



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

**Technical Note on Air Quality Issues**

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## Document Control

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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 S11 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<sub>2.5</sub>) to be achieved by 2040. These include:
- A maximum annual mean concentration target (AMCT)<sup>1</sup> of 10 µg/m<sup>3</sup>; and
  - A population exposure reduction target (PERT)<sup>2</sup> 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/m<sup>3</sup>; 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:

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<sup>1</sup> The AMCT will be met, if at every relevant monitoring station, the annual mean concentration of PM<sub>2.5</sub> in ambient air is equal to or less than 10 µg/m<sup>3</sup> in the calendar year of 2040

<sup>2</sup> 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<sub>x</sub> 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 (NOx) 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 limits<sup>3</sup>”.*

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/m<sup>3</sup> for PM<sub>2.5</sub>.

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<sub>2.5</sub> 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*

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<sup>3</sup> 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/m<sup>3</sup> (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;
- PM<sub>10</sub> concentrations exceed the objective around some major roads, with the most significant source of PM<sub>10</sub> being road transport and other sources associated with central London; and

- Concentrations of PM<sub>2.5</sub> exceed the 2005 WHO guideline of 10 µg/m<sup>3</sup> 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 (PM<sub>10</sub> and PM<sub>2.5</sub>). 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, PM<sub>10</sub> and PM<sub>2.5</sub>, 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 PM<sub>10</sub> are numerically the same as the objectives for England. PM<sub>2.5</sub> has a UK limit value (20 µg/m<sup>3</sup>) 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<sub>2.5</sub> concentration of 10 µg/m<sup>3</sup> 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, PM<sub>10</sub> and PM<sub>2.5</sub> 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<sub>2.5</sub> limit value of 20 µg/m<sup>3</sup> has been used as the primary metric (in accordance with the Air Quality Standards Regulations), with the GLA target of 10 µg/m<sup>3</sup> 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 PM<sub>10</sub> (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
<b>Nitrogen dioxide</b>	1-hour Mean	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	Objective, limit value
	Annual Mean	40 µg/m <sup>3</sup>	Objective, limit value
<b>PM<sub>10</sub></b>	24-hour Mean	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	Objective, limit value
	Annual Mean	40 µg/m <sup>3</sup>	Objective, limit value
<b>PM<sub>2.5</sub></b>	Annual Mean	20 µg/m <sup>3</sup>	UK Limit value
	Annual Mean	10 µg/m <sup>3</sup>	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.

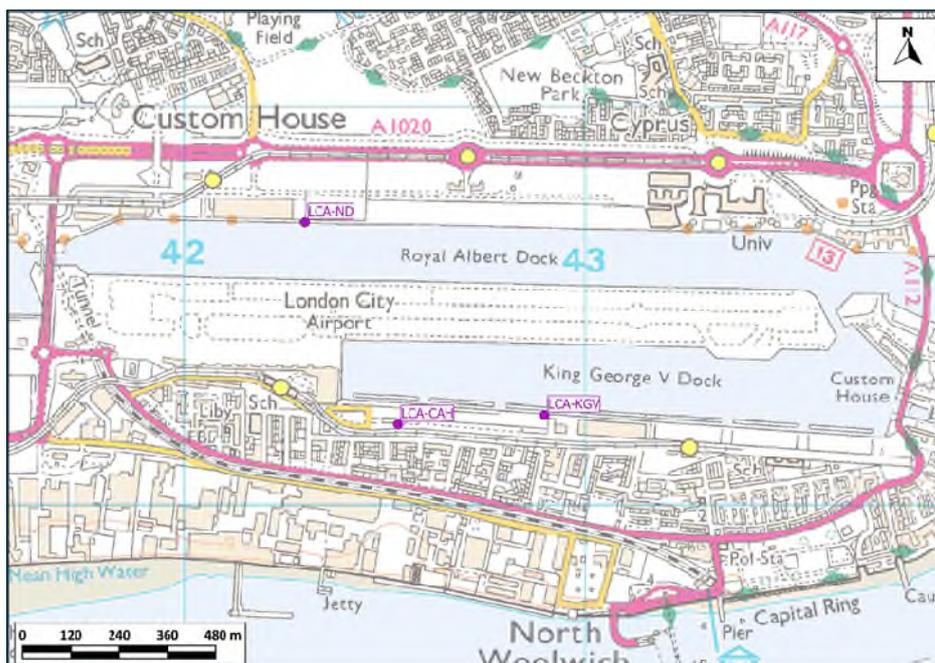
## Odours

- 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 ( $\text{OU}_E/\text{m}^3$ ). 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

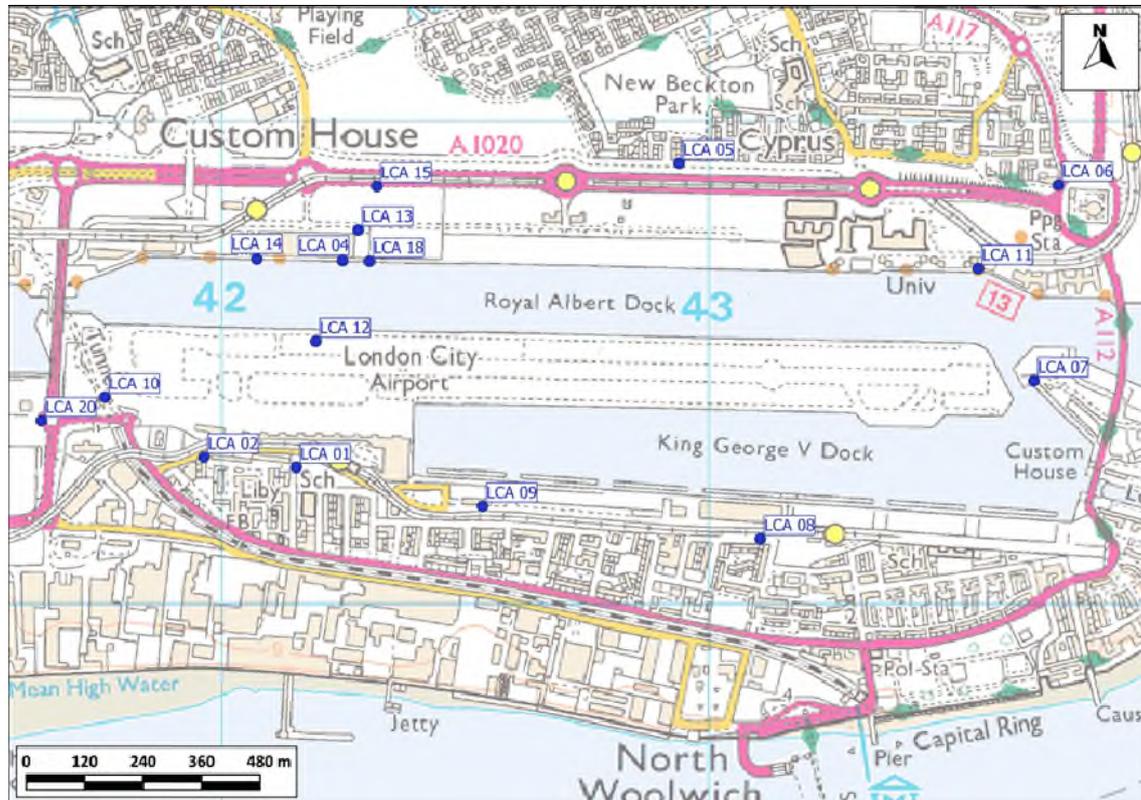
- 5.1 LBN has investigated air quality within its area as part of its responsibilities under the LAQM regime, and has identified road traffic as the primary source of poor air quality in the Borough. In 2002, the Council declared an Air Quality Management Area (AQMA) in relation to exceedances of two air quality objectives – the annual mean objective for nitrogen dioxide and the daily mean objective for PM<sub>10</sub>. 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 PM<sub>10</sub>;
  - one adjacent to the LBN offices at Newham Dockside (LCA-ND), measuring nitrogen dioxide; and
  - one at KGV House (LCA-KGV) measuring PM<sub>10</sub> and PM<sub>2.5</sub>.

**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  $\text{PM}_{10}$  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.

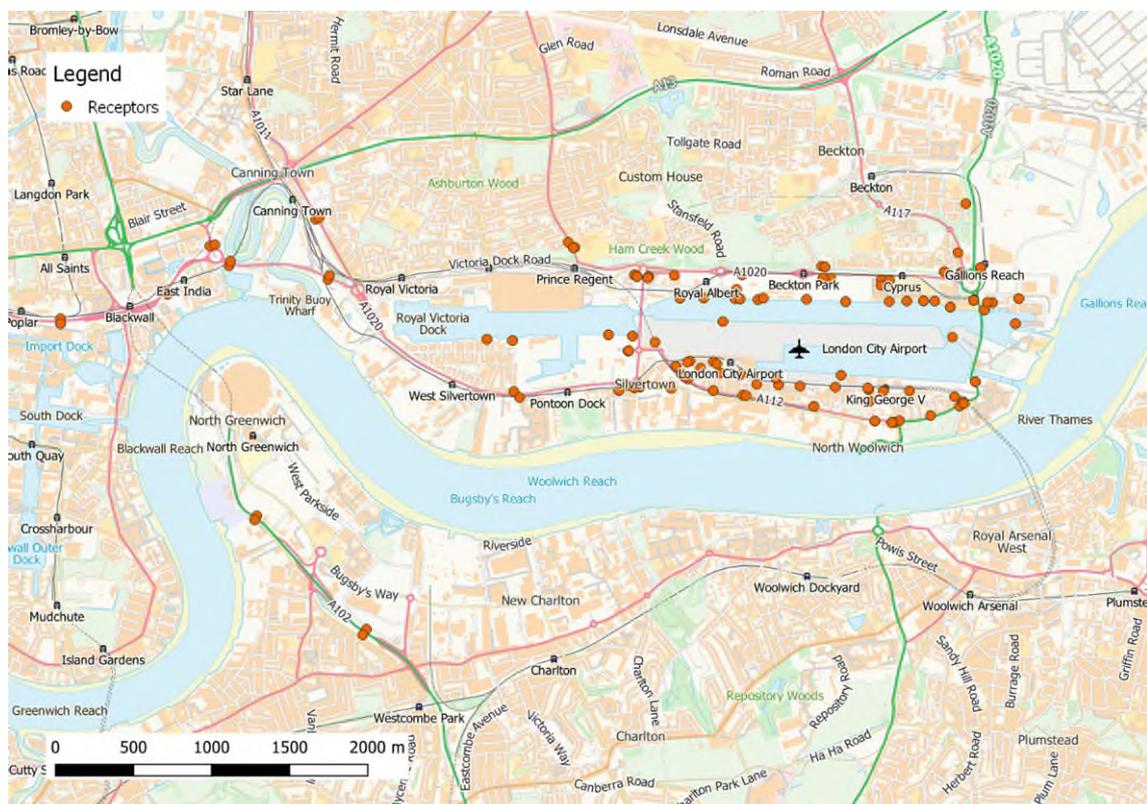
- 5.6 Continuous monitoring is carried out at seven local authority sites (in Newham, Greenwich and Tower Hamlets) in the proximity of the Airport. In 2019, there were exceedances of the annual mean nitrogen dioxide objective at three roadside sites, but none of these locations will be affected by the 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
<b>2023 Assessment Year</b>					
<b>Nitrogen dioxide</b>	Objective	R4 (Newland St)	28.4	28.5	Negligible
<b>Nitrogen dioxide</b>	Limit Value	A102 (LV13)	32.6	32.6	Negligible
<b>PM<sub>10</sub></b>	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
<b>PM<sub>2.5</sub></b>	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
<b>PM<sub>2.5</sub></b>	GLA Target	R60 (Royal Docks)	12.2	12.2	Negligible
<b>2027 Assessment Year</b>					
<b>Nitrogen dioxide</b>	Objective	R4 (Newland St)	27.7	28.0	Negligible
<b>Nitrogen dioxide</b>	Limit Value	A102 (LV13)	30.6	30.6	Negligible
<b>PM<sub>10</sub></b>	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
<b>PM<sub>2.5</sub></b>	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
<b>PM<sub>2.5</sub></b>	GLA Target	R60 (Royal Docks)	12.2	12.2	Negligible
<b>2029 Assessment Year</b>					
<b>Nitrogen dioxide</b>	Objective	R4 (Newland St)	27.1	27.4	Negligible
<b>Nitrogen dioxide</b>	Limit Value	A102 (LV13)	28.4	28.4	Negligible
<b>PM<sub>10</sub></b>	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
<b>PM<sub>2.5</sub></b>	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
<b>PM<sub>2.5</sub></b>	GLA Target	R60 (Royal Docks)	12.2	12.2	Negligible
<b>2031 Assessment Year</b>					
<b>Nitrogen dioxide</b>	Objective	R4 (Newland St)	26.7	27.2	Negligible
<b>Nitrogen dioxide</b>	Limit Value	A102 (LV13)	27.2	27.2	Negligible
<b>PM<sub>10</sub></b>	Objective	R60 (Royal Docks)	18.7	18.7	Negligible
<b>PM<sub>2.5</sub></b>	Objective	R60 (Royal Docks)	12.2	12.2	Negligible
<b>PM<sub>2.5</sub></b>	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  $\text{PM}_{10}$  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  $\text{PM}_{10}$  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  $\text{PM}_{10}$  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 PM<sub>10</sub> or PM<sub>2.5</sub> objectives, and all predicted impacts are negligible.

- 6.19 Predicted concentrations of PM<sub>2.5</sub> exceed the GLA target of 10 µg/m<sup>3</sup> at all receptors in both DM and DC Scenarios. The greatest change between the DM and DC scenarios is 0.02 µg/m<sup>3</sup> 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/m<sup>3</sup>) 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/m<sup>3</sup> (69% of the objective) and for the DC scenario is 28.0 µg/m<sup>3</sup> (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/m<sup>3</sup> 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/m<sup>3</sup> 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/m<sup>3</sup>, less than 0.1% of the Limit Value, and the impact is negligible.
- 6.23 Predicted concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> are lower in both the 2027 DM and DC scenarios than in 2019 at all receptors. The highest predicted concentration of PM<sub>10</sub> is 18.7 µg/m<sup>3</sup> 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/m<sup>3</sup>. The highest predicted concentration of PM<sub>2.5</sub> is 12.2 µg/m<sup>3</sup> or 61% of the objective at the same receptor, for both the DM and DC scenarios. There are no predicted exceedances of the PM<sub>10</sub> or PM<sub>2.5</sub> objectives, and all predicted impacts are negligible.
- 6.24 Predicted concentrations of PM<sub>2.5</sub> exceed the GLA target of 10 µg/m<sup>3</sup> at all receptors in both DM and DC scenarios. The greatest change between the DM and DC scenarios is 0.04 µg/m<sup>3</sup> 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/m<sup>3</sup>) 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  $\text{PM}_{10}$  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  $\text{PM}_{10}$  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  $\text{PM}_{10}$  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  $\text{PM}_{10}$  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  $\text{PM}_{10}$  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 µg/m<sup>3</sup>. 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<sub>10</sub> and PM<sub>2.5</sub> 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<sub>x</sub> 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, PM<sub>10</sub> and PM<sub>2.5</sub> remain well below their respective limit values/objectives, and impacts are all negligible. Concentrations of PM<sub>2.5</sub> 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 OUE/m<sup>3</sup> in the baseline year of 2019. This concentration is below the value of 3 OUE/m<sup>3</sup> 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<sub>x</sub> emissions associated with gas combustion in buildings and NO<sub>x</sub> and PM<sub>2.5</sub> emissions associated with road transport. As the Proposed Amendments do not increase NO<sub>x</sub> 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/m<sup>2</sup> (GIA) for “Offices/light industrial” to 139 trips/m<sup>2</sup> (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 S11 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, PM<sub>10</sub> and PM<sub>2.5</sub> 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<sub>2.5</sub> 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.