is not a rigid hierarchy of health severity, changes in mortality (i.e., death) indicate a higher magnitude than changes in only well-being or quality-of-life (less severe).*” (CD3.8.2 paragraph 8.23).
- 4.1.29 ‘**Health**’ is defined by the World Health Organization as a “state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”. Health thus has various wellbeing components, which were accounted for in the health assessment.

Figure 4-1: Conceptualisation of overlapping concepts



- 4.1.30 Figure 4-1 is for illustrative purposes and reflects my professional opinion on the relationships.
- 4.1.31 There is agreement with LBN that there is not a population health component to RFR 1, which leave the amenity issues as around “pleasantness or attractiveness” and not effects of greater severity. I.e. the issue does not relate to mental health and wellbeing of the population near the Airport.
- 4.1.32 Whilst not every individual health effect can be full anticipated, the very great majority of these will have been taken into account through the consideration of effects to both the general population and vulnerable groups within the Health Assessment. The potential for adverse effects to a very few individuals is not ruled out, but are very unlikely to relate to high severity health outcomes, i.e. mortality, given the predicted exposures, existing airport context and that greater noise events

occur on other days. It is also established within guidance, as explained earlier in this section, that such individual level effects are not the basis for reaching conclusions on EIA Human Health effects, which is the technical assessment intended to inform the planning process.

- 4.1.33 In addition to their being a ‘wellbeing’ related health component to amenity that has been accounted for by the Health Assessment; there is also a health component to quality of life which has been accounted for within the Health Assessment. Table 7.2 of the IEMA Guidance (Pyper et al., 2022b), which is reproduced in the Health Assessment method (Table 12.3 (CD3.8.2), associates:
- ‘low’ magnitude of effects with a “moderate change in quality-of-life”; and
 - ‘negligible’ magnitude of effect with “minor change in quality-of-life”.
- 4.1.34 The Health Assessment of noise (ES Chapter 12 section 12.9 (CD1.19) and of use of open space (ES Chapter 12 section 12.10 (CD1.19) both conclude there would be ‘low’ magnitude of impact, as set out in Table 12.13 of ES Chapter 12 (CD1.19).
- 4.1.35 For weekend daytime noise the Health Assessment is explicit that *“Any health effect due to this change in risk factors is likely limited to a large minority of the study area population in relation to effects between LOAEL and SOAEL, with quality-of-life outcomes dominating.... The change in daytime noise is considered to be of low magnitude for public health.”* (ES Chapter 12 paragraph 12.9.36 (CD1.19)).
- 4.1.36 The conclusions of Chapter 12 are common ground between LBN and LCY (SoCG dated 23 October 2023 section 13 CD11.2).
- 4.1.37 To summarise this section, the concepts of health, quality of life and amenity overlap. The Health Assessment has accounted for wellbeing influences on quality of life and amenity that could adversely affect the health of the population near the Airport. It is common ground that the adverse population health effects would not be significant. The exclusion of population health as an issue limits the extent to which there could be a lack of policy compliance on health and quality of life. It also limits the extent to which effects to residential amenity could be significant for human receptors.

4.2 Overview of the 2015 CADP1 Health Impact Assessment (HIA)

- 4.2.1 The findings associated with the original CADP1 application and, in particular, the 2015 HIA (CD2.1.4) are a relevant reference point for this Appeal. The following bullets summarise the 2015 HIA’s scope and key conclusions.
- 4.2.2 The 2015 HIA assessed:
- Changes in noise exposure, finding the change: *“[in air noise] will not impact upon sleep disturbance [and is] not of a level to quantify any impact upon academic performance [; ground noise levels] “are not of a level to quantify any measurable adverse health outcome” [; and traffic noise is] “not significant”*;
 - Direct, indirect and induced income employment opportunities, finding *“significant socio-economic health benefits at a regional and local level”*;
 - Changes in local road transport nature and flow rates, finding the change *“is not predicted to impact upon local road capacity, materially impact upon road safety or adversely impact upon community severance”*; and
 - Changes to local air quality (emissions to air), finding *“the relative change in concentration exposure are not of an order to quantify any meaningful adverse health outcome”*.

- 4.2.3 The 2015 HIA was undertaken prior to the updated EIA Regulations requiring consideration of the likely significant effects to human health as part of an ES; however, it fulfilled an equivalent planning role. The 2015 HIA concluded that:
- *“CADP1 does not constitute a significant risk to local community health, on the basis that all regulatory environmental standards set to protect health are predicted to be achieved, and the relative effects of the predicted minor changes in air quality, noise and transport upon existing burdens of health are not sufficient to quantify any significant adverse health outcome.*
 - *Moreover, when accounting for the underlying factors defining local influences on poor health in and surrounding the area (largely socio-economic and lifestyle related), and the direct, indirect and induced socio-economic benefits from CADP1, coupled with the committed and ongoing community support and employment initiatives managed by the Airport to optimise local health benefit uptake, CADP1 is considered to represent a net health benefit.”*
- 4.2.4 These conclusions were not disputed by the Council or the inspector / Secretaries of State in the final CADP1 appeal decision.

4.3 Overview of the CADP1 Section 73 Application Health Assessment

- 4.3.1 This section provides an overview of Volume 1: Environmental Statement Chapter 12: Public Health and well-being (CD1.19).

Scope

- 4.3.2 The Health Assessment scope covers relevant determinants of health and population groups. The scope includes wider determinants of health, i.e. not just bio-physical determinants such as air quality and noise, but also behavioural, social, economic and institutional determinants. This is in line with guidance (CD3.8.3) (IEMA, 2022a) and good practice (CD3.8.11) (World Health Organisation, 2022).
- 4.3.3 Whilst many determinants of health may be affected to some degree, guidance is clear that the assessment must be proportionate. This means *“focusing the assessment to likely and potentially significant population health effects of the project.”* (IEMA, 2022a) paragraph 1.10 (CD3.8.3).
- 4.3.4 The Health Assessment covers the following health determinants:
- Health related behaviours: Use of open space;
 - Social environment: Community Identity; and Transport;
 - Economic environment: Good quality employment; and Training Opportunities;
 - Bio-physical environment: Noise; Air quality; Ultra Fine Particulates; and Climate Change; and
 - Institutional and built environment: NHS Routine Service Planning.
- 4.3.5 The scope for the Health Assessment was discussed with the LBN’s Deputy Director of Public Health and LBN’s appointed consultants on 14th and 20th September 2022.
- 4.3.6 The approach to scoping the Health Assessment is considered appropriate. This is confirmed in the LUC ES Review (CD4.5.10) paragraphs 11.1 to 11.3. The assessment scope is also common ground between LBN and LCY (SoCG dated 23 October 2023 between LBN and LCY section 13.0, CD11.2).
- 4.3.7 Table 15.1 of the LUC ES Review (CD4.5.10) includes no technical matters relating to the Health Assessment scope that are listed as unresolved or requiring further clarification.

- 4.3.8 This proof of evidence focuses on the determinants raised by the RFR 1 and in the Statements of Case of other parties.
- 4.3.9 In relation to any matters outside of the scope of the Health Assessment, the guidance cautions that *“There can be a temptation to scope in a long list of wider health determinants to avoid the risk of later challenge. This would be contrary to proportionality and could be detrimental to delivering an effective assessment of the likely significant health effects.”* (IEMA, 2022a) paragraph 3.4 (CD3.8.3).
- 4.3.10 Guidance confirms that *“The role of determining EIA levels of effect on health (including identifying significant effects) is therefore not to set a threshold of ‘no harm’ from development, but to show where, at a population or sub-population level, the harm should weigh strongly in the balance alongside the development’s benefits for health and other outcomes”.* (IEMA, 2022b) paragraph 5.8 (CD3.8.2).
- 4.3.11 On this basis I consider the Health Assessment scope appropriate and agreed with LBN.

Baseline

- 4.3.12 The Health Assessment baseline has regard to relevant local vulnerabilities, noting that different communities have varying susceptibilities to health impacts and benefits as a result of social and demographic structure, behaviour and relative economic circumstances.
- 4.3.13 The baseline focuses on small area data (ward level). The OHID Government public health database has been used to consider the health profile of the wards surrounding the Airport. The baseline shows that across a range of health outcomes the population around the Airport has worse outcomes compared to the averages for England (See ES Table 12.7, CD1.19).
- 4.3.14 ES Appendix 12.3 (CD1.54) focuses in on sub-set of wards, selected to reflect a geographic distribution and the areas with the highest deprivation.
- Royal Docks, E05000491 (the Airport site);
 - Custom House, E05000479 (an area of higher deprivation to the north and west); and
 - Abbey Wood, E05000214 (an area of higher deprivation to the south and east).
- 4.3.15 ES paragraph 12.4.7 notes: *“Whilst indicators for the population closest to the airport (Royal Docks ward) suggest lower sensitivity across most measures; in the neighbouring deprived wards, particularly Custom House but also Abbey Wood, higher sensitivity is evident. The higher sensitivity has been used as the basis for assessment.”*
- 4.3.16 Notwithstanding that high population sensitivity has been assumed within the assessment across the Health Assessment, it is noted that Appendix 12.3 (CD1.54) paragraph 1.1.9 (referring to the table below it) finds that *“mental health indicators perform significantly better than or similar to the national average across all localities making up the local study area”.* This includes for the three wards around the Airport, including those with high deprivation. This is relevant as the RFR 1 discussion of ‘residential amenity’ potentially has links to mental health and quality of life wellbeing outcomes. The baseline indicators relevant to such outcomes suggest that the population around the Airport does not have elevated vulnerability in relation to mental health outcomes. This makes the Health Assessment of noise impacts particularly conservative for mental health outcomes, as it has assumed high sensitivity within the affected population.
- 4.3.17 On the issue of air quality, the baseline (ES paragraph 12.4.11, CD1.19) acknowledges that *“Newham and Tower Hamlets have particularly high rates of mortality attributable to air quality. Baseline sensitivity on this issue is taken into account in the assessment”.*
- 4.3.18 The baseline of the Health Assessment is considered appropriate. This is confirmed in the LUC ES Review (CD4.5.10) paragraphs 11.4 to 11.7. *“The approach to defining the existing baseline which*

includes details of published demographics, socio-economic and public health and healthcare capacity data is considered appropriate.”

4.3.19 Table 15.1 of the LUC ES Review (CD4.5.10) includes no technical matters relating to the Health Assessment baseline that are listed as unresolved or requiring further clarification.

4.3.20 On this basis I consider the Health Assessment baseline appropriate and agreed with LBN.

Receptors

4.3.21 The Health Assessment sets out relevant population groups, including vulnerable sub-populations. As noted in guidance *“For health in EIA, population groups are the sensitive receptors, the health outcomes of which are considered.”* (IEMA, 2022a) paragraph 7.8 (CD3.8.3).

4.3.22 Methodological detail around the groups selected is set out in ES Appendix 12.2 paragraphs 1.1.28 to 1.1.37 (CD1.53). The following population groups have been considered:

- The ‘general population’ including residents, visitors, workers, service providers, and service users; and
- The ‘vulnerable group population’, including
 - Young age: Children and young people (including pregnant women and unborn children).
 - Old age: Older people (particularly frail elderly);
 - Low income: People on low income, who are economically inactive or unemployed/workless;
 - Poor health: People with existing poor health; those with existing long-term physical or mental health conditions or disability that substantially affects their ability to carry out normal day-to-day activities;
 - Social disadvantage: People who suffer discrimination or other social disadvantage, including relevant protected characteristics under the Equality Act 2010 or groups who may experience low social status or social isolation for other reasons; and
 - Access and geographical factors: People experiencing barriers in access to services, amenities and facilities and people living in areas known to exhibit high deprivation or poor economic and/or health indicators.

4.3.23 Specifically on noise, relevant to RFR 1, ES Chapter 12 paragraph 12.9.19 (CD1.19) confirms that the vulnerable sub-population taken into account by the assessment includes:

- children and young people including for educational disturbance;
- older people who may spend more time in affected dwellings;
- people living in deprivation, including those on low incomes may have fewer resources to adapt, e.g. seek respite or install insulation; furthermore, those who are economically inactive may spend more time in affected dwellings;
- people with existing poor physical and mental health may spend more time in affected dwellings; and
- people for whom close proximity to project change increases sensitivity.

4.3.24 Similar detailed statements are made in Chapter 12 for other determinants of health.

4.3.25 Guidance confirms that *“To provide actionable information to decisionmakers, significance conclusions should be on the basis of whether or not there are likely to be population-level effects, both positive and negative”*. (IEMA, 2022b) paragraph 5.9 (CD3.8.2).

- 4.3.26 The receptors used in the Health Assessment are considered appropriate. This is confirmed in the LUC ES Review (CD4.5.10) paragraph 11.8. *"[Chapter 12 of the ES] outlines sensitive receptors considered in the assessment... This is considered appropriate."*
- 4.3.27 Table 15.1 of the LUC ES Review (CD4.5.10) includes no technical matters relating to the Health Assessment receptors that are listed as unresolved or requiring further clarification.
- 4.3.28 OR paragraph 282 (CD4.3.1) confirms that officers have reviewed the receptors of the Health Assessment and have not raised any concerns: *"This [Public Health and Wellbeing] chapter assesses the population health effects resulting from the proposed development. This includes physical and mental health outcomes, assesses the potential for health inequalities to vulnerable groups and considers opportunities to improve population health".*
- 4.3.29 On this basis I consider the Health Assessment receptors appropriate and agreed with LBN.

Methods

- 4.3.30 As discussed, the methods for the Health Assessment follow relevant guidance (IEMA, 2022a, CD3.8.3);(IEMA, 2022b, CD3.8.7) and were discussed with LBN's Deputy Director of Public Health and LBN's appointed consultants on 14th and 20th September 2022.
- 4.3.31 The methods of the Health Assessment are considered appropriate. This is confirmed in the LUC ES Review (CD4.5.10) paragraph 11.9. *"Section 12.3 and Appendix 12.2 set out the methodology used to inform the health and wellbeing assessment. ... The significance criteria applied to potential likely effects are also clearly defined. This is considered appropriate"*.
- 4.3.32 Table 15.1 of the LUC ES Review (CD4.5.10) includes no technical matters relating to the Health Assessment methods that are listed as unresolved or requiring further clarification.
- 4.3.33 On this basis I consider the Health Assessment methods appropriate and agreed with LBN.

Mitigation and monitoring

- 4.3.34 The LUC ES Review (CD4.5.10) paragraph 11.3 confirms it is appropriate that the Health Assessment uses residual effect conclusions of other assessments (i.e. effects after mitigation described in those chapters has been taken into account).
- 4.3.35 ES Chapter 12 section 12.20 (CD1.19) sets out further mitigation and monitoring proposed by the Health Assessment, which would be secured through condition. The section is set out by determinant of health. In summary noise related measures relevant to the Appeal are:
- Targeted support to promote uptake of LCY's Sound Insulation Scheme amongst vulnerable groups. Monitoring results will be shared with the relevant public health teams. Further targeting may include tenants being eligible to initiate the Sound Insulation Scheme application (the implementation of which would still be subject to landlord approval), as well as support where English is not a first language and for those with low literacy.
 - The public health opportunities for offsetting increased disturbance at public open spaces has been considered. It is proposed that part of the Community Fund to be used as per LBN Policy SP2 to provide *"new or improved inclusive open space and sports facilities, including good quality, secure and stimulating play space and informal recreation provision for young people and accessible natural greenspace and bluespace to encourage greater participation in physical activity"*.
- 4.3.36 Monitoring to confirm socioeconomic benefits for vulnerable groups is also proposed (with further measures set out in ES Chapter 7 Socio-economics (CD1.14)):

- Monitoring of the proportion of local people with long-term unemployment, high job instability or low income characteristics who enter good quality stable employment with LCY to confirm the benefit and further tailor the targeting of local vulnerable groups.
- Monitoring of the proportion of young people not in education, employment or training (NEETs) taking up, and completing, training opportunities with LCY could be undertaken to confirm the benefit and further tailor the targeting of local vulnerable groups.

4.3.37 Monitoring in relation to ultra-fine particulates is considered appropriate:

- The appropriate response is for public health to maintain a watching brief on UFP as a topic area. The monitoring of UFPs is therefore supported, including correlating results with use of sustainable aviation fuel (SAF) at the Airport and as appropriate future hydrogen and/or electric aircraft transition. SAF use may reduce UFPs due to its very low sulphur content, though the relationship requires investigation.

4.3.38 OR paragraph 284 (CD4.3.1) confirms that additional information on UFPs should be addressed through a monitoring condition (see linked points in OR paragraphs 127 and 284).

4.3.39 Table 15.1 of the LUC ES Review (CD4.5.10) includes no other technical matters relating to health mitigation or monitoring that are listed as unresolved or requiring further clarification.

4.3.40 On this basis I consider the Health Assessment mitigation and monitoring appropriate and agreed with LBN.

Health assessment conclusions

4.3.41 ES Chapter 12 section 12.21 (CD1.19) sets out the residual effect conclusions. Relevant to the Appeal, the population Health Assessment conclusions, including taking account of potential inequalities to vulnerable sub-populations close to the Airport, are:

- Noise (including mental health and quality of life wellbeing effects): **Minor adverse (not significant).**
- Physical activity & leisure (including amenity of public parks): **Minor adverse (not significant).**
- Air Quality (including ultra-fine particulates): **Minor adverse (not significant).**
- Good Quality Employment: **Moderate beneficial (significant).**
- Training Opportunities: **Moderate beneficial (significant).**

4.3.42 In relation to the ES Chapter 12 Health Assessment LBN state *“the conclusion that the impacts on public health are not significant is generally agreed with...”* OR paragraph 282-284 (CD4.3.1).

4.3.43 Based on there being only one technical issue requiring clarification listed in Table 15.1 of the LUC ES Review (CD4.5.10), the word ‘generally’ can reasonably be inferred to relate to confirming appropriate monitoring in relation to ultra-fine particulates (“UFPs”). This is an issue which is referenced in OR paragraph 284 as resolved CD4.3.1 *“LBN’s consultants note that information on UFPs is lacking and this should be addressed with an appropriate monitoring condition.”*

4.3.44 The OR is silent as to whether the beneficial health effects are also agreed with, but no indication of disagreement is made. The basis for concluding that there are significant beneficial effect conclusions are set out in ES Chapter 12 sections 12.13 and 12.14 (CD1.19).

4.3.45 Table 15.1 of the LUC ES Review (CD4.5.10) includes no technical matters relating to conclusions for socio-economic health benefits that are listed as unresolved or requiring further clarification.

4.3.46 On this basis I consider the Health Assessment conclusions that there are not significant adverse population health effects associated with air quality and noise to be agreed with LBN.

- 4.3.47 I am strongly of the view that the Proposed Development includes important public health benefits from the committed employment and training opportunities, including that these are tailored to be targeted locally and to vulnerable groups.
- 4.3.48 These are a significant beneficial population health effect that should weigh in the balance:
- not only, in relation to national noise policy (CD3.7.2);
 - but also, more broadly in the wider planning balance.
- 4.3.49 The beneficial Health Assessment conclusions are not overstated, they are moderate, not major beneficial effects. They are evidenced and linked to monitoring measures that would confirm the benefit or provide further tailoring to support achieving the benefit.

Faster and Slower Growth Scenarios

- 4.3.50 The assessment considered the two sensitivity tests, as set out in Chapters 3 and 4 of the ES (CD1.10 and CD1.11), which reflect growth in passengers being faster or slower than in the core DC Scenario.
- Under the Faster Growth Scenario 9mppa is forecast to be reached in 2029.
 - Under the Slower Growth Scenario 9mppa is forecast to be reached in 2033.
- 4.3.51 The Health Assessment has considered if there would be new or materially different conclusions when comparing the Do Minimum (DM) Scenario to:
- either the core Development Case (DC) Scenario (the main assessment),
 - or the Faster Growth and Slower Growth Scenarios (the sensitivity test).
- 4.3.52 The Health Assessment concluded that there would not be new or materially different conclusions, see ES Chapter 12 section 12.21 (CD1.19).

Cumulative and in-combination effects

- 4.3.53 ES Chapter 12 section 12.22 (CD1.19) considers in-combination effects, i.e. where the same population may be affected by more than one type of health effect due to the Proposed Amendments. The assessment concludes that:
- Adverse effects, even in combination, would not be greater than minor adverse (not significant).
 - Beneficial effects, even in combination, would not be greater than moderate beneficial (significant).
- 4.3.54 ES Chapter 12 section 12.23 (CD1.19) considers cumulative effects, i.e. where the same population may be affected by more than one project. The assessment concludes that no new significant adverse effects on population health are expected due to cumulative effects with other projects. Significant beneficial effects for population health would remain and may be extended.

Overall

- 4.3.55 A robust Health Assessment has been undertaken. LBN do not dispute the scope, baseline, receptors, methods, mitigation, monitoring or sensitivity tests. LNB agree that there are not significant adverse population health effects. LBN are silent on the significant beneficial effects.
- 4.3.56 OR paragraph 292 - 295 (pdf page 82/84) (CD4.3.1) endorses the quality of the ES generally *"...no further information was required to assess the ES. The ES was considered to provide a thorough and robust assessment of the baseline conditions and enabled a rigorous assessment of the likely significant environmental effects of the development."* Implicitly this is an endorsement of

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the Health Assessment, which supports the position that there is no health aspect of the amenity reason for refusal.

5 RESPONSE TO RFR 1

5.1 Health analysis relevant to RFR1

- 5.1.1 The conclusions of ES Chapter 12 are common ground. It is agreed that public health effects are not a reason for refusal (SoCG dated 23 October 2023 between LBN and LCY section 13.0 - CD11.2).
- 5.1.2 The agreement with LBN notes that the Health Assessment considered, not only the overall noise effects of the Proposed Amendments, but also assessed the effects to night-time noise and weekend daytime noise.
- 5.1.3 The Health Assessment identified minor adverse (not significant) population health effects for the night-time and weekend daytime noise changes of the Proposed Amendments (CD1.19, paragraphs 12.9.31 to 12.9.46 and paragraph 12.21.1). This conclusion includes considering vulnerable groups.
- 5.1.4 This conclusion is not disputed by LBN in the Decision Notice (CD4.4.1) or the OR (CD4.3.1) or by their consultants in the LUC ES Review (CD4.5.10).
- 5.1.5 The only points of disagreement with LBN that relate to health are in relation to the interpretation of noise policy. The point of policy interpretation is covered in the evidence of Richard Greer (APP/2) and Sean Bashforth (APP/3). There is agreement with LBN that the additional morning and Saturday flights, and reduction of the existing Saturday curfew do not give rise to significant adverse health effects for the population living near the Airport.
- 5.1.6 The technical basis that there are not significant adverse population health effects is set out in ES Chapter 12 (CD1.19) and the Overview provided in section 4.3.
- 5.1.7 The implication of this agreement with LBN is that it helps to narrow the issues.
- 5.1.8 It is also implicit that, as there is agreement that there are not significant population health effects, the severity of the effect on residential amenity is of a lesser order, than it might otherwise have been, had significant public health effects been expected.
- 5.1.9 Consequently, the weight that should be attached to the effect on residential amenity is also of a lesser order, than if significant public health effects were expected.
- 5.1.10 This point is relevant to the planning balance, as an adverse effect on residential amenity must have an inherent ceiling if it is not so great as to be associated with a significant public health effect.
- 5.1.11 By contrast the socio-economic beneficial effects of the Proposed Amendments are agreed as significant for population health. Implicitly this means that they must carry more weight than the adverse effects, which are agreed to be not significant.
- 5.1.12 This is particularly the case as the Health Assessment uses an agreed methodology that assesses beneficial and adverse effects on the same basis.
- 5.1.13 The not significant adverse effects and significant beneficial effects discussed in the Health Assessment are therefore directly comparable.
- 5.1.14 IEMA Guidance confirms this relative weighting. It states that the *“EIA process uses the term ‘significance’ to describe the weight that should be placed on an issue during a decision, i.e., the extent to which it is ‘material’ to the planning decision.”* (Paragraph 2.4).
- 5.1.15 IEMA Guidance goes on to explain that: *“What this ‘weight’ means and how it is determined differs between EIA topic areas, such as air quality, biodiversity and health.”* (Paragraph 2.4).
- 5.1.16 However, the IEMA Guidance confirms that within the Health Assessment each significance conclusion is: “comparable, so that those tasked with determining the project application, can

decide the overall weight to give to the health effects of the project and determine the relative influence different health determinants have:...” (Paragraph 6.17).

- 5.1.17 The weight of the health conclusions is discussed within Sean Bashforth’s evidence (APP/3) on the planning balance.

5.2 Health Policy Analysis relevant to RFR 1

- 5.2.1 RFR 1 states that the effects to residential amenity “...would be contrary to policies D13 and T8 of The London Plan (2021) and policies SP2 and SP8 of the Newham Local Plan (2018).”
- 5.2.2 This section examines these cited policies and identifies how the health elements within them have been appropriately addressed. This helps to narrow the issues within these policy tests by confirming that it is note the health elements that underpin RFR 1.

Policy D13 ‘Agent of Change’ of The London Plan (2021) (CD3.3.1)

- 5.2.3 Policy D13 of the London Plan states that:

“Development should be designed to ensure that established noise ... generating uses remain viable and can continue or grow without unreasonable restrictions being placed on them. ... New noise ... generating development proposed close to residential and other noise-sensitive uses should put in place measures to mitigate and manage any noise impacts for neighbouring residents and businesses.”

- 5.2.4 Under this policy residential development around the Airport should have had regard to the existence of the current airport and its activities, for example in terms of sound insulation of buildings at their time of construction. Policy D13 does not however reference health specifically. This policy is not discussed further here but is covered in the evidence of Sean Bashforth (APP/3).

Policy T8 ‘Aviation’ of The London Plan (2021) (CD3.3.1)

- 5.2.5 Policy T8 of the London Plan states that:

“The Mayor supports the role of the airports serving London in enhancing the city’s spatial growth... The environmental and health impacts of aviation must be fully acknowledged ... Development proposals should make better use of existing airport capacity... Development proposals ... should only be supported if they would not lead to additional environmental harm or negative effects on health.” [Emphasis added].

- 5.2.6 The potential for significant population health effects, beneficial and adverse, have been fully acknowledged in ES Chapter 12 (CD1.19). The Health Assessment concludes there would not be significant adverse effects on population health and that there would be significant beneficial population health effects.
- 5.2.7 The conclusions that there would not be significant adverse effects on population health, i.e. ‘negative effects on health’, is not disputed by LBN in the Decision Notice (CD4.4.1), OR (CD4.3.1) or by their consultants in the LUC ES Review (CD4.5.10).
- 5.2.8 If the phrasing ‘negative effects on health’ is also taken to relate to non-significant effects or individual level health effects, then plausibly every development proposal (of whatever nature and scale) could fail this policy test. This point is made in (IEMA, 2022b) (CD3.8.2)
- Paragraph 5.8 “The role of determining EIA levels of effect on health (including identifying significant effects) is therefore not to set a threshold of ‘no harm’ from development, but to

show where, at a population or sub-population level, the harm should weigh strongly in the balance alongside the development's benefits for health and other outcomes".

- Paragraph 5.2 "EIA analysis at the level of individuals would likely mean that all determinants of health conclusions, positive or negative, would be significant on all projects because of the effects to some particularly sensitive individuals. This would be contrary to supporting decision-makers in identifying the material issues. Assessment of EIA significance at the level of individuals is not proportionate".

5.2.9 It is therefore my professional judgment that that the Proposed Development is in accordance with the health aspects of Policy T8. It is my view that health issues are not, therefore, the basis for citing the policy as part of the reason for refusal.

Policy SP2 'Healthy Neighbourhoods' of the Newham Local Plan (2018) (CD3.4.1)

5.2.10 Policy SP2 of the Newham Local Plan states that:

"Development proposals which address the following strategic principles and spatial strategy, and technical criteria will be supported:

"1. Strategic Principles and Spatial Strategy: "The Council ... recognises the role of planning in [promoting healthy lifestyles and reducing health inequalities] ... through the creation of healthy neighbourhoods and places. In Newham, this will be achieved through responding to the following contributors to health and well-being: ... The need to improve employment levels and reduce poverty, whilst attending to the environmental impacts of economic development including ... noise...; [and] The need for ... improved inclusive open space ... to encourage greater participation in physical activity and provide relief from urban intensity." [Emphasis added].

"2. Design and technical criteria: The requirement for major development proposals to be accompanied by a health impact assessment detailing how they respond to the above contributors to health and well-being, including details of ongoing management or mitigation of issues where necessary." [Emphasis added].

5.2.11 With regards to Policy SP2 (1), the Health Assessment (CD1.19) shows that the Proposed Amendments are consistent with supporting healthy neighbourhoods under the relevant elements of Policy SP2, namely providing significant employment benefits, attends to noise impacts appropriately and improving open space. Specifically:

- There would be moderate beneficial (significant) population health effects (ES Chapter 12 sections 12.13, 12.14, 12.20 and 12.21). LUC ES Review Table 15.1 includes no technical matters relating to socio-economics and health that are listed as unresolved or requiring further clarification. LBN has not disagreed with the Health Assessment conclusion that the Proposed Development would have **significant socio-economic benefits for population health**.
- Population health and wellbeing effects of noise are minor adverse (not significant), as set out in ES Chapter 12 section 12.9 (Environmental Effects: Noise) and section 12.10 (Healthy Lifestyles: Use of Open Space), the latter in relation to the population health effects associated with day-time amenity of public open spaces. Mitigation, including relevant to noise, is covered in section 12.20; and residual effects are set out in section 12.21. Table 15.1 of the LUC ES Review includes no technical matters relating to noise and health that are listed as unresolved or requiring further clarification. LBN has not disagreed with the Health Assessment conclusion that the Proposed Development would have **no significant health effects due to noise**.

- In relation to **improving open space**, Health Assessment paragraph 12.20.3 states that *“It is proposed that part of the Community Fund be used as per LBN Policy SP2 to provide “new or improved inclusive open space and sports facilities, including good quality, secure and stimulating play space and informal recreation provision for young people and accessible natural greenspace and bluespace to encourage greater participation in physical activity”.*

- 5.2.12 With regard to Policy SP2 (2), the Section 73 Application has been accompanied by an appropriate health impact assessment. As explained by Government guidance (Public Health England, 2020) (CD3.8.1 pages 28 and 48) HIA can be integrated into the EIA process. The guidance states: *“First, establish whether the project is subject to EIA. If yes, follow health in EIA process.”* This is an EIA project and the EIA process of including a health chapter has been followed.
- 5.2.13 It is therefore my professional judgment that that the Proposed Development is in accordance with the health-related references within Policy SP2. It is my view, therefore, that references to a health impact assessment and the issues it covers are not the basis for citing the policy as part of the reason for refusal.

Policy SP8 ‘Ensuring Neighbourly Development’ of the Newham Local Plan (2018)

- 5.2.14 Policy SP8 of the Newham Local Plan states that:
- “Proposals that address the following Strategic Principles, Spatial Strategy and Design, Management and Technical criteria will be supported: ... where possible enhance ... public open space ...; Encourage the use of sustainable transport ...; [and] Avoid unacceptable exposure to ... noise, disturbance, ... and other amenity or health impacting pollutants in accordance with policy SP2” [Emphasis added].*
- 5.2.15 With regards to Policy SP8, the ES Chapter 12 Health Assessment (CD1.19) shows that the Proposed Amendments:
- **are consistent with enhancing public open space** (as explained above in paragraph 5.2.11 third bullet);
 - **encourage sustainable transport** in relation to surface access, see ES Chapter 12 section 12.12 (Safe and Cohesive Communities: Transport); and
 - **avoid unacceptable (significant) population health effects due to noise** (as explained above in paragraph 5.2.11 second bullet). IEMA guidance paragraph 1.6 (IEMA, 2022b) (CD CD3.8.2 page 4) explains that ‘acceptability’ is part of determining significance. *“EIA significance is defined as informed expert judgement of the importance, desirability or acceptability of a change”.*
- 5.2.16 It is therefore my professional judgment that that the Proposed Development is in accordance with the health-related references within Policy SP8. It is my view, therefore, that Health Assessment issues are not the basis for citing the policy as part of the reason for refusal.

5.3 Beneficial health effects

- 5.3.1 In relation to the ES Chapter 12 Health Assessment, LBN state *“the conclusion that the impacts on public health are not significant is generally agreed with...”* in the OR, paragraph 282-284 (CD4.3.1). The OR is silent as to whether the beneficial health effects are also agreed with, but no indication of disagreement is made.

- 5.3.2 It is noted, with regard to technical advice received from LBN, no concerns or clarifications were raised on the health conclusions for socio-economic benefits in the LUC ES Review Table 15.1 (CD4.5.10).
- 5.3.3 Planning practice guidance (CD3.8.4) confirms: "*The local planning authority must take into account the information in the Environmental Statement, the responses to consultation and any other relevant information when determining a planning application*". DLUHC, Planning Practice Guidance: Environmental Impact Assessment, Paragraph 46 (CD3.2.2).
- 5.3.4 It is unclear what weight has been given, if any, to the beneficial health effects that are described in ES Chapter 12. It is my professional judgment that these health benefits should weigh strongly in the planning balance, which is discussed further in the Proof of Evidence of Sean Bashforth (APP/3).

6 RESPONSE TO ISSUES RAISED BY RULE 6 PARTY HACAN EAST

Statement of Case

- 6.1.1 HACAN East's SoC (CD10.3) makes two references to health, both of which are specifically on the narrow point of a precautionary approach being appropriate where there is uncertainty:
- Paragraph 4.1.5: *"It will also argue that, to the extent that there remains any uncertainty in the scientific data around the health impacts of extended exposure to unmitigated noise, the Inspector is required to adopt a precautionary approach."*
 - Paragraph 7.2: *"The Appeal Proposal will cause environmental harm and may adversely affect public health. It will result in a significant adverse noise impact for residents living in affected areas. A precautionary approach is required to be taken."*

A precautionary approach is inherent to the Health Assessment

- 6.1.2 The application of the precautionary principle in public health is explained by the World Health Organisation (World Health Organisation, 2004 – CD3.8.12). The publication explains that the precautionary principle is 'built-in' to public health; and in particular, the use of health impact assessment as a practical means of presenting conclusions on significance that take uncertainties into account.
- 6.1.3 In this case the health impact assessment (HIA) is set out in ES Chapter 12 CD1.19, which notes at paragraph 12.3.23: *"The approach taken ensures that HIA is embedded within the EIA in line with good practice."*
- 6.1.4 The WHO publication (World Health Organisation, 2004, CD3.8.12) finds:
- *"The [precautionary] principle states that in the case of serious or irreversible threats to the health of humans or the ecosystem, acknowledged scientific uncertainty should not be used as a reason to postpone preventive measures."* Page 1.
 - *"The concepts of precaution and prevention have always been at the heart of public health practice."* Page 3.
 - *"The precautionary principle encourages policy-makers and public health professionals to consider, in their approach to public health, how to account for growing complexity and uncertainty."* Page 3.
 - *"...together with related approaches such as health impact assessment, precaution provides a useful compass to guide public health decisions under uncertainty,".* Page 10
 - *"A centrepiece of precautionary assessment is environment and health assessment, which weighs the science of hazards and exposure. In this step, evidence of risk and uncertainty is examined to determine the possibility (and plausibility) of a significant health threat and the need for precautionary action."* Page 188.
- 6.1.5 ES Chapter 12 (CD1.19) sets out the likely (plausible) significant effects of the Proposed Development.

Uncertainty and effect significance are accounted for

- 6.1.6 The IEMA guidance (Pyper et al., 2022a) (CD3.8.3) paragraph 3.4 also articulates the precautionary principle:

“Where there are threats of serious damage to health, a lack of full scientific certainty should not be used as a reason for postponing measures to minimise this damage”.

- 6.1.7 Whether taking the WHO or IEMA definition, the precautionary principle includes a two-part test, both of which must be met. There must be:
- *“threats of serious damage to health”*; and
 - *“a lack of full scientific certainty”.*
- 6.1.8 It is accepted that there is a lack of full scientific certainty in relation to health and quality of life effects associated with aviation noise.
- 6.1.9 For example, Chapter 12 of the ES references the work of Clark et al. (Clark et al., 2020 – CD3.8.7) who look specifically at the evidence for environmental noise effects on health for the UK policy context. On the measure that aligns most closely to the national noise policy wording (i.e. health and quality of life) Clark et al. note at Table 7 that, for aircraft noise, the quality of evidence for self-reported ‘quality of life or health’ is “very low quality” and the level of effect is rated as “no effect”.
- 6.1.10 This uncertainty (very low quality of evidence) in the scientific literature reflects a paucity of studies. It also reflects that, research to date shows that aviation noise effects on quality of life and health do not have a large effect on health outcomes.
- 6.1.11 The findings are consistent with the WHO 2018 systematic review of this issue (Clark and Paunovic, 2018) that informed the WHO noise guidelines (WHO, 2018, CD3.7.6). In relation to quality of life, well-being and mental health the WHO noise guidelines summarise the evidence as: *“The evidence showed, however, no substantial effect of aircraft noise on self-reported quality of life or health”* (page 153 (pdf page 174) paragraph 3.2, CD3.7.6).
- 6.1.12 With regards to threats of serious damage to health (i.e. the potential for significant health effects), it has been established through the ES Chapter 12 Health Assessment (CD1.19) that this is not the case. This is common ground between LCY and LBN, whose public health team were appropriately consulted (SoCG dated 23 October 2023 between LBN and LCY section 13.0, CD11.2).
- 6.1.13 The conclusion that there would not be significant adverse health effects is the output of a technical assessment, not simply a point of view.
- 6.1.14 Guidance on the technical assessment of determining significance in EIA terms is provided by IEMA (IEMA, 2022a, CD3.8.3);(IEMA, 2022b, CD3.8.2). The guidance is the industry standard and represents a consensus between EIA practitioners and public health stakeholders. The guidance was developed with input from public health specialists familiar with EIA from the UK Health Security Agency (UKHSA) and Department of Health Office for Health Improvement and Disparities (OHID).
- 6.1.15 The guidance clarifies the basis of assessment, including scope and methods. These have been used in the Health Assessment. LBN agree with this basis of assessment, see LUC ES Review paragraph 11.9 (CD4.5.10) *“Section 12.3 and Appendix 12.2 set out the methodology used to inform the health and wellbeing assessment. ... This is considered appropriate”.* Agreement is confirmed in the final SoCG dated 23 October 2023 between LBN and LCY (CD11.2).
- 6.1.16 With regard to significance, the guidance (IEMA, 2022b) paragraph 1.6 states (CD3.8.2): *“For human health, [EIA significance] relates to whether the change is important, desirable or acceptable for public health. The judgement must explain the context and be evidence based.”* The guidance sets out in detail how such an evidence-based judgement is reached by a competent expert. Chapter 12 of the ES has followed these methods. This is not disputed by LBN, (LUC ES Review paragraph 11.9 (CD4.5.10)).

- 6.1.17 Uncertainty and limitations of the Health Assessment have been set out in ES Chapter 12 paragraphs 12.3.31 to 12.3.34 (CD1.19), concluding that “*the information available provides a suitable basis for assessment*”. The conclusions of the Health Assessment, taking into account uncertainty, are common ground between LBN and LCY (SoCG dated 23 October 2023 CD11.2).
- 6.1.18 It is also the case that Appendix 12.2 (CD1.53) to the ES Chapter 12 Health Assessment is transparent in stating that:

“All decision making is within the context of imperfect information and therefore uncertainty. Reducing uncertainty is a key element of Impact Assessment. Whilst not all uncertainty can be removed, the following steps have been taken to allow confidence in the EIA health assessment conclusions:

- *Methods are used that triangulate evidence sources and professional perspectives;*
- *The scientific literature reviews undertaken give priority to high quality study design, such as systematic reviews and meta-analysis, and strength of evidence;*
- *Quantitative inputs for other assessments have been used, which included model validation, as described in other chapters;*
- *The health assessment has been cautious, with conservative assessments, for example in taking account of non-threshold effects and vulnerable group findings;*
- *Monitoring and adaptive management is conditioned as part of ongoing compliance; and*
- *The health assessment has been transparent in its analysis and follows good practice.”* (Paragraph 1.1.43).

- 6.1.19 I am confident in the robustness of the Health Assessment and its conclusions on public health significance. No alternative Health Assessment has been put forward by HACAN East to suggest alternative public health significance conclusions reached by a competent expert in EIA human health assessment.

Conclusion

- 6.1.20 In conclusion, notwithstanding that there is scientific uncertainty, the Health Assessment is the mechanism by which the precautionary approach is applied (weighing the severity of risks and the available scientific literature); and has concluded that there are no threats of serious damage to the population’s health.
- 6.1.21 HACAN East contend that there may be an adverse effect to public health. However, no significant adverse effect to public health is anticipated and this is the conclusion of a detailed technical assessment that follows established guidance and is agreed with LBN.

7 CONCLUSION

- 7.1.1 A compliant health impact assessment has been undertaken.
- 7.1.2 It is agreed with LBN that there are no significant adverse effects on population health.
- 7.1.3 The implication of this is that the alleged 'significant harm to residential amenity' referenced in RFR1 is not related to significant effects on mental health or quality of life wellbeing outcomes for the population of residents near the Airport.
- 7.1.4 Any harm to residential amenity must, therefore carry limited weight, as it is not so great as to give rise to significant population health effects.
- 7.1.5 Relevant requirements relating to health in the policies cited by RFR 1 have been met, so these are not considered appropriate reasons for refusal. This includes that the Proposed Amendments would provide significant socio-economic related population health benefits.
- 7.1.6 HACAN East has questioned whether a precautionary approach must be adopted given that there remains uncertainty within the health literature. It is however the case that the weighing of such uncertainty and the relative severity of any risk to the public is an inherent consideration of the health assessment process. The Health Assessment has taken appropriate steps to reduce uncertainty, such that there can be confidence in its findings.
- 7.1.7 I cross-reference the evidence of Richard Greer in relation to noise (APP/2), Louise Congdon in relation to need/socioeconomics (APP/1) and Sean Bashforth in relation to the planning balance (APP/3). Information on air quality effects is set out in detail by Stephen Moorcroft in a technical note on air quality (APP/3/B/1).
- 7.1.8 The Health Assessment has neither overstated the benefits nor downplayed the negative effects of the Proposed Development.

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Technical Note on Transport Modelling and Traffic and Movement Environmental Assessment

Appeal by London City Airport
Ltd
(PINS ref:
APP/G5750/W/23/3326646)



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1 Introduction

- 1.1 This note has been prepared in light of guidance published since the preparation and submission of the Transport Assessment (TA) (CD1.61) and Environmental Statement (ES) which were submitted alongside the planning application (“S73 Application”) which the subject of this Appeal. Specifically this covers two areas: it sets out how transport modelling has taken account of COVID-19 and any implications of the revised Department for Transport (DfT) guidance on TAG Unit M4: Forecasting and Uncertainty (CD3.2.5) and also provides commentary regarding updated guidance on environmental assessment of traffic and movement.
- 1.2 The note does not provide any new analysis and confirms that previous reports submitted to London Borough of Newham (LBN) and Transport for London (TfL) remain valid.

2 Accounting for COVID 19 in Transport Modelling

Context

- 2.1 The Department for Transport (DfT) published guidance in May 2023 which provides advice on transport modelling (TAG Unit M4: Forecasting and Uncertainty) (CD3.2.5) (the “TAG Guidance”). The guidance advises that the validity of models for future forecasting with base years established prior to COVID-19 should be assessed using present day observations.
- 2.2 The TAG Guidance provides practical guidance for forecasting the impact of transport projects including option testing and appraisal. The TAG Guidance is particularly aimed at the assessment of transport interventions within the public sector, where a business case is developed that considers the benefits of new or changed infrastructure against potential costs. Such cost/benefit analysis is not required as part of private sector promoted planning applications.
- 2.3 The transport modelling for the S73 Application was not prepared as a DfT TAG (Transport Advisory Guidance) compliant exercise, though many of the principles set out within TAG Guidance have been considered. The approach to modelling was agreed through scoping discussions with Transport for London (TfL) and London Borough of Newham (LBN) and followed established best practice guidance for transport assessments informed by the specific surface access issues associated with airports.
- 2.4 The appropriate use of alternatives to TAG modelling methods is acknowledged at Para. 1.1.1.1 of the TAG Guidance, which states:

“...For major transport schemes, it is expected that these models will have been developed in line with TAG Unit M2.1 – Variable Demand Modelling, TAG Unit M2.2 – Base Year Matrix Development, TAG Unit M3.1 – Highway Assignment Modelling and TAG Unit M3.2 – Public Transport Assignment Modelling, with exceptions where other modelling methods have been demonstrated to be more effective (for example, the use of uni-modal models for rail and aviation modes). Simpler “light touch” approaches, typically used for traffic impact assessments are also discussed.” (Underlining for emphasis)

Guidance on COVID-19 within TAG Unit M4

- 2.5 The COVID-19 pandemic has had a significant impact on the pattern and volume of travel, with overall volumes for most modes still below pre-pandemic levels.

2.6 At Para B.1.1 the TAG Guidance states:

“It is the Department’s view and recommendation that this evident suppression of travel demand relative to a pre-pandemic projection of demand at this time should be appropriately represented in transport analysis. This is important particularly in appraisal and analysis supporting transport investment decisions.”

2.7 Other TAG guidance sets out the need to assess the validity of the trip matrices developed in the past against present day observations. Where there are significant changes from when the matrix was developed and the present day, the model should ideally be rebased. More proportionate approaches may be acceptable if sufficient evidence is provided that these appropriately cover most of the risks of not rebasing.

2.8 The TAG Guidance recommends that to account for COVID-19 related changes, trip matrices based before the beginning of the pandemic should ideally be rebased, or if this is not possible, an appropriate adjustment applied to model inputs or outputs in a proportionate way.

2.9 It is noted that at Para B.2.5 the TAG Guidance states:

“analysts should continue to use the growth factors from the National Trip End Model data set (NTEM) to grow demand from their base year”

2.10 The summary recommendation is, where model rebasing is judged not to be practical, for analysts to assess the extent of the divergence of travel patterns and volumes from pre-pandemic projections, using the best available data and evidence. If it is clear COVID-19 has had an impact on travel, this should be represented using an appropriate change in travel demand across the trip matrix, considering trip purpose and patterns as appropriate, and apply this to produce an updated core forecast.

Consideration of COVID-19 in Transport Assessment

2.11 It is important to note that the modelling in the TA was undertaken in a post COVID-19 period but when post COVID-19 levels of travel demand were yet to be established with great reliance. The TA acknowledged the disruptive effect of COVID-19 on travel patterns. In terms of passenger numbers it was explained that COVID-19 had created an approximate 5-year hiatus but numbers were expected to return to pre-Covid levels rapidly and thereafter the annual total passenger numbers were predicted to grow up to the maximum allowed, with passenger numbers predicted to grow faster after 2024 with the Proposed Development.

2.12 The projected passenger demand in the Do Minimum and Development Case scenarios (as set out in detail in Chapter 4 of the ES (CD1.11)) is summarised in Table 1.1.

Table 1.1: Past and Predicted Future Annual Passenger Numbers (millions)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Do Minimum (Without Development)	5.1	0.9	0.7	3.0	3.6	4.9	5.0	5.3	5.4	6	6.4	6.5	6.5

Development Case (with Development)	-	-	-	-	-	4.9	5.4	6.3	7.0	7.6	7.9	8.6	9.0
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- 2.13 For the purposes of the TA, the surface access travel modes for air passengers at the Airport were derived from the most recent validated pre-COVID-19 CAA passenger survey data (2019).
- 2.14 The Future year mode shares adopted for the transport modelling were set out in the TA and were developed in 2022, once the impact of COVID had started to be understood. In particular it was understood that mode choice in London had not significantly changed possibly reflecting the lower car ownership patterns in London that means choice of travel mode between car and public transport are limited.
- 2.15 The detailed transport models used for the surface access transport modelling was the Steer developed airport surface access spreadsheet demand model (as reported in the TA) and the TfL provided 2031 LOHAH and TfL's 2031 Railplan model, used for highway impact and for public transport impact assessments respectively.

Post Covid Validation

Passenger Growth

- 2.16 3.0 million passengers passed through the airport in 2022, in line with the figures reported in the TA. The predicted future growth of passenger numbers remains as per the figures assumed for the surface access transport modelling, as set out in Table 1.1 above. Employee number assumptions also remain valid.

CAA Data

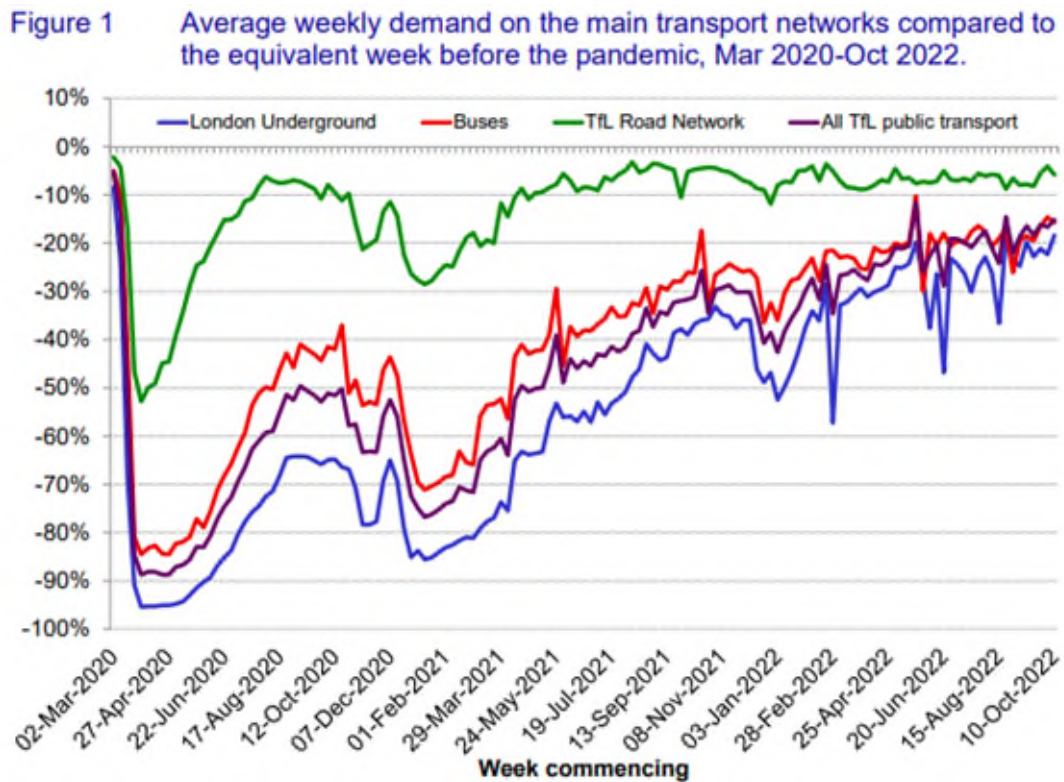
- 2.17 Since the preparation of the TA and ES, the independently prepared CAA departing passenger survey report for 2022 has been published. The mode of travel for City Airport is reported as 51.5% public/48.5% private. This compares with the 2019 figure of 51.9% public/48.9% private. The very close match of post COVID-19 to pre COVID-19 mode share is notable.

Travel in London report 15

- 2.18 Travel in London¹ is Transport for London's (TfL's) annual publication that summarises trends and developments relating to travel and transport in London. Its principal function is to describe how travel is changing and to provide an interpretative overview of progress towards implementing the Mayor's Transport Strategy. It also provides an evidence and analysis base for the general use of stakeholders and policymakers. This fifteenth report covers trends and developments up to 2021 and into 2022, including the disruption brought about by the COVID-19 pandemic from early 2020 and London's recovery since then. It describes overall travel trends, such as patterns of travel demand and mode shares.
- 2.19 As of October 2022, representative average daily demand on the London Underground was about 82 per cent of the pre-pandemic levels. Bus demand was around 84 per cent of the pre-pandemic levels. Traffic on the TfL Road Network was about 94 per cent of the pre-pandemic levels, although it had been close to this level since early 2021. The broad relativities between the modes established during the pandemic appear to have persisted into the recovery,

¹ Travel in London report 15, Transport for London, 2022

although recent values for the London Underground are suggestive of a stronger recovery into autumn 2022, as shown in Figure 1 from the report below:



2.20 The report also provides insight on the impact of COVID-19, the most significant in terms of planning for the next phases of the recovery are:

- An uneven pace of recovery among different modes.
- Changes in travel demand by day of the week.
- No persisting changes in the distribution of road traffic and bus demand throughout the week either side of the pandemic.
- For rail (particularly London Underground), recovery has been noticeably faster on weekends than on weekdays.
- Central days (Tuesday to Thursday) now showing a relatively higher difference to Mondays and Fridays than before the pandemic.
- Reduction of, in particular, medium- and long-distance commuting into central London due to flexible, hybrid and remote working practices is still noticeable during the working week, and there continues to be relatively more travel in local areas than before the pandemic.

The report states that other features of pandemic travel demand have largely dissipated:

- Changes in travel demand by time of day; the distribution of demand throughout the day now follows again the traditional two peaks for most modes.
- Changes in the spatial patterns of travel demand; there has been a slow return to the previous pattern.

- 2.21 As a whole the report provides a picture that post COVID-19 travel demand is returning to pre Covid levels but remains lower than pre COVID-19. Road traffic is closest to pre COVID-19 levels.
- 2.22 As stated in the report, the extent to which the features of demand identified above, catalysed by the pandemic, will persist into the longer term is not yet clear. It seems likely that London's recovery has some way yet to run before the pandemic effects are fully eliminated and any post-pandemic legacy impacts fully embedded.

Conclusion

- 2.23 From the review of available data post COVID-19 there are three key elements that can be utilised to validate previously provided analysis and reporting:
- There is clear guidance that the National Trip End Model data set remains a reasonable assumption, so growth assumptions relied upon in the TA and ES remain valid.
 - The evidence of no mode share change between CAA data pre and post COVID provides comfort that the 2019 baseline utilised for understanding existing travel behaviour remains valid.
 - The evidence from the 2022 TfL report on London Travel patterns suggests that travel volumes are returning to pre COVID-19 levels and mode share shift is apparent.
- 2.24 When considered together, it provides assurance that the reported surface access modelling remains valid post COVID-19.
- 2.25 In particular there can be confidence that the 2031 LOHAM and Railplan models remain a reasonable basis for assessment of impact from the proposed additional passengers associated with the S73 Application. If anything, the most recent evidence suggests background demand may be slightly lower than modelled and hence the cumulative demands with the proposed increase in passenger numbers at the airport may be slightly lower than reported and hence reporting is robust.

3 Implications of the Revised IEMA Guidance on Environmental Assessment of Traffic and Movement.

Context

- 3.1 Guidelines for the Environmental Assessment of Road Traffic (Guidance Note No. 1) were published in 1993 by the Institute of Environmental Assessment (IEA) (now the Institute of Environmental Management and Assessment IEMA).
- 3.2 The scope of the assessment set out in Chapter 10 of the ES (CD1.17) focussed on the impact of additional highway traffic on the surrounding highway network and road users, and the impact of increased demand on the public transport network from additional airport passengers. The scope of the assessment accorded with the IEMA Guidelines for investigating highway impact. Otherwise, the methodology adopted was clearly identified.
- 3.3 In July 2023 the IEMA issued 'Environmental Assessment of Traffic and Movement' (EATM 2023) as a replacement for the IEMA 1993 guidelines.

Review of revised guidelines

- 3.4 The new guidance usefully states that the 1993 guidelines have been used continuously in projects across the UK and internationally to help provide guidance on this area of impact assessment. The core tenets of the methodology provided in the 1993 Guidelines have been validated by cross-examination of expert witnesses in contested cases over the years.
- 3.5 It is also noted that the revised guidance set out that the guidelines are intended to complement professional judgement and the experience of trained and competent assessors. As the environmental impact of traffic and movement will vary on a case-by-case basis, the experience and expertise of the assessor will remain of primary importance, along with adequate consultation.

Items of new guidance and consideration of ES Chapter 10

- 3.6 Set out below are specific areas of guidance that have been introduced in the revised guidelines and a commentary on how such areas have been covered in the Chapter 10 of the ES (CD1.17).

Scope and modelling

- 3.7 The new guidelines now notes that the scope and approach to a transport assessment and environmental statements may vary, with transport assessments focusing on peak demand and environmental assessments looking at daily traffic flows. With a few exceptions, the nature and depth of assessment undertaken within a transport assessment is incompatible for the purposes of an assessment under the Town and Country Planning (Environmental Impact Regulations) 2017 (as amended) (the “EIA Regulations”) or non-statutory environmental assessment. It is therefore important to ensure that the content of traffic and movement input to environmental assessment fully accords with the requirement of the relevant EIA Regulations.
- 3.8 The scope for the TA and ES were submitted and agreed separately with both LBN and TfL providing comments that were taken on board in the submitted reports. The TA transport modelling was focussed on peak hour periods whilst the ES highway assessment was based around daily flows (which were also used for separately reported air quality and noise assessments).

Rochdale Envelope

- 3.9 The new guidelines set out the principle of ‘Rochdale Envelope’ and the need for environmental assessment practitioners to consider the forecast changes to baseline (magnitude of change/ impact), the relative value/sensitivity/importance of the affected asset/receptor and the scale, nature and significance of the effect (consequence).
- 3.10 The ES Chapter 10 conforms with this requirement, with the nature of the proposed increase in passengers leading to a long-term negative effect offset by suitable mitigation that has been duly assessed in the ES.

Affected Parties

- 3.11 The new guidance sets out a list of special interests that should be considered when defining the list of receptors to be included in the environmental assessment, i.e. those which may be sensitive to changes in traffic conditions, and should be informed by consultation with the local planning and highway authorities as part of the Environmental Impact Assessment (“EIA”) scoping process, as follows:
- People at home
 - People at work
 - Sensitive and/or vulnerable groups (including young age; older age; income; health status; social disadvantage; and access and geographic factors)
 - Locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools)
 - Retail areas
 - Recreational areas
 - Tourist attractions
 - Collision clusters and routes with road safety concerns
 - Junctions and highway links at (or over) capacity
- 3.12 Though this specific list was not defined at the time of scoping of the ES, such potential receptors were considered at the time of scoping and subsequent undertaking of the detailed

assessment. The list provided in the new guidance has been reviewed for the defined study area and does not introduce any new receptors that have not previously been considered.

Mitigation hierarchy, mitigation and monitoring

3.13 The new guidance states that for the purpose of traffic and movement, it is critically important that EIA Screening Reports, EIA Scoping Reports and the final EIA Report (with accompanying Non-Technical Summary (NTS)) provide the necessary details of any primary, secondary and/or tertiary mitigation relied upon in the assessment of significant environmental effects at each stage of the EIA process.

3.14 The ES Chapter 10 clearly sets out the assumed assumptions for mitigation including the suggested secondary mitigation associated with the proposed planning obligations associated with travel planning.

Use of Competent Experts

3.15 The new guidelines now set out specific guidance on the competent traffic and movement expert's level of understanding which should include (but not be limited to):

- A relevant degree, other professional qualifications, or relevant experience relating to the transport sector, traffic, and traffic management.
- A working knowledge and appreciation of UK traffic and transport modes, their properties and characteristics, and understanding of their management in accordance with the highest tiers of the mitigation hierarchy and sustainable transport hierarchy.
- Knowledge of the concepts, theories and application of traffic and movement assessment, as well as key links to other related assessments such as air quality, noise and human health.

3.16 It also states that as well as a sound knowledge of the key principles concerning traffic and movement, the competent traffic and movement expert must have a good understanding of EIA principles, including the ability to:

- Define the scope of an environmental assessment, including its temporal and spatial boundaries (to ensure a proportional approach).
- Determine potential environmental impacts and effects (whether positive or negative).
- Actively seek beneficial effects, enhancement and adverse effect minimisation as far as reasonably practicable.
- Understand the mechanisms established by legislation, policy and accepted practice, to adequately reduce potential impacts.
- Define significant environmental effects for consideration within EIA.

3.17 Chapter 10 of the ES was prepared by Steer, a leading transport focussed consultancy established for over 40 years. Steer advise a wide range of clients within the public and private sector on all aspects of transport and associated issues. In the UK, our clients include the Department for Transport; Network Rail ; regional and local transport authorities; private developers; and transport operators. Steer have prepared numerous Environmental Statements in support of developments and a wide range of transport infrastructure projects.

3.18 The Chapter 10 Assessment was led by Philip Jonathan Rust, a Director of Steer. He has a BSC(Hons) in Civil Engineering, is a Chartered Engineer, a Member of the Institution of Civil Engineers and a Member of the Chartered Institution of Highways and Transportation. He has

over 40 years of experience within the field of transport planning, involving 8 years employment in a local authority and over 30 years in private consultancy.

- 3.19 He has undertaken Environmental Assessments for highway schemes and development proposals since their first introduction in the 1990s and is fully familiar with EIA principles set out above.

Screening and scoping

- 3.20 The new guidelines set out best practice for scoping and screening that reflect the approach adopted for this application and process of preparing Chapter 10 of the ES as submitted.

- 3.21 The new guidelines set out the principle of Rule 1 and Rule 2 “criteria” as follows:

Rule 1 Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)

Rule 2 Include highway links of high sensitivity where traffic flows have increased by 10% or more

- 3.22 The assessment set out in Chapter 10 of the ES followed the 30%/10% principle, but for robustness, a more conservative approach was adopted in the assessment whereby consideration was given to the potential environmental impact on all roads that experience a 10% or greater rise in traffic flows (irrespective of sensitivity) when comparing the Do Minimum Scenario with the Development Case Scenario in the principal assessment year (2031).

- 3.23 The guidance states:

“The Rule 1 and Rule 2 ‘criteria’ process may not be appropriate for some impacts, and it is generally accepted by regulators and practitioners that it should not be applied to assessments of air quality, noise, road safety and driver delay. For these impacts, a separate study area and assessment criteria should be agreed with the relevant stakeholders.”

- 3.24 For the ES the detailed air quality and noise assessments have not been undertaken in the transport chapter as they have been reported in separate chapters and the scope and approach to assessment was agreed between the parties and stakeholders by relevant experts.

Assessment Methodology

- Specific traffic and movement related impacts that should be covered in an environmental statement have been stated in the revised guidance as:
- Severance of communities
- Road vehicle driver and passenger delay
- Non-motorised user delay
- Non-motorised amenity
- Fear and intimidation on and by road users
- Road user and pedestrian safety
- Hazardous/large loads
- With the exception of Hazardous/large loads these replicate the 1993 guidance and Chapter 10 of the ES considers these were assessed as set out in the table below:

Effect	Description
Changes in Traffic Flows	Increase or decrease in road traffic flows resulting from the development, compared to baseline conditions.
Severance	The perceived division that can occur within a community when it becomes separated by a major traffic artery.
Driver Delay	Valuation of the delay (or benefit) to drivers resulting from a new development.
Pedestrian Delay (cyclists also considered)	The change in the ability of pedestrians to cross a given highway link due to changes in traffic flow, speed, composition, highway design.
Pedestrian Amenity	Influenced by traffic flow but also including consideration of the overall relationship between pedestrian and traffic (e.g., air quality and noise).
Fear and Intimidation	Linked to pedestrian amenity and influenced by factors including traffic flow, composition and pavement conditions.
Accidents and Safety	Increase or decrease in risk of road traffic collisions resulting from changes in traffic flows and highway layout.

3.25 The new guidance does provide some additional best practice compared with the 1993 guidance however, the approach adopted for Chapter 10 of the ES has been reviewed against the new guidance. No new criteria or approach is introduced by the guidance and no change to the detailed assessment as reported arises from the revised guidelines.

3.26 No hazardous or large loads arise as a result of the S73 Application hence no additional assessment is required for the ES.

Links to other Assessments

3.27 The new guidance sets out the relationship between traffic and movement assessment and other assessments within a transport assessment. The approach suggested (including separate scoping and extent) has been followed for this application and separate best practice guidance followed as appropriate.

Conclusions

3.28 The new guidelines provide a useful update that captures significant change in the statutory requirements and best practice for the preparation of a Transport and Movement assessment forming part of an environmental statement. However, the guidance does not introduce any fundamental changes to the approach or suggest that environmental statements prepared following previous guidelines are inappropriate.

- 3.29 Chapter 10 of the ES was prepared by Steer who have kept abreast of best practice in the preparation of a transport and movement assessment.
- 3.30 A detailed review of the new guidance has been undertaken as set out in this note. No issues have been identified that require any modifications to Chapter 10 of the ES.

Control Information

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LONDON BOROUGH OF NEWHAM

STRATEGIC DEVELOPMENT COMMITTEE

18th November 2014

Application Number: 14/00664/OUT

Validation Date: 31st March 2014

Location: Gallions Quarter, Atlantis Avenue,
Beckton, London E16

Ward: Beckton

Applicant: Notting Hill Housing Trust

Agent: Savills

Purpose of Report / Proposal

The purpose of this report is to set out the Officer recommendations to Strategic Development Committee regarding a hybrid application relating to the following proposal.

Outline planning application for the comprehensive redevelopment of the whole site to provide up to 800 residential units (Use Class C3) and up to 2641sqm (GIA) of commercial space (Use Classes A1, A2, A3, A4, B1 and D1); Alterations to existing vehicular and pedestrian access and highway layout within and around the site, including the creation of new pedestrian and cycle routes and crossings; and on-street car parking within the site; Provision of undercroft vehicle and cycle parking; Provision of two new public parks, Gallions Park and Gallions Green; Provision of temporary energy centre; and Public Realm improvements including hard and soft landscaping and all necessary enabling works with all matters reserved excluding layout and access.

In respect of the area of land at the north and north western portion of the site (Phase 1), detailed planning consent is sought for the development of 3 perimeter blocks ranging in height between 5-12 storeys; 292 new residential units (Use Class C3), including 87 affordable dwellings; 852sqm of commercial floorspace; 157 car parking spaces and 369 cycle parking spaces; landscaping and public realm improvements; temporary energy centre; and improvements to internal access routes.

For these reasons it is recommended that planning permission is granted, subject to conditions, the completion of a S106 Legal Agreement, the completion of the public consultation period and referral to the Mayor of London.

NAME OF LEAD OFFICER: Deirdra Armsby

POSITION: Head of Planning and Development Commissioning

Originator of report: Justin Bougoure

Tel no: 0203 373 1252

E-mail address: justin.bougoure@newham.gov.uk

Human Rights Act

The provisions of the Human Rights Act 1998 have been taken into account in the processing of the application and the preparation of this report.

Equalities

In determining this planning application the Council has regard to its equalities obligations including its obligations under section 149 of the Equality Act 2010.

For the purposes of this application the equalities issues have been covered in Section 2.20 'Accessibility' of this report

Local Government (Access to Information) Act 1985

Background papers used in preparing this report:

- Planning Application
- Statutory Register of Planning Decisions
- Correspondence with Adjoining Occupiers
- Correspondence with Statutory Bodies
- Correspondence with other Council Departments
- National Planning Policy Framework
- London Plan
- Local Plan - Core Strategy, UDP, SPGs
- Planning Policy Guidance
- Other relevant guidance

List of Enclosures / Appendices:

Officer Report:

- Part 1: Planning Application Fact Sheet
- Part 2: Assessment and Conclusions
- Part 3: Background Information

Appendix 1 – Conditions and Informatives

Appendix 2 – S106 Heads of Terms

Appendix 3 – Site Plan

Appendix 4 – Phase 1 Site Plan

Appendix 5 – Site Photographs
Appendix 6 – Phasing Plan
Appendix 7 – Phase 1 Ground Floor Plan
Appendix 8 – Phase 1 Podium Level Plan
Appendix 9 – Phase 1 East and West Elevations
Appendix 10 – Phase 1 North and South Elevations
Appendix 11 – Phase 1 Landscape Plans
Appendix 12 – Development Zone Height Parameter Plan
Appendix 13 – Courtyard Parameter Plan
Appendix 14 – Parameter Plans
Appendix 15 – Landscape Parameter Plans
Appendix 16 – Concept Views

OFFICER REPORT

PART 1: Planning Application Fact Sheet

The Site	
Address	Gallions Quarter, Atlantis Avenue, Beckton London, E16
Applicant	Notting Hill Housing Trust
Ward	Beckton
Local Plan allocation	Strategic Site S19 – Albert Basin Arc of Opportunity
Conservation Area	No
Listed Building	No
Setting of Listed Building	Gallions Hotel Grade II* Listed Building
Building of Local Interest	No
Tree Preservation Order	No
Flood Risk Zone	3
Other	Archaeological Priority Area London City Airport Height Constraint London City Airport 57 DB Noise Contour

Housing – Master Plan		
Illustrative Density	Proposed Density hr/ha	665
	Proposed Density u/ph	217
	PTAL	3/4
	London Plan Density Range	200-700 hr/ha 45-260 u/ph
Illustrative Dwelling Mix	Studio (no. / %)	0
	1 bed (no. / %)	257 / 35%
	2 bed (no. / %)	257 / 35%
	3 bed (no. / %)	225 / 30%
	4 bed (no. / %)	0
Illustrative Affordable Housing / Tenure split	Overall % of Affordable Housing	40%
	Affordable/Social Rent (no. / %)	148 / 50%
	Intermediate / Shared Ownership (no. / %)	148 / 50%
	Private (no. / %)	443 / 60%

Housing – Phase 1		
Dwelling Mix Phase 1	Studio (no. / %)	0 / 0%
	1 bed (no. / %)	111 / 38%
	2 bed (no. / %)	130 / 45%
	3 bed (no. / %)	51 / 17%
	4 bed (no. / %)	0 / 0%
Affordable Housing / Tenure split	Overall % of Affordable Housing	29.8%
	Affordable Rent social (no. / %)	42 / 14.4%

	Intermediate / Shared Ownership (no. / %)	45 / 15.4%
	Private (no. / %)	205 / 70.2%
Internal Space Standards	Comply with London Housing SPG?	Yes
Amenity Space	Comply with London Housing SPG?	Yes
Accessibility	Comply with Lifetime Homes?	Yes

Non-residential Uses

Existing Use(s)	Existing Use / Operator	Vacant Site
	Existing Use Class(es) sqm	Vacant Site
Proposed Use(s)	Proposed Use / Operator	Unknown
	Proposed Use Class(es) sqm	A1, A2, A3, A4, B1 & D1 maximum 2,641 sqm
Employment	Existing number of jobs	0
	Proposed number of jobs	121 Operational 360 Construction

Transportation – Master Plan

Car Parking	No. Existing Car Parking spaces	0
	No. Proposed Residential Car Parking Spaces	426
	No. Proposed Commercial Car Parking Spaces	10
	Proposed Parking Ratio (on and off street)	0.57
Cycle Parking	No. Existing Cycle Parking spaces	0
	No. Proposed Residential Cycle Parking Spaces	986
	Cycle Parking Ratio	1 per unit 2 per 3 bed unit
Public Transport	PTAL Rating	3/4
	Closest Rail Station / Distance (m)	Gallions Reach DLR (adjacent to site)
	Bus Routes	474, 366, N551, 101 & 262
Parking Controls	Residents Parking Zone?	No
	RPZ Hours	NA
	Previous RPZ Consultation (if not in RPZ)	NA
	Other on-street controls	Double yellow lines

Transportation – Phase 1		
Car Parking	No. Existing Car Parking spaces	0
	No. Proposed Off Street Car Parking Spaces	145
	No. Proposed On Street Car Parking Spaces	14
	Proposed Parking Ratio per residential unit	0.5 spaces
Cycle Parking	No. Existing Cycle Parking spaces	0
	No. Proposed Residential Cycle Parking Spaces	359
	No. Proposed Non Residential Cycle Parking Spaces	10
	Cycle Parking Ratio	1.29
Refuse/Recycling Collection	Summary of proposed refuse/recycling strategy	Primary Refuse collection will occur from Atlantis Avenue and Gallions Road

Sustainability / Energy	
Code for Sustainable Homes Rating	Level 4
BREEAM Rating	Very Good
Renewable Energy Source / %	high performance building fabric, shading systems, low energy lighting, energy efficient appliances, metering, high levels of insulation and by maximising natural sunlight and solar gain and Combined Heating and Power Plant / 41%

Public Consultation	
Number of properties consulted	569
Expiry of consultation period	19 th November 2014
Number of responses	5
Number in support	2
Number of objections	3
Number of other representations (neither objecting or supporting)	0

PART 2: Assessment and Conclusions

1. Executive Summary

1.1 Site

1.1.1 The site, Gallions Quarter, is located in East London on the northern bank of the River Thames at the point where it is met by the eastern end of the Royal Docks. The site is in the southeast corner of the London Borough of Newham between the areas of North Woolwich and Beckton.

1.1.2 Gallions Quarter is located immediately to the east of Gallions Reach DLR station and lies between the completed Royal Quays residential site to the south and an industrial building, the BDM warehouse, immediately to the north. To the east of the site is the Buhler Sortex building which was constructed within the last 10 years as part of the Olympic relocation programme. To the west of the site across Royal Docks Road, the new Porsche Centre is under construction (13/01969/FUL), beyond that is the established residential area of Beckton, the University of East London campus and student accommodation including the Sports Dock sports centre. In the wider context, London City Airport is located nearby to the south west of the site approximately 350 metres away.

1.2 Proposal

1.2.1 The application is accompanied by an Environmental Statement for the purposes of Environmental Impact Assessment.

1.2.2 The application is for a hybrid planning permission for a total 3.41 hectare site spread across two parcels and delivered over three Phases (Phase 1, Phase 2A and 2B).

1.2.3 Outline planning permission is sought for the comprehensive mixed use redevelopment of the whole site comprising:

- Up to 800 residential dwellings;
- Up to 2,641sqm (GIA) of commercial space (Use Classes A1, A2, A3, A4, B1 and D1);
- Masterplan layout (perimeter blocks and highway layout); height parameters between 3-12 storeys;
- A car parking provision of 432 spaces;
- 983 cycle parking spaces;
- Provision of two new public parks, Gallions Park and Gallions Green with a total provision of public open space of approximately 8,700 sqm; and
- Provision of a temporary Energy Centre.

1.2.4 The outline part of the application seeks approval for the matters of 'layout and 'access' only. The matters reserved for subsequent Local Planning Authority Approval are 'appearance', 'landscaping' and 'scale'.

1.2.5 Within the overall development, detailed planning permission is sought for Phase 1 comprising:

- 292 new residential dwellings, including 87 affordable dwellings;
- 852 sqm of commercial space
- Three perimeter blocks ranging in height between 5-12 storeys;
- A car parking provision of 157 spaces and 369 cycle parking spaces;
- Landscaping and public realm improvements; and
- Temporary Energy Centre

1.3 Key Issues

1.3.1 The submitted Environmental Statement (ES) considered the environmental impacts. It is considered that the ES is robust and that any likely negative impacts can be satisfactorily mitigated.

1.3.2 The principle of redeveloping this site for residential led mixed use is fully supported by adopted policies and in particular the strategic site designation in the Core Strategy. The mix of uses is in accordance with this designation, will create jobs and encourage activity and animation throughout the day and week.

1.3.3 The provision of family housing is 30% 3 bedroom units across the whole site. Whilst the Phase 1 offer is still below the Council's adopted policy requirements, a contribution towards offsite family housing will be secured through the S106 Legal Agreement should Phases 2A and 2B not be delivered.

1.3.4 The proposals will provide 40% affordable housing across the whole site. Whilst the Phase 1 offer is still below the Council's adopted policy requirements, a contribution towards offsite affordable housing will be secured through the S106 Legal Agreement should Phases 2A and 2B not be delivered.

1.3.5 The scale, massing and landscaping are all considered to be acceptable. Conditions will ensure a good quality of the external treatment of both the detailed first phase and outline phases. All the residential units are of a good quality, with generous internal spaces and amenity space provision. The design is considered to be of a very good quality.

1.3.6 The use of appropriate conditions, implementation of the drafted S278 Legal Agreement and completion of the S106 Legal Agreement, will ensure that no adverse transportation impacts will arise. An appropriate level of parking at a ratio of 0.50 off street parking spaces per residential unit is proposed.

1.3.7 The proposals have very good sustainability credentials and the range of strategies that have been cited comply with adopted planning policy requirements, and are therefore welcome.

1.3.8 The proposals are also considered acceptable in terms of heritage impacts, amenity space provision, amenity impacts, flood risk, ecology, airport safeguarding, accessibility and land contamination.

1.4 Recommendations

1.4.1 The principle of redeveloping this site for residential led mixed use is fully supported by adopted policies and in particular the strategic site designation in the Core Strategy. The submitted Environmental Statement (ES) considered the environmental impacts. It is considered that the ES is robust and that all these impacts are acceptable or can be mitigated. The quantity and quality of family housing is considered to be acceptable as well as the affordable housing offer of 40% across the whole site. The design is considered to be of a very good quality, and will foster sustainable and successful placemaking. It is not considered that any adverse transportation impacts will arise. An appropriate level of parking at a ratio of 0.50 off street parking spaces per unit is proposed. The proposals are also considered to be acceptable in terms of heritage impacts, amenity space provision, amenity impacts, flood risk, ecology, airport safeguarding, accessibility and land contamination.

2. **Assessment**

2.1 The key issues relevant to this application are:

- Analysis of Environmental Statement
- Principle of Development
- Employment
- Housing Mix and Residential Quality
- Affordable housing
- Urban design
- Amenity Space provision
- Children's Play space
- Landscaping and Open space
- Amenity (Noise, sunlight daylight, overshadowing, overlooking/loss of view)
- Microclimate
- Air quality
- Flood Risk
- Sustainability
- Ecology
- Airport safeguarding
- Heritage
- Transportation
- Accessibility
- Contaminated Land

2.2 Analysis of Environmental Statement

2.2.1 Officers have taken environmental information into consideration in the assessment of this application in accordance with the Town and Country

Planning (Environmental Impact Assessment) Regulations 2011, The Proposed Development is classified as an 'Urban Development Project' under Schedule 2 of the Regulations.

- 2.2.2 A request for an EIA Scoping Opinion was received by the Council on 9th September 2013. A Scoping Opinion was provided on 5th November 2013.
- 2.2.3 The application is accompanied by an Environmental Statement prepared by Entran Ltd for the purposes of Environmental Impact Assessment. The Environmental Statement (ES) comprises of 3 Volumes. Volume 1 concerns 'Introduction, 'The Site and Surroundings, 'Environmental Statement Methodology, 'Alternatives and Design Evolution', 'The Proposed Development', 'Development Programme, Demolition and Construction', 'Transport and Access', 'Daylight and sunlight', 'Townscape and Visual Amenity', 'Wind Analysis and Pedestrian Comfort', 'Noise and Vibration', 'Air Quality', 'Water Resources and Flood Risk', 'Archaeology and Cultural Heritage', 'Ecology And Nature Conservation', 'Telecommunications', 'Soils, Geology And Contaminated Land, , 'Socio-economics' and 'Waste Management'. Volume 2 is a Technical Appendices. The ES is also accompanied by Volume 3 which is a Non Technical Summary.
- 2.2.4 The Council commissioned AMEC Environment & Infrastructure UK Ltd. "AMEC" to undertake an independent technical review of the ES which has been carried out in accordance with the requirements of the EIA Regulations 2011.
- 2.2.5 The Council requested the submission of further information in line with a Regulation 22 on 6th June 2014 requiring the submission of further information in support of Chapters 8 (Daylight and Sunlight), Chapter 10 (Wind Analysis and Pedestrian Comfort), Chapter 11 (Noise and Vibration), Chapter 12 (Air Quality), Chapter 14 (Archaeology and Cultural Heritage), Chapter 15 (Ecology and Nature Conservation), Chapter 16 (Telecommunications), Chapter 17 (Soils, Geology and Contaminated Land) and Chapter 18 (Socio-economics). The requested information was submitted to the Council on 2nd September 2014. A second Regulation 22 request was sent to the applicant on 16th October 2014 requiring the submission of further information in support of Chapters 8 (Daylight and Sunlight), Chapter 10 (Wind Analysis and Pedestrian Comfort) and Chapter 15 (Ecology and Nature Conservation). That information was submitted to the Council on 21st October 2014. The consultation period in respect of the submitted information began on 29th October 2014 and will expire on 19th November 2014.
- 2.2.6 The relevant chapters in the ES are summarised below. Issues arising from the ES relevant to the assessment of the application are included in section 2.3 and onwards of this report.
- 2.2.7 Development Programme, Demolition and Construction

- This chapter describes works associated with programme and phasing of development, demolition, earthworks, piling/substructure, building superstructure and fit out.
- The duration of construction will be approximately 6-7 years. The phasing has been considered to ensure that first phase knits into the grain of the existing adjacent development. The first phase encompasses the northern part of the site adjacent to the DLR station and creates a commercial space in front of the DLR station. The second phase (2A) will develop the block adjacent to the DLR park whilst the third and final phase (2B) will develop the remaining two blocks.
- The construction effects would be managed through the development of a project and site specific Demolition and Construction Environmental Method and Management Plan (DCEMMP).
- Details of hours of working, traffic management, traffic generation and construction vehicle routes can be mitigated through the DCEMMP. A condition capturing this has been included in the draft list of conditions (see condition C19).

2.2.8 Transport and Access

- The Transport Assessment has identified that the development will have a minor adverse impact due to construction vehicle activity. However, this impact will be temporary.
- Due to site intensification and the consequent increase in car driver trips, there is a minor adverse impact on the local highway.
- Moderate beneficial transport impacts are brought about by improved bus stops on Atlantis Avenue, improved pedestrian crossing provision on Atlantis Avenue and enhanced cycle routes.
- A Transport Assessment has been submitted with the application which assesses the transport impact of the proposed development and includes a Sustainable Transport Strategy, Framework Delivery and Servicing Plan and a Framework Construction Management Plan. A Travel Plan has also been prepared to encourage sustainable travel and reduce reliance on private vehicle trips. The submission of a sitewide Travel Plan prior to occupation of an Phase of the development shall be secured through a S106 Legal Agreement.

2.2.9 Daylight and sunlight

- The assessment has been undertaken to measure the potential effect within the development and its impact on surrounding buildings. The assessment also looked at solar glare and light pollution. The assessment considered these issues against BRE guidelines.
- The overall sunlight assessment within the proposed development shows that the majority of facades in most blocks receive good levels of sunlight.
- All north-facing facades and a small proportion of facades facing internal courtyards have reduced sunlight availability. All courtyards in the proposed development were tested to be reasonably sunlit throughout the year in accordance with the guidelines recommended by the BRE. There is

no impact on the sunlight availability of any surrounding buildings from the proposed development.

- The overall daylight assessment shows that a majority of the external facades within Amarda South and the remaining blocks in the masterplan receive adequate levels of daylight. Reduced daylight levels are mainly seen in facades facing internal courtyards.
- The proposed development has a minor adverse impact on the existing daylight levels of the office spaces in the Buhler Sortex industrial building and on a small number of windows on the lower floors of two blocks within the adjacent Royal Quays residential development. Further analysis on the surrounding buildings showed that despite a reduction, the affected rooms still achieve good daylight levels above recommended values.
- The potential effects resulting from light pollution are considered to be of neutral significance assuming that best practice internal and external lighting design would be implemented across the development. In regards to solar glare, all instances are likely to be resolved and adequately mitigated by using non-reflective glazing where necessary, resulting in a neutral residual effect.
- A Regulation 22 request was issued by Council seeking further information regarding daylight and sunlight. An appropriate response has now been received by the applicant who provided summary of current policy and guidance, a summary of existing receptors and their sensitivity, construction phase effects, criteria for assessment and additional daylight and sunlight assessments.
- Officers recommend conditions to ensure that the remaining concerns are addressed as each phase progresses to detailed design (see draft condition B5).

2.2.10 Townscape & Visual Amenity

- The Site is allocated for residential development within the planning framework and does not lie within a Conservation area nor any area with any specific landscape or townscape designation. All of the existing buildings in the immediate area have been built in the last few decades and are contemporary in design, the only exception is Gallions Hotel, a Grade II* listed building which lies 50 m south of the Site.
- The redevelopment is arranged into blocks which relate to the existing street and block pattern, with the tallest, twelve storey, blocks forming gateway features into the area while remaining in scale with the existing apartment blocks at Royal Quay.
- Gallions Quarter will not be prominent within the key local views which are from the River and the open areas around Royal Albert Dock since the Proposed Development will lie behind the buildings of Royal Quay and the University of East London. Visibility will decrease once the Great Eastern Quays and Magellan Boulevard sites are built out. The most significant visual impact of the Proposed Development will be to travellers moving east along Royal Albert Way where the twelve storey towers overlooking Gallions Roundabout will appear as landmarks.
- The redevelopment of the site is predicted to not have a significant impact on visual amenity and the townscape. It is considered that the completed

development will have moderate to minor beneficial effect for the character areas adjacent to and including the site.

2.2.11 Wind Analysis and Pedestrian Comfort

- The ES identifies that wind conditions at pedestrian level are expected to be acceptable for use as a main public area.
- The design of the courtyard AS1 may lead to some impact on wind patterns. The use of wind breaks could be used to make this more sheltered.
- A Regulation 22 request was issued by Council seeking further information regarding Wind Analysis. The response to the Regulation 22 request is considered to be adequate, however areas of the methodology are not considered to be in line with best practice.
- It is concluded that the proposals in three areas should be classified as substantial adverse in terms of the impact of wind.
- An additional Regulation 22 request was issued by Council regarding Wind Analysis. The Council's environmental consultant now considers there to be enough information for Council to make a decision regarding Wind and Pedestrian Comfort. Conditions have been recommended to ensure the impacts of wind are mitigated against prior to the commencement of development (see draft condition C41).

2.2.12 Noise and Vibration

- The noise assessment has considered the likely effects of the scheme with respect to noise and vibration including the noise and vibration generated by the development on surrounding properties, during both construction and operational phases.
- The assessment has been based on a series of environmental noise measurements undertaken at the Site and noise predictions. During construction mitigation measures have been recommended, which when implemented are capable of ensuring that the impact of noise and vibration during the construction is adequately controlled.
- The proposed residential units located adjacent to the Docklands Light Railway and road network will, in some instances require the appropriate glazing and ventilation specification, in order to achieve the required internal noise levels.
- A Regulation 22 request was issued by Council seeking further information regarding Noise and Vibration. An appropriate response has now been received by the applicant, which included the consideration of traffic flows, noise modelling, location of noise receptors and complete survey results.
- The Environmental Statement and Addendum together are accepted and the response, while deficient in places is considered adequate to meet the requirements of the Regulation 22 Request and to complete a full assessment against the ES.
- Significant effects may arise during construction, affecting existing and proposed noise sensitive receptors. Significant effects may also occur if buildings services noise is not adequately controlled having regard to the

closest receptors. The proposed sound insulation scheme should be revised having regard to future traffic noise levels.

- These impacts can be controlled through appropriate conditions requiring the above issues to be fully and satisfactorily addressed prior to commencement of construction (see draft conditions C58 to C64).

2.2.13 Air Quality and Odour

- The proposed development site does not lie within the London Borough of Newham Air Quality Management Area for Nitrogen Dioxide. Modelling has been undertaken for the impacts that the proposed development would have on nitrogen dioxide levels which shows that the additional traffic associated with the proposal would have a negligible impact on local air quality.
- There is potential for dust impacts arising from demolition and construction activities at the development site, however, with the appropriate mitigation measures the impact on residential properties in the area will be minimised and therefore there is considered to be no permanent adverse impact.
- In terms of odour, detailed modelling of odour impacts arising from the Beckton Sewerage Treatment Works (BSTW) which has previously been undertaken by Thames Water predicts the current impacts of the facility and identifies future impacts once planned improvement works have been carried out. These works include the covering of the primary settlement tanks in 2015 which will substantially reduce odour emissions from the BSTW.
- A Regulation 22 request was issued by Council seeking further information regarding the temporary energy centre and traffic emissions modelling. The findings of the ES and ES addendum have been accepted. Council's environmental consultants have advised that the development would have a moderate adverse at worst at existing sensitive receptors and the development is not air quality neutral with respect to emissions from transport associated with the development.
- Officers consider that the negative impacts can be adequately addressed through mitigation and off-site abatement measures and appropriate conditions (see draft conditions C38 to C40).

2.2.14 Water Quality, Hydrology and Flood Risk

- The site is located in Flood Zone 3 but is protected by the flood defence wall which lines the River Thames.
- Whilst some potential impacts on the water environment have been identified as a result of the Proposed Development, provided that the measures outlined in the accompanying Flood Risk Assessment are undertaken, then the proposed phases of the development are concluded to have no significant detrimental impact on water resources or flood risk.
- The Environment Agency has recommended conditions relating to surface water drainage and only consider the development to be acceptable subject to these conditions (see draft conditions C27 to C30)

- Thames Water has advised it has no objection to wastewater or water capacity on site and recommended a condition regarding piling (see draft condition C31)

2.2.15 Archaeology and Cultural Heritage

- It is assessed that the site has the potential to contain buried sediments of geoarchaeological and palaeoenvironmental significance.
- Effects will be confined to the construction phase, and will result from the substantial degree of ground disturbance that will be required, notably due to piled foundations and the excavation.
- A Regulation 22 request was issued by Council seeking further information regarding desk-based archaeology assessment.
- Appropriate conditions will ensure that any potential impact on archaeology will be mitigated (see draft condition C21). Officers consider that the conditions recommended and mitigation measures identified satisfy concerns in relation to the potential negative impacts.

2.2.16 Ecology and Nature Conservation

- Potential effects on the Royal Docks SBINC are associated with contamination by pollutants created during both the construction and operational phases, through the loss of the ecological buffer created by the on site habitats prior to clearance. There is also the potential for the disturbance of a range of faunal species (i.e., bats and breeding birds) due to increased lighting levels and usage.
- The predicted effects on the existing on-site habitats is associated with the removal of all vegetation and the associated impacts to a range of fauna that may use them for foraging, commuting and nesting.
- The overall impact will need to be mitigated level through the implementation of a suite of habitat enhancements and compensatory measures, including: The creation of the Gallions Green/Linear Park Rain Gardens, insect wall and wildflower meadow; The use of container planting in other parts of the Site; and the creation of green and brown roofs and mounding for invertebrates. These mitigation measures will be secured through landscaping and ecology conditions (see draft conditions C33 to C35).
- The impact on bats will be mitigated to a Minor Beneficial level through the design and implementation of a sensitive lighting strategy, installation of green/brown roofs, and the installation of bat boxes on the new buildings.
- New foraging habitats for birds have been created by the use of green/brown roofs and suitable planting in other areas. Mitigation for birds has been targeted towards non-flocking species due to the proximity of London City Airport.
- Two Regulation 22 requests were issued by Council seeking further information regarding Invertebrate and Reptile Surveys conducted on the site. Buglife also objected to the development based on insufficient information having been submitted. As a result of the response to Council's second Regulation 22 request and in consultation with Buglife, matters

regarding Ecology and Nature Conservation are now considered to be addressed through the Environmental Statement.

- These impacts can be appropriately controlled through appropriate conditions requiring the above issues to be fully and satisfactorily addressed prior to vegetation clearing and construction (see draft conditions C33 to C35).

2.2.17 Soils, Geology and Contaminated Land

- Assessment has been undertaken in terms of land and groundwater quality, ground contamination and its potential effects on future site users and groundwater quality, surface water and the environment generally.
- With respect to ground contamination the sensitivity of the Site is considered to be High for Site End Users, Medium – High for Construction Workers and Groundwater receptors, and Medium for Surface Water receptors, Buildings and Service Infrastructure and Adjacent End Users.
- In order to consider the land contamination issues and mitigate the associated risks (during and after construction). Remediation Specification and Verification Report will be prepared which will be supported by the Contractors own Method Statements. Regulatory approval from the Local Authority and Environmental Agency will be obtained for the approach presented in these documents (see conditions C23 to C26).
- Whilst there is potential for adverse impacts resulting from the release of contaminants encountered during construction activities, Officers consider that the proposed conditions satisfy concerns with regards to the potential adverse impacts identified. Potential adverse impacts can be avoided through best practice working methods, which would be set out within environmental and construction management plans secured by condition and also the recommended conditions from the Environment Agency.

2.2.18 Telecommunications Interference

- An assessment has been undertaken to assess the potential impacts on the reception of Television and radio broadcast services.
- Modelling and analysis of current local reception conditions has shown that the proposed development is not expected to have any detrimental impact on Digital Terrestrial Television, digital satellite television services, VHF and DAB radio services.
- A Regulation 22 request was issued by Council seeking further information regarding microwave links and UHF or higher frequencies operating in the area.
- Officers have assessed the implications as stated within the Environmental Statement and the Addendum and it is considered that there will not be significant electronic interference caused to the local area from the development. A clause within the S106 Legal Agreement has been included to ensure a detailed management and mitigation plan with commitment to implementation within Appendix 2 of this report. Officers consider that the proposed obligations would satisfy concerns with regards to telecommunications interference.

2.2.19 Socioeconomics

- Assessment has been based on the effects on the socio economic conditions of both the local community and the new residents of the development. The assessment looks at issues that cannot easily be measured such as potential for crime and fear of crime and also the potential for demand on local social infrastructure such as schools and GP surgeries.
- The assessment has identified that the proposed development will have a beneficial effect in terms of construction employment, apprenticeship roles and operational employment (total of 121 jobs during the operational phase and 360 during the construction phase), the assessment also states that there is a major beneficial effect in terms of reducing crime and the potential for fear of crime through good design, bringing back into use a vacant plot and providing facilities such as open space and play space.
- The proposal will have adverse impacts on primary health care provision and primary and secondary school provision.
- Whilst the proposal will have an adverse impact on primary and secondary school provision and primary healthcare provision, S106 financial obligations for education have been sought and agreed by the applicant resulting in a neutral effect on local services.
- The proposal will create significant jobs and a local labour, goods and services clause will be secured through the S106 agreement, creating an overall beneficial impact on the socioeconomics of the area.
- A condition has been recommended restricting the maximum area of Use Class A1 Retail to ensure the proposed Local Centre does not compete with other Centres in the area (see draft condition C9).

2.2.20 Waste Management

- The proposed development will result in the generation of waste materials as a result of demolition and construction waste and general household waste during the operational phase.
- Construction waste will be managed in accordance with a Site Waste Management Plan (SWMP), which will be a statutory requirement, and the effect on the waste management regime is considered to be of minor significance at a local/regional level (see draft condition C72).
- The London Borough of Newham will be responsible for the collection, transfer, treatment and disposal of household waste.
- In order to ensure that the construction and operational wastes and onsite wastes produced by the completed development are dealt with in a sustainable way, a condition has been recommended to ensure that a Site Waste Management Plan is submitted prior to commencement of works.
- Overall, subject to the mitigation measures proposed the Council's waste management department is satisfied that the development can be accommodated appropriately.

2.3 Principle of Development

- 2.3.1 The National Planning Policy Framework (NPPF) Objective 19 states that planning should proactively drive and support the development that is needed and that every effort should be made to identify and meet the housing, business, and other development needs of an area. Objective 19 also states that planning policies and decisions should make effective use of land and promote mixed use developments. Objective 17 point 4, states that Planning Authorities should always seek to secure high quality design and a good standard of amenity for all existing and future occupants of land and buildings.
- 2.3.2 NPPF Objective 17 point 3, states that Planning Authorities should proactively drive and support sustainable economic development to deliver the homes and thriving local places that the country needs. Every effort should be made objectively to identify and then meet the housing and other development needs of an area and respond positively to wider opportunities for growth.
- 2.3.3 NPPF Objective 17 point 8, states that Planning Authorities should encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.
- 2.3.4 NPPF Objective 49 states that housing applications should be considered in the context of the presumption in favour of sustainable development and objective 50 goes on to state that Planning Authorities should plan for a mix of housing based on current and future demographic trends, market trends and the needs of different groups in the community.
- 2.3.5 The London Plan locates the site within the East London Sub-Region and designates the Site within the Royal Docks and Beckton Waterfront Opportunity Area which under Policy 2.13 seeks to optimise residential and non-residential output and densities, contain a mix of uses, provide necessary social and other infrastructure and contribute towards meeting (or where appropriate, exceeding) the minimum guidelines for housing (11,000 homes) and/or indicative estimates for employment capacity (6,000 jobs).
- 2.3.6 Policy 3.4 of the London Plan states that development proposals should achieve optimum intensity of use taking into account local context, design principles of the London Plan and Public Transport capacity.
- 2.3.7 The London Strategic Housing Land Availability Assessment 2013 (SHLAA) highlights that both the LLDC and Newham contribute a significant amount of 'large site' capacity in the east (15,855) as shown in Table 3.3 and at 42%, the East Sub region has the largest total housing capacity in London for net additional housing. The SHLAA has informed the London Plan target to deliver 2,500 homes per year in Newham, the third largest in London overall.
- 2.3.8 The Site is located on the eastern edge of the Royal Docks within East Beckton adjacent to the London Riverside Opportunity Area. A draft of the Royal Docks Opportunity Area Planning Framework (OAPF) has not yet been published but the draft London Riverside OAPF (December 2011) includes the area in which the Site is located as it was considered that it shares many features which make it more akin to London Riverside than the Royal Docks.

2.10.6 The concept of connecting people with food is excellent and is supported in every respect. Officers look forward to seeing more on this as the detail develops, this would be controlled through a condition. The longer term success of this concept will depend on management and the approach on this will need to be set out to ensure sustainability of the concept.

2.10.7 The south entry pocket spaces have natural stone paving (indicated as granite) to this threshold which is appropriate, provided the unit sizes are not out of scale with the other materials which as indicated in images seems suitable.

2.10.8 It is noted the open space provision satisfies the GLA SPG and Council's Landscape Officers support the approach on dedicated play space being integrated with larger multifunctional spaces. It is essential the quality and attention to detail achieves this design intent.

2.10.9 The proposed Gallions Park link across Atlantis Avenue (and on through to Gallions Green) is a positive statement of public realm and will need to be detailed carefully in terms of materials.

2.10.10 The spaces under the DLR will have to work hard to achieve the design objectives shown. The use of this space is supported and the move to lower the half court area below grade works well. Appropriate fencing must be designed to ensure balls are kept off the highway here.

2.10.11 At 11 metres wide for the main green space, this park is narrow, but the various treatments for the three zones should provide for suitable interest and movement, with clear links from the Phase 2 blocks, via Gallions Street and Gallions Mews. The rain garden and tree planting should reinforce its southern edge. The materials are appropriate overall, however a bound rather than bonded gravel may be more suitable.

2.10.12 A landscaping condition would be attached to any planning permission which would address any outstanding detail comments discussed above, including materials and management of the spaces (see draft condition A6, B11 to B14). Officers consider the landscape strategy to be well resolved for Phase 1 and the indicative proposals for Phase 2A and 2B are also supported. Further details for Phase 2A and 2B will come forward through reserved matters applications. The open space provision is considered acceptable and consistent with adopted policies. The Mayor of London was also satisfied with the provision, as set out in stage 1 of their response on the proposals.

2.11 Amenity (Noise, sunlight daylight, overshadowing, overlooking/loss of view)

2.11.1 NPPF objective 109 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of noise pollution.

- 2.11.2 Paragraph 7.19 of The London Plan states that the lighting of the public realm needs careful consideration to ensure places and spaces are appropriately lit, and there is an appropriate balance between issues of safety and security, and reducing light pollution.
- 2.11.3 Policy 7.6 outlines that buildings and structures should not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and microclimate. It states that this is particularly important for tall buildings.
- 2.11.4 Policy 7.7 part D Tall Buildings outlines that tall buildings should not affect their surroundings adversely in terms of microclimate, wind turbulence, overshadowing, noise, reflected glare, aviation, navigation and telecommunication interference.
- 2.11.5 UDP Policy H17 requires new development to ensure a satisfactory level of amenity, outlook and natural lighting is maintained to existing occupiers.
- 2.11.6 UDP Policy EQ45 is concerned with protecting residential amenity from a range of sources.

Noise and Vibration

- 2.11.7 The supporting Environmental Statement (Chapter 11) prepared by Entran, has carried out an analysis of the potential constraints from existing sources of noise on the internal noise environments within the Proposed Development and where necessary, the types of measures that might be adopted to overcome these constraints; impact of noise and vibration on existing sensitive receptors during the demolition and construction phase; the potential effect of the Proposed Development on surrounding sensitive receptors during the operational phase. The cumulative impacts of the other schemes in the area have also been included in the baseline flows.
- 2.11.8 London Plan Policy 7.15 requires development to seek to reduce noise by minimising the existing and potential adverse impacts of noise on, from, within, or in the vicinity of development proposals. Saved UDP policy EQ45 seeks to ensure that developments are not exposed to unacceptable levels of pollution, including noise and vibration. Saved UDP policy EQ47 sets out that where a proposed development is likely to produce a consideration increase in noise relating to its use the Council will require a Noise Impact Assessment to be carried out.
- 2.11.9 The noise assessment has considered the likely effects of the scheme with respect to noise and vibration including the noise and vibration generated by the development on surrounding properties, during both construction and operational phases. The proposed units located adjacent to the Docklands Light Railway and road network will, in some instances require the appropriate glazing and ventilation specification, in order to achieve the required internal noise levels. This has been secured by condition (see draft conditions C57 to C63)

- 2.11.10 A Regulation 22 request was issued by Council seeking further information regarding Noise and Vibration. An appropriate response has now been received from the applicant. The Environmental Statement and Addendum together are accepted and the response, while deficient in places is considered to meet the requirements of the Regulation 22 Request. Significant effects may arise during construction, affecting existing and proposed noise sensitive receptors. Significant effects may also occur if buildings services noise is not adequately controlled having regard to the closest receptors. The proposed sound insulation scheme should be revised having regard to future traffic noise levels. These impacts can be controlled through appropriate conditions requiring the above issues to be fully and satisfactorily address prior to commencement of construction (see draft conditions C57 to C63).

Daylight and Sunlight on proposed development

- 2.11.11 The design development for the Gallions Quarter development follows guidelines prescribed in the BRE to maximise the availability of sunlight in most units across the site. The distribution of units, internal layouts and courtyard spaces within Armada South ensure most blocks have south facing living room units and receive good levels of sunlight both annually and during the winter months. No enhancement and mitigation measures are therefore proposed at this stage for Phase 1.
- 2.11.12 A large proportion of the facades in other blocks in the remaining masterplan, also receive a good amount of sunlight availability both annually and during the winter months. Considering the nature and size of a large urban development such as this, it is often difficult for all facades to achieve maximum levels of sunlight, due to other design considerations like development ratios, site layout constraints etc. The BRE guide addresses this issue, and offers application of flexibility when dealing with sites located in dense urban city centres or major urban regeneration sites. This is particularly challenging for a large masterplan with a courtyard arrangement for most of its blocks. A number of blocks have north-facing facades or others that have reduced sunlight availability due to overshadowing from neighbouring blocks. This should be taken into account when developing the internal floor layouts for the masterplan to ensure that most dwellings that are dual aspect or multi-aspect have at least one main living room on facades which can receive a reasonable amount of sunlight. To ensure Phases 2A and 2B are appropriate in terms of daylight and sunlight, a condition has been recommended requiring the applicant to submit detailed Daylight and Sunlight assessments with appropriate mitigation measures to ensure daylight and sunlight levels are adequate for future occupants of the development (see draft condition B5).

Daylight and Sunlight on neighbouring development

- 2.11.13 All tested windows for the Buhler Sortex and Royal Quay 1 developments meet the minimum values required both annually and during the winter months, with the proposed development in place. The effect on the

London City Airport safeguarding team to ensure that their operations are not compromised.

2.17 Airport safeguarding

2.17.1 Objective 102 of the National Planning Policy Framework 2012 states that local planning authorities should put in place policies taking into account aviation safety and that when determining planning applications, local planning authorities should ensure that there are no unacceptable adverse impacts on aviation safety.

2.17.2 Core Strategy Policy INF1 requires development proposals to have regard to the Airport Safeguarding Area and Public Safety Zone.

2.17.3 London Borough of Newham Unitary Development Plan (adopted June 2001, policies saved by the Secretary of State in 2007 and not deleted on adoption of the Core Strategy on 26th January 2012) Policy T30 states that the Civil Aviation Authority will be consulted on all applications for permission to develop sites within the outer safeguarding boundary shown on the safeguarding map for the London City Airport, provided that the proposals are of the extent and nature specified on the key to the map.

2.17.4 London City Airport commented that they did not object in principle, subject to conditions to be included within any approval to ensure that details of craneage are submitted, and London City Airport are given the opportunity to comment further. The proposals are considered to be acceptable in terms of airport safeguarding.

2.18 Heritage

2.18.1 The Council as the Local Planning Authority has exercised its general duty under s.66 of the Planning (Listed Building and Conservation Areas) Act 1990 in respect of the listed building located within close proximity to the site, having special regard to the desirability of preserving the building and its setting. The Council has assessed the level of harm to these heritage assets and has given considerable importance and weight to the desirability of preserving the setting of listed buildings.

2.18.2 Chapter 12 of the NPPF and accompanying PPG Conserving and enhancing the historic environment (updated 10.04.2014) focus on the topic of conserving and enhancing the historic environment. The appropriate conservation of heritage assets forms one of the 'Core Planning Principles' of the NPPF that underpin the planning system. This is expanded upon principally in paragraphs 126-141 but policies giving effect to this objective appear elsewhere in the NPPF.

2.18.3 Having specific regard to Core Strategy policy SP5 (Heritage and other Successful Place-making Assets) which promotes the need for innovation to realise the value of assets and secure viable, sustainable and appropriate futures for them.

and until in relation to that Phase the noise mitigation measures approved pursuant to (i) above have been installed and completed by a suitably qualified engineer approved by the Local Planning Authority has certified that the noise mitigation measures agreed have been installed and completed.

Reason To ensure the impacts of the construction of the development are mitigated against so that the new residents of earlier phases and existing neighbouring properties suffer no loss of amenity during the construction and demolition.

C59. No Building within a Phase within the development hereby permitted shall be Occupied unless and until full details that demonstrate that the required guideline internal noise levels specified in BS8233 with reference to Table 4 of BS8233, and that individual noise events should not normally exceed 45dB $A_{max(f)}$ in bedrooms at night, and appropriate levels of ventilation have been achieved within the relevant Building have been submitted to and approved in writing by the Local Planning Authority.

Reason To protect the amenity of future occupants and neighbours.

C60. No Building within a Phase shall be Occupied unless and until a scheme for testing the internal noise environment of the units within the relevant Building, demonstrating compliance with the standards required by condition C58 above has been submitted to and approved in writing by the Local Planning Authority.

Each approved scheme for testing shall thereafter be implemented.

Reason To protect the amenity of future occupants and neighbours.

- C61.**
- a) No Construction Works for a Building within any Phase of the development hereby permitted shall be commenced unless and until details of the proposed sound insulation scheme to be implemented between the residential accommodation and any non residential uses have been submitted to and approved in writing by the Local Planning Authority, in relation to the relevant building. Details should include airborne and impact sound insulation.
 - b) No Building within any Phase shall be first occupied unless the developer has certified that the noise mitigation measures agreed have been installed. The approved scheme is to be completed prior to occupation of the residential units of the relevant building and shall be permanently maintained thereafter, throughout the life of the building.

The Local Planning Authority will require pre-completion testing to be carried out to prove that all floor, ceiling and wall constructions can achieve compliance with Building Regulations Approved Document E, or

greater in the cases specified in that paragraph.

Reason To protect the amenity of future occupants and neighbours.

- C62.**
- a) No Building within any Phase of the development hereby permitted which contains external plant shall be commenced unless and until an acoustic report has been submitted to and approved by the Local Planning Authority in relation to that Building. The submitted acoustic report shall demonstrate that the plant operation and activity on that Building shall not give rise to a BS4142 rating level greater than the background level at the nearest or worst affected property.
 - b) No building within any Phase shall be first occupied unless the details approved pursuant to a) above have been implemented in full. Thereafter, the developer shall certify to the Local Planning Authority that the noise mitigation measures agreed have been installed.

Reason To protect the amenity of future occupants and neighbours.

- C63.**
- (i) No Phase of the development hereby permitted shall be commenced until a survey measuring noise levels generated from adjacent road traffic, DLR and ground and air noise from London City Airport has been submitted to and approved by the Local Planning Authority in relation to the relevant Phase of development.

The survey should be accompanied by a scheme setting out mitigation measures such as siting, orientation, noise barriers and other such measures as may be appropriate to be incorporated into the development to ensure internal noise levels specified in BS 8233 with reference to Table 4 of BS 8233 are achieved. The mitigation measures shall include the provision of acoustic glazing and mechanical ventilation as required to meet the guideline values in Table 4 of BS 8233.

All glazing and ventilation installed should be sufficient to provide an internal noise level in line with the BS 8233 guideline values. Evidence should be provided to show that the glazing and ventilation intended to be installed can actually achieve the noise mitigation levels required. This should include manufacturers' test data showing the sound reduction levels achievable and calculations should demonstrate that room and window dimensions have been considered.

- (ii) No Building within the relevant Phase of the development shall be Occupied unless and until in relation to that Phase the mitigation measures approved pursuant to (i) above have been implemented in full and certified as such by a suitably qualified engineer approved by the Local Planning Authority. The mitigation measures approved pursuant to (i) above shall be retained for so long as the development shall exist.

Reason To protect the amenity of future occupants and neighbours.

C64. No residential unit (Use Class C3) within any Building of the development hereby permitted shall be first Occupied unless:

A) a scheme for noise insulation and ventilation for the relevant Building has been submitted to and approved in writing by the Local Planning Authority. The submitted scheme should produce internal noise levels in residential accommodation specified in BS8233:2014 and a reasonable level of ventilation when windows are closed; and,

B) the developer has certified in writing to the Local Planning Authority that the noise insulation and ventilation system, as approved by A) above, has been installed in all residential units within the relevant Building.

Reason To protect the amenity of future occupiers with particular regard to the fact that the development falls within the 57dB full noise contour of London City Airport.

Design and Access

C65. (i) All the residential units comprised within the development hereby permitted shall be constructed in accordance with Lifetime Homes standards, as defined in the Joseph Rowntree Foundation publication "Achieving Part M and Lifetime Homes standards" and the joint collaboration of JRF, Mayor of London, GML Architects and Habinteg HA in the publication "Lifetime Homes" and as referred to in the Greater London Authority Accessible London Supplemental Planning Guidance entitled Accessible London: achieving an inclusive environment (April 2004); and,

(ii) any application for reserved matters approval that includes residential units shall be accompanied by adequate information to demonstrate that all of those residential units in the relevant Phase of the development will be constructed to Lifetime Home Standards.

Reason To ensure that accessible housing is provided.

C66. No fewer than 10% of the total number of residential units within the development hereby approved shall be constructed so that they can be easily adapted for residents who are wheelchair users in accordance with the publication 'Wheelchair Housing Design Guide', Habinteg Housing Association, dated February 2006.

Reason To ensure that accessible housing is provided.

C67. The non-residential parts of the development hereby permitted shall not

be Occupied unless and until, the developer has provided a copy of the final Building Research Establishment (BRE) certificate confirming that the development design for the relevant part of the permanent buildings each achieve a minimum BREEAM rating of Very Good. The BREEAM Post Construction Assessment for Offices, Education or Retail, whichever is relevant, shall be carried out on a sample of the relevant part of the development in accordance with an agreed methodology to ensure that the required minimum rating has been achieved and can be maintained.

Reason In the interest of energy efficiency and sustainability.

C68. No residential unit (Use Class C3) within any Building of the development hereby permitted shall be first Occupied unless and until the developer has provided a copy of the post construction stage final certificate issued by a licensed code assessor on behalf of the Department of Communities and Local Government, and logged on the service provider database, demonstrating that the residential units in that building have achieved The Code for Sustainable Homes Code Level 4 as a minimum (or the equivalent level of any subsequently adopted national standard on sustainable design and construction) at both design stage and post construction stage (as determined by a licensed assessor) in respect of the relevant Building.

Reason To ensure that high standards of sustainable design are implemented.

C69. No building within any Phase of the development hereby permitted shall be commenced unless and until an Emergency Services Access Strategy has been submitted to and approved in writing by the Local Planning Authority in consultation with Building Control and the Fire Brigade in relation to the relevant Building. The Strategy shall include details of all access routes for fire and other emergency vehicles to and within the Building, during the construction and operational periods of that Building and cumulatively, taking account of the site (to the extent that it has been developed) as a whole at that time. The approved access routes shall be kept clear at all times.

Reason To ensure satisfactory access for emergency vehicles.

C70. The landscaping provided as part of the development hereby permitted, shall be accessible and useable by disabled people, including wheelchair and scooter users, people with sight impairment and people with prams or pushchairs.

Reason To ensure that the site is accessible and usable for all.

C71. No satellite antenna, apparatus or plant of any sort (including structures or plant in connection with the use of telecommunication systems or any electronic communications apparatus) shall be erected on the site or roof of any buildings hereby approved unless or until details of their size and location have previously been submitted to and approved in writing by the

Local Planning Authority.

Reason In the interest of visual amenity and the safe operation of London City Airport.

Waste

C72. (i) Notwithstanding and in addition to the provisions of Chapter 19 of the Environmental Statement submitted as part of the application, which states that the Applicant will instruct the production of a Site Waste Management Plan (SWMP), no Construction Works for a Development Phase shall be commenced unless and until a final Site Waste Management Plan (SWMP) has been submitted to and approved in writing by the Local Planning Authority in relation to the relevant Development Phase.

Each DPWMP shall include details of the methods to be employed to:

- deal with construction and demolition waste prior to commencement of development of the relevant Development Phase;
- details relating to the means of refuse and recycle storage for that Development Phase; and,
- the methods to be employed to enable street level waste collections during the operational phase.

(ii) No Development Phase of the development hereby permitted shall be Occupied unless and until the approved details pursuant to (i) above have been implemented in full in relation to the relevant Development Phase. The details approved pursuant to (i) above shall be permanently maintained thereafter throughout the life of the Development Phase.

Reason To ensure a long-term sustainable waste management strategy for the site and control the transport and environmental impact of all collection, transfer and disposal movements.

Minimising Carbon Dioxide Emissions

C73. No photovoltaic panels shall be sited on any building or structure within the development hereby permitted until the full details of the proposed location and manufacturers specification(s), for each complete installation has been submitted to and approved in writing by Local Planning Authority in consultation with London City Airport.

Reason To ensure a satisfactory standard of external appearance of the development and in the interest of the safe operation of London City Airport.

C74. The minimum 41% reduction in carbon dioxide emissions shall be established from the anticipated carbon dioxide emissions of all of the

approved permanent development phases once all energy efficiency measures have been accounted for and details shall be provided in writing to the Local Planning Authority.

Reason To ensure the development makes the fullest contribution to Climate Change.

C75. a) Prior to the commencement of works on the Energy Centre(s), details of the Energy Centre(s) should be submitted to, for approval in writing by, the Local Planning Authority. The details shall include:

- The make and model of the system and details of the additional abatement technology that has been investigated for fitment to reduce air pollution emissions.
- A life cycle analysis showing a net benefit to carbon emissions from the plant.
- The type, height, size and location of the energy centre (including calculation details regarding the height of the energy centre).
- An assessment of the impact of the emissions to ground level concentrations and any additional impact to surrounding buildings/structures.
- An acoustic report for the plant. Plant operation and activity on site shall not give rise to a BS4142 rating level greater than the background level at the nearest or worst affected property. Where it is considered impractical to meet this noise standard the report should detail mitigation measures taken to reduce noise to a minimum.

b) The approved gas fired CHP and associated plant shall be installed in strict accordance with the agreed details and operational to the satisfaction of the Local Planning Authority prior to the occupation of the development and shall be permanently maintained thereafter, unless otherwise agreed in writing.

c) The approved system(s) shall achieve at least a minimum 41% reduction in carbon dioxide emissions from the anticipated regulated carbon dioxide emissions of the development once all energy efficiency measures have been accounted for and be implemented and retained for so long as the development shall exist except to the extent approved in writing by the Local Planning Authority.

Reason To ensure the development meets the requirements of the Mayor's Climate Change Mitigation and Energy Strategy and its objectives of increasing the proportion of energy used generated from renewable sources

Informatives

- 1 In dealing with this application, Newham Council has implemented the requirements of the National Planning Policy Framework and of the Town and

Appendix 2: Section 106 Legal Agreement – Heads of Terms

The Section 106 Legal Agreement Heads of Terms to be agreed between the Council and the Applicant are set out below. The contributions secured through the S106 agreement have been subject to a viability assessment.

- Payment of the Council's legal fees
- Affordable housing – 40% and 50/50 split affordable/social rent to intermediate / shared ownership
- Local labour, local goods and services
- Workplace contribution of **£153,405**
- Financial contribution towards Education Phase 1 - **£458,000**, Phase 2A - **£470,000** and Phase 2B - **£665,000**
- Travel Plan Monitoring **£3000**
- S106 Monitoring **£30,000**
- Car Club Methodology
- Preparation of a Site Wide Travel Plan
- Offsite family housing contribution **£5,518,800** for Phase 1 should Phase 2A and 2B not come forward
- Offsite affordable housing contribution of **£4,511,400** for Phase 1 should Phase 2A and 2B not come forward
- Telecommunications Mitigation and Management Strategy
- Connection to the Combined Heating and Power (CHP) plant located in the Great Eastern Quay's development to the south.