

Annual  
Performance  
Report 2022

# Annexes



01 June 2023

# Contents

- Annex 1** Summary of CAPD1 APR requirements & References
- Annex 2** Noise Management and Mitigation Strategy (NOMMS) Report
- Annex 3** Aircraft Noise Categorisation Scheme (ANCS) Report
- Annex 4** Community and Airline Annual Report (IPS) and List of Community Projects Fund 2022 Awardees
- Annex 5** Annual Air Quality Monitoring Report
- Annex 6** Air Quality Action Plan Progress Update
- Annex 7** Sustainability and Biodiversity Action Plan Progress Update
- Annex 8** List of Employers Onsite and CADP1 Construction Contractors
- Annex 9** Our Newham Work Statistics
- Annex 10** LCY Employment Policy
- Annex 11** Employee Travel Survey

# Annual Performance Report 2022

## Annex 1

### Summary of CADP1 APR Requirements & References



Requirements	Source: Approved Document or Condition	Condition /AOD References	APR Section	Format	APR Reference/ Source
<b>Approved PCCS (AODS)</b>					
<b>Condition 18 AOD Aircraft Noise Categorisation Scheme (March 2022) – paras 4.1.3 &amp; 5.2.2</b> (5.2.2) Produce a report as part of the APR that records the results of the assessments undertaken as part of the quota count regime. Including but not limited to: the quota counts for each aircraft type; the total annual quota arising from aircraft operations; the results of noise monitoring, expressed for each aircraft and airline as averages in relation to sideline, flyover and approach noise levels, quota counts to be used for each aircraft and the expected total annual quota for the forthcoming calendar year. (4.1.3) publish in the APR a league table setting out the performance of each aircraft type, by airline, relative to its previous years' performance.	Condition & Approved Document	18 AOD paras 4.1.3 & 5.2.2 19 31 31 AOD A.7, Appendix C paras C.3 and C.7	Environment	Summary in text and report in Annex	Sections 2.2 & 2.4 Annex 3: ANCS Report Annex 2: NOMMS, Annex 4: Annual Community & Airline Report
<b>Condition 31 AOD NOMMS (August 2022) A.7 – Complaints Handling</b> Report complaints about environmental impact of the operation of the airport and any action taken to address such complaints in the APR.	Condition & Approved Document	31 31 AOD A.7 59	Environment	Summary in text	Section 2.12
<b>Condition 31 AOD NOMMS (August 2022) A.7 – Reporting</b> Publish noise monitoring data in APR in June each year, including reports from the Noise and Track Monitoring System:- i) Track plots showing the actual tracks flown by departing aircraft. ii) Average departure and arrival noise levels by aircraft type and airline.	Condition & Approved Document	18 AOD 5.2.2 31 31 AOD A.8	Environment	Summary on text, report in Annex	Section 2.3 Annex 2 NOMMS Annex 3 ANCS Section 4 and Appendix 3
<b>Condition 31 AOD NOMMS (August 2022) – Appendix C para C.2.7</b> Produce an annual Community and Airline Report as part of the APR describing aircraft/airline performance with regard to noise monitoring in terms of good and poor performance and league tables.	Condition & Approved Document	31 31 AOD Appendix C para C.7	Environment	Summary in text and report in Annex	Section 2.4 Annex 4: Annual Community & Airline Report Annex 2: NOMMS Section 2,4 and Appendix 2
<b>Condition 31 AOD NOMMS (August 2022) Appendix C para C.3 (iv) and (v)</b> Publish an annual Community and Airline Report that highlights the performance of the scheme and identify the most improved airline for the previous calendar year. Identify the details of the community projects that have been sponsored in the previous year in partnership with the winning airline. Publish as part of the APR.	Condition & Approved Document	31 31 AOD Appendix C para C.3 (iv) and (v)	Environment	Summary in text and report in Annex	Section 2.4 Annex 4: Annual Community & Airline Report Annex 2: NOMMS Section 2,4 and Appendix 2



Requirements	Source: Approved Document or Condition	Condition /AOD References	APR Section	Format	APR Reference/ Source
<b>Approved PCCS (AODS)</b>					
<b>Condition 31 AOD NOMMS (August 2022) – H.1</b> Report in the APR details of the use of APUs at the airport the previous calendar year.	Condition & Approved Document	31 31 AOD Appendix F	Environment	Contours in Annex and summary in text	Sections 2.5 and 2.3 Annex 2: NOMMS Appendix 6
<b>Condition 31 AOD NOMMS (August 2022) – Appendix I (Reverse Thrust) Any</b> exceedances of the noise threshold levels from an arriving aircraft shall be reported in the Annual Performance Report	Approved Document	31 AOD Appendix I	Environment	Report in Annex	Annex 2: NOMMS
<b>Condition 44 AOD Ground Power Strategy (June 2020) – para 1.7</b> Monitoring of Ground Power performance to be reported annually in APR. Paragraph 1.6 confirms the monitoring approach is described in the Air Quality Management Strategy (AQMS) (condition 58). Relevant measures in the AQMS are: 1, 2 and 3.	Approved Document	44 44 AOD para 1.7 58 AOD para 1.5 56 AOD	Environment	Summary of AQMS progress	Section 2.5 Annex 2 NOMMS Annex 6 Air Quality Action Plan Progress Update
<b>Condition 47 AOD Auxiliary Power Units Strategy (February 2020) –para 1.9</b> Report annually as part of the APR all current aircraft operational at the airport which require essential use of APUs and APU run times that have ran for longer than specified in the Airport Operating Instructions.	Condition & Approved Document	47 AOD para 1.8 31 31 AOD Appendix H.1	Environment	Summary in text and report in Annex	Section 2.5 Annex 2 NOMMS Section 8.0 & Appendix 6 Annex 6 Air Quality Action Plan Progress Update
<b>Condition 48 AOD Ground Engine Running Strategy (September 2020) – para 6.2.1</b> A report as part of the APR on the performance and or compliance during the previous calendar year with the approved targets in the Ground Engine Running Strategy. To compare against the stated targets, by aircraft type and airline, including the: average engine running time on stands; average time for aircraft to taxi into a stand on arrival; and average time from an aircraft leaving a stand to the time of departure.	Condition & Approved Document	48 AOD para 6.2.1 31	Environment	Summary in text and report in Annex	Section 2.5 Annex 2 NOMMS Section 5.2 & Appendix 3
<b>Condition 49 AOD Ground Running, testing and Maintenance Strategy (October 2020) – para 5.1.1.</b> A report as part of the APR recording engine ground running during the preceding calendar year, including details of the number, duration and power setting of ground runs and the types of aircraft involved and written measurements and calculations to show whether the Ground Running Noise Limit has been exceeded during the preceding calendar year.	Condition and Approved Document	49 49 AOD	Environment	Summary in text and report in Annex	Annex 2 NOMMS Section 5.3 & Appendix 4

Requirements	Source: Approved Document or Condition	Condition /AOD References	APR Section	Format	APR Reference/ Source
Approved PCCS (AODS)					
Condition 51 AOD Ground Running Noise Limit Strategy (January 2017) – para 4.1.2 Provide written measurements and calculations in the APR to show whether the Ground Running Noise Limit is being approached.	Condition & Approved Document	51 para 4.1.2 52 48 49	Environment	Summary in text and report in Annex	Annex 2 NOMMS Section 5.0 & Appendix 4
Condition 56 AOD Sustainability and Biodiversity Strategy (March 2021) – para 1.8 Report on the individual targets in the APR.	Condition & Approved Document	56 56 AOD para 1.8 70 AOD para 4.7	Environment	Summary in text and report in Annex	Section 2.11 Annex 7 Sustainability and Biodiversity Action Plan Progress Update
Condition 57 AOD Air Quality Monitoring Strategy (December 2020) – para 2.11 Include the annual Air Quality Monitoring Report in the APR.	Condition & Approved Document	57 57 AOD para 2.11	Environment	Summary in text and report in Annex	Section 2.6 Annex 6
Condition 58 AOD Air Quality Management Strategy (March 2021) – Measures 1 to 18 – para 1.5 Progress on each measure/target will be set out in the APR each year. All targets and strategies are set out in Box 1 of the approved strategy.	Approved Document	58 AOD para 1.5 44 AOD para 1.7	Environment	Report in Annex	Section 2.6 Annex 6 Air Quality Action Plan Progress Update
Condition 60 AOD Use of River Thames For Construction – Para 4.2 Report the number of vehicles taken off the road each year as part of APR.	Approved Document	60 AOD para 4.2	Environment	Summary in text	Section 4.3
Condition 70 AOD Waste Management Strategy – Para 4.7 Report progress annually on the targets for the management and recycling of CADP1 construction wastes.	Approved Document	70 AOD para 4.7 56 56 AOD para 1.8	Environment	Summary in text and report in Annex	Section 2.11 Annex 7 Sustainability and Biodiversity Action Plan Progress Update (measure WST1)
Condition 71 AOD Travel Plan (November 2019) – Paras 5.8 & 5.16 Results of passenger and staff travel surveys will be included within the APR.	Approved Document	71 AOD paras 5.8 & 5.16	Surface Access	Summary in text	Section 4.2 Annex 11

Requirements	APR Section	Format	APR Reference/ Source
<b>SECTION 106 PLANNING AGREEMENT</b>			
<b>Schedule 8 produce noise contours – Para 2 (30 Noise Monitoring System &amp; 31 NOMMS – Appendix F)</b> Publish noise contours each year as part of the APR (to include 54Db contour), noise contours for the Sound Insulation Scheme & produce annual daytime noise contours depicting air noise produced during an average summer day following defined method.	Environment	Contours in Annex and summary in text	Section 2.7 Annex 2 NOMMS Section 7 and Appendix 5
<b>Schedule 9 Purchase Offer – Para 8.2</b> – any residential dwelling with any part of its external elevation which is situated within the actual 69 db contour for the purposes of the purchase scheme and within three months of that date they shall notify the owner/occupier of any dwelling so identified in the APR that they are entitled to benefit from the purchase scheme and invite applications from the owner/occupier under the purchase scheme.	Environment	Summary in text and report in Annex	Section 2.7 Annex 2 NOMMS Section 10 and Appendix 8
<b>Schedule 9 Reinspection Scheme – Para 5.3</b> – a list of properties which have become eligible for the Reinspection Scheme in the preceding 12 months.	Environment	Report in Annex	Section 2.7 Annex 2 NOMMS Section 10 and Appendix 8
<b>Schedule 11 – Para 1.3 Provide list of existing employers</b>	Employment	Summary in text and schedule in Annex	Section 3.2 Annex 8 List of Employers Onsite
<b>Schedule 11 – Paras 1.5 Report job numbers and target performance to LBN and LCACC</b> (a) the percentage of jobs advertised at the Airport in the preceding calendar year to which residents living (i) in the Local Area; and (ii) the London Borough of Newham were recruited; (b) the percentage of jobs advertised by the Operator in the preceding calendar year to which residents living in (i) the Local Area; and (ii) the London Borough of Newham were recruited; (c) the numbers of full-time equivalent jobs at the Airport and the number of full-time equivalent jobs made available directly by the Operator; (d) the total number of full-time and part-time employees at the Airport and those employed directly by the Operator	Employment	Stats in text	Sections 3.2 and 3.3
<b>Schedule 11– Para 3.2 Maximise supply chain opportunities for LBN and local area businesses and report progress</b> (a) the number of contractors being used on site; and (b) details of those based in Newham and the remainder of the Local Area; (c) name and postcode of contractor/supplier; and (d) the aggregate values of different categories of contracts	Employment	Stats in text and list in Annex	Sections 3.4 & 3.5 Annex 8 List of Employers Onsite

Requirements	APR Section	Format	APR Reference/ Source
<b>SECTION 106 PLANNING AGREEMENT</b>			
<b>Schedule 11 – Recruitment Policy – Para 1.4</b> – to continue to provide the Council annually with details in writing of the policy adopted by the Operator to fill its job vacancies and the Operator shall consult the Council about such policy on not fewer than one occasion each year in conjunction with the APR.	Employment	Summary in text and policy in Annex	Section 3.3 Annex 10 LCY Employment Policy
<b>Schedule 12 Value Compensation Scheme (VCS 1)</b> – which payments have been made under VCS 1	Financial Contributions	Summary in text	N/A for 2022
<b>Schedule 12 VCS 2</b> – which payments have been made under VCS 2 + The existence of the adopted VCS2 and its closing date will be published by its inclusion in the annual performance report which the Airport is obliged to publish every year and (within three months of the start of VCS2) through written notification of the owners of Eligible Interests in Eligible Sites, insofar as the Airport is able to identify them through Land Registry searches.	Financial Contributions	Summary in text	N/A for 2022
<b>Schedule 9 NIPS 1 para 6.2</b> – which payments have been made under NIPS 1	Financial Contribution	Summary on text, report in Annex	Section 5.2 Annex 2, para 10.3
<b>Schedule 9 NIPS2 para 7.2</b> – which payments have been made under NIPS 2	Financial Contribution	Summary in text, report in Annex	Section 5.2 Annex 2, para 10.3
<b>Annexure 2 – First Tier Scheme - para 3.1</b> – with effect from the Commencement of Development the APR shall specify the geographic area within which the properties which are eligible for this Scheme are situated.	Compensation	Summary in text, report in Annex	Section 2.7 Annex 2
<b>Annexure 3 – NIPS – para 3.8</b> – the existence of NIPS (once adopted) will be published by its inclusion in the APR	Compensation	Summary in text and link to LCY website	Section 5.2
<b>Annexure 4 – NIPS2 – para 3.8</b> – the existence of NIPS2 (once adopted) will be published by its inclusion in the APR	Compensation	Summary in text	Section 5.2
<b>Annexure 7 – Second Tier Noise Insulation Scheme – para 3.1</b> – the geographic area within which the properties which are eligible for this Scheme are situated.	Compensation	Summary in text, report in Annex	Section 2.7 Annex 2

Requirements	APR Section	Format	APR Reference/ Source
<b>SECTION 106 PLANNING AGREEMENT</b>			
<b>Annexure 8 – VCS – para 5.1</b> – written notification of the owners of Eligible Interests in Eligible Sites, insofar as the Airport is able to identify them through Land Registry searches.	Compensation	Summary in text and link to LCY website	Section 5.2
<b>Annexure 9 – VCS2 – para 5.1</b> Publicise existence of VCS2 and closing date in APR and written notification of the owners of Eligible Interests in Eligible Sites, insofar as the Airport is able to identify them through Land Registry searches.	Compensation	Summary in text and link to LCY website	Section 5.2
<b>Annexure 12 – Intermediate Tier Scheme – para 3</b> – specify the geographic area within which the properties which are eligible for this Scheme are situated.	Compensation	Summary in text, report in Annex	Section 2.7 Annex 2
<b>Schedule of Payments Made</b>	Financial Contributions	Summary of annual payments in text	Section 5.1



Requirements	Source: Approved Document or Condition	Condition /AOD References	APR Section	Format	APR Reference/ Source
<b>Conditions</b>					
<b>19 Review and Reporting on Aircraft Noise Categorisation Scheme (ANCS) (March 2022)</b> A report as part of the APR on the performance and/or compliance with the approved ANCS during the previous calendar year.	Condition & Approved Document	19 18 AOD paras 4.1.3 & 5.2.2	Environment	Summary in text and report in Annex	Section 2.2 Annex 4 ANCS Report
<b>31 Noise Management and Mitigation Strategy (NOMMS) (August 2022)</b> Report on the performance and compliance with the approved NOMMS during the previous 12 months in the APR.	Condition & Approved Document	31 31 AOD	Environment	Summary in text and report in Annex	Sections 2.3, 2.4 & 2.12 Annex 2
<b>47 Auxiliary Power Units</b> A report containing details of the use of Auxiliary Power Units at the Airport in the previous calendar year.	Condition & Approved Document	47 AOD para 1.9 31 AOD-H1	Environment	Summary in text and report in Annex	Annex 2 NOMMS Section 8.0
<b>48 Ground Engine Running Strategy (September 2020) – para 6.2.1</b> A report as part of the APR on the performance and or compliance during the previous calendar year with the approved targets in the Ground Engine Running Strategy.	Condition & Approved Document	48 48 AOD	Environment	Summary in text and report in Annex	Annex 2 NOMMS Section 5.2 & Appendix 5
<b>49 Ground Running, Testing and Maintenance Strategy</b> A report as part of the APR on the performance and or compliance during the previous calendar year with the targets in the Ground Running, Testing and Maintenance Strategy.	Condition & Approved Document	49 49 AOD	Environment	Summary in text and report in Annex	Annex 2 NOMMS Section 5.3 & Appendix 6
<b>52 Ground Running Annual Performance Report</b> A report as part of the APR, including details of the number, duration and power setting of ground runs and the types of aircraft involved and written measurements and calculations to show whether the Ground Running Noise Limit has been exceeded as a result of Ground running during the preceding calendar year.	Condition	52 51 AOD para 4.1.2 48 AOD para 6.2.1 49 AOD para 5.1.1	Environment	Summary in text and report in Annex	Annex 2 NOMMS 5.3 Appendices 5, 6
<b>56 Sustainability and Biodiversity Strategy</b> A report as part of the APR on the performance and compliance during the previous calendar year with the targets in the approved Sustainability and Biodiversity Strategy.	Condition	56 56 AOD para 1.8 57 AOD para 4.7	Environment	Summary in text and report in Annex	Section 2.11 Annex 7 Sustainability and Biodiversity Action Plan Progress Update
<b>57 Air Quality Monitoring</b> Report annually as part of the APR.	Condition & Approved Document	57 57 AOD para 2.11	Environment	Summary in text and report in Annex	Section 2.6 Annex 6 2021 Air Quality Annual Monitoring Report
<b>59 Complaints About Environmental Impact</b> Report in the APR all complaints and any action taken in the preceding calendar year.	Condition	59 31 31 AOD A.7	Environment	Summary in text	Section 2.12

## **Annex 2**

# Noise Management and Mitigation Strategy (NOMMS) Report

# LONDON CITY AIRPORT

## NOISE MANAGEMENT AND MITIGATION STRATEGY (NOMMS) REPORT 2022

Report to

London City Airport  
The Royal Docks  
London E16 2PB

A11327\_05\_RP049\_4.0  
7 June 2023

**Bickerdike Allen Partners LLP** is an integrated practice of Architects, Acousticians, and Construction Technologists, celebrating over 60 years of continuous practice.

**Architects:** Design and project management services which cover all stages of design, from feasibility and planning through to construction on site and completion.

**Acoustic Consultants:** Expertise in planning and noise, the control of noise and vibration and the sound insulation and acoustic treatment of buildings.

**Construction Technology Consultants:** Expertise in building cladding, technical appraisals and defect investigation and provision of construction expert witness services.

<b>Contents</b>	<b>Page No.</b>
1.0 Introduction .....	5
2.0 Combined Noise and Track Monitoring System.....	7
3.0 Quiet Operating Procedures .....	11
4.0 Incentives and Penalties Scheme .....	12
5.0 Control of Ground Noise .....	17
6.0 Airport Consultative Committee .....	21
7.0 Annual Noise Contours.....	22
8.0 Auxiliary Power Units .....	23
9.0 Reverse Thrust .....	24
10.0 Sound Insulation Scheme .....	26
11.0 Aircraft Movement Numbers .....	30



Appendix 1:	NTK Status Reports
Appendix 2:	Incentives and Penalties
Appendix 3:	Summary of EFPS Data
Appendix 4:	Ground Running of Engines
Appendix 5:	Noise Contours
Appendix 6:	Auxiliary Power Unit Usage
Appendix 7:	Summary of Reverse Thrust Data
Appendix 8:	Sound Insulation Scheme Property Lists
Appendix 9:	Extract from Planning Conditions
Appendix 10:	Number of Aircraft Operating at LCA

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## 1.0 INTRODUCTION

The City Airport Development Programme (CADP1) planning application (13/01228/FUL) was granted planning permission by the Secretary of State for Communities and Local Government and the Secretary of State for Transport in July 2016 following an appeal and public inquiry which was held in March and April 2016.

Condition 31 of this permission states that:

*“Prior to the Commencement of Development a Noise Management and Mitigation Strategy (NOMMS) shall be submitted to the Local Planning Authority for approval in writing.*

*The NOMMS shall be implemented as approved and thereafter the Airport shall only operate in accordance with the approved NOMMS.*

*Following implementation of the approved NOMMS, a report shall be submitted to the Local Planning Authority annually on 1 June (or the first working day thereafter) as part of the Annual Performance Report on the performance and compliance with the approved NOMMS during the previous 12 month period.*

*The approved NOMMS shall be reviewed not later than the 5<sup>th</sup> year after approval and every 5<sup>th</sup> year thereafter. The reviews shall be submitted to the Local Planning Authority within 3 months of such review dates for approval, and implemented as so approved.*

*The NOMMS shall include, but not be limited to:*

- *Combined Noise and Track Monitoring System*
- *Quiet Operating Procedures*
- *Penalties and Incentives*
- *Control of Ground Noise*
- *Airport Consultative Committee*
- *Annual Noise Contours*
- *Integrity of NOMMS*
- *Auxiliary Power Units*
- *Reverse Thrust and*
- *Sound Insulation Scheme”*

The NOMMS which addresses the above requirements was formally approved by the London Borough of Newham (LBN) on 18 May 2017 and was implemented on 18 August 2017. The latest version of the NOMMS was approved on 27 September 2022 (LBN reference 22/02035/AOD).

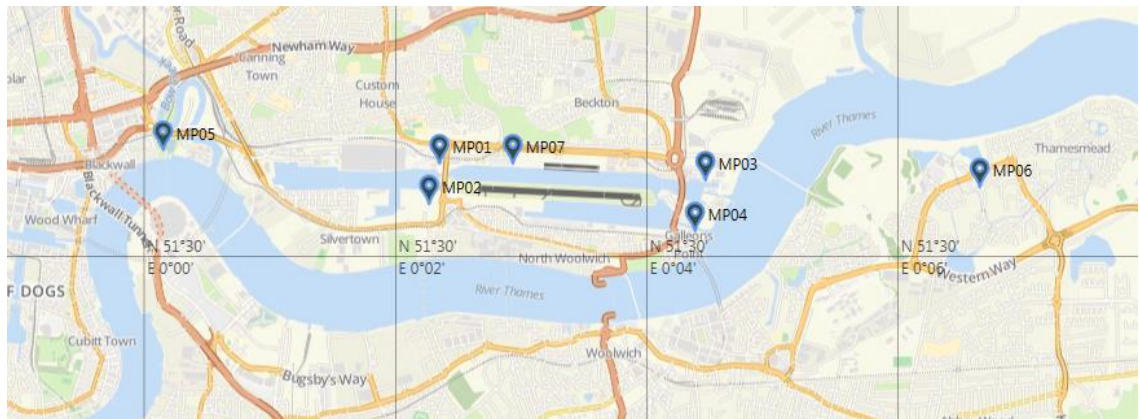
This report reviews the performance and compliance with the latest NOMMS in 2022, as part of the Condition 31 requirements.

Information is also provided on the number of aircraft movements that have taken place at London City Airport (LCA) over the period 1<sup>st</sup> January 2022 up to and including 31<sup>st</sup> December 2022, to show compliance with CADP1 Conditions 23 to 27.

## 2.0 COMBINED NOISE AND TRACK MONITORING SYSTEM

### 2.1 Noise Monitoring

A continuous noise monitoring system was first installed and became operational at the airport in 1992, and a system of this type has been in place ever since. Since 1999 it has also included a flight track monitoring system and has been known as the Noise and Track Keeping (NTK) system. The noise monitoring system has since been upgraded and expanded and now comprises six fixed noise monitoring terminals (NMTs) and one mobile NMT. The fixed NMTs (NMTs 1-6) are used to measure arrivals and departures of aircraft using the airport. The mobile NMT (NMT 7) is used primarily for the monitoring of aircraft related ground noise. The location of NMTs 1-7 is shown in Figure 1.



**Figure 1: Location of NMTs 1-7**

Noise data is collected from the NMTs and processed for the purposes of aircraft monitoring and also noise management. The NTK system is designed to ensure that a minimum correlation rate of 80% of all aircraft departures is achieved over the calendar year. Quarterly NTK status reports are issued to the London Borough of Newham, reporting on the correlation rate achieved over the quarter as discussed in 2.2.1 below.

The average departure and arrival noise levels measured in 2022, by aircraft type and airline, are reported elsewhere as part of the Aircraft Noise Categorisation Scheme (ANCS) summary.

## 2.2 Flight Track Monitoring

The flight track monitoring component of the system is permanently linked to the airport's radar feed, which is provided by the Air Traffic Control (ATC). Aircraft flight tracks are correlated with flight information and noise events. Based on this information, the airport use a web-based system (known as TRAVIS<sup>1</sup>) to share data from the flight track monitoring system with the public.

Flight tracks are capable of real-time inspection and are also stored for later processing and analysis. This allows deviations from the departure and arrival flight paths at the airport both in plan and elevation to be determined.

LCA do not currently operate noise preferential routes such as those that are in place at some other airports. In the absence of an agreed swathe to assess against, in recent years analysis has been carried out on the tracks flown to identify any aircraft which appear to be 'off track', based on whether they go through a 'gate' which has been set up in the NTK system for each route.

As part of the review of the NOMMS in 2022, the requirement to report airline/aircraft performance with respect to track-keeping and the requirement to maintain a log of 'off track' departures was removed. This is due to the lack of an agreed swathe to assess against and the perception that 'off track' aircraft are not currently a significant issue at LCA. The airport will however continue to present the track plots in the quarterly and annual reports. If these, or a sudden influx of related complaints, suggest 'off track' flights has become an issue, the analysis undertaken previously will recommence.

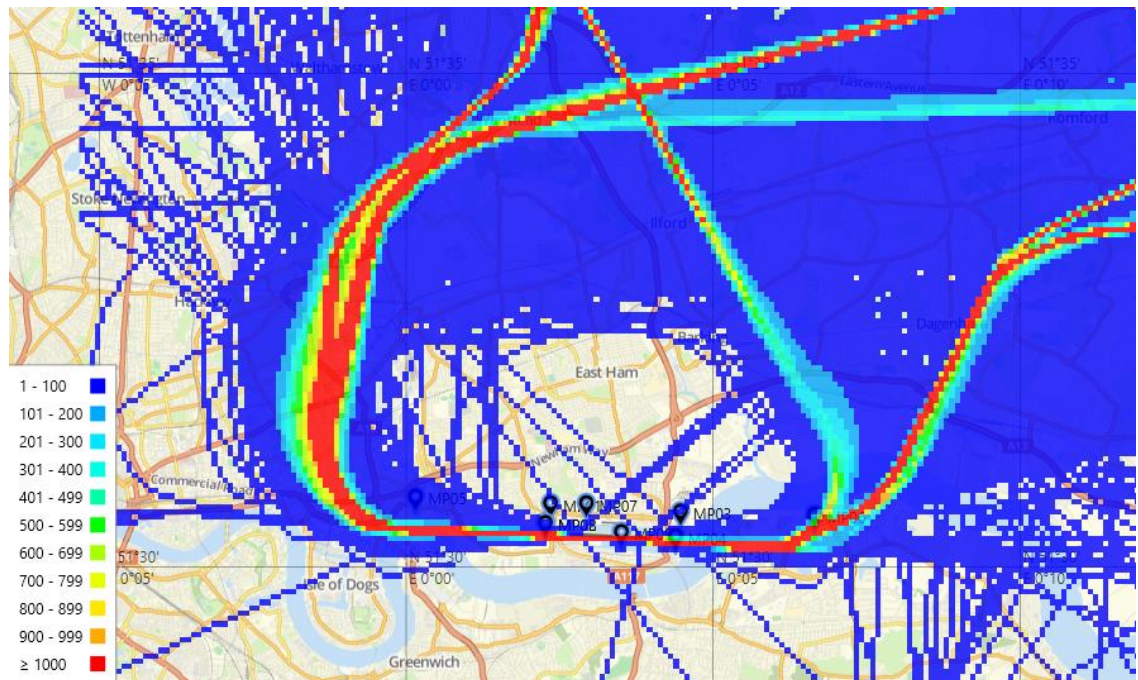
Figure 2 shows a heat map of all departures from LCA during 2022. The colour of each tile represents the number of aircraft that passed through it. The dark blue tiles represent the lowest frequency of departures and the red tiles the highest frequencies.

Figure 3 shows a heat map of all departures from LCA during the previous year for comparison. It can be seen that there have not been any significant changes to the flight tracks, although there has been an increase in activity.

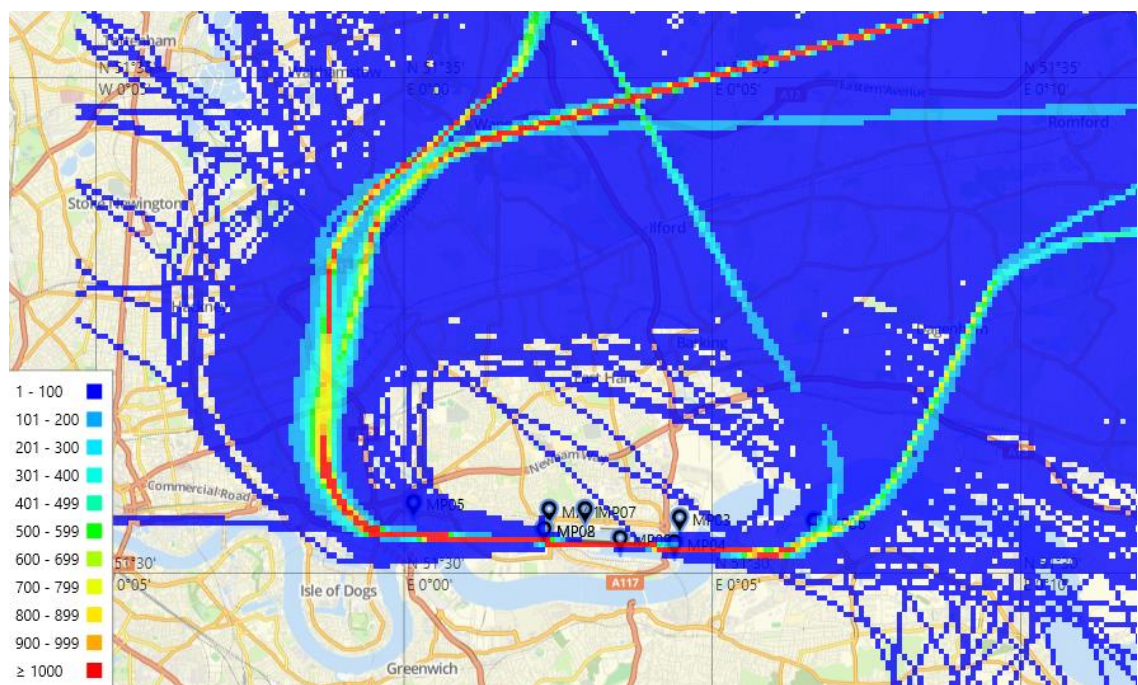
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<sup>1</sup> <https://travislyc.topsonic.aero/>





**Figure 2: Departure Heat Map, 2022**



**Figure 3: Departure Heat Map, 2021**

### 2.2.1 NTK Status

Prior to the implementation of NOMMS, under paragraph A6.0 of the approved Temporary Noise Monitoring Strategy, the airport was required to provide quarterly reports on the status of the NTK system (NMTs 1-4) to the local authority. Each report was required to record the daily operational status of each Noise Monitoring Terminal (NMT) together with the total monthly correlation rate of noise events to aircraft departures over a specified quarter year period.

Although no longer a planning condition, at the request of the London Borough of Newham (LBN), the airport have agreed to continue providing these reports, and also to include the status of NMTs 5 & 6.

Table A1.1 of Appendix 1 of this report details the daily operational status of each of NMTs 1-6 between 1<sup>st</sup> January 2022 and 31<sup>st</sup> December 2022. Table A1.2 sets out the monthly correlation rate of noise events to aircraft movements for the same period, and Table A1.3 gives a summary of the NTK operational status for each quarter.

The noise monitoring system remained in continuous operation throughout the whole twelve month period between 1<sup>st</sup> January 2022 and 31<sup>st</sup> December 2022. Each noise monitoring terminal was in operation every day with the exception of NMT3 on 29<sup>th</sup> October and NMT 4 on 19<sup>th</sup>, 26<sup>th</sup> and 27<sup>th</sup> June. In all cases this was due to a failure of the power supply.

The target correlation rate (80%) for departures measured at NMTs 1-4 was met for 2022. A total of 22,028 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 94% was achieved.

A total of 22,132 (95%) departures and 22,335 (96%) arrivals were correlated at NMTs 5 and 6 in 2022.

### **3.0 QUIET OPERATING PROCEDURES**

The airport requires that every operator of aircraft adopt procedures which will produce the least noise disturbance compatible with safe operation, and where applicable, such procedures should follow any promulgated noise abatement routing for the airport. Where aircraft manufacturers have established special procedures for the purposes of reducing noise, these should be applied to operations at London City Airport, subject always to the safe operation of aircraft.

Quiet operating procedures at London City Airport include the following:-

- Minimum use of reverse thrust (see Section 9.0)
- Use of fixed electrical ground power where possible (see Section 8.0)
- Minimum use of auxiliary power units (see Section 8.0)
- Operation of a steep glide slope (5.5 degrees)
- An EFPS (Electronic Flight Progress Strips) system (see Section 5.0).

## 4.0 INCENTIVES AND PENALTIES SCHEME

### 4.1 Scheme Details

The NOMMS includes an Incentives and Penalties Scheme (IPS) which has financial penalties for noisy departures. The IPS was implemented on 18 August 2017 and was intended to introduce a more equitable approach to determining penalties and credits by utilising the fixed noise monitors at either end of the runway (NMTs 5 and 6) to monitor departure noise levels. The IPS focuses on incentivising quieter operation of aircraft on departure and penalising noisy departures.

The scheme works as follows:

- The flyover noise level for a given departure is defined as the  $L_{Amax,s}$  noise level measured at the relevant NMT (NMT 5 for runway 27 departures, and NMT 6 for runway 09 departures).
- The measured noise levels are compared with the thresholds given in Table 1.
- If the Fixed Penalty Limit is exceeded, the airline responsible is fined £600<sup>2</sup> per dB(A) of exceedance, and one credit point is removed from the airline's credit account.
- If the Fixed Penalty Limit is not exceeded, but the Credit Removal Threshold is exceeded, one credit point is removed from the airline's credit account.
- If the Credit Award Threshold is not exceeded, one credit point is added to the airline's credit account.
- An airline may avoid a fixed penalty or credit removal for a particular flight, if they are able to provide a reasonable explanation for the noisy departure. Each exceedance event is considered on a case by case basis to establish whether or not a penalty or credit removal is applied.
- An airline's credit account is reset to zero at the beginning of each calendar year.

The fines for exceeding the Fixed Penalty Limit are paid into London City Airport's Community Fund, and are added to the annual contribution of £75,000 provided to the fund by LCA. The most improved airline each year, as determined by this review, partners the airport in delivering the fund.

The current penalty and credit limits (noise levels) are set out in Table 1 below.

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<sup>2</sup> Fines were not payable prior to 1st November 2018

Threshold Description	Aircraft Category	Flyover Noise Level, dB L <sub>ASmax</sub>	
		Runway 09	Runway 27
Fixed Penalty Limit	Turbofans	84	84 <sup>1</sup>
	Turboprops	78	78
Credit Removal Threshold	Turbofans	81	82
	Turboprops	75	77
Credit Award Threshold	Turbofans	73	72
	Turboprops	66.5	65.5

<sup>1</sup> If aircraft is between 100m and 300m north of the extended runway centreline, a 0.2 dB reduction is applied to the measured noise level

N.B. All noise limits are expressed as dB L<sub>ASmax</sub>

**Table 1: IPS Fixed Penalty Noise Limits and Credit Thresholds**

## 4.2 Community Fund

The Community Fund grant provides a financial boost to local groups, such as mental health charities, disability groups, community gardens and sports teams as well as those providing family support, mentoring programmes and employability training. The Community Fund awarded over £77k in 2022, to 28 organisations, including Blind in Business, Get Set Girls, Team Elite Basketball Club, made in Hackney, and more. A full list is available on the airport website<sup>3</sup>.

Applications are considered twice a year by a board of Trustees from London City Airport and representatives from the local community, as well as an independent chair. This means that with great local insight and expertise, the Trustees evaluate applications using their knowledge to ensure the greatest possible benefit goes to the community.

To qualify for any of the available Grant, an applicant must be a charity or not for profit organisation and the project is expected to meet one or more of the following criteria:

- build stronger, safer and healthier communities;
- create more sustainable and greener communities;
- raise aspirations of East Londoners; or
- create pathways into employment.

<sup>3</sup> <https://www.londoncityairport.com/corporate/responsible-growth/community-fund>



The Community Fund advertises in local newspapers including, Newham & Stratford Recorder, Barking and Dagenham Post, Wharf Life and South London press & Mercury Paper. An example of the advert is reproduced in Figure 4. The fund was also advertised to local MPs and councillors to cascade the information and encourage charities and not-for profit organisations to apply.

**LONDON CITY AIRPORT  
COMMUNITY  
FUND**

**Funding Criteria**  
Applications are open to charities and not-for-profit organisations.  
To qualify your project needs to fit within the following categories:

- Building stronger, safer and healthier communities
- Creating more sustainable and greener communities
- Raising aspirations of East Londoners
- Creating pathways into employment

**£75,000**

To support local charities and organisations that represent inclusive and diverse communities across East London.

**Eligibility**  
See below the eligible locations:

Barking & Dagenham | Bexley | Epping Forest District Council | Greenwich | Hackney | Havering | Newham | Lambeth | Lewisham | Redbridge | Southwark | Tower Hamlets | Waltham Forest

**Apply Now**  
To apply, please fill out the application form on our website:  
[www.londoncityairport.com/corporate/responsible-growth/community-fund](http://www.londoncityairport.com/corporate/responsible-growth/community-fund)  
The Fund has awarded grants to over 100 charities and not-for-profit organisations in East London, distributing more than £360k worth of funding since its launch in May 2019.

Contact us for more information:  
[Community.Fund@londoncityairport.com](mailto:Community.Fund@londoncityairport.com)  
For Terms and Conditions and submission deadlines, please visit our website.

**LONDON CITY AIRPORT**

**Figure 4: Example of Community Fund Advert**

### 4.3 Scheme Review

The IPS was previously subject to an annual review, independently of the review of the NOMMS. As part of the 2022 review of the NOMMS, this was amended such that going forward the IPS shall be reviewed as part of the NOMMS.

### 4.4 Reporting

A summary of the number of fixed penalties, credit awards and credit removals by month is given in Table 2.

Month	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded
January	0	£0	0	156
February	0	£0	2	111
March	0	£0	0	247
April	0	£0	0	281
May	0	£0	0	250
June	0	£0	0	221
July	0	£0	0	167
August	0	£0	0	161
September	0	£0	0	204
October	0	£0	2	207
November	0	£0	2	235
December	0	£0	4	199
<b>Total</b>	<b>0</b>	<b>£0</b>	<b>10</b>	<b>2,439</b>

**Table 2: Monthly Penalties, Credit Removals and Credit Awards, 2022**

The number of residual credits is given for the most commonly operating airlines (those with at least one departure per week on average) in Table 3. These are based on the thresholds given in Table 1. Full details of the fixed penalties, credit awards and credit removals for 2022 are given by airline and aircraft type in Appendix 2.

<b>Airline</b>	<b>Residual Credits 2022</b>	<b>Residual Credits 2021</b>	<b>Residual Credits Difference 2022 - 2021</b>
Swiss	813	125	688
NetJets Europe	392	232	160
Shell Aircraft	124	24	100
Luxair	134	38	96
BA Cityflyer	174	80	94
Lufthansa	58	11	47
GlobeAir	95	51	44
KLM Royal Dutch Airlines	75	36	39
Aerotaxi del Caribe	42	17	25
Loganair	12	6	6
LOT Polish Airlines	2	5	-3
Sun Air	45	-	-
ITA Airways	37	-	-

**Table 3: 2022 Residual Credits Ranking**

The most improved airline has been determined by comparing the total residual credits in the two years. Therefore, Swiss will partner LCA in delivering the Community Fund in 2024.

## **5.0 CONTROL OF GROUND NOISE**

### **5.1 General**

The airport seeks to ensure as far as reasonably practicable that every aircraft operator adopts the operating practice which generates the least amount of noise from aircraft taxiing, manoeuvring or holding on stand, at the runway, and prior to take off, subject to the requirement of ensuring the safe operation of the aircraft at all times, all in accordance with the procedures set out in the Ground Engine Running Strategy in compliance with CADP1 Planning Condition 48. This should involve the minimum power settings necessary and, in the case of propeller aircraft, pitch settings should as far as possible be those which produce the least propeller noise.

The introduction of nose-in parking at LCA remains under consideration. This procedure is expected to have a negligible effect on the future ground noise levels around LCA. This is because in general terms, the ground noise generated by an aircraft parking and departing a stand when nose in manoeuvring will differ little, albeit it will be possibly marginally less at a receptor, as compared to when self-manoeuving.

An Electronic Flight Progress Strips (EFPS) system is in operation at LCA which provides the ability to monitor the time that aircraft operate engines on the ground, from engine start-up until the time of departure and following the time of landing until engine shut-down. The time of any engine ground running on the apron for maintenance purposes is also monitored. Any excessive or unnecessary operation of aircraft engines is investigated by the airport.

### **5.2 Ground Engine Running Strategy**

Ground engine running relates to the use of aircraft engines from the time of engine start-up prior to departure, during taxiing and during holding, to the time of departure. Similarly, it relates to the time following an aircraft arrival from the time when it has reduced to taxiing speed on the runway, or when the aircraft turns off the runway, whichever occurs first, to the time when an aircraft switches off its engines on a stand.

The Ground Engine Running Strategy requires that ground engine running by aircraft is to be undertaken with the minimum amount of power and for the minimum amount of time as practically possible (except when operational or safety requirements dictate otherwise) to reduce noise emissions from the use of aircraft engines while on a stand, while taxiing or while holding at any point around the airport, all in accordance with procedures and requirements set out in Airside Operating Instruction (AOI) 06 Apron Management.

The following parameters were required to be reported under the strategy in 2022:

#### 5.2.1 Average Engine Running time on Stands (ERS)

This is the time taken for an aircraft to operate its engines, once approval to start has been given, to the time of pushback from the stand, and is required to be reported for each airline and aircraft type, with a target to keep it below 7.5 minutes on average.

Where ERS times are found to exceed 7.5 minutes on average over a quarter on a regular basis for a given aircraft type and airline, the relevant airline will be contacted to seek an explanation and to identify ways of ensuring ERS time is reduced as far as practicable. The average time by aircraft type and airline is given in Appendix 3.

The overall average ERS time for 2022 was 4 minutes and 22 seconds. Taking the year as a whole there were no airline/aircraft combinations with a minimum of one result per week which on average exceeded an ERS time of 7.5 minutes.

#### 5.2.2 Average Taxi Time on Arrival (TTA)

This is the time between an aircraft arriving at LCA and the time it arrives on the stand and is to be reported for each airline and aircraft type, with a target to keep it below 6 minutes on average.

Where the TTA is found to exceed 6 minutes on average over a quarter on a regular basis for a given aircraft type and airline, the relevant airline will be contacted to seek an explanation and to identify ways of ensuring the TTA is reduced as far as practicable. The average time by aircraft type and airline is given in Appendix 3.

The overall average TTA for 2022 across all aircraft was 3 minutes and 46 seconds. Taking the year as a whole there were no airline/aircraft combinations with a minimum of one result per week which on average exceeded a TTA of 6 minutes.

#### 5.2.3 Average Taxi Time on Departure (TTD)

This is the difference between the time of pushback on the stand and the time of departure and is to be reported for each airline and aircraft type, with a target to keep it below 11.5 minutes on average.

Where the TTD is found to exceed 11.5 minutes on average over a quarter on a regular basis for a given aircraft type and airline, the relevant airline will be contacted to seek an explanation and to identify ways of ensuring the TTD is reduced as far as practicable. The average time by aircraft type and airline is given in Appendix 3.

The overall average TTD for 2022 across all aircraft was 6 minutes and 7 seconds. Taking the year as a whole there were no airline/aircraft combinations with a minimum of one result per week which on average exceeded a TTD of 11.5 minutes.

### **5.3 Ground Running of Engines for Testing and Maintenance Purposes**

The ground running of engines is required for testing and maintenance purposes. The airport is required to ensure that the noise level arising from aircraft ground running does not exceed the Ground Running Noise Limit of 60 dB  $L_{Aeq,12h}$ . This is assessed against the worst-case month of the year.

The running of aircraft engines is permitted only during the approved operating times for the airport. The running of engines at high power settings for the purposes of test and maintenance is carried out in accordance with the Ground Running Testing and Maintenance Strategy in compliance with CADP1 Conditions 49 and 50. Aircraft operators wishing to carry out high power engine runs must obtain prior approval from the Airfield Operations Duty Manager. Approval to start the engine run is given by ATC.

High powered engine runs have historically taken place in the engine ground running locations on stands 23 and 24. A verification report was submitted in January 2020 and approved by LBN to support moving the Ground Running Location(s) to the eastern-most stand in operation at the time, as the CADP1 development is built out. The Ground Running Location(s) in use on a certain date will depend on the progress of the CADP1 development.

It is normally preferable to carry out engine testing on the eastern-most stand for operational reasons. The verification report also retained the option to use stands further to the west if this is more beneficial operationally, as the noise impact at the worst-affected sensitive receptors would be the same or slightly lower. For example, it may be operationally preferable to continue to use Stand 24 for engine testing while construction of stands to the east is ongoing, in order to maintain safe distances between engine testing and the active construction site.

The airport records written details of ground running including details of the number, duration and power settings of ground runs (High and Low) and the types of aircraft involved.

In the event that the Ground Running Noise Limit is approached within 1 dB, proposals for the amelioration of this issue, for example undertaking ground running on alternative stands, will be submitted to LBN for their approval within 3 months of the identification of this risk and, thereafter, reported in the Annual Performance Report. Such measures shall ensure that Ground Running complies with the Ground Running Noise Limit and, once approved by LBN, these measures shall be implemented within 6 months.

In the event that the Ground Running Noise Limit has been exceeded, proposals will be submitted to the Council for their approval for the carrying out of measures to ensure that Ground Running complies with the Ground Running Noise Limit and such approved measures shall be carried out in accordance with the approved time scale, all in accordance with the Ground Running Noise Limit Strategy.

Appendix 4 of this report sets out the official record of ground running of engines for test and maintenance for 2022 (Table A4.1), the summary of high power running for the same period (Table A4.2), and the prediction of ground running noise for comparison with the Ground Running Noise Limit.

During 2022, high powered engine runs took place on Stands 26, 27 and 28. For the purpose of the compliance calculation, it has been assumed that Stand 28 was used at all times, which is the worst case in noise terms.

In 2022 LCA's ground running noise level was 56.8 dB  $L_{Aeq,12h}$  which is 3.2 dB below the Ground Running Noise Limit of 60 dB  $L_{Aeq,12h}$ . Therefore no further action is required.



## **6.0 AIRPORT CONSULTATIVE COMMITTEE**

The airport holds regular quarterly meetings with the London City Airport Consultative Committee (LCACC). The body of the committee is made up of representatives from the Council, public bodies, the airport and airport users, representatives for residents of local and neighbouring communities and non-voting attendees (present to provide advice to members as required, i.e. Metropolitan Police, Department for Transport).

The meetings are open and the committee's agendas and minutes are widely circulated and available on the LCACC website<sup>4</sup>. The meetings include reports on developments at the airport including changes in routes, flight and passenger numbers. There is a standing item on environmental issues including complaints, enquiries, noise monitoring and management and other requirements of the planning permission and Section 106 Agreement.

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<sup>4</sup> <http://lcacc.org/meeting-papers-key-documents/recent-minutes-of-meetings/>

## 7.0 ANNUAL NOISE CONTOURS

The following noise contours are required to be produced as part of the APR, in order to assess eligibility under the various sound insulation schemes run by the airport:

- Actual average mode summer daytime for 2022,
- Forecast average mode summer daytime for 2023,
- Forecast average mode summer daytime for 2023, factored to account for the typical differences between the forecast and actual movements (referred to as “forecast reduced”)

These noise contours, presented in Appendix 5, are all produced at values of 57, 63, 66, and 69 dB  $L_{Aeq,16h}$ . Additionally, the 54 dB  $L_{Aeq,16h}$  contour is shown for the 2022 contour for information purposes, at the request of third parties during the CADP1 planning inquiry.

CADP1 Condition 33 requires that the area enclosed by the 57 dB  $L_{Aeq,16h}$  actual average mode summer daytime contour shall not exceed 9.1 km<sup>2</sup>.

The contours have been calculated by the Aviation Environmental Design Tool (AEDT) version 3d. The areas of each of the contours presented in Appendix 5 are given in Table 4.

Contour Value, dB $L_{Aeq,16h}$	Contour Area, km <sup>2</sup>		
	2022 Actual Summer Average Mode	2023 Forecast Summer Average Mode	2023 Forecast Reduced Average Mode
54	11.2	11.9	11.1
57	6.1	6.5	6.0
63	3.1	3.3	3.1
66	1.6	1.7	1.5
69	0.8	0.9	0.8

**Table 4: Contour Area Results**

This demonstrates that LCA operated within their contour area limit in 2022 and are forecast to continue to do so in 2023.

## **8.0 AUXILIARY POWER UNITS**

A number of aircraft using the airport require from time to time the use of their onboard auxiliary power units (APUs). The needs for usage of these power units as opposed to portable ground power units or the airport's fixed electrical power are varied.

The typical need is to condition the aircraft cabin when temperatures become uncomfortable as fixed electrical power cannot normally be used for that purpose. In this case, the airport policy is that the maximum running time for an APU should not exceed 10 minutes prior to departure. Permitted use of the APU is contained in Airside Operating Instruction (AOI) 07.

The other need arises when there is an incompatibility between aircraft systems and the fixed electrical power supply. The need to maintain the same source of supply to avoid interference with aircraft on board computer systems has been raised by users. There is also the rare occurrence where for technical reasons the airport's fixed electrical supply is not available.

The airport has fixed electrical ground power (FEGP) at Stands 1-10 and 15. Prior to 30<sup>th</sup> June 2021, all other stands were serviced by mobile diesel ground power units. Following a delay in delivery due to technical faults, all stands that don't have FEGP are now serviced using battery-powered/Electric Mobile Ground Power Units (EMGPU), and the diesel units are no longer in use.

Appendix 6 sets out details of the aircraft types that may require use of their auxiliary power units (APU) to supplement the fixed ground power that is provided by the airport when an aircraft is on a stand on the apron.

## 9.0 REVERSE THRUST

The use of reverse thrust on the landing roll should be kept to the minimum required for the necessary deceleration of the aircraft and within the limits of the airline's standard operating procedures.

A new requirement as part of the CADP1 planning consent is that any instance of unusual or excessive use of thrust reversers will be investigated by the airport and a report generated. This will make reference to noise data collected at NMT 7, which has been installed for this purpose.

Noise events at NMT 7 are triggered by arriving aircraft. These are then correlated with the aircraft movement data. Many of these noise events are caused by arrivals which did not use reverse thrust, particularly those using runway 09. The loudest events are investigated to determine whether there were cases of unusual or excessive use of reverse thrust. When this is found to have been the case, the airport contacts the airline and seeks an explanation in order to minimise future occurrences.

BAP carried out a review of the NMT 7 data collected for the 12 month period from July 2017 to June 2018 in order to determine a suitable noise threshold above which events will be investigated. This has been defined as 88 dB  $L_{A_{Smax}}$  for runway 09 arrivals and 90 dB  $L_{A_{Smax}}$  for runway 27 arrivals.

6 aircraft arrivals exceeded these thresholds at NMT 7 in 2022. Details of these are presented in Table 5.

Date	Arrival Time	Runway	Aircraft Type	Airline	NMT 7 Noise Level, dB $L_{A_{Smax}}$
18/01/2022	18:00	27	A221	SWR	91.0
03/03/2022	18:27	09	E135	ABP	88.8
26/06/2022	17:48	27	FA8X	CLF	90.4
12/10/2022	19:19	27	GLEX	N50	90.1
26/10/2022	07:49	27	F2TX	PHJ	90.2
17/12/2022	09:34	27	E190	KLM	90.8

**Table 5: Log of Potentially Unusual or Excessive Reverse Thrust Use, 2022**

The following responses have been received from airlines:

- ABP responded that in that case, the use of reverse thrust was necessary for safe operation.

- PHJ responded that they had investigated and reverse thrust on that landing was performed but in normal conditions to stop the airplane in conjunction with the brakes and with no excessive use.

The distribution of measured noise levels at NMT7 in 2022 are presented in Appendix 7 for reference.

## 10.0 SOUND INSULATION SCHEME

LCA are required to mitigate the impact of environmental noise on residential premises and public buildings as a result of airport operations. The Sound Insulation Scheme (SIS) offers the communities living close to the airport within the Scheme boundaries the opportunity to treat their homes and community buildings against noise.<sup>5</sup>

The airport previously operated a sound insulation scheme comprising a two tier system. Residential and Public Buildings became eligible under the scheme, subject to when they were built, when first exposed to air noise at the First Tier Eligibility Criterion of 57 dB  $L_{Aeq,16h}$ . Additional mitigation was offered at air noise exposure levels of 66 dB  $L_{Aeq,16h}$ .

As part of the CADP1 development, the airport improved the first tier of works, introduced an intermediate tier of treatment, and also upgraded the second tier to further protect those Residential and Public Buildings most affected by noise. The enhanced sound insulation scheme under CADP1 for Residential Buildings is summarised in Table 6 and described in more detail later in this section, alongside the other schemes in operation.

Scheme	Threshold ( $L_{Aeq,16h}$ )	Enhanced Scheme under CADP1
First Tier	57 dB	100% costs of secondary glazing or 100% costs of DG to existing single glazed properties, and acoustic vents
Intermediate Tier	63 dB	Secondary glazing and acoustic vents or £3000 (index linked) towards HPDG and acoustic vents
Second Tier	66 dB	100% costs of secondary glazing or HPDG in place of only a contribution to HPDG, and acoustic vents

DG – Standard thermal double glazing, HPDG – High (Acoustic) Performance double glazing

**Table 6: Sound Insulation Schemes – Residential Buildings**

No properties have become newly eligible for any of the schemes as shown in Appendix 8. This is because all properties within the actual contours for 2022, or the forecast reduced contours for 2023, were also inside the eligibility contours presented in the 2020 APR and therefore any eligible properties would already have been offered insulation.

<sup>5</sup> The full details of the Scheme (with CADP1) are documented within Annexures 2, 7 and 12 of the Section 106 Agreement dated 27th April 2016.

The first tier of works has been improved under CADP1 by ensuring any existing single glazed properties that are eligible under the scheme will be offered 100% of the cost for replacement standard thermal glazed windows or secondary glazing, whichever is preferred. Previously, only secondary glazing and acoustic vents were available to these single glazed properties. Residential premises in general will continue to be offered sound attenuating ventilators (acoustic ventilation) to provide background ventilation without the need to open windows.

The intermediate tier was a new requirement as part of the CADP1 permission. Under the intermediate tier works, for those residential properties that are already or become exposed to air noise at a level of 63 dB  $L_{Aeq,16h}$ , an offer of secondary glazing and acoustic ventilation will be made or alternatively, a contribution of £3,000 towards high performance acoustic double glazing and acoustic vents. Under this scheme, residents who prefer the high performance double glazing option may choose to treat only one or two rooms, such as those most affected by aircraft noise, as opposed to all rooms, to remain within the £3,000 budget available or they may use the £3,000 as a contribution towards more extensive works. Furthermore, this additional tier of works will be eligible to all existing dwellings exposed currently to 63 dB or more as well as any existing dwellings that come into the eligibility noise contour in the future.

For those most affected, that is those that become exposed to air noise at the Second Tier Eligibility Criterion of 66 dB  $L_{Aeq,16h}$ , they were previously offered improved secondary glazing or a monetary contribution of equivalent value towards high acoustic performance thermal double glazing, together with acoustic ventilation. The airport has enhanced the scheme under CADP1 to offer improved secondary glazing or a 100% contribution towards high performance double glazing, together with acoustic ventilation. This ensures that all of those most affected by noise are afforded the maximum noise protection opportunity. The airport will also inspect any previous treatments and rectify any damage caused by reasonable wear and tear.

An assessment of newly eligible properties is carried out every year as part of the Annual Performance Report and the eligibility boundaries are typically presented. In this 2022 APR there have been no newly eligible properties. The eligibility boundaries are presented in Appendix 5.

The scheme is delivered to eligible properties in accordance with a timescale agreed with the local authority and set out in detail in the Section 106 agreement. The timescales for treatment are devised as far as reasonably possible to ensure that the scheme will be delivered and in place by the time that residents become exposed to noise of 57 dB  $L_{Aeq,16h}$  based on an average summer day. Second Tier and Intermediate Tier properties that are exposed to higher levels of noise will be treated as a priority in the new scheme.



The noise contours are produced annually (using actual summer-period operational data), in accordance with the calculation methodology agreed with LBN. This is reviewed every 3 years, with the most recent review approved on 19 October 2022 (LBN reference 22/02356/\$106). The noise contours are used, along with information on when the properties were built, to determine eligibility for sound insulation treatment.

The sound insulation requirements of all public buildings in community use within the 57, 63 and 66 dB  $L_{Aeq,16h}$  noise contours are assessed individually, based on the use of the building, the current and future levels of aircraft noise and recommended internal noise standards, and works agreed as necessary with the local authority.

Where new properties are granted planning consent within the airport's noise contours, the airport will encourage local planning authorities to incorporate published noise contours into decisions on new residential development, with a view to ensuring that acceptable noise levels will be achieved within new homes and other noise sensitive developments through the use of reasonable, robust and enforceable design standards.

### **10.1 Purchase Scheme**

Any eligible properties that fall within the 69 dB  $L_{Aeq,16h}$  noise contour will receive an offer from the airport to purchase the property at the open market value within 6 months of the owner/occupier making an application for the airport to do so<sup>6</sup>.

Any properties that are found to lie within the current 69 dB  $L_{Aeq,16h}$  noise contour will be identified and contacted in accordance with the Purchase Scheme's requirements. No properties fell within this contour in 2022.

### **10.2 Re-Inspection Scheme**

For those eligible residential properties that were treated under the scheme at least 10 years ago, a free inspection is offered and provided previous treatments are unaltered, rectification works will be undertaken where appropriate to bring the sound insulation up to the standard

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<sup>6</sup> The full details of the Scheme are documented within Annexure 5 of the Section 106 Agreement dated 27 April 2016 (with CADP1) and within Part 12 of the Fourth Schedule and Part 14 of the Ninth Schedule to the Section 106 Agreement dated 9 July 2009 (without CADP1).

when the treatment was originally undertaken<sup>7</sup>. 474 properties have been identified for reinspection in 2023. A list of these properties is provided in Appendix 8.

### **10.3 Noise Insulation Payment Scheme (NIPS)**

Developments which have received planning permission but have not yet been built may be eligible to receive a payment under the NIPS. The aim of the NIPS is to compensate landowners and developers for the reasonable incremental costs of supplying and fitting additional noise insulation measures at certain proposed developments to mitigate against the noise effects of the increase in aircraft movements permitted by the Airport's Planning Permission. There is a NIPS relating to the 2009 planning permission as well as the CADP1 planning permission (known as NIPS2). No claims were made in 2022 under either scheme.

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<sup>7</sup>The full details of the Scheme are documented within Annexure 6 of the Section 106 Agreement dated 27 April 2016 (with CADP1) and Part 1 of the Fourth Schedule to the Section 106 Agreement dated 9 July 2009 (without CADP1).

## **11.0 AIRCRAFT MOVEMENT NUMBERS**

Conditions 17 and 23 to 27 of the CADP1 planning permission of July 2016, which are reproduced in Appendix 9, detail the maximum number of aircraft movements that are permitted at the airport.

The CADP1 planning permission allows up to 111,000 total aircraft movements per annum, including both scheduled and general aviation aircraft. The planning permission also contains specific limits on daily and weekly movements.

The airport is also required to record the numbers and types of aircraft that use the airport daily and submit aggregate figures to the Council on a quarterly basis. The daily records for the number of aircraft movements in 2022 are presented in Appendix 10, where they are compared with the relevant daily, weekly and annual limits.

Appendix 10 also presents the number of aircraft movements that took place each day during the restricted early morning periods of 06:30 to 06:44 hours and 06:30 to 06:59 hours, during the late operating periods of 22:00 to 22:30 hours on weekdays and Sundays and from 12:30 to 13:00 hours on Saturdays.

The data shows that throughout 2022, LCA has operated within its planning consent with regard to the number of daily and annual aircraft movements, including those during early morning and late evening periods, as well as weekly and annual noise factored movements.

**Mike Pau**

**for Bickerdike Allen Partners LLP**

**Nick Williams**

**Associate**

**David Charles**

**Partner**

## APPENDIX 1

### NTK STATUS REPORTS

Table A1.1 gives the daily operation status of each NMT for the 2022 calendar year.

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
01/01/2022	YES	YES	YES	YES	YES	YES
02/01/2022	YES	YES	YES	YES	YES	YES
03/01/2022	YES	YES	YES	YES	YES	YES
04/01/2022	YES	YES	YES	YES	YES	YES
05/01/2022	YES	YES	YES	YES	YES	YES
06/01/2022	YES	YES	YES	YES	YES	YES
07/01/2022	YES	YES	YES	YES	YES	YES
08/01/2022	YES	YES	YES	YES	YES	YES
09/01/2022	YES	YES	YES	YES	YES	YES
10/01/2022	YES	YES	YES	YES	YES	YES
11/01/2022	YES	YES	YES	YES	YES	YES
12/01/2022	YES	YES	YES	YES	YES	YES
13/01/2022	YES	YES	YES	YES	YES	YES
14/01/2022	YES	YES	YES	YES	YES	YES
15/01/2022	YES	YES	YES	YES	YES	YES
16/01/2022	YES	YES	YES	YES	YES	YES
17/01/2022	YES	YES	YES	YES	YES	YES
18/01/2022	YES	YES	YES	YES	YES	YES
19/01/2022	YES	YES	YES	YES	YES	YES
20/01/2022	YES	YES	YES	YES	YES	YES
21/01/2022	YES	YES	YES	YES	YES	YES
22/01/2022	YES	YES	YES	YES	YES	YES
23/01/2022	YES	YES	YES	YES	YES	YES
24/01/2022	YES	YES	YES	YES	YES	YES
25/01/2022	YES	YES	YES	YES	YES	YES
26/01/2022	YES	YES	YES	YES	YES	YES
27/01/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
28/01/2022	YES	YES	YES	YES	YES	YES
29/01/2022	YES	YES	YES	YES	YES	YES
30/01/2022	YES	YES	YES	YES	YES	YES
31/01/2022	YES	YES	YES	YES	YES	YES
01/02/2022	YES	YES	YES	YES	YES	YES
02/02/2022	YES	YES	YES	YES	YES	YES
03/02/2022	YES	YES	YES	YES	YES	YES
04/02/2022	YES	YES	YES	YES	YES	YES
05/02/2022	YES	YES	YES	YES	YES	YES
06/02/2022	YES	YES	YES	YES	YES	YES
07/02/2022	YES	YES	YES	YES	YES	YES
08/02/2022	YES	YES	YES	YES	YES	YES
09/02/2022	YES	YES	YES	YES	YES	YES
10/02/2022	YES	YES	YES	YES	YES	YES
11/02/2022	YES	YES	YES	YES	YES	YES
12/02/2022	YES	YES	YES	YES	YES	YES
13/02/2022	YES	YES	YES	YES	YES	YES
14/02/2022	YES	YES	YES	YES	YES	YES
15/02/2022	YES	YES	YES	YES	YES	YES
16/02/2022	YES	YES	YES	YES	YES	YES
17/02/2022	YES	YES	YES	YES	YES	YES
18/02/2022	YES	YES	YES	YES	YES	YES
19/02/2022	YES	YES	YES	YES	YES	YES
20/02/2022	YES	YES	YES	YES	YES	YES
21/02/2022	YES	YES	YES	YES	YES	YES
22/02/2022	YES	YES	YES	YES	YES	YES
23/02/2022	YES	YES	YES	YES	YES	YES
24/02/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
25/02/2022	YES	YES	YES	YES	YES	YES
26/02/2022	YES	YES	YES	YES	YES	YES
27/02/2022	YES	YES	YES	YES	YES	YES
28/02/2022	YES	YES	YES	YES	YES	YES
01/03/2022	YES	YES	YES	YES	YES	YES
02/03/2022	YES	YES	YES	YES	YES	YES
03/03/2022	YES	YES	YES	YES	YES	YES
04/03/2022	YES	YES	YES	YES	YES	YES
05/03/2022	YES	YES	YES	YES	YES	YES
06/03/2022	YES	YES	YES	YES	YES	YES
07/03/2022	YES	YES	YES	YES	YES	YES
08/03/2022	YES	YES	YES	YES	YES	YES
09/03/2022	YES	YES	YES	YES	YES	YES
10/03/2022	YES	YES	YES	YES	YES	YES
11/03/2022	YES	YES	YES	YES	YES	YES
12/03/2022	YES	YES	YES	YES	YES	YES
13/03/2022	YES	YES	YES	YES	YES	YES
14/03/2022	YES	YES	YES	YES	YES	YES
15/03/2022	YES	YES	YES	YES	YES	YES
16/03/2022	YES	YES	YES	YES	YES	YES
17/03/2022	YES	YES	YES	YES	YES	YES
18/03/2022	YES	YES	YES	YES	YES	YES
19/03/2022	YES	YES	YES	YES	YES	YES
20/03/2022	YES	YES	YES	YES	YES	YES
21/03/2022	YES	YES	YES	YES	YES	YES
22/03/2022	YES	YES	YES	YES	YES	YES
23/03/2022	YES	YES	YES	YES	YES	YES
24/03/2022	YES	YES	YES	YES	YES	YES



Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
25/03/2022	YES	YES	YES	YES	YES	YES
26/03/2022	YES	YES	YES	YES	YES	YES
27/03/2022	YES	YES	YES	YES	YES	YES
28/03/2022	YES	YES	YES	YES	YES	YES
29/03/2022	YES	YES	YES	YES	YES	YES
30/03/2022	YES	YES	YES	YES	YES	YES
31/03/2022	YES	YES	YES	YES	YES	YES
01/04/2022	YES	YES	YES	YES	YES	YES
02/04/2022	YES	YES	YES	YES	YES	YES
03/04/2022	YES	YES	YES	YES	YES	YES
04/04/2022	YES	YES	YES	YES	YES	YES
05/04/2022	YES	YES	YES	YES	YES	YES
06/04/2022	YES	YES	YES	YES	YES	YES
07/04/2022	YES	YES	YES	YES	YES	YES
08/04/2022	YES	YES	YES	YES	YES	YES
09/04/2022	YES	YES	YES	YES	YES	YES
10/04/2022	YES	YES	YES	YES	YES	YES
11/04/2022	YES	YES	YES	YES	YES	YES
12/04/2022	YES	YES	YES	YES	YES	YES
13/04/2022	YES	YES	YES	YES	YES	YES
14/04/2022	YES	YES	YES	YES	YES	YES
15/04/2022	YES	YES	YES	YES	YES	YES
16/04/2022	YES	YES	YES	YES	YES	YES
17/04/2022	YES	YES	YES	YES	YES	YES
18/04/2022	YES	YES	YES	YES	YES	YES
19/04/2022	YES	YES	YES	YES	YES	YES
20/04/2022	YES	YES	YES	YES	YES	YES
21/04/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
22/04/2022	YES	YES	YES	YES	YES	YES
23/04/2022	YES	YES	YES	YES	YES	YES
24/04/2022	YES	YES	YES	YES	YES	YES
25/04/2022	YES	YES	YES	YES	YES	YES
26/04/2022	YES	YES	YES	YES	YES	YES
27/04/2022	YES	YES	YES	YES	YES	YES
28/04/2022	YES	YES	YES	YES	YES	YES
29/04/2022	YES	YES	YES	YES	YES	YES
30/04/2022	YES	YES	YES	YES	YES	YES
01/05/2022	YES	YES	YES	YES	YES	YES
02/05/2022	YES	YES	YES	YES	YES	YES
03/05/2022	YES	YES	YES	YES	YES	YES
04/05/2022	YES	YES	YES	YES	YES	YES
05/05/2022	YES	YES	YES	YES	YES	YES
06/05/2022	YES	YES	YES	YES	YES	YES
07/05/2022	YES	YES	YES	YES	YES	YES
08/05/2022	YES	YES	YES	YES	YES	YES
09/05/2022	YES	YES	YES	YES	YES	YES
10/05/2022	YES	YES	YES	YES	YES	YES
11/05/2022	YES	YES	YES	YES	YES	YES
12/05/2022	YES	YES	YES	YES	YES	YES
13/05/2022	YES	YES	YES	YES	YES	YES
14/05/2022	YES	YES	YES	YES	YES	YES
15/05/2022	YES	YES	YES	YES	YES	YES
16/05/2022	YES	YES	YES	YES	YES	YES
17/05/2022	YES	YES	YES	YES	YES	YES
18/05/2022	YES	YES	YES	YES	YES	YES
19/05/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
20/05/2022	YES	YES	YES	YES	YES	YES
21/05/2022	YES	YES	YES	YES	YES	YES
22/05/2022	YES	YES	YES	YES	YES	YES
23/05/2022	YES	YES	YES	YES	YES	YES
24/05/2022	YES	YES	YES	YES	YES	YES
25/05/2022	YES	YES	YES	YES	YES	YES
26/05/2022	YES	YES	YES	YES	YES	YES
27/05/2022	YES	YES	YES	YES	YES	YES
28/05/2022	YES	YES	YES	YES	YES	YES
29/05/2022	YES	YES	YES	YES	YES	YES
30/05/2022	YES	YES	YES	YES	YES	YES
31/05/2022	YES	YES	YES	YES	YES	YES
01/06/2022	YES	YES	YES	YES	YES	YES
02/06/2022	YES	YES	YES	YES	YES	YES
03/06/2022	YES	YES	YES	YES	YES	YES
04/06/2022	YES	YES	YES	YES	YES	YES
05/06/2022	YES	YES	YES	YES	YES	YES
06/06/2022	YES	YES	YES	YES	YES	YES
07/06/2022	YES	YES	YES	YES	YES	YES
08/06/2022	YES	YES	YES	YES	YES	YES
09/06/2022	YES	YES	YES	YES	YES	YES
10/06/2022	YES	YES	YES	YES	YES	YES
11/06/2022	YES	YES	YES	YES	YES	YES
12/06/2022	YES	YES	YES	YES	YES	YES
13/06/2022	YES	YES	YES	YES	YES	YES
14/06/2022	YES	YES	YES	YES	YES	YES
15/06/2022	YES	YES	YES	YES	YES	YES
16/06/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
17/06/2022	YES	YES	YES	YES	YES	YES
18/06/2022	YES	YES	YES	YES	YES	YES
19/06/2022	YES	YES	YES	NO	YES	YES
20/06/2022	YES	YES	YES	YES	YES	YES
21/06/2022	YES	YES	YES	YES	YES	YES
22/06/2022	YES	YES	YES	YES	YES	YES
23/06/2022	YES	YES	YES	YES	YES	YES
24/06/2022	YES	YES	YES	YES	YES	YES
25/06/2022	YES	YES	YES	YES	YES	YES
26/06/2022	YES	YES	YES	NO	YES	YES
27/06/2022	YES	YES	YES	NO	YES	YES
28/06/2022	YES	YES	YES	YES	YES	YES
29/06/2022	YES	YES	YES	YES	YES	YES
30/06/2022	YES	YES	YES	YES	YES	YES
01/07/2022	YES	YES	YES	YES	YES	YES
02/07/2022	YES	YES	YES	YES	YES	YES
03/07/2022	YES	YES	YES	YES	YES	YES
04/07/2022	YES	YES	YES	YES	YES	YES
05/07/2022	YES	YES	YES	YES	YES	YES
06/07/2022	YES	YES	YES	YES	YES	YES
07/07/2022	YES	YES	YES	YES	YES	YES
08/07/2022	YES	YES	YES	YES	YES	YES
09/07/2022	YES	YES	YES	YES	YES	YES
10/07/2022	YES	YES	YES	YES	YES	YES
11/07/2022	YES	YES	YES	YES	YES	YES
12/07/2022	YES	YES	YES	YES	YES	YES
13/07/2022	YES	YES	YES	YES	YES	YES
14/07/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
15/07/2022	YES	YES	YES	YES	YES	YES
16/07/2022	YES	YES	YES	YES	YES	YES
17/07/2022	YES	YES	YES	YES	YES	YES
18/07/2022	YES	YES	YES	YES	YES	YES
19/07/2022	YES	YES	YES	YES	YES	YES
20/07/2022	YES	YES	YES	YES	YES	YES
21/07/2022	YES	YES	YES	YES	YES	YES
22/07/2022	YES	YES	YES	YES	YES	YES
23/07/2022	YES	YES	YES	YES	YES	YES
24/07/2022	YES	YES	YES	YES	YES	YES
25/07/2022	YES	YES	YES	YES	YES	YES
26/07/2022	YES	YES	YES	YES	YES	YES
27/07/2022	YES	YES	YES	YES	YES	YES
28/07/2022	YES	YES	YES	YES	YES	YES
29/07/2022	YES	YES	YES	YES	YES	YES
30/07/2022	YES	YES	YES	YES	YES	YES
31/07/2022	YES	YES	YES	YES	YES	YES
01/08/2022	YES	YES	YES	YES	YES	YES
02/08/2022	YES	YES	YES	YES	YES	YES
03/08/2022	YES	YES	YES	YES	YES	YES
04/08/2022	YES	YES	YES	YES	YES	YES
05/08/2022	YES	YES	YES	YES	YES	YES
06/08/2022	YES	YES	YES	YES	YES	YES
07/08/2022	YES	YES	YES	YES	YES	YES
08/08/2022	YES	YES	YES	YES	YES	YES
09/08/2022	YES	YES	YES	YES	YES	YES
10/08/2022	YES	YES	YES	YES	YES	YES
11/08/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
12/08/2022	YES	YES	YES	YES	YES	YES
13/08/2022	YES	YES	YES	YES	YES	YES
14/08/2022	YES	YES	YES	YES	YES	YES
15/08/2022	YES	YES	YES	YES	YES	YES
16/08/2022	YES	YES	YES	YES	YES	YES
17/08/2022	YES	YES	YES	YES	YES	YES
18/08/2022	YES	YES	YES	YES	YES	YES
19/08/2022	YES	YES	YES	YES	YES	YES
20/08/2022	YES	YES	YES	YES	YES	YES
21/08/2022	YES	YES	YES	YES	YES	YES
22/08/2022	YES	YES	YES	YES	YES	YES
23/08/2022	YES	YES	YES	YES	YES	YES
24/08/2022	YES	YES	YES	YES	YES	YES
25/08/2022	YES	YES	YES	YES	YES	YES
26/08/2022	YES	YES	YES	YES	YES	YES
27/08/2022	YES	YES	YES	YES	YES	YES
28/08/2022	YES	YES	YES	YES	YES	YES
29/08/2022	YES	YES	YES	YES	YES	YES
30/08/2022	YES	YES	YES	YES	YES	YES
31/08/2022	YES	YES	YES	YES	YES	YES
01/09/2022	YES	YES	YES	YES	YES	YES
02/09/2022	YES	YES	YES	YES	YES	YES
03/09/2022	YES	YES	YES	YES	YES	YES
04/09/2022	YES	YES	YES	YES	YES	YES
05/09/2022	YES	YES	YES	YES	YES	YES
06/09/2022	YES	YES	YES	YES	YES	YES
07/09/2022	YES	YES	YES	YES	YES	YES
08/09/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
09/09/2022	YES	YES	YES	YES	YES	YES
10/09/2022	YES	YES	YES	YES	YES	YES
11/09/2022	YES	YES	YES	YES	YES	YES
12/09/2022	YES	YES	YES	YES	YES	YES
13/09/2022	YES	YES	YES	YES	YES	YES
14/09/2022	YES	YES	YES	YES	YES	YES
15/09/2022	YES	YES	YES	YES	YES	YES
16/09/2022	YES	YES	YES	YES	YES	YES
17/09/2022	YES	YES	YES	YES	YES	YES
18/09/2022	YES	YES	YES	YES	YES	YES
19/09/2022	YES	YES	YES	YES	YES	YES
20/09/2022	YES	YES	YES	YES	YES	YES
21/09/2022	YES	YES	YES	YES	YES	YES
22/09/2022	YES	YES	YES	YES	YES	YES
23/09/2022	YES	YES	YES	YES	YES	YES
24/09/2022	YES	YES	YES	YES	YES	YES
25/09/2022	YES	YES	YES	YES	YES	YES
26/09/2022	YES	YES	YES	YES	YES	YES
27/09/2022	YES	YES	YES	YES	YES	YES
28/09/2022	YES	YES	YES	YES	YES	YES
29/09/2022	YES	YES	YES	YES	YES	YES
30/09/2022	YES	YES	YES	YES	YES	YES
01/10/2022	YES	YES	YES	YES	YES	YES
02/10/2022	YES	YES	YES	YES	YES	YES
03/10/2022	YES	YES	YES	YES	YES	YES
04/10/2022	YES	YES	YES	YES	YES	YES
05/10/2022	YES	YES	YES	YES	YES	YES
06/10/2022	YES	YES	YES	YES	YES	YES



Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
07/10/2022	YES	YES	YES	YES	YES	YES
08/10/2022	YES	YES	YES	YES	YES	YES
09/10/2022	YES	YES	YES	YES	YES	YES
10/10/2022	YES	YES	YES	YES	YES	YES
11/10/2022	YES	YES	YES	YES	YES	YES
12/10/2022	YES	YES	YES	YES	YES	YES
13/10/2022	YES	YES	YES	YES	YES	YES
14/10/2022	YES	YES	YES	YES	YES	YES
15/10/2022	YES	YES	YES	YES	YES	YES
16/10/2022	YES	YES	YES	YES	YES	YES
17/10/2022	YES	YES	YES	YES	YES	YES
18/10/2022	YES	YES	YES	YES	YES	YES
19/10/2022	YES	YES	YES	YES	YES	YES
20/10/2022	YES	YES	YES	YES	YES	YES
21/10/2022	YES	YES	YES	YES	YES	YES
22/10/2022	YES	YES	YES	YES	YES	YES
23/10/2022	YES	YES	YES	YES	YES	YES
24/10/2022	YES	YES	YES	YES	YES	YES
25/10/2022	YES	YES	YES	YES	YES	YES
26/10/2022	YES	YES	YES	YES	YES	YES
27/10/2022	YES	YES	YES	YES	YES	YES
28/10/2022	YES	YES	YES	YES	YES	YES
29/10/2022	YES	YES	NO	YES	YES	YES
30/10/2022	YES	YES	YES	YES	YES	YES
31/10/2022	YES	YES	YES	YES	YES	YES
01/11/2022	YES	YES	YES	YES	YES	YES
02/11/2022	YES	YES	YES	YES	YES	YES
03/11/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
04/11/2022	YES	YES	YES	YES	YES	YES
05/11/2022	YES	YES	YES	YES	YES	YES
06/11/2022	YES	YES	YES	YES	YES	YES
07/11/2022	YES	YES	YES	YES	YES	YES
08/11/2022	YES	YES	YES	YES	YES	YES
09/11/2022	YES	YES	YES	YES	YES	YES
10/11/2022	YES	YES	YES	YES	YES	YES
11/11/2022	YES	YES	YES	YES	YES	YES
12/11/2022	YES	YES	YES	YES	YES	YES
13/11/2022	YES	YES	YES	YES	YES	YES
14/11/2022	YES	YES	YES	YES	YES	YES
15/11/2022	YES	YES	YES	YES	YES	YES
16/11/2022	YES	YES	YES	YES	YES	YES
17/11/2022	YES	YES	YES	YES	YES	YES
18/11/2022	YES	YES	YES	YES	YES	YES
19/11/2022	YES	YES	YES	YES	YES	YES
20/11/2022	YES	YES	YES	YES	YES	YES
21/11/2022	YES	YES	YES	YES	YES	YES
22/11/2022	YES	YES	YES	YES	YES	YES
23/11/2022	YES	YES	YES	YES	YES	YES
24/11/2022	YES	YES	YES	YES	YES	YES
25/11/2022	YES	YES	YES	YES	YES	YES
26/11/2022	YES	YES	YES	YES	YES	YES
27/11/2022	YES	YES	YES	YES	YES	YES
28/11/2022	YES	YES	YES	YES	YES	YES
29/11/2022	YES	YES	YES	YES	YES	YES
30/11/2022	YES	YES	YES	YES	YES	YES
01/12/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
02/12/2022	YES	YES	YES	YES	YES	YES
03/12/2022	YES	YES	YES	YES	YES	YES
04/12/2022	YES	YES	YES	YES	YES	YES
05/12/2022	YES	YES	YES	YES	YES	YES
06/12/2022	YES	YES	YES	YES	YES	YES
07/12/2022	YES	YES	YES	YES	YES	YES
08/12/2022	YES	YES	YES	YES	YES	YES
09/12/2022	YES	YES	YES	YES	YES	YES
10/12/2022	YES	YES	YES	YES	YES	YES
11/12/2022	YES	YES	YES	YES	YES	YES
12/12/2022	YES	YES	YES	YES	YES	YES
13/12/2022	YES	YES	YES	YES	YES	YES
14/12/2022	YES	YES	YES	YES	YES	YES
15/12/2022	YES	YES	YES	YES	YES	YES
16/12/2022	YES	YES	YES	YES	YES	YES
17/12/2022	YES	YES	YES	YES	YES	YES
18/12/2022	YES	YES	YES	YES	YES	YES
19/12/2022	YES	YES	YES	YES	YES	YES
20/12/2022	YES	YES	YES	YES	YES	YES
21/12/2022	YES	YES	YES	YES	YES	YES
22/12/2022	YES	YES	YES	YES	YES	YES
23/12/2022	YES	YES	YES	YES	YES	YES
24/12/2022	YES	YES	YES	YES	YES	YES
25/12/2022	YES	YES	YES	YES	YES	YES
26/12/2022	YES	YES	YES	YES	YES	YES
27/12/2022	YES	YES	YES	YES	YES	YES
28/12/2022	YES	YES	YES	YES	YES	YES
29/12/2022	YES	YES	YES	YES	YES	YES

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
30/12/2022	YES	YES	YES	YES	YES	YES
31/12/2022	YES	YES	YES	YES	YES	YES

**Table A1.1: 2022 NTK daily operational status**

A summary of the correlation rate for each month of 2022 is given in Table A1.2. In order to calculate the rate of correlation, the number of aircraft movements correlated has been compared against the number of operations at London City Airport during the same period. It has been assumed that the number of arrivals and departures each constitute 50% of the total number of operations.

Month	No. Operations	No. Correlated Departures (Sideline)	No. Correlated Departures (Flyover)	No. Correlated Arrivals
Jan	1,586	764	752	750
Feb	2,204	861	858	878
Mar	3,428	1,623	1,607	1,603
Apr	4,148	1,918	1,894	1,886
May	4,828	2,158	2,329	2,377
Jun	4,561	2,130	2,194	2,232
Jul	4,315	2,126	2,108	2,112
Aug	4,235	2,093	2,072	2,109
Sep	4,552	2,216	2,225	2,242
Oct	4,526	2,141	2,121	2,145
Nov	4,439	2,109	2,091	2,118
Dec	3,875	1,889	1,881	1,883

**Table A1.2: Summary of Correlated Aircraft Movements, 2022**

Table A1.3 gives a summary of the NTK operational status for each quarter.

Quarter	Operational Summary
January – March	<p>All 6 NMTs were operational, and data was received from each NMT for all days.</p> <p>The target correlation rate (80%) at NMTs 1-4 for departures was met for the first quarter of 2022. A total of 3,248 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 90% was achieved.</p> <p>In the first quarter of 2022, a total of 3,217 (89%) departures and 3,231 (90%) arrivals were correlated at NMTs 5 and 6.</p>
April – June	<p>During this quarterly period, all 6 NMTs were operational, and data was received from each NMT with the exception of NMT 4 on the 19th, 26th and 27th June. This was due to a failure of the power supply.</p> <p>The target correlation rate (80%) at NMTs 1-4 for departures was met for the second quarter of 2022. A total of 6,206 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 92% was achieved.</p> <p>In the second quarter of 2022, a total of 6,417 (95%) departures and 6,495 (96%) arrivals were correlated at NMTs 5 and 6.</p>
July – September	<p>All 6 NMTs were operational, and data was received from each NMT for all days.</p> <p>The target correlation rate (80%) at NMTs 1-4 for departures was met for the third quarter of 2022. A total of 6,435 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 98% was achieved.</p> <p>In the third quarter of 2022, a total of 6,405 (98%) departures and 6,463 (99%) arrivals were correlated at NMTs 5 and 6.</p>
October - December	<p>During this quarterly period, all 6 NMTs were operational and data was received from each NMT on all days except for NMT 3 on 29th October. This was due to a failure of the power supply.</p> <p>The target correlation rate (80%) at NMTs 1-4 for departures was met for the fourth quarter of 2022. A total of 6,139 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 96% was achieved.</p> <p>In the fourth quarter of 2022, a total of 6,093 (95%) departures and 6,146 (96%) arrivals were correlated at NMTs 5 and 6.</p>

**Table A1.3: 2022 Quarterly Operations Summary**

## APPENDIX 2

### INCENTIVES AND PENALTIES

The following table summarises the number of flights that incurred fixed penalties, credit removals and credit awards in the period between 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022, by airline and aircraft type. Additionally, the total value of fixed penalties accrued and the residual number of credits are presented.

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
3AM	FA7X	0	£0	0	1	1
9HJ	F2TH	0	£0	0	3	3
9HL	GLEX	0	£0	0	2	2
AAB	C25C	0	£0	0	1	1
AAB	C56X	0	£0	0	3	3
ABP	E135	0	£0	0	9	9
ABP	FA7X	0	£0	0	2	2
ADN	FA7X	0	£0	0	1	1
ADN	LJ45	0	£0	0	2	2
AHO	C56X	0	£0	0	30	30
AOJ	FA7X	0	£0	0	1	1
ASJ	C510	0	£0	0	9	9
ASJ	C680	0	£0	0	1	1
ASJ	C68A	0	£0	0	4	4
ASJ	FA7X	0	£0	0	2	2
AWU	C25A	0	£0	0	9	9
AWU	C525	0	£0	0	3	3
BAW	E190	0	£0	0	1	1
BFD	F2TH	0	£0	0	8	8
BFD	FA8X	0	£0	0	1	1
BOH	C56X	0	£0	0	3	3
BTX	FA7X	0	£0	0	4	4
BTX	FA8X	0	£0	0	3	3
BTX	PC24	0	£0	0	1	1
CAZ	F2TH	0	£0	0	1	1

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
CAZ	FA7X	0	£0	0	3	3
CFE	E190	0	£0	6	180	174
CLF	E550	0	£0	0	1	1
CLF	FA8X	0	£0	0	3	3
CSC	CL35	0	£0	0	1	1
CSE	C56X	0	£0	0	2	2
CSP	E55P	0	£0	0	1	1
CTM	FA7X	0	£0	0	1	1
DBE	F2TH	0	£0	0	1	1
DBH	E550	0	£0	0	2	2
DBO	F2TH	0	£0	0	6	6
DCA	C56X	0	£0	0	23	23
DCA	C680	0	£0	0	18	18
DCA	C68A	0	£0	0	1	1
DCE	C25C	0	£0	0	1	1
DCS	C56X	0	£0	0	13	13
DCW	C525	0	£0	0	1	1
DLH	E190	0	£0	0	58	58
DSO	F900	0	£0	0	1	1
DSO	FA7X	0	£0	0	1	1
DSO	FA8X	0	£0	0	1	1
ECC	C56X	0	£0	0	3	3
ECC	CL60	0	£0	0	2	2
EDG	G280	0	£0	0	2	2
EFD	C25C	0	£0	0	3	3
EFD	C56X	0	£0	0	1	1
EFD	C680	0	£0	0	2	2
EFD	C68A	0	£0	0	1	1
EFD	FA8X	0	£0	0	1	1



<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
ELJ	C56X	0	£0	0	4	4
ELJ	C680	0	£0	0	4	4
ELJ	C68A	0	£0	0	2	2
EUW	C680	0	£0	0	2	2
FHE	FA7X	0	£0	0	1	1
FHI	FA8X	0	£0	0	1	1
FJO	E550	0	£0	0	1	1
FJO	E135	0	£0	0	3	3
FJO	E550	0	£0	0	9	9
FLJ	E135	0	£0	0	1	1
FLJ	E550	0	£0	0	11	11
FYG	GLEX	0	£0	0	1	1
GAC	C510	0	£0	0	95	95
GER	E190	0	£0	0	1	1
GES	C56X	0	£0	0	3	3
GLJ	GL7T	0	£0	0	1	1
GLJ	GLEX	0	£0	0	1	1
HBJ	FA7X	0	£0	0	4	4
HBJ	FA8X	0	£0	0	1	1
IJM	FA7X	0	£0	0	2	2
IJM	FA8X	0	£0	0	2	2
ITY	E190	0	£0	0	37	37
IXR	C25A	0	£0	0	1	1
IXR	C510	0	£0	0	3	3
IXR	C525	0	£0	0	3	3
JFA	PC24	0	£0	0	16	16
JKH	C25A	0	£0	0	1	1
JSY	C25A	0	£0	0	1	1
KFE	FA7X	0	£0	0	1	1

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
KL9	E190	0	£0	0	2	2
KLM	E190	0	£0	0	75	75
KOC	FA8X	0	£0	0	2	2
LEA	FA7X	0	£0	0	2	2
LGL	DH8D	0	£0	1	134	133
LGL	E190	0	£0	0	1	1
LMJ	C56X	0	£0	0	2	2
LOG	AT42	0	£0	0	11	11
LOG	AT72	0	£0	0	1	1
LOT	E190	0	£0	1	3	2
LXD	PC24	0	£0	0	2	2
LXJ	GLF6	0	£0	0	1	1
MFA	FA7X	0	£0	0	1	1
MFA	FA8X	0	£0	0	2	2
MOZ	C25C	0	£0	0	2	2
N10	CL60	0	£0	0	1	1
N14	GLEX	0	£0	0	1	1
N16	GLEX	0	£0	0	1	1
N17	GLF6	0	£0	0	1	1
N50	GLEX	0	£0	0	5	5
N63	GLF6	0	£0	0	1	1
N65	GLF6	0	£0	0	1	1
N85	G280	0	£0	0	2	2
N88	C680	0	£0	0	5	5
N95	FA8X	0	£0	0	1	1
NJE	C56X	0	£0	0	58	58
NJE	C680	0	£0	0	63	63
NJE	C68A	0	£0	0	71	71
NJE	CL35	0	£0	0	76	76

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
NJE	E55P	0	£0	0	117	117
NJE	GL7T	0	£0	0	1	1
NJE	GLEX	0	£0	0	6	6
NJU	C56X	0	£0	0	1	1
NJU	C650	0	£0	0	11	11
NJU	E55P	0	£0	0	21	21
OML	C68A	0	£0	0	1	1
OOG	C680	0	£0	0	2	2
OOG	F2TH	0	£0	0	25	25
OOH	FA8X	0	£0	0	1	1
OOM	C510	0	£0	0	1	1
OOS	C510	0	£0	0	2	2
OOS	C56X	0	£0	0	16	16
OOV	C560	0	£0	0	1	1
PHC	F2TH	0	£0	0	8	8
PHH	CL60	0	£0	0	2	2
PHJ	F2TH	0	£0	0	10	10
PHT	C510	0	£0	0	1	1
PHW	F2TH	0	£0	0	3	3
PNC	C56X	0	£0	0	1	1
PVT	C510	0	£0	0	1	1
PVT	E135	0	£0	0	1	1
RTG	F2TH	0	£0	0	1	1
SHE	FA7X	0	£0	0	1	1
SHE	FA8X	0	£0	0	123	123
SNM	G280	0	£0	0	1	1
STQ	C25A	0	£0	0	1	1
SUA	C56X	0	£0	0	3	3
SUA	E55P	0	£0	0	1	1

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
SUI	PC24	0	£0	0	1	1
SUS	J328	0	£0	0	45	45
SWR	A221	0	£0	0	482	482
SWR	E290	0	£0	0	331	331
SYB	GLEK	0	£0	0	1	1
TCR	FA8X	0	£0	0	1	1
TVS	C680	0	£0	0	7	7
ULC	FA7X	0	£0	0	1	1
VHF	GL7T	0	£0	0	3	3
VLJ	C25A	0	£0	0	2	2
VPC	CL35	0	£0	0	1	1
VQB	FA8X	0	£0	0	19	19
XGO	P180	0	£0	2	0	-2
XRO	FA7X	0	£0	0	1	1
<b>Total</b>		<b>0</b>	<b>£0</b>	<b>10</b>	<b>2,439</b>	<b>2,429</b>

**Table A2.1: 2022 Penalties and Credits Summary**

## APPENDIX 3

### SUMMARY OF EFPS DATA

The following table summarises the Engine Run on Stand (ERS), Taxi Time on Arrival (TTA), and Taxi Time on Departure (TTD) times for 2022, by airline and aircraft type. Airline and aircraft type combinations that operated less than once per week on average have been grouped in the “Other” category.

<b>Aircraft Code</b>	<b>Airline</b>	<b>Count of TTA</b>	<b>Average of TTA (mm:ss)</b>	<b>Count of ERS</b>	<b>Average of ERS (mm:ss)</b>	<b>Count of TTD</b>	<b>Average of TTD (mm:ss)</b>
A221	Swiss	918	03:25	917	05:59	917	05:24
AT45	Loganair	470	03:29	470	05:45	470	05:23
AT75	Loganair	323	03:34	321	05:19	321	05:33
C510	Globe Air	134	03:07	134	07:26	134	05:58
C56X	NetJets	92	03:05	91	04:43	91	06:20
C68A	NetJets	234	03:49	233	06:07	233	06:26
CL35	NetJets	107	03:06	106	04:18	106	06:02
DH8D	Luxair	1,513	03:33	1,512	05:06	1,512	05:15
E190	BA CityFlyer	14,602	03:49	14,604	04:00	14,604	06:23
E190	Lufthansa	709	04:12	709	04:31	709	05:57
E190	German Airways	613	04:45	614	04:33	614	05:54
E190	KLM	1,660	03:40	1,660	03:25	1,660	05:17
E190	LOT	310	03:56	310	03:57	310	06:15
E290	Swiss	447	03:28	445	06:32	445	05:29
E55P	NetJets	173	03:05	174	05:37	174	06:05
FA8X	Shell Aircraft	188	03:44	189	05:07	189	06:29
J328	Sun Air	77	03:46	77	04:04	77	05:56
Other		907	03:34	904	05:23	904	06:22
<b>Overall</b>		<b>23,477</b>	<b>03:46</b>	<b>23,470</b>	<b>04:22</b>	<b>23,470</b>	<b>06:07</b>

**Table A3.1: 2022 Ground Running Summary**

## APPENDIX 4

### GROUND RUNNING OF ENGINES

Table A4.1 sets out the official record of ground running of engines for test and maintenance for 2022.

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
01/01/2022	Stand 22	NW	Idle	E190	GLCAF	07:49	07:57	00:08
02/01/2022	Stand 10	NW	Idle	E190	GLCYJ	12:32	12:39	00:07
04/01/2022	Stand 9	NW	Idle	E190	GLCAG	09:28	09:42	00:14
04/01/2022	Stand 21	NW	Idle	E190	GLCAD	12:40	12:49	00:09
04/01/2022	Stand 21	NW	Idle	E190	GLCAD	14:44	14:56	00:12
06/01/2022	Stand 25	NW	Idle	E190	GLCAD	09:12	09:20	00:08
06/01/2022	Stand 10	NW	Idle	E190	GLCYM	10:53	11:04	00:11
10/01/2022	Stand 8	NW	Idle	E190	GLCXY	06:39	06:45	00:06
19/01/2022	Stand 22	NW	Idle	E190	GLCYO	15:41	15:50	00:09
21/01/2022	Stand 27	NW	Idle	E190	GLCYO	14:15	14:22	00:07
29/01/2022	Stand 9	NW	Idle	E190	GLCAD	10:02	10:09	00:07
30/01/2022	Stand 6	NW	Idle	E190	GLCAH	12:33	12:39	00:06
01/02/2022	Stand 27	NW	Idle	E190	GLCAU	14:53	14:58	00:05
01/02/2022	Stand 27	NW	Idle	E190	GLCAH	16:52	17:03	00:11
08/02/2022	Stand 4	Parked	Idle	E190	GLCAE	19:44	19:50	00:06
09/02/2022	Stand 7	NW	Idle	E190	GLCYO	07:42	07:48	00:06
15/02/2022	Stand 7	NW	Idle	E190	GLCAA	06:34	06:42	00:08
17/02/2022	Stand 27	NW	Idle	E190	GLCYR	06:46	06:53	00:07
20/02/2022	Stand 10	NW	Idle	E190	GLCYR	12:37	12:43	00:06
21/02/2022	Stand 26	W	High	E190	GLCYV	07:35	08:13	00:38
22/02/2022	Stand 26	W	High	E190	GLCYU	10:05	10:47	00:42
23/02/2022	Stand 26	W	High	E190	GLCYU	09:41	10:01	00:20
23/02/2022	Stand 26	W	High	E190	GLCYU	13:15	13:25	00:10
23/02/2022	Stand 26	W	High	E190	GLCYU	16:32	16:46	00:14
23/02/2022	Stand 26	W	High	E190	GLCYU	20:47	21:12	00:25
24/02/2022	Stand 23	NW	Idle	E190	GLCYS	07:20	07:27	00:07
24/02/2022	Stand 26	W	High	E190	GLCYN	09:25	09:54	00:29
25/02/2022	Stand 23	Parked	Idle	E190	GLCAC	06:48	06:55	00:07
25/02/2022	Stand 4	NW	Idle	E190	GLCYS	09:39	09:46	00:07



Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
27/02/2022	Stand 4	NW	Idle	E190	GLCYW	13:06	13:10	00:04
28/02/2022	Stand 26	W	High	E190	GLCAG	19:51	19:59	00:08
05/03/2022	Stand 27	NW	Idle	E190	GLCYK	10:05	10:14	00:09
08/03/2022	Stand 8	NW	Idle	E190	GLCYU	08:18	08:25	00:07
11/03/2022	Stand 24	NW	Idle	E190	GLCYZ	09:15	09:24	00:09
13/03/2022	Stand 25	NW	Idle	E190	GLCAH	12:54	13:05	00:11
13/03/2022	Stand 6	NW	Idle	E190	GLCYZ	13:33	13:41	00:08
15/02/2022	Stand 9	NW	Idle	E190	GLCAA	07:43	07:55	00:12
15/02/2022	Stand 26	NW	Idle	E190	GLCAE	12:20	12:29	00:09
15/02/2022	Stand 9	NW	Idle	E190	GLCAA	13:39	13:42	00:03
15/02/2022	Stand 9	NW	Idle	E190	GLCAA	14:45	14:55	00:10
16/02/2022	Stand 7	NW	Idle	E190	GLCAA	07:59	08:05	00:06
20/02/2022	Stand 9	NW	Idle	E190	GLCYM	12:36	12:43	00:07
20/02/2022	Stand 7	NW	Idle	E190	GLCYV	13:11	13:20	00:09
21/02/2022	Stand 10	NW	Idle	E190	GLCAA	15:05	15:09	00:04
22/02/2022	Stand 28	W	High	E190	GLCYS	09:48	10:04	00:16
02/04/2022	Stand 7	NW	Idle	E190	GLCYJ	09:41	09:52	00:11
05/04/2022	Stand 26	NW	Idle	E190	GLCAH	19:18	19:54	00:36
06/04/2022	Stand 27	NW	Idle	E190	GLCAH	14:46	14:57	00:11
06/04/2022	Stand 27	NW	Idle	E190	GLCAH	15:49	15:54	00:05
06/04/2022	Stand 27	NW	Idle	E190	GLCAH	17:19	17:28	00:09
07/04/2022	Stand 28	NW	Idle	E190	GLCAC	06:13	06:19	00:06
08/04/2022	Stand 13	E	Idle	E190	GLCAH	14:07	14:14	00:07
09/04/2022	Stand 4	NW	Idle	E190	GLCYJ	11:24	11:28	00:04
10/04/2022	Stand 9	NW	Idle	E190	GLCAE	11:31	11:39	00:08
10/04/2022	Stand 27	W	High	E190	GLCYL	12:27	12:45	00:18
14/04/2022	Stand 27	W	High	E190	GLCYL	07:56	08:35	00:39
16/04/2022	Stand 10	NW	Idle	E190	GLCYT	09:14	09:20	00:06
17/04/2022	Stand 24	Parked	Idle	E190	GLCYT	11:36	11:41	00:05
17/04/2022	Stand 6	NW	Idle	E190	GLCAA	12:15	12:26	00:11
18/04/2022	Stand 7	NW	Idle	E190	GLCYJ	08:23	08:35	00:12
20/04/2022	Stand 27	NW	Idle	E190	GLCYT	19:08	19:13	00:05

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
25/04/2022	Stand 28	NW	Idle	E190	GLCYV	08:44	08:49	00:05
25/04/2022	Abeam 25	W	Idle	E190	GLCAC	20:02	20:22	00:20
28/04/2022	Stand 24	NW	Idle	E190	GLCYM	05:34	05:43	00:09
30/04/2022	Stand 23	NW	Idle	E190	GLCAC	08:51	08:59	00:08
05/05/2022	Stand 26	NW	Idle	E190	GLCAA	05:53	06:20	00:27
06/05/2022	Stand 27	Parked	Idle	E190	GLCYN	11:38	11:55	00:17
07/05/2022	Stand 26	NW	Idle	E190	GLCAA	07:07	07:19	00:12
08/05/2022	Stand 27	W	High	E190	GLCYW	12:12	12:26	00:14
10/05/2022	Stand 9	NW	Idle	E190	GLCYL	10:38	10:47	00:09
10/05/2022	Abeam 28	W	High	E190	GLCYT	19:05	19:24	00:19
11/05/2022	Stand 25	NW	Idle	E190	GLCYW	05:53	06:01	00:08
13/05/2022	Stand 4	NW	Idle	E190	GLCAF	07:32	07:37	00:05
15/05/2022	Stand 9	NW	Idle	E190	GLCYT	11:32	11:38	00:06
15/05/2022	Stand 10	NW	Idle	E190	GLCYL	11:45	11:53	00:08
15/05/2022	Stand 8	NW	Idle	E190	GLCYP	15:57	16:02	00:05
17/05/2022	Abeam 28	W	High	E190	GLCYN	19:13	19:34	00:21
18/05/2022	JC	E	Idle	FA8X	HBJFM	11:53	11:58	00:05
20/05/2022	Stand 28	NW	Idle	E190	GLCYR	05:42	05:50	00:08
20/05/2022	Stand 6	NW	Idle	E190	GLCYO	09:05	09:20	00:15
20/05/2022	Stand 3	NW	Idle	E190	GLCYT	13:13	13:24	00:11
22/05/2022	Stand 6	NW	Idle	E190	GLCYO	11:35	11:40	00:05
22/05/2022	Stand 10	NW	Idle	E190	GLCYS	12:09	12:16	00:07
24/05/2022	Stand 9	NW	Idle	E190	GLCYM	05:30	05:35	00:05
24/05/2022	Stand 25	NW	Idle	E190	GLCYR	15:54	16:01	00:07
25/05/2022	Stand 25	NW	Idle	E190	GLCAC	07:24	07:38	00:14
25/05/2022	Stand 25	NW	Idle	E190	GLCAC	10:10	10:28	00:18
26/05/2022	Stand 26	NW	Idle	E190	GLCAB	05:45	05:52	00:07
27/05/2022	Stand 26	W	High	E190	GLCYT	09:48	10:10	00:22
31/05/2022	Stand 9	NW	Idle	E190	GLCYO	12:11	12:40	00:29
31/05/2022	Stand 28	NW	Idle	E190	GLCYT	18:57	19:08	00:11
02/06/2022	Stand 9	NW	Idle	E190	GLCAB	08:32	08:45	00:13
06/06/2022	Stand 25	NW	Idle	E190	GLCAB	18:17	18:31	00:14

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
10/06/2022	Stand 27	NW	Idle	E190	GLCYO	05:48	05:53	00:05
13/06/2022	Stand 25	NW	Idle	E190	GLCYT	20:11	20:19	00:08
18/06/2022	Stand 4	NW	Idle	E190	GLCAB	05:47	05:56	00:09
22/06/2022	Stand 26	NW	Idle	E190	GLCYS	10:50	10:59	00:09
25/06/2022	Stand 6	NW	Idle	E190	GLCAA	05:39	05:45	00:06
25/06/2022	Stand 6	NW	Idle	E190	GLCAA	06:47	06:51	00:04
03/07/2022	Stand 27	NW	Idle	E190	GLCYT	11:37	11:53	00:16
05/07/2022	Stand 7	NW	Idle	E190	GLCAC	19:33	19:43	00:10
10/07/2022	Stand 27	NW	Idle	E190	GLCYP	15:52	16:00	00:08
13/07/2022	Stand 24	NW	Idle	E190	GLCAG	05:40	05:45	00:05
17/07/2022	Stand 9	NW	Idle	E190	GLCYV	18:01	18:05	00:04
18/07/2022	Stand 26	NW	Idle	E190	GLCYV	07:16	07:29	00:13
18/07/2022	Stand 26	NW	Idle	E190	GLCYV	09:29	09:38	00:09
19/07/2022	Stand 10	NW	Idle	E190	GLCAE	08:20	08:28	00:08
19/07/2022	Stand 22	NW	Idle	E190	GLCYS	11:58	12:07	00:09
21/07/2022	Stand 21	NW	Idle	E190	GLCYS	08:16	08:22	00:06
26/07/2022	Stand 4	NW	Idle	E190	GLCYJ	06:14	06:21	00:07
03/08/2022	Stand 27	NW	Idle	E190	GLCYJ	07:10	07:19	00:09
06/08/2022	Stand 22	Parked	Idle	E190	GLCAF	05:57	06:05	00:08
11/08/2022	Stand 28	Parked	Idle	E190	GLCYW	06:02	06:09	00:07
11/08/2022	Stand 26	NW	Idle	E190	GLCYN	07:39	07:43	00:04
12/08/2022	Stand 26	Parked	Idle	E190	GLCYL	06:26	06:33	00:07
17/08/2022	Stand 27	NW	Idle	E190	GLCYJ	07:50	08:06	00:16
18/08/2022	Abeam 28	W	High	E190	GLCYW	09:40	10:06	00:26
23/08/2022	Abeam 26	W	High	E190	GLCAE	07:47	08:10	00:23
24/08/2022	Stand 22	NW	Idle	E190	GLCYB	06:18	06:22	00:04
25/08/2022	Stand 25	NW	Idle	E190	GLCYO	18:57	19:02	00:05
04/09/2022	Stand 3	NW	Low	E190	GLCYO	11:35	11:45	00:10
07/09/2022	Stand 10	NW	Idle	E190	GLCYN	16:57	17:01	00:04
12/09/2022	Abeam 27	W	High	E190	GLCAB	09:20	09:45	00:25
14/09/2022	Abeam 27	W	High	E190	GLCYP	08:39	08:53	00:14
14/09/2022	Stand 10	NW	Idle	E190	DAECG	10:57	10:59	00:02

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
18/09/2022	Stand 5	NW	Idle	E190	GLCAA	11:31	11:38	00:07
19/09/2022	Stand 24	NW	Idle	E190	GLCYW	16:49	16:53	00:04
21/09/2022	Stand 27	NW	Idle	E190	GLCYL	08:42	08:52	00:10
23/09/2022	Stand 24	NW	Idle	E190	GLCYL	11:28	11:36	00:08
23/09/2022	Abeam 27	W	High	E190	GLCYL	12:00	12:24	00:24
26/09/2022	Stand 27	NW	Idle	E190	GLCYL	07:46	07:55	00:09
27/09/2022	Abeam 28	W	High	E190	GLCYJ	08:51	09:17	00:26
04/10/2022	Stand 23	NW	Idle	E190	GLCYT	18:18	18:25	00:07
04/10/2022	Abeam 28	W	High	E190	GLCYJ	19:08	19:36	00:28
05/10/2022	Stand 26	NW	Idle	E190	GLCYT	08:51	08:58	00:07
05/10/2022	Stand 10	NW	Idle	E190	GLCYM	12:22	12:30	00:08
06/10/2022	Stand 6	NW	Idle	E190	GLCYR	16:01	16:09	00:08
10/10/2022	Stand 27	NW	Idle	E190	GLCYP	17:38	17:44	00:06
11/10/2022	Stand 25	NW	Idle	E190	GLCAB	08:14	08:22	00:08
13/10/2022	Stand 28	W	High	E190	GLCYJ	11:00	11:20	00:20
13/10/2022	Stand 26	NW	Idle	E190	GLCYP	06:53	07:01	00:08
17/10/2022	Stand 12	NW	Idle	DH8D	-	07:47	07:52	00:05
19/10/2022	Abeam 28	W	High	E190	GLCYL	19:05	19:37	00:32
22/10/2022	Stand 10	NW	Idle	E190	GLCYK	09:03	09:10	00:07
24/10/2022	Stand 21	NW	Idle	E190	GLCAD	06:16	06:25	00:09
24/10/2022	Stand 26	NW	Idle	E190	GLCAH	10:22	10:29	00:07
28/10/2022	Stand 26	NW	Idle	E190	GLCYO	05:34	05:40	00:06
27/10/2022	Stand 25	NW	Idle	E190	GLCYO	20:00	20:07	00:07
29/10/2022	Stand 24	Parked	Idle	E190	GLCYJ	11:15	11:24	00:09
01/11/2022	Stand 28	NW	Idle	E190	GLCAA	10:10	10:18	00:08
05/11/2022	Stand 28	W	High	E190	GLCAF	07:14	08:01	00:47
06/11/2022	Stand 28	W	High	E190	GLCYK	12:44	13:12	00:28
12/11/2022	-	W	High	E190	GLCAB	07:25	07:44	00:19
12/11/2022	Stand 13	NW	Idle	DH8D	LXLQD	10:51	11:00	00:09
13/11/2022	Stand 3	NW	Idle	E190	GLCAF	12:53	13:00	00:07
26/11/2022	Stand 6	NW	Idle	E190	GLCYV	10:02	10:08	00:06
27/11/2022	Stand 27	NW	Idle	E190	GLCYU	15:40	15:46	00:06

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
27/11/2022	Stand 27	NW	Idle	E190	GLCYU	15:50	15:52	00:02
30/11/2022	Stand 27	NW	Idle	E190	GLCYP	07:49	08:01	00:12
30/11/2022	Stand 27	NW	Idle	E190	GLCYP	11:13	11:19	00:06
01/12/2022	Stand 6	NW	Idle	E190	GLCYS	07:53	07:59	00:06
01/12/2022	Stand 27	NW	Idle	E190	GLCYL	07:56	08:06	00:10
10/12/2022	Stand 4	NW	Idle	E190	GLCYU	07:38	07:47	00:09
13/12/2022	Stand 7	NW	Idle	E190	GLCYO	12:48	12:57	00:09
15/12/2022	Stand 27	NW	Idle	E190	GLCYU	14:55	15:05	00:10
19/12/2022	Stand 27	NW	Idle	E190	GLCYS	06:47	06:55	00:08
20/12/2022	Stand 25	NW	Idle	E190	GLCYS	10:26	10:32	00:06
21/12/2022	Stand 7	NW	Idle	E190	GLCAA	09:50	09:58	00:08
21/12/2022	Stand 12	NW	Idle	AT76	GLMTA	10:06	10:16	00:10
21/12/2022	Stand 7	NW	Idle	E190	GLCAA	10:28	10:33	00:05
21/12/2022	Stand 7	NW	Idle	E190	GLCAA	11:00	11:08	00:08
29/12/2022	Stand 6	NW	Idle	E190	GLCAD	09:13	09:19	00:06

**Table A4.1: Official record of ground running of engines for test and maintenance for 2022**

Table A4.2 gives a summary of high power running for 2022.

Month	Minutes	A/C Type
January	0	-
February	186	E190
March	16	E190
April	57	E190
May	76	E190
June	0	-
July	0	-
August	49	E190
September	89	E190
October	80	E190
November	94	E190
December	0	-
<b>Total</b>	<b>647</b>	-

**Table A4.2: Summary of high power ground running, 2022**

### **Prediction of engine ground running as Appendix D2 of NOMMS**

Values presented below have been rounded to 1 decimal place. Unrounded values have been used in the actual calculation.

#### **Item (A) Determination of largest monthly duration:**

As indicated in Table A4.2, that occurred in February 2022, specifically –

186 minutes of E190

*186 minutes total ground running*

#### **Item (B) Determination of average daily duration during worst case month:**

186 minutes in a month of 30 days

6.2 minutes average daily duration

#### **Item (C) Compute resultant noise level at reference distance (152 m)**

Resultant noise level at 152 m

= reference noise level + 10 Log(duration) – 10 Log(12x60)

= 84 + 10 Log(6.2) – 10 log(12x60)

= 84 + 7.9 – 28.6

= 63.4 dB  $L_{Aeq,12h}$

#### **Item (D) Compute level at nearest properties in Silverland Street**

Aircraft at Stand 28

Noise level at Silverland Street

= resultant noise level – 26.7 Log(267/152)

= 63.4 – 6.5

= 56.8 dB  $L_{Aeq,12h}$

LCA ground running noise limit = 60 dB  $L_{Aeq,12h}$

#### **Conclusion**

In 2022 LCA's ground running was 3.2 dB below the ground running noise limit.


## APPENDIX 5

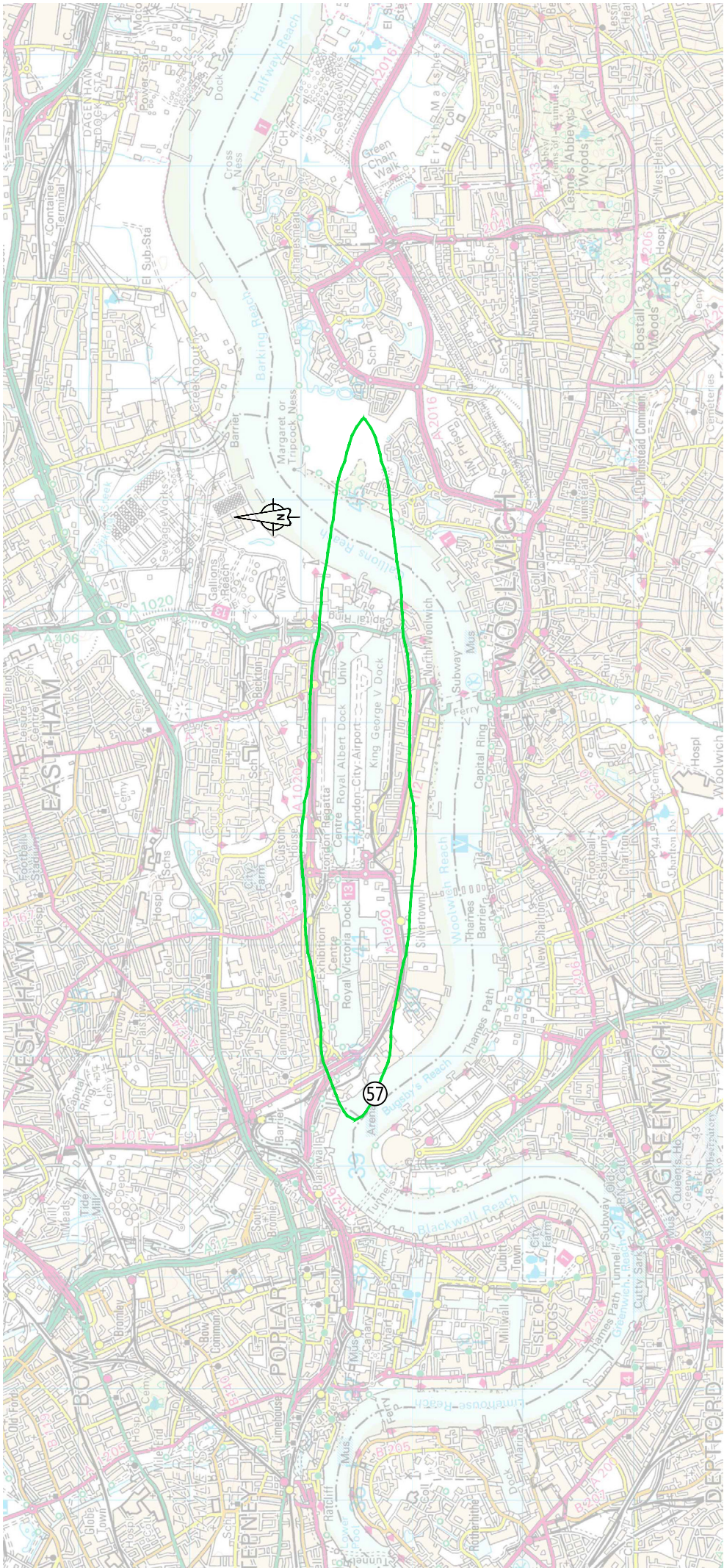
### NOISE CONTOURS



The following noise contours are presented in this appendix:

- 2022 Actual average mode summer daytime
- 2023 Forecast average mode summer daytime
- 2023 Forecast reduced average mode summer daytime
- 1998 Planning Contour
- First Tier Eligibility Boundary
- Intermediate Tier Eligibility Boundary
- Second Tier Eligibility Boundary

LEGEND:  
 Noise Contours




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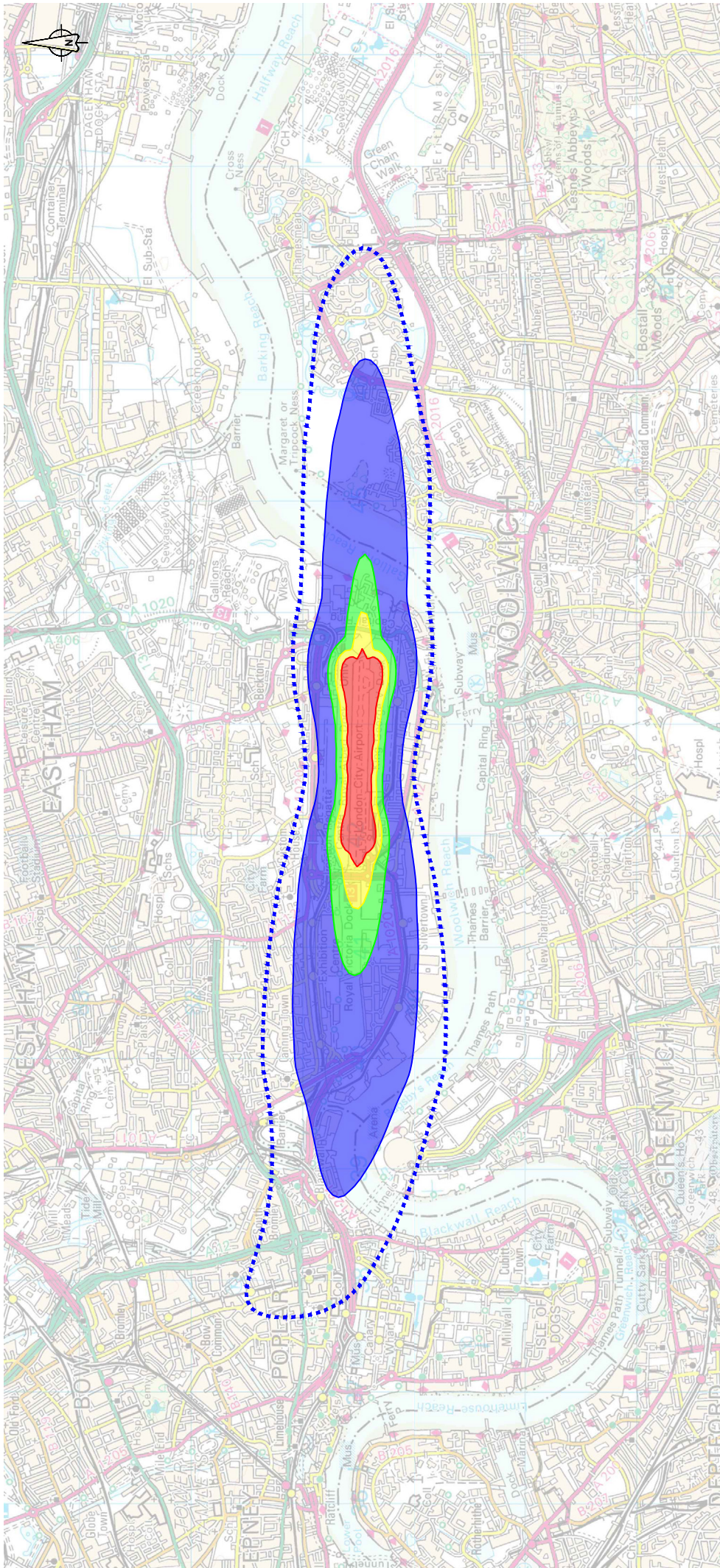
L<sub>Aeq,16h</sub> Noise Contours  
1998 Planning Contour

DRAWN: NW CHECKED: DC

DATE: 28/04/2020 SCALE: 1:50000@A4

FIGURE No:  
**A11327\_10\_DR002\_1.0**





Ordnance Survey map licensed to London City Airport Ltd  
100018300

**LEGEND:**

- 54 dB Noise Contour
- 57 - 63 dB  $L_{Aeq,16h}$
- 63 - 66 dB  $L_{Aeq,16h}$
- 66 - 69 dB  $L_{Aeq,16h}$
- > 69 dB  $L_{Aeq,16h}$

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2022 NOMMS Report

Actual Noise Contours  
Summer 2022 Average Mode

DRAWN: MP

CHECKED: NW

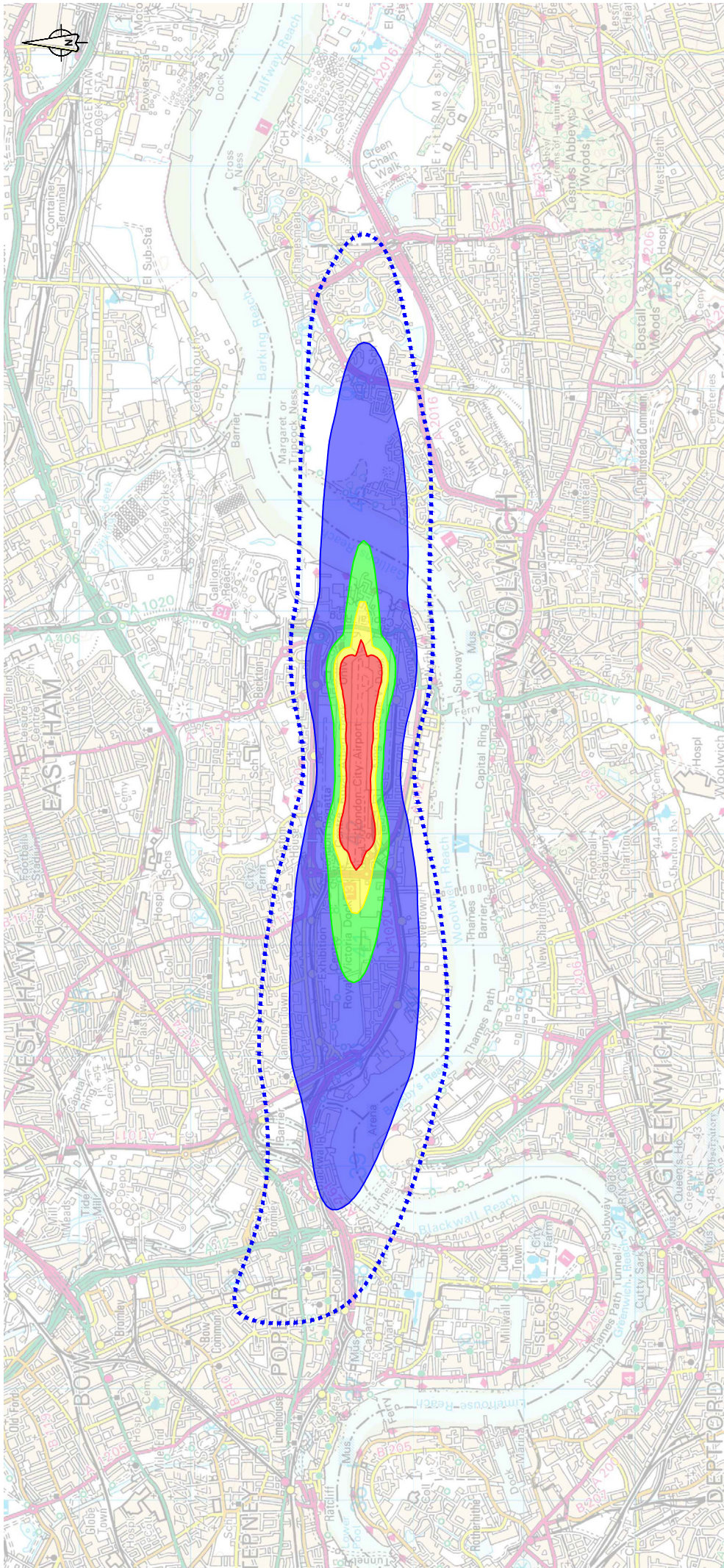
DATE: March 2023

SCALE: 1:50,000@A4

FIGURE No:

A11327\_10\_DR007\_1.0





Ordnance Survey map licensed to London City Airport Ltd  
100018300

**LEGEND:**

- 54 dB Noise Contour
- 57 - 63 dB  $L_{Aeq,16h}$
- 63 - 66 dB  $L_{Aeq,16h}$
- 66 - 69 dB  $L_{Aeq,16h}$
- > 69 dB  $L_{Aeq,16h}$


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2022 NOMMS Report

Forecast Noise Contours  
Summer 2023 Average Mode

DRAWN: MP

CHECKED: NW

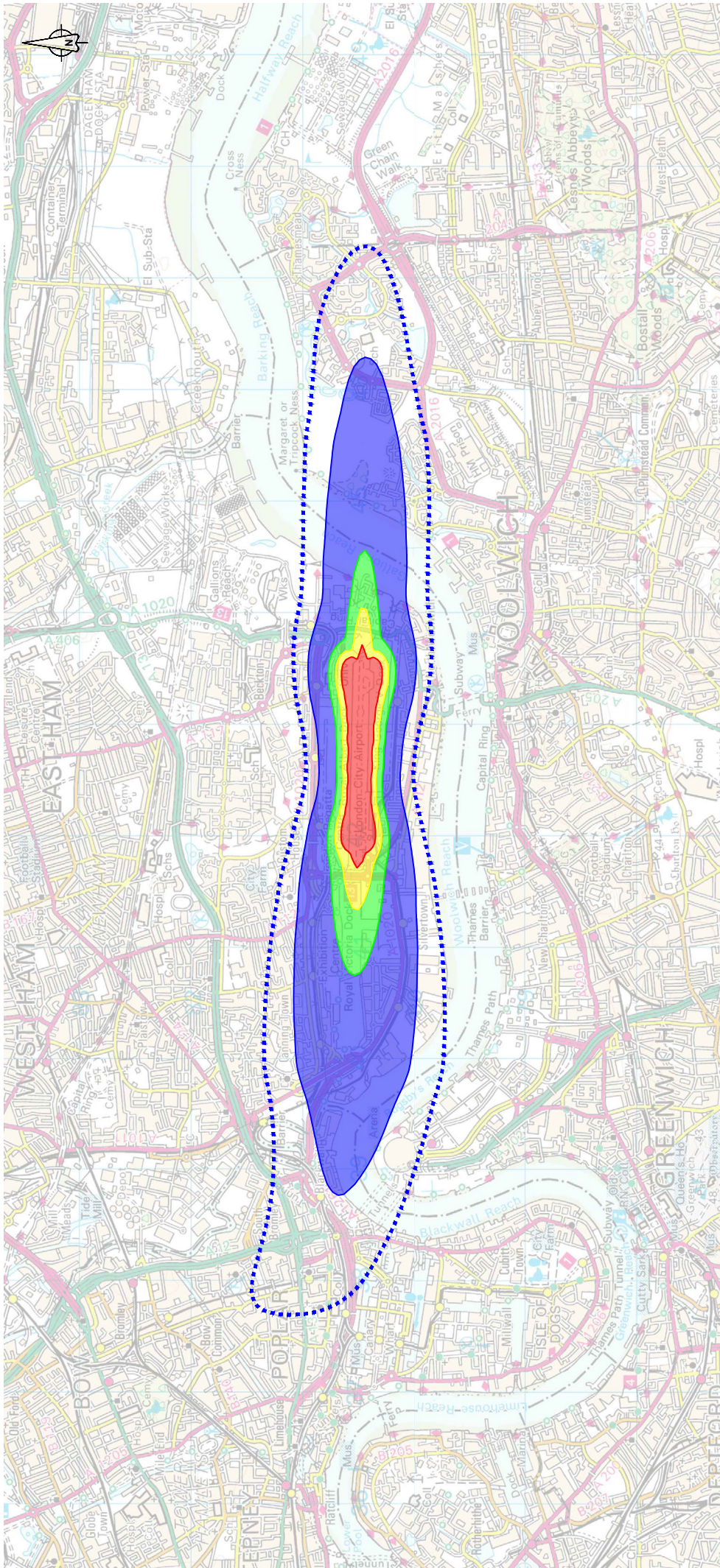
DATE: March 2023

SCALE: 1:50,000@A4

FIGURE No:

A11327\_10\_DR008\_1.0





Ordnance Survey map licensed to London City Airport Ltd  
100018300

**LEGEND:**

- 54 dB Noise Contour
- 57 - 63 dB  $L_{Aeq,16h}$
- 63 - 66 dB  $L_{Aeq,16h}$
- 66 - 69 dB  $L_{Aeq,16h}$
- > 69 dB  $L_{Aeq,16h}$

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London City Airport  
2022 NOMMS Report

Forecast Reduced Noise Contours  
Summer 2023 Average Mode

DRAWN: MP

CHECKED: NW

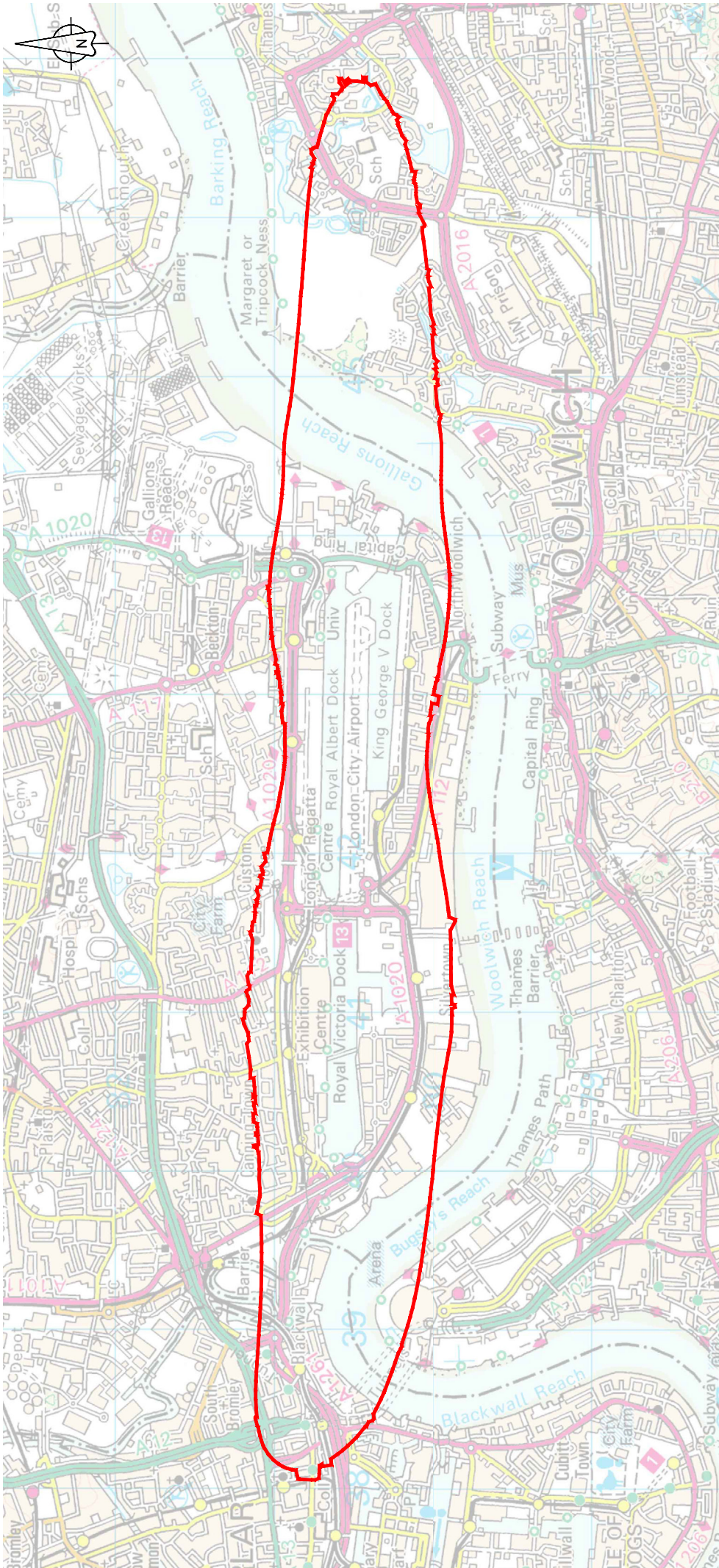
DATE: March 2023

SCALE: 1:50,000@A4

FIGURE No:

A11327\_10\_DR009\_1.0





Ordnance Survey map licensed to London City Airport Ltd  
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**LEGEND:**

— First Tier Eligibility Boundary

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2022 NOMMS Report**

**Residential First Tier Works and  
Public Buildings First Tier Works  
Eligibility Boundary**

DRAWN: MP

CHECKED: NW

DATE: March 2023

SCALE: 1:35,000@A4

FIGURE No:

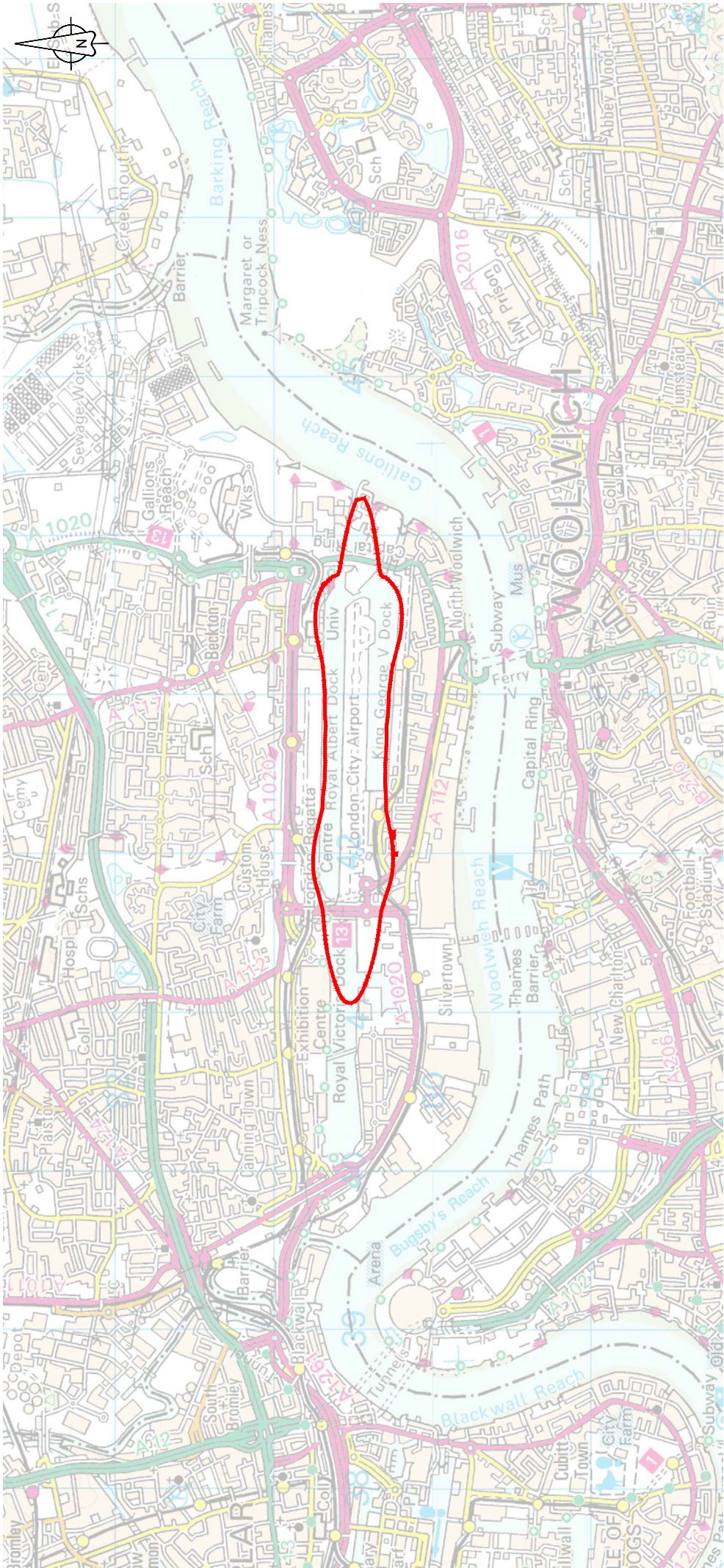
**A11327\_11\_DR006\_1.0**





A11327\_11\_DR007\_1.0





LEGEND:  
Second Tier Eligibility Boundary


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2022 NOMMS Report

Residential Second Tier Works and  
Public Buildings Second Tier Works  
Eligibility Boundary

DRAWN: MP CHECKED: NW  
DATE: March 2023 SCALE: 1:35,000@A4

FIGURE No:  
A11327\_11\_DR008\_1.0



## APPENDIX 6

### AUXILIARY POWER UNIT USAGE

## SCHEDULED AIRCRAFT

AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
BAe 146	✓
RJ Series	✓
Airbus A221	✓
Airbus A318	✓
Embraer 135	✓
Embraer 170	✓
Embraer 190	✓
Embraer 290	✓
Embraer 295	✓
ATR 42	✓
ATR 72	✓
DHC 8-100	✓
DHC 8-300	✓
DHC 8-400	✓
Fokker 50	
Dornier 328	✓
Dornier 328 Jet	✓
Saab 2000	✓

**Table A6.1: APU Usage Details, Scheduled Aircraft**

## GENERAL AVIATION AIRCRAFT

AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
B300/350 Beechcraft Super King Air	
BE20 Beechcraft 200	
BE58 PA Beechcraft Baron	
BE9L Beechcraft 900	
Beech 400 A	

AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
Bombardier Challenger 350	✓
Bombardier Challenger 600 Series	✓
Bombardier Global 5000/6000/7000 Series	✓
C510 (Citation Mustang)	
C525 Citation Jet Series (CJ1/2/3/4)	
C550 (Citation Bravo)	
C560 (Citation V)	
C56X (Citation Excel)	✓
C680 (Citation Sovereign)	✓
C680A (Citation Latitude)	✓
E545 Legacy 450	✓
E550 Legacy 500	✓
E55P Phenom 300	
FA900B	✓
FA10 (Falcon 10)	
FA50 (Falcon 50)	✓
F2TH (Falcon 2000EX)	✓
F900EX (Falcon 900EX)	✓
FA7X Falcon 7X	✓
FA8X Falcon 8X	✓
G150 Gulfstream 150	✓
G280 Gulfstream 280	✓
G500 Gulfstream GVII	✓
G600 Gulfstream GVII	✓
G650 Gulfstream GVI	✓
Hawker 800 XP	✓
Learjet 40/45	✓
P180 (Piaggio Avanti)	
P68C (Partenavia 68)	

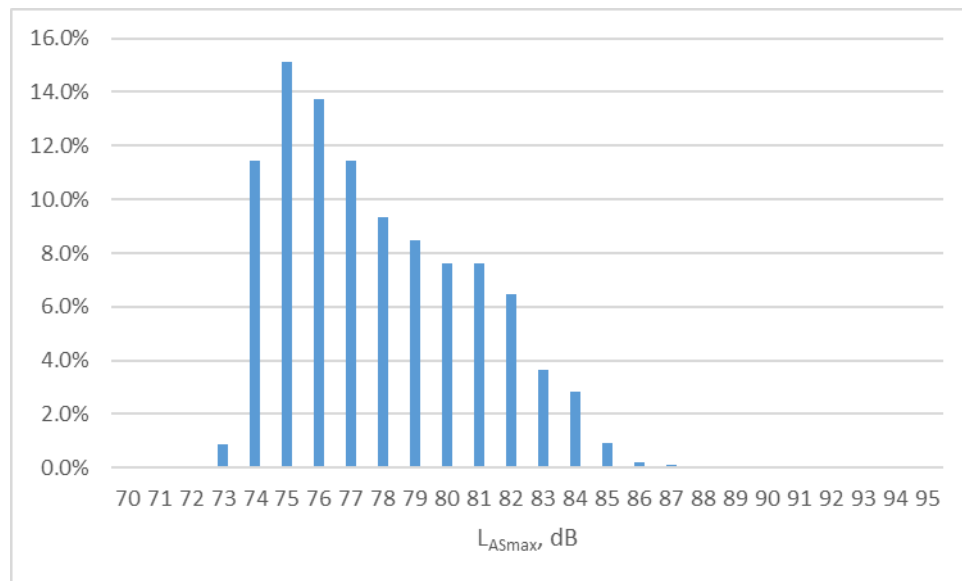
AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
PA31 (Navajo)	
PA34 (Seneca)	
Pilatus PC24	✓

**Table A6.2: APU Usage Details, General Aviation Aircraft**

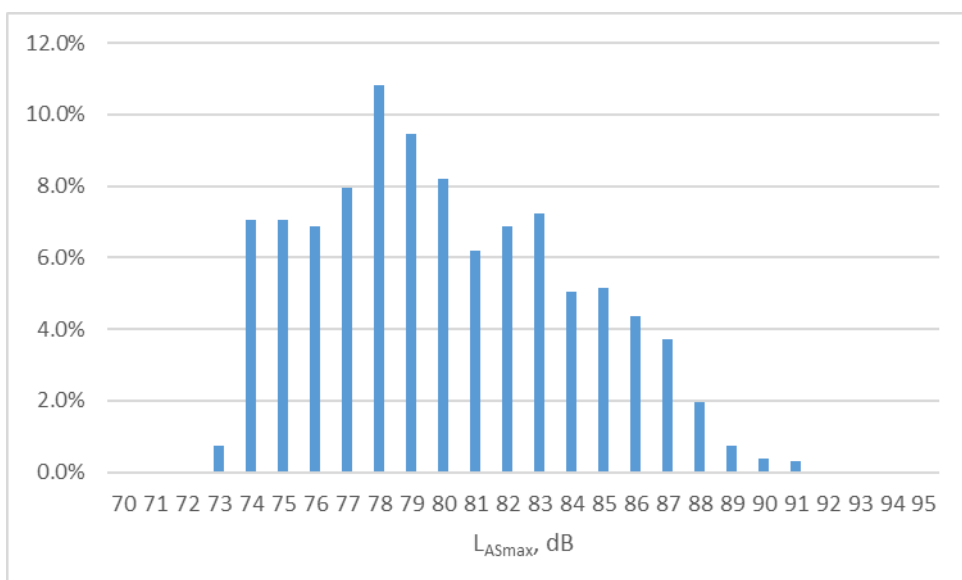
## APPENDIX 7

### SUMMARY OF REVERSE THRUST DATA

The following charts show the distribution of measured levels of arriving aircraft at NMT7 in 2022, separately for runway 09 and runway 27. The decibel values on the x-axis in each chart are the maximum values for events in that column, e.g. the column above “83” contains events that recorded a measurement of 82.1 to 83.0 dB  $L_{ASmax}$ .



**Figure A7.1: Runway 09 Distribution of NMT 7 Noise Levels, 2022 (2,373 events)**



**Figure A7.2: Runway 27 Distribution of NMT 7 Noise Levels, 2022 (1,647 events)**

## APPENDIX 8

### SOUND INSULATION SCHEME PROPERTY LISTS

The tables in this appendix give the lists of properties that have become newly eligible for the following sound insulation schemes:

- First Tier Scheme – Residential Dwellings
- First Tier Scheme – Public Buildings
- Intermediate Tier Scheme – Residential Dwellings
- Intermediate Tier Scheme – Public Buildings
- Second Tier Scheme – Residential Dwellings
- Second Tier Scheme – Public Buildings
- Re-inspection Scheme

First Tier Scheme – Residential Dwellings						
Building Name	No.	Sub Building Name	Thorough-fare	Post Code	uprn	Further Info
n/a						

**Table A8.1: Newly Eligible Residential Dwellings, First Tier Scheme**

First Tier Scheme – Public Buildings						
Building Name	No.	Sub Building Name	Thorough-fare	Post Code	uprn	Further Info
n/a						

**Table A8.2: Newly Eligible Public Buildings, First Tier Scheme**

Intermediate Tier Scheme – Residential Dwellings						
Building Name	No.	Sub Building Name	Thorough-fare	Post Code	uprn	Further Info
n/a						

**Table A8.3: Newly Eligible Residential Dwellings, Intermediate Tier Scheme**



Intermediate Tier Scheme – Public Buildings						
Building Name	No.	Sub Building Name	Thorough-fare	Post Code	uprn	Further Info
n/a						

**Table A8.4: Newly Eligible Public Buildings, Intermediate Tier Scheme**

Second Tier Scheme – Residential Dwellings						
Building Name	No.	Sub Building Name	Thorough-fare	Post Code	uprn	Further Info
n/a						

**Table A8.5: Newly Eligible Residential Dwellings, Second Tier Scheme**

Second Tier Scheme – Public Buildings						
Building Name	No.	Sub Building Name	Thorough-fare	Post Code	uprn	Further Info
n/a						

**Table A8.6: Newly Eligible Public Buildings, Second Tier Scheme**

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	20	BARGE HOUSE ROAD	E16 2NH	46251419	
-	-	24	BARGE HOUSE ROAD	E16 2NH	46003283	
-	-	14	BERWICK ROAD	E16 3DS	46005342	
-	-	16	BERWICK ROAD	E16 3DS	46005343	
-	-	22	BERWICK ROAD	E16 3DS	46005346	
-	-	24	BERWICK ROAD	E16 3DS	46005347	
-	-	26	BERWICK ROAD	E16 3DS	46005348	
-	-	30	BERWICK ROAD	E16 3DS	46005350	
-	-	32	BERWICK ROAD	E16 3DS	46005351	
-	-	42	BERWICK ROAD	E16 3DS	46005356	
-	-	14A	BERWICK ROAD	E16 3DS	46005330	
-	-	16A	BERWICK ROAD	E16 3DS	46005328	
-	-	18A	BERWICK ROAD	E16 3DS	46005331	
-	-	20A	BERWICK ROAD	E16 3DS	46005332	
-	-	22A	BERWICK ROAD	E16 3DS	46005333	
-	-	28A	BERWICK ROAD	E16 3DS	46005312	
-	-	32A	BERWICK ROAD	E16 3DS	46005313	
-	-	25	BRIDGELAND ROAD	E16 3AD	46007898	
-	-	27	BRIDGELAND ROAD	E16 3AD	46007900	
-	-	29	BRIDGELAND ROAD	E16 3AD	46007902	
-	-	38	BRIDGELAND ROAD	E16 3AD	46007910	
-	-	42	BRIDGELAND ROAD	E16 3AD	46007912	
-	-	48	BRIDGELAND ROAD	E16 3AD	46007915	
-	-	52	BRIDGELAND ROAD	E16 3AD	46007917	
-	-	54	BRIDGELAND ROAD	E16 3AD	46007918	
-	-	56	BRIDGELAND ROAD	E16 3AD	46007919	
-	-	60	BRIDGELAND ROAD	E16 3AD	46007921	
-	-	62	BRIDGELAND ROAD	E16 3AD	46007922	
-	-	66	BRIDGELAND ROAD	E16 3AD	46007924	
-	-	68	BRIDGELAND ROAD	E16 3AD	46007925	
-	-	26	BRIDGELAND ROAD	E16 3AD	46007899	
-	-	28	BRIDGELAND ROAD	E16 3AD	46007901	
-	-	30	BRIDGELAND ROAD	E16 3AD	46007903	
-	-	32	BRIDGELAND ROAD	E16 3AD	46007905	
-	-	34	BRIDGELAND ROAD	E16 3AD	46007907	
FLAT 20	SHAW HOUSE	-	CLAREMONT STREET	E16 2LP	46015544	
FLAT 24	SHAW HOUSE	-	CLAREMONT STREET	E16 2LP	46015529	
FLAT 28	SHAW HOUSE	-	CLAREMONT STREET	E16 2LP	46015542	
-	-	1	CLEMENTS AVENUE	E16 3AA	46016497	
-	-	5	CLEMENTS AVENUE	E16 3AA	46016501	
-	-	9	CLEMENTS AVENUE	E16 3AA	46016505	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	28	CLEMENTS AVENUE	E16 3AA	46016515	
-	-	30	CLEMENTS AVENUE	E16 3AA	46016516	
-	-	32	CLEMENTS AVENUE	E16 3AA	46016517	
-	-	34	CLEMENTS AVENUE	E16 3AA	46016518	
-	-	36	CLEMENTS AVENUE	E16 3AA	46016519	
-	-	46	CLEMENTS AVENUE	E16 3AA	46016524	
-	-	31	COOLFIN ROAD	E16 3AW	46017959	
-	-	35	COOLFIN ROAD	E16 3AW	46017963	
-	-	37	COOLFIN ROAD	E16 3AW	46017965	
-	-	4	CUNDY ROAD	E16 3DL	46019870	
-	-	8	CUNDY ROAD	E16 3DL	46019872	
-	-	10	CUNDY ROAD	E16 3DL	46019873	
-	-	12	CUNDY ROAD	E16 3DL	46019874	
-	-	14	CUNDY ROAD	E16 3DL	46019875	
-	-	16	CUNDY ROAD	E16 3DL	46019876	
-	-	18	CUNDY ROAD	E16 3DL	46019878	
-	-	20	CUNDY ROAD	E16 3DL	46019880	
-	-	22	CUNDY ROAD	E16 3DL	46019882	
-	-	24	CUNDY ROAD	E16 3DL	46019884	
-	-	26	CUNDY ROAD	E16 3DL	46019886	
-	-	28	CUNDY ROAD	E16 3DL	46019888	
-	-	30	CUNDY ROAD	E16 3DL	46019890	
-	-	32	CUNDY ROAD	E16 3DL	46019892	
-	-	34	CUNDY ROAD	E16 3DL	46019894	
-	-	36	CUNDY ROAD	E16 3DL	46019896	
-	-	44	CUNDY ROAD	E16 3DL	46019904	
-	-	48	CUNDY ROAD	E16 3DL	46019908	
-	-	52	CUNDY ROAD	E16 3DL	46019912	
-	-	68	CUNDY ROAD	E16 3DL	46019928	
-	-	70	CUNDY ROAD	E16 3DL	46019930	
-	-	74	CUNDY ROAD	E16 3DL	46019933	
-	-	78	CUNDY ROAD	E16 3DL	46019935	
-	-	7	ELBURY DRIVE	E16 3AE	46023743	
-	-	6	ETHEL ROAD	E16 3AU	46024652	
-	-	8	ETHEL ROAD	E16 3AU	46024653	
-	-	10	ETHEL ROAD	E16 3AU	46024654	
-	-	22	ETHEL ROAD	E16 3AU	46024664	
-	-	26	ETHEL ROAD	E16 3AU	46024668	
-	-	36	ETHEL ROAD	E16 3AU	46024677	
-	-	60	ETHEL ROAD	E16 3AU	46024701	
-	-	68	ETHEL ROAD	E16 3AU	46024709	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	70	ETHEL ROAD	E16 3AU	46024711	
-	-	78	ETHEL ROAD	E16 3AU	46024718	
-	-	27	ETHEL ROAD	E16 3AT	46024669	
-	-	19	ETHEL ROAD	E16 3AT	46024661	
-	-	97	EVELYN ROAD	E16 1UB	10009018553	
-	-	99	EVELYN ROAD	E16 1UB	10009018554	
-	-	101	EVELYN ROAD	E16 1UB	10009018555	
-	-	103	EVELYN ROAD	E16 1UB	10009018556	
-	NORMANDY TERRACE	4	FREEMASONS ROAD	E16 3AS	46027960	
-	NORMANDY TERRACE	6	FREEMASONS ROAD	E16 3AS	46027962	
-	NORMANDY TERRACE	7	FREEMASONS ROAD	E16 3AS	46027963	
-	NORMANDY TERRACE	8	FREEMASONS ROAD	E16 3AS	46027964	
-	NORMANDY TERRACE	9	FREEMASONS ROAD	E16 3AS	46027965	
-	NORMANDY TERRACE	10	FREEMASONS ROAD	E16 3AS	46027966	
-	NORMANDY TERRACE	11	FREEMASONS ROAD	E16 3AS	46027967	
-	NORMANDY TERRACE	13	FREEMASONS ROAD	E16 3AS	46027969	
-	NORMANDY TERRACE	22	FREEMASONS ROAD	E16 3AS	46027978	
-	NORMANDY TERRACE	23	FREEMASONS ROAD	E16 3AS	46027979	
-	NORMANDY TERRACE	24	FREEMASONS ROAD	E16 3AS	46027980	
-	NORMANDY TERRACE	25	FREEMASONS ROAD	E16 3AS	46027982	
-	NORMANDY TERRACE	3	FREEMASONS ROAD	E16 3AS	46096154	
-	-	1	GILL AVENUE	E16 3AF	46029260	
-	-	3	GILL AVENUE	E16 3AF	46029262	
-	-	5	GILL AVENUE	E16 3AF	46029264	
-	-	6	GILL AVENUE	E16 3AF	46029265	
-	-	7	GILL AVENUE	E16 3AF	46029266	
-	-	9	GILL AVENUE	E16 3AF	46029268	
-	-	11	GILL AVENUE	E16 3AF	46029270	
-	-	13	GILL AVENUE	E16 3AF	46029272	
-	-	17	GILL AVENUE	E16 3AF	46029276	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	3	GRASSHAVEN WAY	SE28 8TH	10010211225	
-	-	8	GRASSHAVEN WAY	SE28 8TH	10010211230	
-	-	9	GRASSHAVEN WAY	SE28 8TH	10010211231	
-	-	13	GRASSHAVEN WAY	SE28 8TH	10010211235	
-	-	18	GRASSHAVEN WAY	SE28 8TH	10010211240	
-	-	19	GRASSHAVEN WAY	SE28 8TH	10010211241	
-	-	20	GRASSHAVEN WAY	SE28 8TH	10010211242	
-	-	67	GRASSHAVEN WAY	SE28 8TL	10010211312	
-	-	71	GRASSHAVEN WAY	SE28 8TL	10010211285	
-	-	72	GRASSHAVEN WAY	SE28 8TL	10010211286	
-	-	73	GRASSHAVEN WAY	SE28 8TL	10010211287	
-	-	74	GRASSHAVEN WAY	SE28 8TL	10010211288	
-	-	78	GRASSHAVEN WAY	SE28 8TL	10010211291	
-	-	79	GRASSHAVEN WAY	SE28 8TL	10010211292	
-	-	81	GRASSHAVEN WAY	SE28 8TL	10010211294	
-	-	90	GRASSHAVEN WAY	SE28 8TL	10010211303	
-	-	96	GRASSHAVEN WAY	SE28 8TL	10010211318	
-	-	9	HARTLEPOOL COURT	E16 2RL	46081733	
-	-	1	HIGH TOR VIEW	SE28 0LN	10010210682	
-	-	2	HIGH TOR VIEW	SE28 0LN	10010210692	
-	-	3	HIGH TOR VIEW	SE28 0LN	10010210693	
-	-	4	HIGH TOR VIEW	SE28 0LN	10010210685	
-	-	6	HIGH TOR VIEW	SE28 0LN	10010210680	
-	-	10	HIGH TOR VIEW	SE28 0LN	10010210683	
-	-	11	HIGH TOR VIEW	SE28 0LN	10010210684	
-	-	15	HIGH TOR VIEW	SE28 0LN	10010210695	
-	-	18	HILL VIEW DRIVE	SE28 0LH	10010210596	
-	-	20	HILL VIEW DRIVE	SE28 0LH	10010210567	
-	-	26	HILL VIEW DRIVE	SE28 0LH	10010210573	
-	-	27	HILL VIEW DRIVE	SE28 0LJ	10010210629	
-	-	53	HILL VIEW DRIVE	SE28 0LJ	10010210625	
-	-	63	HILL VIEW DRIVE	SE28 0LJ	10010211082	
-	-	65	HILL VIEW DRIVE	SE28 0LJ	10010210633	
-	-	70	HILL VIEW DRIVE	SE28 0LH	10010210592	
-	-	94	HILL VIEW DRIVE	SE28 0LH	10010210590	
-	-	28	JAMESTOWN WAY	E14 2DF	6082206	
-	-	9	JAMESTOWN WAY	E14 2DE	6082492	
-	-	17	JAMESTOWN WAY	E14 2DE	6082496	
-	-	29	JAMESTOWN WAY	E14 2DE	6082180	
-	-	31	JAMESTOWN WAY	E14 2DE	6082181	
-	-	51	JAMESTOWN WAY	E14 2DE	6082191	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	55	JAMESTOWN WAY	E14 2DE	6082193	
-	-	57	JAMESTOWN WAY	E14 2DE	6082194	
-	-	9	JULIA GARFIELD MEWS	E16 1UB	46089504	
-	-	11	JULIA GARFIELD MEWS	E16 1UB	46089506	
-	-	13	JULIA GARFIELD MEWS	E16 1UB	46089508	
-	-	15	JULIA GARFIELD MEWS	E16 1UB	46089510	
-	-	17	JULIA GARFIELD MEWS	E16 1UB	46089512	
-	-	10	JULIA GARFIELD MEWS	E16 1UB	46089505	
-	-	12	JULIA GARFIELD MEWS	E16 1UB	46089507	
-	-	14	JULIA GARFIELD MEWS	E16 1UB	46089509	
-	-	16	JULIA GARFIELD MEWS	E16 1UB	46089511	
-	-	15	MARTIN STREET	SE28 0BZ	10010210417	
-	-	19	MARTIN STREET	SE28 0BZ	10010210419	
-	-	21	MARTIN STREET	SE28 0BZ	10010210420	
-	-	23	MARTIN STREET	SE28 0BZ	10010210421	
-	-	31	MARTIN STREET	SE28 0BZ	10010210425	
-	-	33	MARTIN STREET	SE28 0BZ	10010210426	
-	-	13	MARTINDALE AVENUE	E16 3AB	46048902	
-	-	23	MARTINDALE AVENUE	E16 3AB	46048907	
-	-	25	MARTINDALE AVENUE	E16 3AB	46048908	
-	-	31	MARTINDALE AVENUE	E16 3AB	46048911	
-	-	33	MARTINDALE AVENUE	E16 3AB	46048912	
-	-	50	MARTINDALE AVENUE	E16 3AB	46048914	
-	-	52	MARTINDALE AVENUE	E16 3AB	46048915	
-	-	54	MARTINDALE AVENUE	E16 3AB	46048916	
-	-	56	MARTINDALE AVENUE	E16 3AB	46048917	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	58	MARTINDALE AVENUE	E16 3AB	46048918	
-	-	86	MARTINDALE AVENUE	E16 3AB	46048932	
-	-	88	MARTINDALE AVENUE	E16 3AB	46048933	
-	-	90	MARTINDALE AVENUE	E16 3AB	46048934	
-	-	92	MARTINDALE AVENUE	E16 3AB	46048935	
-	-	94	MARTINDALE AVENUE	E16 3AB	46048936	
-	-	96	MARTINDALE AVENUE	E16 3AB	46048937	
-	-	98	MARTINDALE AVENUE	E16 3AB	46048938	
-	-	106	MARTINDALE AVENUE	E16 3AB	46048942	
-	-	3	MASON CLOSE	E16 1LF	46049256	
-	-	6	MASON CLOSE	E16 1LF	46049259	
-	-	8	MASON CLOSE	E16 1LF	46049261	
-	-	13	MASON CLOSE	E16 1LF	46049266	
-	-	14	MASON CLOSE	E16 1LF	46049267	
-	-	15	MASON CLOSE	E16 1LF	46049268	
-	-	18	MASON CLOSE	E16 1LF	46049271	
-	-	19	MASON CLOSE	E16 1LF	46049272	
-	-	23	MASON CLOSE	E16 1LF	46049276	
-	-	24	MASON CLOSE	E16 1LF	46049277	
-	-	2	MERBURY CLOSE	SE28 0NF	10010212000	
FLAT 6	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211849	
FLAT 7	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211850	
FLAT 16	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211859	
FLAT 17	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211860	
FLAT 23	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211866	
FLAT 27	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211870	
FLAT 28	TIDEHAM HOUSE	2	MERBURY CLOSE	SE28 0LW	10010211871	
-	-	4	MERBURY CLOSE	SE28 0NF	10010212001	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	6	MERBURY CLOSE	SE28 0NF	10010212002	
-	-	8	MERBURY CLOSE	SE28 0NF	10010212003	
-	-	41	MERBURY ROAD	SE28 0GY	10010211795	
FLAT 1	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211939	
FLAT 6	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211944	
FLAT 8	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211946	
FLAT 11	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211949	
FLAT 13	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211951	
FLAT 14	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211952	
FLAT 15	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211953	
FLAT 17	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211955	
FLAT 19	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211957	
FLAT 20	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211958	
FLAT 28	TRIDENT HOUSE	-	MERBURY ROAD	SE28 0NB	10010211966	
-	-	1	MILES CLOSE	SE28 0NJ	10010210840	
-	-	2	MILES CLOSE	SE28 0NJ	10010212132	
-	-	3	MILES CLOSE	SE28 0NJ	10010212136	
-	-	4	MILES CLOSE	SE28 0NJ	10010212137	
-	-	5	MILES CLOSE	SE28 0NJ	10010212133	
-	-	7	MILES CLOSE	SE28 0NJ	10010212135	
-	-	1	MILES DRIVE	SE28 0NE	10010210832	
-	-	3	MILES DRIVE	SE28 0NE	10010211999	
-	-	6	MILES DRIVE	SE28 0JA	10010203520	
-	-	13	MILES DRIVE	SE28 0NE	10010210810	
-	-	15	MILES DRIVE	SE28 0NE	10010210833	
-	-	23	MILES DRIVE	SE28 0NE	10010210804	
-	-	30	MILES DRIVE	SE28 0JA	10010210439	
FLAT 1	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211969	
FLAT 2	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211970	



Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
FLAT 3	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211971	
FLAT 5	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211973	
FLAT 7	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211975	
FLAT 9	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211977	
FLAT 10	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211978	
FLAT 11	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211979	
FLAT 13	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211981	
FLAT 15	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211983	
FLAT 17	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211985	
FLAT 19	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211987	
FLAT 21	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211989	
FLAT 23	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211991	
FLAT 24	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211992	
FLAT 28	TRICORN HOUSE	-	MILES DRIVE	SE28 0ND	10010211996	
-	-	16	MONK DRIVE	E16 1LE	46051456	
-	-	2	MUNDAY ROAD	E16 3QA	46052430	
-	-	3	MUNDAY ROAD	E16 3QA	46052431	
-	-	4	MUNDAY ROAD	E16 3QA	46052432	
-	-	6	MUNDAY ROAD	E16 3QA	46052434	
-	-	7	MUNDAY ROAD	E16 3QA	46052435	
-	-	9	MUNDAY ROAD	E16 3QA	46052437	
-	-	10	MUNDAY ROAD	E16 3QA	46052438	
-	-	12	MUNDAY ROAD	E16 3QA	46052440	
-	-	14	MUNDAY ROAD	E16 3QA	46052442	
-	-	15	MUNDAY ROAD	E16 3QA	46052443	
-	-	17	MUNDAY ROAD	E16 3QA	46052445	
-	-	1	MUNDAY ROAD	E16 3QA	46052429	
-	-	5	MURRAY SQUARE	E16 3AH	46052471	
-	-	7	MURRAY SQUARE	E16 3AH	46052473	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	9	MURRAY SQUARE	E16 3AH	46052475	
-	-	13	MURRAY SQUARE	E16 3AH	46052479	
-	-	19	MURRAY SQUARE	E16 3AH	46052485	
-	-	31	MURRAY SQUARE	E16 3AH	46052497	
-	-	45	MURRAY SQUARE	E16 3AH	46052511	
-	-	2	MURRAY SQUARE	E16 3AL	46052468	
-	-	8	MURRAY SQUARE	E16 3AL	46052474	
-	-	14	MURRAY SQUARE	E16 3AL	46052480	
-	-	16	MURRAY SQUARE	E16 3AL	46052482	
-	-	66	MURRAY SQUARE	E16 3AL	46052525	
-	-	76	MURRAY SQUARE	E16 3AL	46052530	
FLAT 1	MAY WYNNE HOUSE	-	MURRAY SQUARE	E16 3AN	-	
FLAT 5	MAY WYNNE HOUSE	-	MURRAY SQUARE	E16 3AN	-	
FLAT 12	MAY WYNNE HOUSE	-	MURRAY SQUARE	E16 3AN	-	
-	-	22	MURRAY SQUARE	E16 3AL	46052488	
-	-	24	MURRAY SQUARE	E16 3AL	46052490	
-	-	5	NEWMARSH ROAD	SE28 8TA	2.00002E+11	
-	-	12	NEWMARSH ROAD	SE28 8TF	2.00002E+11	
-	-	15	NEWMARSH ROAD	SE28 8TA	2.00002E+11	
-	-	16	NEWMARSH ROAD	SE28 8TF	2.00002E+11	
-	-	28	NEWMARSH ROAD	SE28 8TF	2.00002E+11	
-	-	30	NEWMARSH ROAD	SE28 8TF	2.00002E+11	
-	-	32	NEWMARSH ROAD	SE28 8TF	2.00002E+11	
-	-	34	NEWMARSH ROAD	SE28 8TF	2.00002E+11	
-	-	35	NEWMARSH ROAD	SE28 8TA	2.00002E+11	
-	-	41	NEWMARSH ROAD	SE28 8TA	2.00002E+11	
-	-	47	NEWMARSH ROAD	SE28 8TA	2.00002E+11	
-	-	70	NEWMARSH ROAD	SE28 8TG	2.00002E+11	
-	-	72	NEWMARSH ROAD	SE28 8TG	2.00002E+11	
-	-	82	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	84	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	86	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	88	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	90	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	92	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	94	NEWMARSH ROAD	SE28 8TQ	2.00003E+11	
-	-	98	NEWMARSH ROAD	SE28 8TQ	2.00002E+11	
-	-	106	NEWMARSH ROAD	SE28 8TQ	2.00002E+11	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	110	NEWMARSH ROAD	SE28 8TQ	2.00002E+11	
-	-	112	NEWMARSH ROAD	SE28 8TQ	2.00002E+11	
-	-	191	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	193	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	201	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	215	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	217	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	219	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	221	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	223	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	225	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	227	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	229	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	231	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	233	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	235	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	239	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	241	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	245	NEWMARSH ROAD	SE28 8TB	2.00003E+11	
-	-	247	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	249	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	253	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	255	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	257	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	259	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	261	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	263	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	267	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	269	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	271	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	273	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	275	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	277	NEWMARSH ROAD	SE28 8TD	2.00003E+11	
-	-	281	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	283	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	287	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	291	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	293	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	299	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	301	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	303	NEWMARSH ROAD	SE28 8TE	2.00002E+11	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	305	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	309	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	311	NEWMARSH ROAD	SE28 8TE	2.00002E+11	
-	-	279A	NEWMARSH ROAD	SE28 8TE	10010223755	
-	-	281A	NEWMARSH ROAD	SE28 8TE	10010223756	
-	-	5	RAYLEIGH ROAD	E16 1UB	46251619	
-	-	7	RAYLEIGH ROAD	E16 1UB	46251618	
-	-	9	RAYLEIGH ROAD	E16 1UB	46251617	
-	-	11	RAYLEIGH ROAD	E16 1UB	46251616	
-	-	13	RAYLEIGH ROAD	E16 1UB	46251615	
-	-	19	RAYLEIGH ROAD	E16 1UB	46251613	
-	-	21	RAYLEIGH ROAD	E16 1UB	46251612	
-	-	23	RAYLEIGH ROAD	E16 1UB	46251611	
-	-	5	ROYAL VICTORIA PLACE	E16 1UB	10008999754	
-	-	7	ROYAL VICTORIA PLACE	E16 1UB	10008999756	
-	-	13	ROYAL VICTORIA PLACE	E16 1UB	10008999761	
-	-	21	ROYAL VICTORIA PLACE	E16 1UB	10008999767	
-	-	25	ROYAL VICTORIA PLACE	E16 1UB	10008999770	
-	-	29	ROYAL VICTORIA PLACE	E16 1UB	10008999774	
-	-	31	ROYAL VICTORIA PLACE	E16 1UB	10008999776	
-	-	37	ROYAL VICTORIA PLACE	E16 1UB	46089159	
-	-	41	ROYAL VICTORIA PLACE	E16 1UB	10008999785	
-	-	45	ROYAL VICTORIA PLACE	E16 1UB	10008999787	
-	-	47	ROYAL VICTORIA PLACE	E16 1UB	10008999788	
-	-	51	ROYAL VICTORIA PLACE	E16 1UB	10008999792	
-	-	53	ROYAL VICTORIA PLACE	E16 1UB	10008999793	
-	-	61	ROYAL VICTORIA PLACE	E16 1UB	10008999797	
-	-	63	ROYAL VICTORIA PLACE	E16 1UB	10008999799	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	65	ROYAL VICTORIA PLACE	E16 1UB	10008999801	
-	-	67	ROYAL VICTORIA PLACE	E16 1UB	10008999802	
-	-	8	ROYAL VICTORIA PLACE	E16 1UB	10008999757	
-	-	24	ROYAL VICTORIA PLACE	E16 1UB	10008999769	
-	-	28	ROYAL VICTORIA PLACE	E16 1UB	10008999773	
-	-	36	ROYAL VICTORIA PLACE	E16 1UB	10008999781	
-	-	38	ROYAL VICTORIA PLACE	E16 1UB	10008999782	
-	-	40	ROYAL VICTORIA PLACE	E16 1UB	10008999784	
-	-	12	TEASEL CRESCENT	SE28 0LP	10010210713	
-	-	18	TEASEL CRESCENT	SE28 0LP	10010210716	
-	-	45	TEASEL CRESCENT	SE28 0LP	10010210727	
-	-	49	TEASEL CRESCENT	SE28 0LP	10010210729	
-	-	3	THROCKMORTON ROAD	E16 3DN	46074288	
-	-	17	THROCKMORTON ROAD	E16 3DN	46074298	
-	-	25	TOR GROVE	SE28 0LF	10010210513	
-	-	28	TOR GROVE	SE28 0LF	10010210539	
-	-	34	TOR GROVE	SE28 0LF	10010210510	
-	-	35	TOR GROVE	SE28 0LF	10010210541	
-	-	39	TOR GROVE	SE28 0LF	10010210518	
-	-	40	TOR GROVE	SE28 0LF	10010210504	
-	-	28	TRADER ROAD	E6 6FR	46085454	
-	-	3	WATERSIDE CLOSE	SE28 0GT	10010211018	
-	-	6	WATERSIDE CLOSE	SE28 0GS	10010210955	
-	-	9	WATERSIDE CLOSE	SE28 0GT	10010210969	
-	-	11	WATERSIDE CLOSE	SE28 0GT	10010210970	
-	-	13	WATERSIDE CLOSE	SE28 0GT	10010210987	
-	-	15	WATERSIDE CLOSE	SE28 0GT	10010210988	
-	-	23	WATERSIDE CLOSE	SE28 0GT	10010210989	
-	-	25	WATERSIDE CLOSE	SE28 0GT	10010210990	
-	-	27	WATERSIDE CLOSE	SE28 0GT	10010210991	
-	-	28	WATERSIDE CLOSE	SE28 0GS	10010210926	
-	-	30	WATERSIDE CLOSE	SE28 0GS	10010210961	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	32	WATERSIDE CLOSE	SE28 0GS	10010210962	
-	-	33	WATERSIDE CLOSE	SE28 0GT	10010210994	
-	-	35	WATERSIDE CLOSE	SE28 0GT	10010210995	
-	-	37	WATERSIDE CLOSE	SE28 0GT	10010210996	
-	-	39	WATERSIDE CLOSE	SE28 0GT	10010210997	
-	-	40	WATERSIDE CLOSE	SE28 0GS	10010210966	
-	-	47	WATERSIDE CLOSE	SE28 0GT	10010211000	
-	-	49	WATERSIDE CLOSE	SE28 0GT	10010211001	
-	-	51	WATERSIDE CLOSE	SE28 0GT	10010211002	
-	-	53	WATERSIDE CLOSE	SE28 0GT	10010211003	
-	-	54	WATERSIDE CLOSE	SE28 0GS	10010210943	
-	-	55	WATERSIDE CLOSE	SE28 0GT	10010211004	
-	-	56	WATERSIDE CLOSE	SE28 0GS	10010210931	
-	-	58	WATERSIDE CLOSE	SE28 0GS	10010210932	
-	-	59	WATERSIDE CLOSE	SE28 0GT	10010211006	
-	-	61	WATERSIDE CLOSE	SE28 0GT	10010211007	
-	-	64	WATERSIDE CLOSE	SE28 0GS	10010210945	
-	-	65	WATERSIDE CLOSE	SE28 0GT	10010211009	
-	-	66	WATERSIDE CLOSE	SE28 0GS	10010210934	
-	-	67	WATERSIDE CLOSE	SE28 0GT	10010211010	
-	-	68	WATERSIDE CLOSE	SE28 0GS	10010210946	
-	-	70	WATERSIDE CLOSE	SE28 0GS	10010210947	
-	-	71	WATERSIDE CLOSE	SE28 0GT	10010211012	
-	-	72	WATERSIDE CLOSE	SE28 0GS	10010210948	
-	-	74	WATERSIDE CLOSE	SE28 0GS	10010210949	
-	-	75	WATERSIDE CLOSE	SE28 0GT	10010211014	
-	-	76	WATERSIDE CLOSE	SE28 0GS	10010210950	
-	-	78	WATERSIDE CLOSE	SE28 0GS	10010210968	
-	-	80	WATERSIDE CLOSE	SE28 0GS	10010210951	
-	-	81	WATERSIDE CLOSE	SE28 0GT	10010210251	
-	-	88	WATERSIDE CLOSE	SE28 0GS	10010210250	
-	-	91	WATERSIDE CLOSE	SE28 0GT	10010210976	
-	-	92	WATERSIDE CLOSE	SE28 0GS	10010222593	
-	-	96	WATERSIDE CLOSE	SE28 0GS	10010222595	
-	-	97	WATERSIDE CLOSE	SE28 0GT	10010210979	
-	-	100	WATERSIDE CLOSE	SE28 0GS	10010222597	
-	-	102	WATERSIDE CLOSE	SE28 0GS	10010222598	
-	-	104	WATERSIDE CLOSE	SE28 0GS	10010222599	
-	-	105	WATERSIDE CLOSE	SE28 0GT	10010210983	
-	-	107	WATERSIDE CLOSE	SE28 0GT	10010210984	
-	-	108	WATERSIDE CLOSE	SE28 0GS	10010222601	

Re-inspection Scheme						
Flat/door number	Building name	Street numbers	Street name	Post Code	uprn	Further Info
-	-	110	WATERSIDE CLOSE	SE28 0GS	10010222602	
-	-	112	WATERSIDE CLOSE	SE28 0GS	10010222603	
-	-	114	WATERSIDE CLOSE	SE28 0GS	10010222604	
-	-	120	WATERSIDE CLOSE	SE28 0GS	10010222607	
-	-	128	WATERSIDE CLOSE	SE28 0GS	10010222611	
-	-	130	WATERSIDE CLOSE	SE28 0GS	10010222612	
-	-	134	WATERSIDE CLOSE	SE28 0GS	10010222614	
-	-	136	WATERSIDE CLOSE	SE28 0GS	10010222615	
-	-	138	WATERSIDE CLOSE	SE28 0GS	10010222616	
-	-	140	WATERSIDE CLOSE	SE28 0GS	10010222617	
-	-	142	WATERSIDE CLOSE	SE28 0GS	10010222618	
-	-	144	WATERSIDE CLOSE	SE28 0GS	10010222619	
-	-	146	WATERSIDE CLOSE	SE28 0GS	10010222620	
-	-	148	WATERSIDE CLOSE	SE28 0GS	10010222621	
-	-	150	WATERSIDE CLOSE	SE28 0GS	10010222622	
-	-	152	WATERSIDE CLOSE	SE28 0GS	10010222623	
-	-	154	WATERSIDE CLOSE	SE28 0GS	10010222624	
-	-	156	WATERSIDE CLOSE	SE28 0GS	10010222625	
-	-	158	WATERSIDE CLOSE	SE28 0GS	10010222626	
-	-	162	WATERSIDE CLOSE	SE28 0GS	10010222628	
-	-	164	WATERSIDE CLOSE	SE28 0GS	10010222629	
-	-	168	WATERSIDE CLOSE	SE28 0GS	10010222631	
-	-	170	WATERSIDE CLOSE	SE28 0GS	10010222632	
-	-	172	WATERSIDE CLOSE	SE28 0GS	10010222633	
-	-	174	WATERSIDE CLOSE	SE28 0GS	10010222634	
-	-	176	WATERSIDE CLOSE	SE28 0GS	10010222635	
-	-	19	WEAVER CLOSE	E6 6FY	46086981	
	BRITANNIA VILLAGE HALL	65	EVELYN ROAD	E16 1TU	10012839975	
	WOODMAN STREET TENANTS HALL	32A	WOODMAN STREET	E16 2NF	10009003863	

**Table A8.7: Buildings Eligible for Re-Inspection**

## APPENDIX 9

### EXTRACT FROM PLANNING CONDITIONS



## LBN/107(b)

### 17. Aircraft Take-Off and Land Times

Except in cases of immediate emergency to an aircraft and/or the persons on board, the Airport shall not be used for the taking off or landing of aircraft at any time other than between:

#### Weekdays

0630 and 2200 hours Monday to Friday; and

Bank Holidays and Public Holidays (with the exception of Christmas Day – see condition 27)

0900 and 2200 hours on Bank Holidays and Public Holidays; and

#### Saturdays

0630 and 1230 hours on Saturdays; and

#### Sundays

1230 hours and 2200 hours on Sundays.

Provided that these restrictions shall not prevent an aircraft which was scheduled to take off from or land at the Airport but which has suffered unavoidable operational delays, from taking off or landing at the Airport between 2200 and 2230 Sunday to Friday and 1230 to 1300 on Saturday and where that taking off or landing would not result in there being more than 400 Aircraft Movements at the Airport per calendar year outside the above permitted hours of operation comprising no more than 150 such movements in any consecutive three months.

Reason: In the interests of limiting the number of aircraft movements in order to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

## **LBN/107(b)**

the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

### 21. Maximum Permitted Noise Factored Aircraft Movements

Until such time as the Aircraft Noise Categorisation Scheme has been approved and implemented in accordance with Condition 18 and the review of the Aircraft Noise Categorisation Scheme after its first year of operations has been submitted to and approved in writing pursuant to Condition 19, the number of Noise Factored Movements shall not exceed:

- in any one week the number of permitted Aircraft Movements for that week by more than 25%; and
- 120,000 Noise Factored Movements per calendar year.

Reason: In the interests of limiting the number of Aircraft Movements in order to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

### 22. Maximum Permitted Actual Aircraft Movements per hour as Timetabled

The scheduled number of Actual Aircraft Movements including business, commercial, charter and private Aircraft Movements shall not exceed 45 in total in any given hour.

Reason: In the interests of limiting the number of aircraft movements in the peak periods in order to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

### 23. Maximum Permitted Actual Aircraft Movements (days/year)

The number of Actual Aircraft Movements at the Airport shall not exceed:

- a) 100 per day on Saturdays; and
- b) 200 per day on Sundays but not exceeding 280 on any consecutive Saturday and Sunday; and
- c) subject to (d) to (j) below 592 per day on weekdays; and
- d) 132 on 1 January; and
- e) 164 on Good Friday; and
- f) 198 on Easter Monday; and
- g) 248 on the May Day Holiday; and
- h) 230 on the late May Bank Holiday; and
- i) 230 on the late August Bank Holiday; and
- j) 100 on 26 December; and
- k) 111,000 per calendar year.

Reason: In the interests of limiting the number of Aircraft Movements in order to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of

## LBN/107(b)

the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

### 24. Maximum Permitted Actual Aircraft Movement on Other Bank Holidays

In the event of there being a Bank Holiday or Public Holiday in England which falls upon or is proclaimed or declared upon a date not referred to in sub-paragraph (d) to (j) (inclusive) of Condition 23 above, then the number of Aircraft Movements permissible on that date shall not exceed 330 unless otherwise agreed in writing by the Local Planning Authority but in any event shall not exceed 396.

Reason: In the interests of limiting the number of Aircraft Movements in order to safeguard the quality of life in the local area.

### 25. Maximum Permitted Actual Aircraft Movement limit between 0630 and 0659

#### Mondays to Saturdays

The maximum number of Actual Aircraft Movements between 0630 and 0659 hours on Mondays to Saturdays (excluding Bank Holidays and Public Holidays when the Airport shall be closed for the use or operation of aircraft between these times) shall not exceed 6 on any day.

Reason: In the interests of limiting the number of movements in and to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

### 26. Maximum Permitted Actual Aircraft Movement limit between 0630 and 0645 on

#### Mondays to Saturdays

Notwithstanding the restriction on Actual Aircraft Movements between 0630 and 0659 hours, as set out by Condition 25 above, the total number of Actual Aircraft Movements in the period between 0630 and 0645 on Mondays to Saturdays (excluding Bank Holidays and Public Holidays when the Airport shall be closed for the use or operation of aircraft between these times), shall not exceed 2 on any day.

Reason: In the interests of limiting the number of Aircraft Movements and to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

### 27. Christmas Day Closure

The Airport shall be closed on Christmas Day each year for the use or operation or maintenance of aircraft or for passengers, with no Aircraft Movements and no Ground Running by aircraft engines.

Reason: In the interests of limiting the number of Aircraft Movements to protect the amenity of current and future occupants and neighbours and with regard to saved Policy EQ47 of the London Borough of Newham Unitary Development Plan (adopted June 2001 and saved from 27 September 2007 by direction from the Secretary of State and not deleted on adoption of the Core Strategy on 26 January 2012), Policy 7.15 of the London Plan (consolidated with alterations since 2011 and published March 2015), and Policies SP2 and SP3 of the Newham Core Strategy (adopted 26 January 2012).

## APPENDIX 10

### NUMBER OF AIRCRAFT OPERATING AT LCA

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>		3 Month Running Total
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	Week	06:30-06:44	06:30-06:59	Early Morning	Late Eve / Sat Afternoon	22:00-22:30 / 12:30-13:00	
27/12/2021	67	-	330	-	13	76.1	742.5	327	-	666.4	0	0	2	6	0	-
28/12/2021	62	-	330	-	12			590	-		0	0	2	6	0	-
29/12/2021	68	-	592	-	14			583	-		0	2	2	4	0	-
30/12/2021	66	-	592	-	13			584	-		0	1	2	5	0	-
31/12/2021	55	-	592	-	11	77.9	742.5	537	-	664.6	0	3	2	3	0	10
01/01/2022	13	72	100	280	2			87	208		0	1	2	5	0	-
02/01/2022	59		200		11			141			-	-	-	-	0	-
03/01/2022	83	-	330	-	16			247	-		0	0	2	6	0	-
04/01/2022	68	-	592	-	13	63.2	742.5	524	-	679.3	0	1	2	5	0	-
05/01/2022	62	-	592	-	11			530	-		0	1	2	5	0	-
06/01/2022	58	-	592	-	11			534	-		0	0	2	6	0	-
07/01/2022	72	-	592	-	13			520	-		0	1	2	5	0	-
08/01/2022	26	80	100	280	4	61.1	742.5	74	200	681.4	0	1	2	5	2	-
09/01/2022	54		200		10			146			-	-	-	-	0	-
10/01/2022	65	-	592	-	12			527	-		0	2	2	4	0	-
11/01/2022	44	-	592	-	8			548	-		0	2	2	4	0	-
12/01/2022	44	-	592	-	8	69.3	742.5	548	-	679.3	0	0	2	6	0	-
13/01/2022	57	-	592	-	11			535	-		0	0	2	6	0	-
14/01/2022	64	-	592	-	12			528	-		0	1	2	5	0	-
15/01/2022	15	69	100	280	3			85	211		0	1	2	5	0	-
16/01/2022	54		200		10	61.1	742.5	146			-	-	-	-	0	-
17/01/2022	58	-	592	-	11			534	-		1	2	1	4	0	-
18/01/2022	33	-	592	-	6			559	-		1	2	1	4	0	-
19/01/2022	47	-	592	-	8			545	-		0	0	2	6	0	-
20/01/2022	49	-	592	-	9	69.3	742.5	543	-	681.4	0	0	2	6	0	-
21/01/2022	69	-	592	-	13			523	-		0	1	2	5	0	-



Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)		Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	06:30-06:44	06:30-06:59	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
22/01/2022	21	80	100	280	4			79	200		1	1	1	5	0	-
23/01/2022	59		200		10			141			-	-	-	-	0	-
24/01/2022	58	-	592	-	11			534	-		0	2	2	4	0	-
25/01/2022	40	-	592	-	7			552	-		0	2	2	4	0	-
26/01/2022	42	-	592	-	7			550	-		0	1	2	5	0	-
27/01/2022	50	-	592	-	9			542	-	679.8	0	0	2	6	0	-
28/01/2022	67	-	592	-	12			525	-		0	2	2	4	0	-
29/01/2022	22	85	100	280	4			78	195		1	1	1	5	1	-
30/01/2022	63		200		12			137			-	-	-	-	0	-
31/01/2022	70	-	592	-	14			522	-		0	3	2	3	0	7
01/02/2022	73	-	592	-	14			519	-		0	1	2	5	0	-
02/02/2022	79	-	592	-	15			513	-		0	0	2	6	0	-
03/02/2022	92	-	592	-	17			500	-	644.2	0	0	2	6	0	-
04/02/2022	102	-	592	-	20			490	-		0	2	2	4	0	-
05/02/2022	31	97	100	280	6			69	183		0	1	2	5	0	-
06/02/2022	66		200		12			134			-	-	-	-	1	-
07/02/2022	87	-	592	-	17			505	-		0	2	2	4	0	-
08/02/2022	77	-	592	-	15			515	-		0	2	2	4	0	-
09/02/2022	79	-	592	-	15			513	-		0	2	2	4	0	-
10/02/2022	99	-	592	-	19			493	-	637.5	0	3	2	3	0	-
11/02/2022	104	-	592	-	20			488	-		0	2	2	4	0	-
12/02/2022	39	93	100	280	8			61	187		0	3	2	3	4	-
13/02/2022	54		200		11			146			-	-	-	-	0	-
14/02/2022	109	-	592	-	21			483	-		0	4	2	2	0	-
15/02/2022	93	-	592	-	18			499	-	646.6	0	1	2	5	0	-
16/02/2022	99	-	592	-	18			493	-		0	2	2	4	0	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)		Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	06:30-06:44	06:30-06:59	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
17/02/2022	95	-	592	-	18			497	-		1	3	1	3	0	-
18/02/2022	23	-	592	-	5			569	-		0	0	2	6	0	-
19/02/2022	38	97	100	280	7			62	183		1	2	1	4	3	-
20/02/2022	59		200		10			141			-	-	-	-	0	-
21/02/2022	103	-	592	-	20			489	-		0	1	2	5	0	-
22/02/2022	83	-	592	-	17			509	-		0	1	2	5	0	-
23/02/2022	95	-	592	-	18			497	-		0	3	2	3	0	-
24/02/2022	97	-	592	-	19			495	-	629.1	1	2	1	4	0	-
25/02/2022	102	-	592	-	20			490	-		0	3	2	3	0	-
26/02/2022	32	108	100	280	7			68	172		0	1	2	5	3	-
27/02/2022	76		200		14			124			-	-	-	-	0	-
28/02/2022	118	-	592	-	22			474	-		1	3	1	3	0	15
01/03/2022	106	-	592	-	21			486	-		0	4	2	2	0	-
02/03/2022	108	-	592	-	21			484	-	609.4	1	4	1	2	0	-
03/03/2022	128	-	592	-	24			464	-		0	5	2	1	0	-
04/03/2022	114	-	592	-	23			478	-		0	3	2	3	0	-
05/03/2022	38	119	100	280	7			62	161		0	1	2	5	1	-
06/03/2022	81		200		14			119			-	-	-	-	0	-
07/03/2022	124	-	592	-	24			468	-		2	5	0	1	0	-
08/03/2022	109	-	592	-	21			483	-		1	4	1	2	0	-
09/03/2022	113	-	592	-	21			479	-		1	6	1	0	0	-
10/03/2022	127	-	592	-	24			465	-	606.9	2	5	0	1	0	-
11/03/2022	121	-	592	-	23			471	-		1	4	1	2	0	-
12/03/2022	38	116	100	280	7			62	164		0	1	2	5	1	-
13/03/2022	78		200		15			122			-	-	-	-	0	-
14/03/2022	112	-	592	-	21			480	-	606.6	1	2	1	4	0	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Actual Movements	QC Total	Early Morning	Early Morning	Early Morning	Early Morning	Late Eve / Sat Afternoon	3 Month Running Total
15/03/2022	130	-	592	-	24			462	-	1	5	1	1	0	-
16/03/2022	119	-	592	-	22			473	-	1	5	1	1	0	-
17/03/2022	120	-	592	-	23			472	-	1	4	1	2	0	-
18/03/2022	125	-	592	-	24			467	-	0	4	2	2	0	-
19/03/2022	45	116	100	280	8			55	164	1	4	1	2	0	-
20/03/2022	71		200		13			129		-	-	-	-	0	-
21/03/2022	128	-	592	-	24			464	-	1	5	1	1	0	-
22/03/2022	121	-	592	-	23			471	-	2	5	0	1	0	-
23/03/2022	128	-	592	-	23			464	-	1	5	1	1	0	-
24/03/2022	131	-	592	-	25		742.5	461	-	1	4	1	2	0	-
25/03/2022	115	-	592	-	23			477	-	0	2	2	4	0	-
26/03/2022	42	128	100	280	7			58	152	0	3	2	3	2	-
27/03/2022	86		200		16			114		-	-	-	-	0	-
28/03/2022	146	-	592	-	29			446	-	0	1	2	5	0	-
29/03/2022	174	-	592	-	34			418	-	2	5	0	1	0	-
30/03/2022	181	-	592	-	34		189.6	411	-	1	3	1	3	3	-
31/03/2022	169	-	592	-	33		742.5	423	-	0	4	2	2	0	21
01/04/2022	172	-	592	-	34			420	-	0	4	2	2	0	-
02/04/2022	43	129	100	280	8			57	151	0	2	2	4	0	-
03/04/2022	86		200		17			114		-	-	-	-	0	-
04/04/2022	183	-	592	-	35			409	-	0	4	2	2	0	-
05/04/2022	180	-	592	-	35			412	-	2	5	0	1	1	-
06/04/2022	179	-	592	-	34		198.6	413	-	1	5	1	1	0	-
07/04/2022	173	-	592	-	35			419	-	0	2	2	4	0	-
08/04/2022	161	-	592	-	33			431	-	1	4	1	2	0	-
09/04/2022	45	130	100	280	9			55	150	1	4	1	2	1	-



Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>		3 Month Running Total	
	Day	Week-end	Day	Week-end	Day	Week	Week	Actual Movements	QC Total	Early Morning	Early Morning	Early Morning	Late Eve / Sat Afternoon	22:00-22:30 / 12:30-13:00			
10/04/2022	85		200		16			115		-	-	-	0	-			
11/04/2022	164	-	592	-	33	742.5	742.5	428	-	0	3	2	3	2	-		
12/04/2022	170	-	592	-	34			422	-	1	6	1	0	0	0	-	
13/04/2022	179	-	592	-	35			413	-	1	5	1	1	1	0	-	
14/04/2022	185	-	592	-	36			407	-	1	5	1	1	1	0	-	
15/04/2022	109	-	164	-	21	183.1	742.5	55	-	0	0	2	6	0	-		
16/04/2022	40	119	100	280	8			60	161	0	4	2	2	1	1	-	
17/04/2022	79		200		16			121	-	-	-	-	-	0	0	-	
18/04/2022	115	-	198	-	23			83	-	0	0	2	6	0	0	0	-
19/04/2022	178	-	592	-	36	187.8	742.5	414	-	1	6	1	0	0	-		
20/04/2022	177	-	592	-	35			415	-	2	4	0	2	0	0	-	
21/04/2022	185	-	592	-	36			407	-	2	5	0	1	0	0	-	
22/04/2022	172	-	592	-	34			420	-	1	6	1	0	0	0	0	-
23/04/2022	31	123	100	280	6	205.5	742.5	69	157	1	3	1	3	1	-		
24/04/2022	92		200		18			108	-	-	-	-	-	0	0	-	
25/04/2022	186	-	592	-	36			406	-	0	5	2	1	0	0	0	-
26/04/2022	179	-	592	-	35			413	-	2	5	0	1	0	0	0	-
27/04/2022	195	-	592	-	38	201.0	742.5	397	-	2	5	0	1	0	-		
28/04/2022	194	-	592	-	37			398	-	0	1	2	5	0	0	0	-
29/04/2022	174	-	592	-	35			418	-	0	4	2	2	2	1	1	-
30/04/2022	37	121	100	280	8			63	159	0	5	2	1	1	1	1	26
01/05/2022	84		200		17	-	541.5	116	-	-	-	-	-	0	-		
02/05/2022	118	-	248	-	23			130	-	0	0	2	6	0	0	0	-
03/05/2022	196	-	592	-	38			396	-	0	4	2	2	2	0	0	-
04/05/2022	199	-	592	-	38			393	-	2	6	0	0	0	0	0	-
05/05/2022	205	-	592	-	39			387	-	1	5	1	1	0	0	-	

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	Early Morning	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
06/05/2022	186	-	592	-	37			406	-		2	5	0	1	0
07/05/2022	43	132	100	280	9			57	148		1	4	1	2	1
08/05/2022	89		200		17			111			-	-	-	1	-
09/05/2022	199	-	592	-	39			393	-		1	5	1	1	0
10/05/2022	189	-	592	-	38			403	-		1	5	1	1	0
11/05/2022	198	-	592	-	38			394	-	524.9	2	5	0	1	1
12/05/2022	199	-	592	-	38			393	-		1	6	1	0	0
13/05/2022	189	-	592	-	37			403	-		1	6	1	0	3
14/05/2022	44	140	100	280	9			56	140		1	5	1	1	1
15/05/2022	96		200		19			104			-	-	-	0	-
16/05/2022	192	-	592	-	37			400	-		2	6	0	0	0
17/05/2022	193	-	592	-	37			399	-		2	5	0	1	0
18/05/2022	204	-	592	-	38			388	-	530.0	2	6	0	0	0
19/05/2022	188	-	592	-	37			404	-		2	6	0	0	0
20/05/2022	172	-	592	-	34			420	-		1	5	1	1	1
21/05/2022	46	156	100	280	9			54	124		0	5	2	1	3
22/05/2022	110		200		19			90			-	-	-	2	-
23/05/2022	193	-	592	-	37			399	-		1	3	1	3	2
24/05/2022	193	-	592	-	38			399	-		1	5	1	1	0
25/05/2022	202	-	592	-	39			390	-	525.8	1	5	1	1	0
26/05/2022	196	-	592	-	38			396	-		0	5	2	1	0
27/05/2022	188	-	592	-	37			404	-		0	3	2	3	1
28/05/2022	42	142	100	280	8			58	138		0	5	2	1	2
29/05/2022	100		200		19			100			-	-	-	1	-
30/05/2022	191	-	592	-	38			401	-	556.4	1	5	1	1	2
31/05/2022	184	-	592	-	37			408	-		2	4	0	2	0
															36

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	Early Morning	Late Eve / Sat Afternoon	3 Month Running Total
01/06/2022	183	-	592	-	37			409	-		1	6	1	0	1
02/06/2022	130	-	230	-	25			100	-		0	0	2	6	0
03/06/2022	127	-	330	-	25			203	-		0	0	2	6	0
04/06/2022	32	125	100	280	7			68	155		1	2	1	4	0
05/06/2022	93		200		17			107			-	-	-	-	1
06/06/2022	196	-	592	-	38			396	-		0	4	2	2	2
07/06/2022	195	-	592	-	38			397	-		1	5	1	1	0
08/06/2022	199	-	592	-	37			393	-	528.7	1	4	1	2	0
09/06/2022	203	-	592	-	39			389	-		1	4	1	2	0
10/06/2022	185	-	592	-	36			407	-		1	6	1	0	1
11/06/2022	34	134	100	280	7			66	146		1	4	1	2	2
12/06/2022	100		200		19			100			-	-	-	-	1
13/06/2022	203	-	592	-	38			389	-		0	4	2	2	0
14/06/2022	193	-	592	-	38			399	-		1	6	1	0	1
15/06/2022	191	-	592	-	37			401	-	529.0	1	6	1	0	0
16/06/2022	192	-	592	-	37			400	-		1	5	1	1	0
17/06/2022	172	-	592	-	35			420	-		1	3	1	3	0
18/06/2022	42	153	100	280	9			58	127		0	4	2	2	3
19/06/2022	111		200		21			89			-	-	-	-	5
20/06/2022	198	-	592	-	37			394	-		1	3	1	3	0
21/06/2022	177	-	592	-	35			415	-	539.6	2	2	0	4	1
22/06/2022	185	-	592	-	36			407	-		2	4	0	2	0
23/06/2022	191	-	592	-	38			401	-		1	5	1	1	0
24/06/2022	164	-	592	-	31			428	-		1	5	1	1	3
25/06/2022	39	145	100	280	8			61	135		1	4	1	2	1
26/06/2022	106		200		18			94			-	-	-	-	3

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	Early Morning	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
27/06/2022	185	-	592	-	36	196.6	742.5	407	-	545.9	1	3	1	3	-
28/06/2022	176	-	592	-	35			416	-		0	4	2	2	-
29/06/2022	176	-	592	-	34			416	-		0	3	2	3	-
30/06/2022	183	-	592	-	36			409	-		0	4	2	2	67
01/07/2022	155	-	592	-	31	206.4	742.5	437	-	536.1	0	3	2	3	-
02/07/2022	43	135	100	280	9			57	145		0	3	2	3	-
03/07/2022	92	-	200	-	16			108	-		-	-	-	1	-
04/07/2022	170	-	592	-	34			422	-		0	3	2	3	-
05/07/2022	182	-	592	-	36	204.2	742.5	410	-	538.3	0	5	2	1	-
06/07/2022	187	-	592	-	37			405	-		1	2	1	4	-
07/07/2022	192	-	592	-	38			400	-		1	2	1	4	-
08/07/2022	173	-	592	-	34			419	-		1	4	1	2	-
09/07/2022	40	141	100	280	8	190.8	742.5	60	139	551.7	2	5	0	1	-
10/07/2022	101	-	200	-	18			99	-		-	-	-	1	-
11/07/2022	182	-	592	-	35			410	-		0	3	2	3	-
12/07/2022	184	-	592	-	35			408	-		1	5	1	1	-
13/07/2022	185	-	592	-	36	142	742.5	407	-	538.3	0	3	2	3	-
14/07/2022	192	-	592	-	38			400	-		1	4	1	2	-
15/07/2022	162	-	592	-	33			430	-		1	3	1	3	-
16/07/2022	45	142	100	280	9			55	138		0	4	2	2	-
17/07/2022	97	-	200	-	18	169	742.5	103	-	538.3	-	-	-	2	-
18/07/2022	169	-	592	-	33			423	-		0	0	2	6	-
19/07/2022	156	-	592	-	32			436	-		1	5	1	1	-
20/07/2022	165	-	592	-	33			427	-		1	4	1	2	-
21/07/2022	164	-	592	-	33	167	742.5	428	-	538.3	0	4	2	2	-
22/07/2022	167	-	592	-	34			425	-		0	2	2	4	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	Early Morning	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
23/07/2022	39	137	100	280	8			61	143		1	3	1	3	-
24/07/2022	98		200		18			102			-	-	-	0	-
25/07/2022	167	-	592	-	33			425	-		0	3	2	3	-
26/07/2022	163	-	592	-	32			429	-		1	4	1	2	-
27/07/2022	169	-	592	-	34			423	-		0	1	2	5	-
28/07/2022	173	-	592	-	35			419	-	547.4	0	3	2	3	-
29/07/2022	164	-	592	-	34			428	-		0	4	2	2	-
30/07/2022	41	139	100	280	9			59	141		0	4	2	2	-
31/07/2022	98		200		18			102			-	-	-	1	96
01/08/2022	160	-	592	-	32			432	-		0	4	2	2	-
02/08/2022	154	-	592	-	30			438	-		1	5	1	1	-
03/08/2022	172	-	592	-	34			420	-		1	4	1	2	-
04/08/2022	164	-	592	-	33			428	-	556.1	0	4	2	2	-
05/08/2022	157	-	592	-	32			435	-		1	3	1	3	-
06/08/2022	39	128	100	280	9			61	152		1	5	1	1	-
07/08/2022	89		200		16			111			-	-	-	0	-
08/08/2022	164	-	592	-	33			428	-		1	5	1	1	-
09/08/2022	162	-	592	-	32			430	-		2	3	0	3	-
10/08/2022	159	-	592	-	31			433	-		1	4	1	2	-
11/08/2022	168	-	592	-	33			424	-	553.2	1	5	1	1	-
12/08/2022	159	-	592	-	33			433	-		1	4	1	2	-
13/08/2022	44	139	100	280	9			56	141		2	6	0	0	-
14/08/2022	95		200		18			105			-	-	-	2	-
15/08/2022	164	-	592	-	32			428	-		1	6	1	0	-
16/08/2022	168	-	592	-	33			424	-	557.7	1	4	1	2	-
17/08/2022	138	-	592	-	28			454	-		1	5	1	1	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)		Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	06:30-06:44	06:30-06:59	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
18/08/2022	166	-	592	-	33			426	-		0	5	2	1	3	-
19/08/2022	157	-	592	-	32			435	-		1	6	1	0	0	-
20/08/2022	44	134	100	280	9			56	146		0	5	2	1	2	-
21/08/2022	90		200		17			110			-	-	-	-	0	-
22/08/2022	159	-	592	-	32			433	-		2	6	0	0	1	-
23/08/2022	165	-	592	-	33			427	-		1	5	1	1	0	-
24/08/2022	155	-	592	-	32			437	-		1	4	1	2	0	-
25/08/2022	158	-	592	-	32			434	-	553.5	0	2	2	4	1	-
26/08/2022	159	-	592	-	33			433	-		0	3	2	3	0	-
27/08/2022	43	144	100	280	9			57	136		0	4	2	2	0	-
28/08/2022	101		200		19			99			-	-	-	-	1	-
29/08/2022	128	-	230	-	24			102	-		0	0	2	6	0	-
30/08/2022	180	-	592	-	34			412	-		1	3	1	3	0	-
31/08/2022	174	-	592	-	33			418	-		2	5	0	1	0	92
01/09/2022	196	-	592	-	37			396	-	547.1	1	4	1	2	0	-
02/09/2022	181	-	592	-	37			411	-		1	2	1	4	1	-
03/09/2022	49	162	100	280	10			51	118		0	4	2	2	3	-
04/09/2022	113		200		20			87			-	-	-	-	0	-
05/09/2022	183	-	592	-	36			409	-		1	5	1	1	0	-
06/09/2022	184	-	592	-	35			408	-		2	5	0	1	1	-
07/09/2022	189	-	592	-	36			403	-		2	3	0	3	0	-
08/09/2022	181	-	592	-	36			411	-	538.8	2	3	0	3	1	-
09/09/2022	170	-	592	-	35			422	-		0	6	2	0	1	-
10/09/2022	40	136	100	280	8			60	144		0	4	2	2	0	-
11/09/2022	96		200		18			104			-	-	-	-	0	-
12/09/2022	188	-	592	-	35			404	-	543.4	1	4	1	2	2	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>		3 Month Running Total	
	Day	Week-end	Day	Week-end	Day	Week	Week	Actual Movements	QC Total	Early Morning		Early Morning	Late Eve / Sat Afternoon	22:00-22:30 / 12:30-13:00			
										06:30-06:44	06:30-06:59						
															Day		Week-end
13/09/2022	176	-	592	-	35			416	-		1	5	1	1		0	
14/09/2022	197	-	592	-	37				395	-		1	4	1	2	1	-
15/09/2022	185	-	592	-	36				407	-		0	5	2	1	0	-
16/09/2022	161	-	592	-	33				431	-		0	4	2	2	2	-
17/09/2022	34	128	100	280	7				66	152		0	3	2	3	2	-
18/09/2022	94		200		17				106			-	-	-	-	0	-
19/09/2022	159	-	330	-	31				171	-		1	3	1	3	0	-
20/09/2022	185	-	592	-	36				407	-		2	5	0	1	0	-
21/09/2022	197	-	592	-	37				395	-		1	5	1	1	0	-
22/09/2022	193	-	592	-	36				399	-		2	5	0	1	1	-
23/09/2022	173	-	592	-	34				419	-		0	4	2	2	0	-
24/09/2022	41	145	100	280	8				59	135		1	5	1	1	1	-
25/09/2022	104		200		18				96			-	-	-	-	1	-
26/09/2022	174	-	592	-	34				418	-		0	4	2	2	0	-
27/09/2022	180	-	592	-	35				412	-		1	4	1	2	1	-
28/09/2022	188	-	592	-	35				404	-		2	4	0	2	0	-
29/09/2022	181	-	592	-	34				411	-		1	5	1	1	1	-
30/09/2022	160	-	592	-	32				432	-		0	4	2	2	1	74
01/10/2022	35	134	100	280	7				65	146		1	3	1	3	1	-
02/10/2022	99		200		19				101			-	-	-	-	0	-
03/10/2022	193	-	592	-	36				399	-		0	4	2	2	0	-
04/10/2022	195	-	592	-	37				397	-		1	5	1	1	0	-
05/10/2022	187	-	592	-	36				405	-		2	4	0	2	0	-
06/10/2022	187	-	592	-	36				405	-		1	6	1	0	0	-
07/10/2022	181	-	592	-	36				411	-		0	6	2	0	0	-
08/10/2022	40	130	100	280	7				60	150		0	2	2	4	1	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)		Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	06:30-06:44	06:30-06:59	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
09/10/2022	90		200		17			110			-	-	-	-	0	-
10/10/2022	186	-	592	-	35			406	-		1	4	1	2	1	-
11/10/2022	187	-	592	-	35			405	-		0	3	2	3	0	-
12/10/2022	195	-	592	-	37			397	-		2	5	0	1	0	-
13/10/2022	188	-	592	-	36		742.5	404	-	537.9	0	4	2	2	1	-
14/10/2022	182	-	592	-	36			410	-		1	2	1	4	0	-
15/10/2022	39	138	100	280	7			61	142		1	4	1	2	1	-
16/10/2022	99		200		18			101			-	-	-	-	0	-
17/10/2022	181	-	592	-	35			411	-		1	5	1	1	0	-
18/10/2022	179	-	592	-	36			413	-		1	4	1	2	0	-
19/10/2022	174	-	592	-	35		742.5	418	-	545.0	1	4	1	2	1	-
20/10/2022	184	-	592	-	35			408	-		1	2	1	4	0	-
21/10/2022	160	-	592	-	31			432	-		0	3	2	3	0	-
22/10/2022	44	137	100	280	8			56	143		1	6	1	0	2	-
23/10/2022	93		200		17			107			-	-	-	-	2	-
24/10/2022	185	-	592	-	35			407	-		1	4	1	2	0	-
25/10/2022	184	-	592	-	36			408	-		1	4	1	2	0	-
26/10/2022	181	-	592	-	35			411	-		2	4	0	2	0	-
27/10/2022	181	-	592	-	36		202.2	411	-	540.3	1	6	1	0	1	-
28/10/2022	183	-	592	-	36			409	-		0	4	2	2	0	-
29/10/2022	41	135	100	280	8			59	145		1	3	1	3	1	-
30/10/2022	94		200		17			106			-	-	-	-	0	-
31/10/2022	179	-	592	-	34			413	-		2	6	0	0	0	49
01/11/2022	185	-	592	-	36		742.5	407	-	542.4	2	5	0	1	0	-
02/11/2022	176	-	592	-	36			416	-		2	4	0	2	1	-
03/11/2022	185	-	592	-	36			407	-		2	5	0	1	0	-



Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)		Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	06:30-06:44	06:30-06:59	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
04/11/2022	171	-	592	-	33			421	-		1	3	1	3	2	-
05/11/2022	39	131	100	280	8			61	149		2	3	0	3	0	-
06/11/2022	92		200		18			108			-	-	-	-	0	-
07/11/2022	190	-	592	-	37			402	-		0	6	2	0	1	-
08/11/2022	186	-	592	-	35			406	-		2	5	0	1	1	-
09/11/2022	191	-	592	-	37			401	-		2	5	0	1	0	-
10/11/2022	197	-	592	-	38			395	-	545.7	2	5	0	1	1	-
11/11/2022	175	-	592	-	33			417	-		2	3	0	3	0	-
12/11/2022	39	78	100	280	7			61	202		1	4	1	2	0	-
13/11/2022	39		200		9			161			-	-	-	-	0	-
14/11/2022	113	-	592	-	22			479	-		0	1	2	5	0	-
15/11/2022	185	-	592	-	35			407	-		2	5	0	1	0	-
16/11/2022	188	-	592	-	37			404	-	552.3	1	4	1	2	0	-
17/11/2022	189	-	592	-	36			403	-		1	4	1	2	0	-
18/11/2022	188	-	592	-	35			404	-		2	5	0	1	0	-
19/11/2022	44	138	100	280	7			56	142		2	3	0	3	0	-
20/11/2022	94		200		18			106			-	-	-	-	0	-
21/11/2022	188	-	592	-	37			404	-		1	4	1	2	0	-
22/11/2022	188	-	592	-	36			404	-		2	6	0	0	0	-
23/11/2022	181	-	592	-	36			411	-	540.8	2	6	0	0	0	-
24/11/2022	179	-	592	-	36			413	-		2	5	0	1	0	-
25/11/2022	169	-	592	-	33			423	-		1	3	1	3	0	-
26/11/2022	32	124	100	280	6			68	156		2	3	0	3	0	-
27/11/2022	92		200		18			108			-	-	-	-	0	-
28/11/2022	192	-	592	-	37			400	-	537.8	2	4	0	2	0	-
29/11/2022	167	-	592	-	32			425	-		0	2	2	4	0	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)			Early Actual Movements		(Early Permitted - Actual)	Late Actual Movements <sup>[2]</sup>	
	Day	Week-end	Day	Week-end	Day	Week	Week	Day	Week-end	QC Total	06:30-06:44	06:30-06:59	Early Morning	Late Eve / Sat Afternoon 22:00-22:30 / 12:30-13:00	3 Month Running Total
30/11/2022	185	-	592	-	36			407	-		1	4	1	2	38
01/12/2022	207	-	592	-	39			385	-		1	3	1	3	-
02/12/2022	178	-	592	-	34			414	-		0	2	2	4	-
03/12/2022	41	140	100	280	8			59	140		1	2	1	4	-
04/12/2022	99		200		19			101			-	-	-	0	-
05/12/2022	189	-	592	-	37			403	-		2	6	0	0	-
06/12/2022	184	-	592	-	36			408	-		2	4	0	2	-
07/12/2022	189	-	592	-	37			403	-	550.1	1	4	1	2	-
08/12/2022	206	-	592	-	39			386	-		1	4	1	2	-
09/12/2022	165	-	592	-	32			427	-		1	2	1	4	-
10/12/2022	36	67	100	280	7			64	213		0	2	2	4	-
11/12/2022	31		200		4			169			-	-	-	0	-
12/12/2022	84	-	592	-	17			508	-		0	0	2	6	-
13/12/2022	166	-	592	-	32			426	-		0	0	2	6	-
14/12/2022	169	-	592	-	34			423	-	562.2	0	0	2	6	-
15/12/2022	191	-	592	-	36			401	-		0	1	2	5	-
16/12/2022	175	-	592	-	34			417	-		0	2	2	4	-
17/12/2022	43	139	100	280	8			57	141		0	1	2	5	-
18/12/2022	96		200		19			104			-	-	-	1	-
19/12/2022	138	-	592	-	28			454	-		0	5	2	1	-
20/12/2022	154	-	592	-	31			438	-	586.7	1	4	1	2	-
21/12/2022	155	-	592	-	31			437	-		1	4	1	2	-
22/12/2022	146	-	592	-	29			446	-		0	2	2	4	-
23/12/2022	163	-	592	-	32			429	-		0	3	2	3	-
24/12/2022	34	34	100	100	6			66	66		1	2	1	4	-
25/12/2022	0		0		0			0			-	-	-	0	-

Date	Actual Aircraft Movements		Permitted Actual Aircraft Movements		QC Total		Permitted QC Total	Differences (Permitted - Actual)		Early Actual Movements		(Early Permitted - Actual)		Late Actual Movements <sup>[2]</sup>			
	Day	Week-end	Day	Week-end	Day	Week	Week	Actual Movements	QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	3 Month Running Total		
										06:30-06:44	06:30-06:59	06:30-06:44	06:30-06:59				
26/12/2022	86	-	100	-	16	742.5		14	-	0	0	2	6	0	-		
27/12/2022	112	-	330	-	21			218	-	0	0	2	6	0	-		
28/12/2022	125	-	592	-	25			467	-	1	2	1	4	0	-		
29/12/2022	139	-	592	-	27			453	-	1	4	1	2	0	-		
30/12/2022	135	-	592	-	27			457	-	0	0	2	6	0	-		
31/12/2022	39	-	100	-	7	61	-	1	3	1	3	2	3	2	33		
01/01/2023	-		-		-	-		-	-	-	-	-	-	-	-		
Annual Total	46,697		111,000		9,055		22,000	64,303		12,945		231	1,087	-	-	195	-

**Annual  
Performance  
Report 2022**

# **Annex 3**

## Aircraft Noise Categorisation Scheme (ANCS) Report



## LONDON CITY AIRPORT

# AIRCRAFT NOISE CATEGORISATION SCHEME (ANCS) REPORT 2022

### Report to

London City Airport  
The Royal Docks  
London E16 2PB

A11327\_05\_RP050\_2.0  
28 April 2023

**Bickerdike Allen Partners LLP** is an integrated practice of Architects, Acousticians, and Construction Technologists, celebrating over 60 years of continuous practice.

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**Acoustic Consultants:** Expertise in planning and noise, the control of noise and vibration and the sound insulation and acoustic treatment of buildings.

**Construction Technology Consultants:** Expertise in building cladding, technical appraisals and defect investigation and provision of construction expert witness services.

<b>Contents</b>	<b>Page No.</b>
1.0 Introduction .....	4
2.0 Quota Count Classification System .....	5
3.0 Quota Count Budget .....	10
4.0 Noise Monitoring .....	13
Appendix 1: Derivation of Departure and Arrival Level for Quota Count Assessment	
Appendix 2: Assumed Quota Count Values	
Appendix 3: Quota Count Daily and Weekly Totals	
Appendix 4 2022 Noise Monitoring Results by Airline and Aircraft Type	

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## 1.0 INTRODUCTION

The City Airport Development Programme (CADP1) planning application (13/01228/FUL) was granted planning permission by the Secretary of State for Communities and Local Government and the Secretary of State for Transport in July 2016 following an appeal and public inquiry which was held in March and April 2016.

Condition 18 of the permission required a new Aircraft Noise Categorisation Scheme (ANCS) to be submitted to and approved by the Local Planning Authority (LPA) prior to the first beneficial use of the development. The ANCS was approved in December 2017 and implemented in January 2018.

Condition 19 of the permission requires the ANCS to be reviewed periodically. Following its first four years of operation, the ANCS was reviewed in 2022 and an update to the scheme was approved by the LPA. This came into effect from April 2022 and resulted in changes to the procedure used to determine the Quota Count (QC) values of jet aircraft and formalisation of the procedure for light propeller aircraft. Although this report describes the current scheme it has assessed the ANCS performance on the basis of the scheme in effect at the time; with any updated QC values applied from April 2022 only.

Condition 19 also requires that *“a report shall be submitted to the local planning authority annually on 1 June or the first working day thereafter as part of the Annual Performance Report on the performance and/or compliance with the approved Aircraft Noise Categorisation Scheme during the previous calendar year”*.

To satisfy this condition, the ANCS states that *“A report will also be produced as part of the Annual Performance Report that records the results of the assessments undertaken as part of the quota count regime, including but not limited to:-*

- *The quota counts used for each aircraft type during the calendar year in question;*
- *The total annual quota arising from aircraft operations during the calendar year;*
- *The results of noise monitoring undertaken during the calendar year, expressed for each aircraft and airline as averages in relation to sideline, flyover and approach noise levels as determined in accordance with Section 3.1 above;*
- *The quota counts to be used for each aircraft for the forthcoming calendar year; and*
- *The expected total annual quota for the forthcoming year.”*

This report covers the items listed above for 2022.



## 2.0 QUOTA COUNT CLASSIFICATION SYSTEM

The ANCS uses a Quota Count (QC) classification system which, in the case of departure noise, is based on official noise certification data derived from measurements made on actual aircraft which have been conducted in accordance with the International Civil Aviation Organisation (ICAO) certification process.

A similar noise certification process exists for civil aircraft on approach, but this is based on operations at a glide slope of 3 degrees, not 5.5 degrees as used at LCA. To account for this difference, the AEDT<sup>1</sup> software has been used to compute, at the approach noise certification point<sup>2</sup>, the difference in noise level between a 3 degree and a 5.5 degree glide slope using the AEDT in-built aircraft database. This difference is then applied to the noise certification data to estimate a certification value based on a glide slope of 5.5 degrees.

Whereas this method for approach noise levels provides a reasonable correlation with measurements of turbofan aircraft at LCA, it does not reflect well the noisiness of turboprop aircraft on steeper approaches. As a result, measured data at LCA has been used to validate the turboprop aircraft types within the AEDT model to achieve a reasonable correlation between prediction of approach noise at the noise certification point and measurement.

The ANCS uses manufacturers' noise certification data to categorise aircraft and allocate a specific 'QC score' to each aircraft type permitted to fly into and out of the airport. Each aircraft has a certificated 'sideline', 'flyover' and 'approach' noise level. These are described in Appendix 1.

Each aircraft in operation at the airport is allocated a separate QC score for arrival and departure operations, based on its certificated noise levels (adjusted to reflect the approach glide slope used at LCA), and categorised into 1 dB bands (rather than 3 dB bands as is the case in most other QC schemes). The QC classification bands are set out in Table 1 below. As an example, the ANCS would allocate a QC score of 0.4 to an aircraft departure or arrival in a noise band range of 87.0 dB to 87.9 dB and a QC score of 0.1 to a quieter aircraft departure or arrival in a noise band range of 81.0 dB to 81.9 dB. The QC classification bands are set out in Table 1 below:

---

<sup>1</sup> The term AEDT throughout this document refers to the latest version of the Aviation Environmental Design Tool, produced by the Federal Aviation Administration.

<sup>2</sup> 2.0 km from runway threshold.

Noise Level Band <sup>3</sup> , EPNdB	Quota Count (QC) Classification	Noise Level Band <sup>3</sup> , EPNdB	Quota Count (QC) Classification
90 – 90.9	0.8	78 – 78.9	0.05
89 – 89.9	0.63	77 – 77.9	0.04
88 – 88.9	0.5	76 – 76.9	0.0315
87 – 87.9	0.4	75 – 75.9	0.025
86 – 86.9	0.315	74 – 74.9	0.002
85 – 85.9	0.25	73 – 73.9	0.016
84 – 84.9	0.2	72 – 72.9	0.0125
83 – 83.9	0.16	71 – 71.9	0.01
82 – 82.9	0.125	70 – 70.9	0.008
81 – 81.9	0.1	69 – 69.9	0.0063
80 – 80.9	0.08	68 – 68.9	0.005
79 – 79.9	0.063		

**Table 1: Aircraft Noise Classifications**

*(NB. This classification system is a modification and extension of that operated by the designated airports in their Night Noise Quota Count System)*

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<sup>3</sup> Noise level bands above those presented would not be permitted to operate at LCA as a result of the need to comply with the noise certification level limits within the scheme.

## 2.1 Derivation of Noise Certification Levels - Departures

Under regulations laid out by the European Commission<sup>4</sup>, all aircraft of the types used at LCA are required to hold a certificate that sets out the noise certification levels for the aircraft and states the weight at which the aircraft was certificated (a higher weight typically corresponds with a higher noise level).

The sideline and flyover noise levels on the noise certificate are used to describe the noise of departing aircraft for all aircraft other than light propeller aircraft. Noise certification data for a given aircraft type can exist at a variety of different take-off weights. In addition, some aircraft of a given type are fitted with modified (quieter) engines and are certificated accordingly. As a result of this, the selection of noise certification levels for an individual aircraft shall be based on:-

- i. the sideline and flyover departure noise values set out on the noise certificate for the individual aircraft; or
- ii. the values set out in the EASA<sup>5</sup> database for the specific aircraft type<sup>6</sup> accounting for the permitted Maximum Take-Off Weight (MTOW) of that aircraft at LCA. If no entry in the database is available for the specific aircraft at this MTOW, the entry for the next highest MTOW will be used; or
- iii. under exceptional circumstances, evidence presented to LBN which demonstrates to their satisfaction, confirmed in writing, that the aircraft is capable of operating at its permitted MTOW at LCA within the noise constraints applicable at the airport.

Appendix 1 sets out how to derive the Departure Noise Level from the sideline and flyover noise certification values to enable a QC classification to be derived from Table 1. Appendix 2 provides the QC values that are assumed for each aircraft type where no noise certificate is available.

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<sup>4</sup> Commission Regulation (EU) 748/2012

<sup>5</sup> European Aviation Safety Agency *Aircraft type certificate data sheets*, [Online], Available: <http://www.easa.europa.eu/certification/type-certificates/aircraft.php> [15/03/2022].

<sup>6</sup> This relates to the noise certification levels given for the aircraft at a MTOW in the EASA database that equals the average of the maximum take-off weights specified for that aircraft type. If no entry is available, the noise certification levels for the next highest MTOW is to be used.

## 2.2 Derivation of Noise Certification Levels - Arrivals

The approach noise levels on the noise certificate are used to describe the noise of arriving aircraft for all aircraft other than light propeller aircraft. This certificated noise level requires modification. This is because the certificated noise level appearing on the certificate is measured based on a glide slope of 3 degrees, whereas 5.5 degrees is used at LCA. This steeper approach is required to keep aircraft higher for longer for obstacle avoidance.

To account for this difference, the AEDT software is used to compute the approach noise level based on both a 3 degree and a 5.5 degree glide slope. The AEDT software contains an in-built database of aircraft types, flight, thrust and noise parameters. This database of information has been developed in consultation with aircraft manufacturers.

This computational method provides good correlation with measurements of turbofan aircraft at the different glide slopes; however it does not accurately reflect the noisiness of turboprop aircraft on steeper approaches. Data measured with noise monitors at LCA is therefore used to validate the turboprop aircraft types within AEDT.

The approach noise level for a given type of turbofan aircraft is derived by modelling the aircraft in AEDT using the matching or recommended built-in aircraft database entry at the approach noise certification point described in ICAO Annex 16<sup>7</sup>. This is done separately with a glide slope of 3 degrees and 5.5 degrees and the difference computed. This difference is then applied to the certificated (3 degree) approach noise level of the individual aircraft, obtained using the same criteria as for departing aircraft. The resulting value is equivalent to the noise certification level for that given turbofan aircraft type for a 5.5 degrees approach.

The approach noise level for a given type of turboprop aircraft is derived by firstly adjusting the noise profile of the most appropriate aircraft type within the AEDT to best match the approach noise level measured at LCA during a 5.5 degree approach. This aircraft type is then modelled with a glide slope of 5.5 degrees using the AEDT to derive the noise value at the approach noise certification point described in ICAO Annex 16<sup>4</sup>. This resulting value is used as the approach noise certification level for that given turboprop aircraft type for the purposes of quota count classification. Appendix 1 sets out how to derive the Arrival Noise Level from the approach noise level to enable a QC classification to be derived from Table 1. Appendix 2 provides the assumed QC values used where no noise certificate is available, based on the EASA database.

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<sup>7</sup> Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume 1, Aircraft Noise

### **2.3 Derivation of Noise Certification Levels – Light Propeller Aircraft**

Light propeller aircraft are not subject to the same measurements as part of the certification process and therefore comparable certificated noise levels are not available. For these aircraft the following procedure is followed to estimate the certificated noise levels:

- i. Determine the reference aircraft, being the lightest propeller aircraft for which suitable measurements operating at LCA are available and which is subject to the ICAO Chapter 4 certification tests.
- ii. Compare the measured EPNdB noise levels taken by the LCA NMTs with those for the reference aircraft, separately for sideline (NMTs 1-4), flyover (NMTs 5-6) and approach (NMTs 5-6).
- iii. Use these difference to estimate the sideline, flyover and approach noise levels for the light propeller aircraft by comparing with noise certificates for the reference aircraft.

These estimated noise levels are then used to confirm that the aircraft meets the maximum noise limits. Light propeller aircraft are then treated as turboprop aircraft for the purposes of determining the arrival noise level and departure noise level.

### **3.0 QUOTA COUNT BUDGET**

#### **3.1 Quota Count Period**

The quota count period applies throughout the operational hours of the airport as specified in the airport's entry given in the UK AIP<sup>8</sup>. For the purposes of an annual assessment of the quota count, the calendar year applies.

#### **3.2 Quota Count Budget**

LCA are required to operate within an overall noise quota budget set out in the ANCS, which limits the number of annual flight movements. Each aircraft landing or taking-off counts towards the overall quota budget at the airport. The noisier the aircraft type, the higher its QC score and the more it counts towards the total budget, resulting in fewer permitted flights within the limit. The use of 1 dB bands means that a small reduction in noise levels may result in a lower QC score, thereby incentivising the use of quieter aircraft. Performance against the quota budget is calculated by multiplying the number of departures and arrivals by the respective QC scores for an aircraft and adding together the totals for each aircraft using the airport. All aircraft operating at LCA are included in the quota, other than those engaged in training, positioning, aircraft testing and/or evaluation.

The quota count budget is:

- i) 22,000 per calendar year; and
- ii) 742.5 in any one week

Each year's total quota count will be determined based on the schedule of actual aircraft movements for the year and established QC scores. The results will be compared against LCA's permitted noise quota budget as specified in i) and ii) above.

#### **3.3 2022 QC Assessment**

The QC score has been calculated for each aircraft movement during 2022. Totals for each day and week are presented in Appendix 3. These show that the airport has operated within its quota budget of 742.5 per week during this period.

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<sup>8</sup> The UK Aeronautical Information Publication, NATS Aeronautical Information Service  
<https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/>

Table 2 presents the total QC score for 2022, broken down by aircraft type. This shows that the airport has operated within its quota budget of 22,000 for 2022.

Aircraft Type	Average QC Score <sup>1</sup>		2022 Total Mvts		2022 Quota Count <sup>2</sup>		
	Arr	Dep	Arr	Dep	Arr	Dep	Total
Airbus A221	0.032 (0.050)	0.125 (0.125)	916	917	31	115	146
ATR 42	0.200 (0.315)	0.050 (0.050)	470	470	107	24	130
ATR 72	0.250 (N/A)	0.100 (N/A)	322	322	81	32	113
Avro RJ85	N/A (0.063)	N/A (0.315)	2	1	0	0	0
BAe 146	N/A (0.063)	N/A (0.315)	1	1	0	0	0
Dash 8-400	0.125 (0.125)	0.100 (0.100)	1,511	1,512	189	151	340
Dornier 328JET	0.016 (N/A)	0.125 (N/A)	77	77	1	10	11
Embraer E190	0.050 (0.050)	0.396 (0.392)	17,903	17,893	895	7,082	7,978
Embraer E190-E2	0.040 (0.050)	0.100 (0.100)	447	446	19	45	63
General Aviation: Jet Aircraft	0.027 (0.050)	0.129 (0.107)	1,672	1,703	55	211	266
General Aviation: Non-Jet Aircraft	0.268 (0.315)	0.085 (0.160)	17	17	5	2	7
<b>TOTAL</b>			23,338	23,359	1,382	7,672	9,055

<sup>1</sup> Some aircraft types can have different departure QC scores depending on the specific aircraft flown. Additionally, some aircraft had different QC values prior to the update to the ANCS in April 2022. The average QC after the ANCS update is given with the average QC in Q1 2022, prior to the ANCS update, following in brackets.

<sup>2</sup> Average QC score rounded to three decimal places. QC totals rounded to nearest whole number. Overall totals are sum of unrounded values.

**Table 2: 2022 QC Assessment**



### 3.4 2023 QC Forecast

Based on the forecast provided by LCA, a predicted QC total for 2023 has been computed. An assumed QC score has been assigned to each aircraft operating at LCA and used to compute a predicted QC total for 2023.

Aircraft Type	Assumed QC Score		2023 Forecast Movements <sup>1</sup>		2023 Forecast Quota Count <sup>2</sup>		
	Arr	Dep	Arr	Dep	Arr	Dep	Total
Airbus A221	0.032	0.125	736	736	23	92	115
ATR 42	0.200	0.050	576	576	115	29	144
ATR 72	0.250	0.100	520	520	130	52	182
Dash 8-400	0.125	0.100	1,984	1,984	248	198	446
Dornier 328JET	0.016	0.125	144	144	2	18	20
Embraer E190	0.050	0.396	21,772	21,668	1,089	8,591	9,679
Embraer E190-E2	0.040	0.100	1,056	1,056	42	106	148
Embraer E195-E2	0.040	0.125	420	420	17	53	69
General Aviation: Jet Aircraft	0.027	0.129	1,672	1,703	46	221	266
General Aviation: Non-Jet Aircraft	0.268	0.085	17	17	5	1	6
<b>TOTAL</b>			<b>28,897</b>	<b>28,824</b>	<b>1,717</b>	<b>9,360</b>	<b>11,077</b>

<sup>1</sup> Forecast annual totals are derived from a summer forecast provided by LCA. Therefore, arrival and departure totals may not match exactly. General Aviation forecast movements are based on 2019 activity.

<sup>2</sup> Average QC score rounded to three decimal places. QC totals are rounded to nearest whole number. Overall totals are sum of unrounded values.

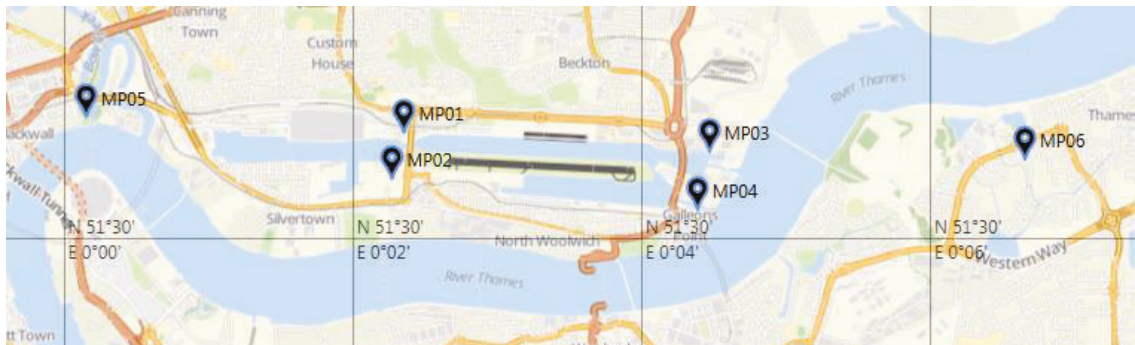
**Table 3: 2023 QC Prediction**

The above calculation shows that in 2023 the airport is predicted to be under the QC budget of 22,000.

## 4.0 NOISE MONITORING

### 4.1 Aircraft Noise Measurement

The airport's noise monitoring system records the noise levels in terms of Effective Perceived Noise Level (EPNL) during aircraft departures and landings at six locations (NMTs 1 to 6) shown in Figure 1.



**Figure 1: Location of NMTs 1-6**

This data is reviewed on an annual basis to establish for each aircraft type, separately for each airline, the following information:

- the average annual SIDELINE<sup>9</sup> departure noise level (in EPNdB), from NMTs 1, 2, 3 and 4,
- the average annual FLYOVER departure noise level (in EPNdB), from NMTs 5 and 6,
- the average annual APPROACH noise level (in EPNdB), from NMTs 5 and 6.

#### 4.1.1 Calibration Details

The sound level meter and microphone systems that comprise the NMTs are calibrated by a UKAS accredited institution every two years as a minimum, in accordance with ISO 20906:2009/Amd.1:2013 *“Acoustics – Unattended monitoring of aircraft sound in the vicinity of airports”*.

During 2022, independent on-site microphone calibration was carried out in March, June, September and December. In all cases it was found that the NMTs were operating within normal tolerances and no concerns were raised regarding the functioning of the NMTs.

<sup>9</sup> At LCA all aircraft types, both jet and propeller, are measured at the same “sideline” noise monitoring locations. Further explanation of “sideline” in this context is given in Appendix 1.

#### 4.1.2 Monitoring Results

A literal interpretation of the ANCS requirement is to compare the year-on-year changes for every aircraft type and associated airline. However, it is often not appropriate to assess every combination, as when there are small numbers of results this will likely show large differences due to the natural variation in measurement results, for example due to variation in aircraft weights and weather conditions. Therefore, it was agreed with the London Borough of Newham (LBN) that only aircraft and airline combinations which recorded at least one arrival and departure measurement per day on average would be included in the comparison.

The 2022 noise levels are presented in Table 4, alongside their change from 2021. The 2022 noise levels for all aircraft and airline combinations are given in Appendix 1.

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		Avg Level, EPNdB	Change from 2021 <sup>[1]</sup>	Avg Level, EPNdB	Change from 2021 <sup>[1]</sup>	Avg Level, EPNdB	Change from 2021 <sup>[1]</sup>
A221 <sup>[2]</sup>	LX	93.8	0.7	83.8	0.4	83.5	0.4
AT45 <sup>[2]</sup>	LM	91.2	0.0	81.9	-0.2	88.1	-0.4
DH8D <sup>[2]</sup>	LG	92.3	0.7	81.8	0.5	84.6	-0.2
E190 <sup>[2]</sup>	AZ	99.6	-	88.3	-	84.4	-
E190	BA	99.4	0.1	88.0	-0.2	84.7	-0.3
E190	KL	98.8	0.7	87.9	0.5	84.6	-0.3
E190 <sup>[2]</sup>	LH	99.3	0.4	87.5	-0.1	85.2	-0.1
E290 <sup>[2]</sup>	LX	93.4	-0.2	82.9	-0.6	83.3	-0.5

<sup>[1]</sup> Averages are rounded to 1 decimal place. Changes are based on the unrounded values.

<sup>[2]</sup> Aircraft type and airline combination had fewer than one measurement per day in 2021.

**Table 4: 2022 Noise Monitoring Results and Comparison to 2021**

The results in Table 4 show that for all the most commonly operating aircraft and airline combinations, there has been no significant change in the average measured arrival noise levels when compared to 2021. When considering departure noise levels, some aircraft type and airline combinations have increased in noise level by around 0.5 dB(A). These combinations all previously showed a decrease in measured levels from 2019 to 2020/21 which was attributed to the Covid-19 pandemic. Consequently, no change was made to the Quota Count (QC) classifications in 2020/21. The QC classifications used in 2021 are therefore considered to remain appropriate.

**Nick Williams**  
**for Bickerdike Allen Partners LLP**

**David Charles**  
**Partner**

## APPENDIX 1

### DERIVATION OF DEPARTURE AND ARRIVAL LEVEL FOR QUOTA COUNT ASSESSMENT

The basic principles of how to calculate the departure and arrival level as part of the Night Noise Quota Counts that are in place at Heathrow, Gatwick and Stansted Airports are described in a report prepared by the Civil Aviation Authority<sup>10</sup>.

These principles are adopted in the LCA Quota Count Scheme with some slight modifications and are as follows:-

- i) The noise classification of aircraft into 1 EPNdB wide QC categories or bands is based on certificated (for departure) and calculated (for approach) Effective Perceived Noise Level (EPNL, in units EPNdB).
- ii) The Departure Noise Level is determined from the aircraft's noise certification values (EPNLs) for sideline and flyover based on the following equation:  
  

$$\text{Departure Noise Level} = (\text{Sideline EPNL} + \text{Flyover EPNL})/2$$
- iii) The Arrival Noise Level is determined from the approach noise level derived as described in Section 2.2 above and the equation:  
  

$$\text{Arrival Noise Level} = \text{Approach Noise Level EPNL} - 9$$
- iv) For propeller aircraft with maximum take-off weight (MTOW) not exceeding 5700 kg (i.e. those not subject to such criteria) and older propeller aircraft also not subject to these criteria, aircraft are classified according to assumptions based on available noise data.
- v) The Departure Noise Level and (separately) the Arrival Noise Level are matched in Table A1.1 with the relevant noise band to determine the associated quota count (QC) classification for the specific aircraft type.

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<sup>10</sup> ERCD Report 0204 Review of the Quota Count (QC) System: Re-Analysis of the Differences Between Arrivals and Departures

Noise Level Band, EPNdB	Quota Count (QC) Classification	Noise Level Band, EPNdB	Quota Count (QC) Classification
90 – 90.9	0.8	78 – 78.9	0.05
89 – 89.9	0.63	77 – 77.9	0.04
88 – 88.9	0.5	76 – 76.9	0.0315
87 – 87.9	0.4	75 – 75.9	0.025
86 – 86.9	0.315	74 – 74.9	0.002
85 – 85.9	0.25	73 – 73.9	0.016
84 – 84.9	0.2	72 – 72.9	0.0125
83 – 83.9	0.16	71 – 71.9	0.01
82 – 82.9	0.125	70 – 70.9	0.008
81 – 81.9	0.1	69 – 69.9	0.0063
80 – 80.9	0.08	68 – 68.9	0.005
79 – 79.9	0.063		

**Table A1.1: Aircraft Noise Classifications**

*(NB. This classification system is a modification and extension of that operated by the designated airports in their Night Noise Quota Count System)*

The terms “sideline” and “flyover” appear in this ANCS and also in LCA’s Noise Management and Mitigation Scheme (NOMMS) but carry different meanings in each. The following section provides an explanation of these terms in the context of both the ANCS and the NOMMS.



## Explanation of “Sideline” and “Flyover” Points in the NOMMS and ANCS

The terms “sideline” and “flyover” are used in the NOMMS<sup>11</sup> and ANCS<sup>12</sup> to describe a point or location where aircraft noise is either measured or assessed. In the NOMMS, the terms are used to describe locations where London City Airport’s (LCA’s) fixed noise monitors are located. In the ANCS, the terms are used to describe noise certification points prescribed by the International Civil Aviation Organisation (ICAO). Although the terms “sideline” and “flyover” used in the NOMMS and ANCS are identical, they are not in the same position. To avoid confusion, this annex provides a short description of the location of the sideline and flyover points for both the NOMMS and ANCS.

NOMMS uses a number of fixed noise monitors to determine noise levels from departing and arriving aircraft at the airport. For historic reasons the location of these monitors are categorised as either *sideline* or *flyover* locations depending on where they are with respect to the flight path of departing or arriving aircraft. The results are used primarily for noise management purposes through a Penalties and Incentives Scheme.

The ANCS categorises and assesses aircraft by using noise certification data determined in accordance with procedures set out by ICAO. Each aircraft operating in the UK has a noise certificate describing its noise emissions under carefully controlled conditions, at three noise certification points. These certification levels are indicators of aircraft noise performance and are determined at three points in accordance with prescribed international procedures. These procedures also use the terms *sideline* and *flyover* for two of these three points (the third is the *approach* point).

### NOMMS - noise monitor locations

A continuous noise monitoring system was first installed and became operational at the airport in 1992. A system of this type has been in place ever since that time and was upgraded in 2000 when a flight track monitoring system was also installed. The noise and flight track monitoring system was further updated in 2013. Historically, this noise and flight track monitoring system (NFTM) comprised four fixed noise monitors. These four monitors known as NMTs 1 to 4 are all located close to the airport.

Under the NOMMS, two new fixed noise monitors (NMTs 5 and 6) and a mobile noise monitor are incorporated within the NFTM.

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<sup>11</sup> NOMMS – Noise Management and Mitigation Strategy

<sup>12</sup> ANCS – Aircraft Noise Categorisation Scheme

The six fixed noise monitors shown in Figure A1.1 are used to measure noise levels during an aircraft departure. These measured noise levels are used to determine the Sideline Noise Level and Flyover Noise Level for comparison with limits set in relation to the airport's Penalties and Incentives scheme which forms part of the NOMMS. The Sideline Noise Level and the Flyover Noise Level are compared against the fixed penalty limit and credit thresholds to determine whether a credit or penalty should be applied to the operator of the aircraft.

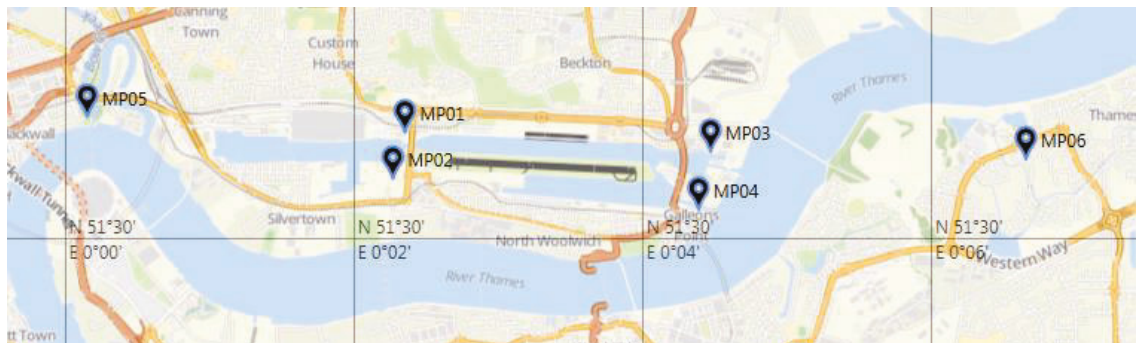
As NMTs 1 and 2, and 3 and 4 lie on either side of the flight path of a departing or an arriving aircraft these are designated as "sideline" locations.

For aircraft departures on Runway 27, the Sideline Noise Level is determined from the arithmetic average of the maximum noise level ( $L_{Amax,S}$ ) measured at NMT 1 and 2. For aircraft departures on Runway 09, the Sideline Noise Level is determined from the arithmetic average of the maximum noise level ( $L_{Amax,S}$ ) measured at NMT 3 and 4.

As NMTs 5 and 6 lie approximately underneath the flight path of a departing aircraft these are designated as "flyover" locations.

For aircraft departures on Runway 27, the Flyover Noise Level is the maximum noise level ( $L_{Amax,S}$ ) measured at NMT 5. For aircraft departures on Runway 09, the Flyover Noise Level is the maximum noise level ( $L_{Amax,S}$ ) measured at NMT 6.

The locations of NMTs 1 to 6 are shown in Figure A1.1.



**Figure A1.1: NOMMS - Location of Noise Monitoring Terminals**

#### **ANCS - noise certification level positions**

The ANCS uses a Quota Count (QC) system as a means of limiting the noise generated by aircraft movements in a transparent and easily administered manner. It operates in a similar manner to the Night Noise Quota Count scheme used at the designated airports such as Heathrow, Gatwick and Stansted, and used at other UK airports such as Manchester. The QC system at LCA however applies during the daytime, not the night-time. LCA are the first airport to operate a daytime QC system in the UK. As is the case for the Night Noise Quota Count scheme, the LCA QC system is

based on aircraft noise certification data where each aircraft type is allotted a QC value based on the noise generated by the aircraft type on departure and arrival under prescribed certification conditions<sup>13</sup>.

Certification levels, determined in accordance with prescribed procedures under ICAO Annex 16<sup>14</sup> and given in terms of the Effective Perceived Noise Level (EPNL), are used within the ANCS for a variety of reasons, including:

- to comply with UK Regulations<sup>15</sup>
- they are reliable and independently verified indicators of aircraft noise performance;
- they are freely available for practically every relevant aircraft type<sup>16</sup>.

Certificated noise levels for departing and arriving aircraft are determined under carefully controlled conditions at three positions:

- For jet-powered aeroplanes, 450 metres sideline at noisiest point during an aircraft departure. For propeller aircraft, depending on when the aircraft was certified, the point on the extended centre line of the runway 650 metres vertically below the climb-out flight path at full take-off power (referred to as Sideline or Lateral point);
- 6500 metres from start of roll, directly beneath the departing aircraft (referred to as Flyover point);
- 2000 metres from runway threshold, directly beneath the arriving aircraft (referred to as Approach point).

Figure A1.2, reproduced from ERCD 0205<sup>17</sup>, illustrates these three noise certification points below.

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<sup>13</sup> Based on the certified operating weight or maximum permitted operating weight at LCA or on evidence presented to LBN which demonstrates to their satisfaction, confirmed in writing, that the aircraft is capable of operating at its permitted MTOW at LCA within the noise constraints applicable at the airport.

<sup>14</sup> Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume 1, Aircraft Noise

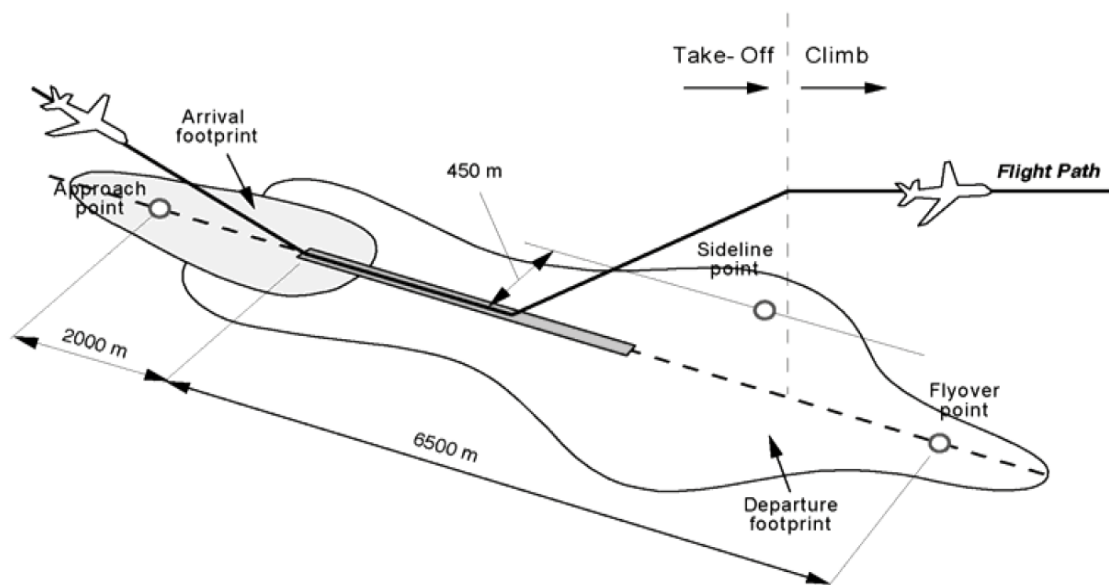
<sup>15</sup> Aerodrome (Noise Restrictions) (Rules and Procedures) Regulations 2003

<sup>16</sup> European Aviation Safety Agency (2016) *Aircraft type certificate data sheets*, [Online], Available: <http://www.easa.europa.eu/certification/type-certificates/aircraft.php> [15/03/2022].

<sup>17</sup> ERCD Report 0205 Quota Count Validation Study: Noise Measurements and Analysis, Civil Aviation Authority

## AIRCRAFT NOISE CERTIFICATION MEASUREMENT POINTS

in relation to illustrative footprints



**Figure A1.2: Aircraft noise certification measurement points**

The Sideline point shown is for jet-powered aircraft. For propeller aircraft, depending on when the aircraft was certified, the sideline position may be the point on the extended centre line of the runway 650 metres vertically below the climb-out flight path at full take-off power. For reasons given in ERCD 0205, the use of a different measurement position for sideline noise from propeller aircraft is because of practical difficulties in measuring sideline noise at the 450 m sideline point required for jet-powered aircraft. ERCD found that the results obtained in the two locations are practically the same.

## APPENDIX 2

### ASSUMED QUOTA COUNT VALUES

The following table gives the Quota Count values which are assumed for each aircraft type in operation at LCA. These are used when a noise certificate is not available. The values are calculated using the noise certificate information set out in the EASA database for the specific aircraft type accounting for the permitted Maximum Take Off Weight (MTOW) of that aircraft at LCA.

Aircraft Code	Aircraft Description	Aircraft Category	Quota Count	
			Departures	Arrivals
A221	Airbus A220-100	Turbofan	0.16	0.0315
A318	Airbus A318	Turbofan	0.315	0.05
B461	BAe 146-100	Turbofan	0.16	0.063
B462	BAe 146-200	Turbofan	0.315	0.08
C25A	Cessna CitationJet CJ2	Turbofan	0.1	0.0315
C25B	Cessna CitationJet CJ3	Turbofan	0.1	0.0125
C25C	Cessna CitationJet CJ4	Turbofan	0.16	0.016
C510	Cessna Citation Mustang	Turbofan	0.063	0.0063
C525	Cessna CitationJet	Turbofan	0.05	0.016
C550	Cessna Citation II	Turbofan	0.16	0.025
C55B	Cessna Citation Bravo	Turbofan	0.063	0.0315
C560	Cessna Citation V	Turbofan	0.063	0.0125
C56X	Cessna Citation Excel	Turbofan	0.05	0.04
C680	Cessna Citation Sovereign	Turbofan	0.063	0.0315
C68A	Cessna Citation Latitude	Turbofan	0.08	0.016
CL30	Bombardier Challenger 300	Turbofan	0.1	0.016
CL35	Bombardier Challenger 350	Turbofan	0.125	0.016
CL60	Bombardier Challenger 600	Turbofan	0.125	0.025
E135	Embraer E135	Turbofan	0.1	0.0315
E170	Embraer E170	Turbofan	0.4	0.063
E175	Embraer E175	Turbofan	0.4	0.063
E190	Embraer E190	Turbofan	0.5	0.05
E290	Embraer E190-E2	Turbofan	0.1	0.04

Aircraft Code	Aircraft Description	Aircraft Category	Quota Count	
			Departures	Arrivals
E295	Embraer E195-E2	Turbofan	0.125	0.04
E545	Embraer EMB-545 (Legacy 450)	Turbofan	0.05	0.016
E550	Embraer EMB-550 (Legacy 500)	Turbofan	0.063	0.025
E55P	Embraer EMB-505 (Phenom 300)	Turbofan	0.063	0.02
F2TH	Dassault Falcon 2000	Turbofan	0.25	0.016
F900	Dassault Falcon 900	Turbofan	0.2	0.04
FA50	Dassault Falcon 50	Turbofan	0.4	0.1
FA7X	Dassault Falcon 7X	Turbofan	0.4	0.063
FA8X	Dassault Falcon 8X	Turbofan	0.25	0.04
G150	Gulfstream G150	Turbofan	0.25	0.0315
G280	Gulfstream G280	Turbofan	0.125	0.02
GA5C	Gulfstream GVII-G500	Turbofan	0.1	0.0315
GA6C	Gulfstream GVII-G600	Turbofan	0.16	0.04
GL5T	Bombardier Global 5000	Turbofan	0.2	0.02
GL7T	Bombardier Global 7000	Turbofan	0.25	0.02
GLEX	Bombardier Global 6000	Turbofan	0.25	0.02
GLF6	Gulfstream G650	Turbofan	0.125	0.02
H25B	Hawker 800	Turbofan	0.25	0.1
J328	Dornier 328JET	Turbofan	0.125	0.016
LJ45	Learjet 45	Turbofan	0.063	0.04
PC24	Pilatus PC-24	Turbofan	0.2	0.0315
RJ85	Avro RJ-85	Turbofan	0.25	0.1
AT42	ATR 42-200	Turboprop	0.08	0.2
AT45	ATR 42-500	Turboprop	0.04	0.2
AT75	ATR 72-500	Turboprop	0.08	0.25
D328	Dornier 328	Turboprop	0.125	0.125
DH8D	De Havilland Canada Dash 8 400	Turboprop	0.08	0.125

Aircraft Code	Aircraft Description	Aircraft Category	Quota Count	
			Departures	Arrivals
F50	Fokker 50	Turboprop	0.125	0.315
SB20	Saab 2000	Turboprop	0.125	0.08
SF34	Saab 340	Turboprop	0.1	0.125
B350	Beechcraft Super King Air 350	Light Prop	0.04	0.125
BE20	Beechcraft Super King Air 200	Light Prop	0.025	0.125
P180	Piaggio P-180 Avanti	Light Prop	0.1	0.315
PA31	Piper PA-31 Navajo	Light Prop	0.1	0.125

**Table A2.1: 2022 Assumed Quota Counts**



## APPENDIX 3

### QUOTA COUNT DAILY AND WEEKLY TOTALS

The following table gives the daily and weekly Quota Count totals for 2022. Values have been rounded to the nearest whole number, therefore in some cases the sum of the daily total may not match the weekly total.

Date	Daily Quota Count	Weekly Total
27/12/2021	13	76
28/12/2021	12	
29/12/2021	14	
30/12/2021	13	
31/12/2021	11	
01/01/2022	2	
02/01/2022	11	
03/01/2022	16	78
04/01/2022	13	
05/01/2022	11	
06/01/2022	11	
07/01/2022	13	
08/01/2022	4	
09/01/2022	10	63
10/01/2022	12	
11/01/2022	8	
12/01/2022	8	
13/01/2022	11	
14/01/2022	12	
15/01/2022	3	
16/01/2022	10	

Date	Daily Quota Count	Weekly Total
17/01/2022	11	61
18/01/2022	6	
19/01/2022	8	
20/01/2022	9	
21/01/2022	13	
22/01/2022	4	
23/01/2022	10	
24/01/2022	11	63
25/01/2022	7	
26/01/2022	7	
27/01/2022	9	
28/01/2022	12	
29/01/2022	4	
30/01/2022	12	
31/01/2022	14	98
01/02/2022	14	
02/02/2022	15	
03/02/2022	17	
04/02/2022	20	
05/02/2022	6	
06/02/2022	12	
07/02/2022	17	105
08/02/2022	15	
09/02/2022	15	
10/02/2022	19	
11/02/2022	20	
12/02/2022	8	
13/02/2022	11	

Date	Daily Quota Count	Weekly Total
14/02/2022	21	96
15/02/2022	18	
16/02/2022	18	
17/02/2022	18	
18/02/2022	5	
19/02/2022	7	
20/02/2022	10	
21/02/2022	20	113
22/02/2022	17	
23/02/2022	18	
24/02/2022	19	
25/02/2022	20	
26/02/2022	7	
27/02/2022	14	
28/02/2022	22	133
01/03/2022	21	
02/03/2022	21	
03/03/2022	24	
04/03/2022	23	
05/03/2022	7	
06/03/2022	14	
07/03/2022	24	136
08/03/2022	21	
09/03/2022	21	
10/03/2022	24	
11/03/2022	23	
12/03/2022	7	
13/03/2022	15	

Date	Daily Quota Count	Weekly Total
14/03/2022	21	136
15/03/2022	24	
16/03/2022	22	
17/03/2022	23	
18/03/2022	24	
19/03/2022	8	
20/03/2022	13	
21/03/2022	24	141
22/03/2022	23	
23/03/2022	23	
24/03/2022	25	
25/03/2022	23	
26/03/2022	7	
27/03/2022	16	
28/03/2022	29	190
29/03/2022	34	
30/03/2022	34	
31/03/2022	33	
01/04/2022	34	
02/04/2022	8	
03/04/2022	17	
04/04/2022	35	199
05/04/2022	35	
06/04/2022	34	
07/04/2022	35	
08/04/2022	33	
09/04/2022	9	
10/04/2022	16	

Date	Daily Quota Count	Weekly Total
11/04/2022	33	183
12/04/2022	34	
13/04/2022	35	
14/04/2022	36	
15/04/2022	21	
16/04/2022	8	
17/04/2022	16	
18/04/2022	23	188
19/04/2022	36	
20/04/2022	35	
21/04/2022	36	
22/04/2022	34	
23/04/2022	6	
24/04/2022	18	
25/04/2022	36	205
26/04/2022	35	
27/04/2022	38	
28/04/2022	37	
29/04/2022	35	
30/04/2022	8	
01/05/2022	17	
02/05/2022	23	201
03/05/2022	38	
04/05/2022	38	
05/05/2022	39	
06/05/2022	37	
07/05/2022	9	
08/05/2022	17	

Date	Daily Quota Count	Weekly Total
09/05/2022	39	218
10/05/2022	38	
11/05/2022	38	
12/05/2022	38	
13/05/2022	37	
14/05/2022	9	
15/05/2022	19	
16/05/2022	37	212
17/05/2022	37	
18/05/2022	38	
19/05/2022	37	
20/05/2022	34	
21/05/2022	9	
22/05/2022	19	
23/05/2022	37	217
24/05/2022	38	
25/05/2022	39	
26/05/2022	38	
27/05/2022	37	
28/05/2022	8	
29/05/2022	19	
30/05/2022	38	186
31/05/2022	37	
01/06/2022	37	
02/06/2022	25	
03/06/2022	25	
04/06/2022	7	
05/06/2022	17	

Date	Daily Quota Count	Weekly Total
06/06/2022	38	214
07/06/2022	38	
08/06/2022	37	
09/06/2022	39	
10/06/2022	36	
11/06/2022	7	
12/06/2022	19	
13/06/2022	38	214
14/06/2022	38	
15/06/2022	37	
16/06/2022	37	
17/06/2022	35	
18/06/2022	9	
19/06/2022	21	
20/06/2022	37	203
21/06/2022	35	
22/06/2022	36	
23/06/2022	38	
24/06/2022	31	
25/06/2022	8	
26/06/2022	18	
27/06/2022	36	197
28/06/2022	35	
29/06/2022	34	
30/06/2022	36	
01/07/2022	31	
02/07/2022	9	
03/07/2022	16	



Date	Daily Quota Count	Weekly Total
04/07/2022	34	206
05/07/2022	36	
06/07/2022	37	
07/07/2022	38	
08/07/2022	34	
09/07/2022	8	
10/07/2022	18	
11/07/2022	35	204
12/07/2022	35	
13/07/2022	36	
14/07/2022	38	
15/07/2022	33	
16/07/2022	9	
17/07/2022	18	
18/07/2022	33	191
19/07/2022	32	
20/07/2022	33	
21/07/2022	33	
22/07/2022	34	
23/07/2022	8	
24/07/2022	18	
25/07/2022	33	195
26/07/2022	32	
27/07/2022	34	
28/07/2022	35	
29/07/2022	34	
30/07/2022	9	
31/07/2022	18	

Date	Daily Quota Count	Weekly Total
01/08/2022	32	186
02/08/2022	30	
03/08/2022	34	
04/08/2022	33	
05/08/2022	32	
06/08/2022	9	
07/08/2022	16	
08/08/2022	33	189
09/08/2022	32	
10/08/2022	31	
11/08/2022	33	
12/08/2022	33	
13/08/2022	9	
14/08/2022	18	
15/08/2022	32	185
16/08/2022	33	
17/08/2022	28	
18/08/2022	33	
19/08/2022	32	
20/08/2022	9	
21/08/2022	17	
22/08/2022	32	189
23/08/2022	33	
24/08/2022	32	
25/08/2022	32	
26/08/2022	33	
27/08/2022	9	
28/08/2022	19	

Date	Daily Quota Count	Weekly Total
29/08/2022	24	195
30/08/2022	34	
31/08/2022	33	
01/09/2022	37	
02/09/2022	37	
03/09/2022	10	
04/09/2022	20	
05/09/2022	36	204
06/09/2022	35	
07/09/2022	36	
08/09/2022	36	
09/09/2022	35	
10/09/2022	8	
11/09/2022	18	
12/09/2022	35	199
13/09/2022	35	
14/09/2022	37	
15/09/2022	36	
16/09/2022	33	
17/09/2022	7	
18/09/2022	17	
19/09/2022	31	201
20/09/2022	36	
21/09/2022	37	
22/09/2022	36	
23/09/2022	34	
24/09/2022	8	
25/09/2022	18	

Date	Daily Quota Count	Weekly Total
26/09/2022	34	196
27/09/2022	35	
28/09/2022	35	
29/09/2022	34	
30/09/2022	32	
01/10/2022	7	
02/10/2022	19	
03/10/2022	36	205
04/10/2022	37	
05/10/2022	36	
06/10/2022	36	
07/10/2022	36	
08/10/2022	7	
09/10/2022	17	205
10/10/2022	35	
11/10/2022	35	
12/10/2022	37	
13/10/2022	36	
14/10/2022	36	
15/10/2022	7	197
16/10/2022	18	
17/10/2022	35	
18/10/2022	36	
19/10/2022	35	
20/10/2022	35	
21/10/2022	31	
22/10/2022	8	197
23/10/2022	17	

Date	Daily Quota Count	Weekly Total
24/10/2022	35	202
25/10/2022	36	
26/10/2022	35	
27/10/2022	36	
28/10/2022	36	
29/10/2022	8	
30/10/2022	17	
31/10/2022	34	200
01/11/2022	36	
02/11/2022	36	
03/11/2022	36	
04/11/2022	33	
05/11/2022	8	
06/11/2022	18	
07/11/2022	37	197
08/11/2022	35	
09/11/2022	37	
10/11/2022	38	
11/11/2022	33	
12/11/2022	7	
13/11/2022	9	
14/11/2022	22	190
15/11/2022	35	
16/11/2022	37	
17/11/2022	36	
18/11/2022	35	
19/11/2022	7	
20/11/2022	18	

Date	Daily Quota Count	Weekly Total
21/11/2022	37	202
22/11/2022	36	
23/11/2022	36	
24/11/2022	36	
25/11/2022	33	
26/11/2022	6	
27/11/2022	18	
28/11/2022	37	205
29/11/2022	32	
30/11/2022	36	
01/12/2022	39	
02/12/2022	34	
03/12/2022	8	
04/12/2022	19	
05/12/2022	37	192
06/12/2022	36	
07/12/2022	37	
08/12/2022	39	
09/12/2022	32	
10/12/2022	7	
11/12/2022	4	
12/12/2022	17	180
13/12/2022	32	
14/12/2022	34	
15/12/2022	36	
16/12/2022	34	
17/12/2022	8	
18/12/2022	19	

Date	Daily Quota Count	Weekly Total
19/12/2022	28	156
20/12/2022	31	
21/12/2022	31	
22/12/2022	29	
23/12/2022	32	
24/12/2022	6	
25/12/2022	0	
26/12/2022	16	122
27/12/2022	21	
28/12/2022	25	
29/12/2022	27	
30/12/2022	27	
31/12/2022	7	
01/01/2023	-	

**Table A3.1: 2022 Daily and Weekly Quota Count Totals**

## APPENDIX 4

### 2022 NOISE MONITORING RESULTS BY AIRLINE AND AIRCRAFT TYPE



Table A4.1 presents the 2022 noise monitoring results for each aircraft and airline combination. Results are given separately for sideline, flyover, and approach. Aircraft and airline combinations with fewer than 10 results have been grouped as “Other”. Average noise levels have been rounded to 1 decimal place.

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB
A221	LX	1754	93.8	886	83.8	867	83.5
AT45	LM	907	91.2	451	81.9	455	88.1
AT75	LM	629	91.8	317	82.7	319	87.5
B350	Other	3	89.9	0	-	2	82.5
B461	Other	4	96.8	2	84.8	2	79.9
C25A	AW	32	91.7	13	79.8	12	79.3
C25A	Other	37	91.3	9	78.5	12	79.7
C25B	IX	10	91.5	0	-	2	77.7
C25B	Other	4	90.6	1	82.6	2	79.1
C25C	Other	16	90.8	8	77.7	3	78.8
C510	AS	19	90.5	9	79.1	2	75.6
C510	GA	202	90.2	91	80.1	30	78.1
C510	OO	10	90.3	5	79.6	3	77.1
C510	Other	7	91.3	4	80.2	0	-
C510	PV	28	89.9	14	79.2	3	78.2
C525	Other	4	93.8	2	84.9	2	80.4
C56X	AH	63	89.7	31	78.7	30	80.3
C56X	DC	68	90.1	36	78.4	35	81.2
C56X	NJ	243	90.7	91	77.2	132	80.3
C56X	OO	66	90.5	17	77.3	34	80.1
C56X	Other	52	90.1	25	78.2	27	80.8
C56X	SU	10	91.3	4	77.1	4	80.8

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB
C680	DC	31	91.1	11	77.9	11	76.9
C680	EU	10	89.8	1	78.3	4	78.4
C680	N8	31	92.0	14	81.4	8	78.0
C680	OO	12	92.5	6	80.2	5	78.0
C680	Other	8	90.3	2	74.7	4	79.2
C680	PV	12	91.6	6	79.7	5	77.1
C680	TV	18	92.5	7	76.2	9	78.3
C68A	AS	11	92.5	5	77.3	5	77.6
C68A	DC	21	91.6	7	77.4	10	77.2
C68A	EL	12	91.9	6	79.8	5	76.8
C68A	NJ	379	90.4	136	77.4	190	77.8
C68A	Other	4	92.7	2	79.5	2	77.5
CL35	NJ	177	93.7	78	79.0	87	80.1
CL35	Other	2	96.7	1	80.8	1	80.5
CL60	Other	10	89.3	5	77.3	6	80.2
DH8D	LG	2940	92.3	1364	81.8	1466	84.6
E135	AB	20	91.3	9	77.8	11	79.0
E135	Other	2	92.9	1	78.9	0	-
E190	AZ	1185	99.6	599	88.3	600	84.4
E190	BA	28063	99.4	14113	88.0	14169	84.7
E190	GE	16	97.9	8	87.5	5	84.5
E190	KL	3220	98.8	1624	87.9	1624	84.6
E190	LH	1373	99.3	691	87.5	693	85.2
E190	LO	599	100.2	301	88.5	297	84.4
E190	LX	18	99.9	9	87.6	9	85.6
E190	Other	2	90.3	1	80.1	0	-

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB
E290	LX	851	93.4	428	82.9	430	83.3
E550	FJ	34	92.6	13	79.7	18	79.3
E550	FL	32	93.1	13	79.4	15	79.0
E550	Other	12	92.6	6	81.0	7	77.7
E55P	NJ	297	92.1	125	79.0	147	78.9
E55P	Other	2	96.4	1	83.0	0	-
F2TH	BF	22	91.5	11	80.9	6	76.1
F2TH	DB	18	91.4	8	80.3	6	77.7
F2TH	OO	56	91.1	26	80.8	26	78.6
F2TH	Other	20	91.5	10	81.1	12	78.7
F2TH	PH	56	92.2	28	81.3	22	78.8
F900	Other	12	94.1	6	84.0	6	81.3
FA50	Other	2	96.5	1	87.1	1	79.7
FA7X	9H	14	90.7	7	82.3	6	81.3
FA7X	AB	12	97.1	6	83.9	7	80.3
FA7X	BT	12	88.9	6	81.5	6	80.4
FA7X	CA	12	90.8	6	82.0	5	80.4
FA7X	HB	16	89.9	8	82.4	5	81.0
FA7X	IJ	17	90.0	9	83.6	8	80.2
FA7X	LE	10	87.7	5	83.0	4	81.0
FA7X	MF	10	90.2	5	82.4	4	79.2
FA7X	Other	38	90.9	18	81.7	25	80.6
FA8X	Other	46	91.9	22	82.4	22	80.3
FA8X	PV	24	89.2	12	80.6	12	80.2
FA8X	SH	241	89.1	120	80.5	118	80.4
FA8X	VQ	43	89.1	21	80.7	22	80.5

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB	No. Results	2022 Avg Level, EPNdB
G280	Other	12	91.2	6	81.0	6	80.5
GL5T	Other	6	94.1	2	82.5	3	80.9
GL7T	Other	8	97.1	4	80.5	4	78.9
GLEX	N5	10	93.5	5	82.0	6	80.4
GLEX	NJ	17	92.3	9	81.6	9	80.5
GLEX	Other	22	94.1	11	81.1	11	79.9
GLF6	Other	10	90.0	5	81.9	4	77.9
H25B	Other	2	96.0	1	85.5	0	-
J328	BA	151	93.0	76	83.4	74	85.4
J328	Other	2	95.4	1	85.7	1	86.8
LJ45	Other	6	94.2	3	80.3	0	-
P180	Other	4	90.7	2	80.0	2	91.3
P180	XG	24	92.7	12	84.2	9	91.0
PC24	FY	14	96.1	7	83.9	7	84.2
PC24	JF	77	95.7	37	82.5	38	83.4
PC24	Other	12	94.9	6	81.0	15	83.2
RJ85	Other	2	98.3	1	86.6	2	81.9

**Table A4.1: 2022 Noise Monitoring Results**

**Annual  
Performance  
Report 2022**

# **Annex 4**

## Community and Airline Annual Report (IPS Report) and List of Community Project Fund 2022 Awardees



# LONDON CITY AIRPORT

## ANNUAL COMMUNITY AND AIRLINE REPORT

### 2022

#### Report to

London City Airport  
The Royal Docks  
London E16 2PB

A11327\_07\_RP051\_1.0  
28 March 2023

#### Partners (members)

David Charles, Philippa Gavey, Giles Greenhalgh, David Trew

**Bickerdike Allen Partners LLP** is an integrated practice of Architects, Acousticians, and Construction Technologists, celebrating over 60 years of continuous practice.

**Architects:** Design and project management services which cover all stages of design, from feasibility and planning through to construction on site and completion.

**Acoustic Consultants:** Expertise in planning and noise, the control of noise and vibration and the sound insulation and acoustic treatment of buildings.

**Construction Technology Consultants:** Expertise in building cladding, technical appraisals and defect investigation and provision of construction expert witness services.

<b>Contents</b>	<b>Page No.</b>
1.0 Introduction .....	4
2.0 Incentives and Penalties Scheme (IPS).....	4
Appendix 1: 2022 IPS Results by Airline and Aircraft Type	

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## 1.0 INTRODUCTION

One of the noise control measures at London City Airport (LCA) is the Incentives and Penalties Scheme (IPS), which is part of the wider Noise Management and Mitigation Strategy (NOMMS).

The IPS monitors the noise levels produced by departing aircraft, and if the noise level is above or below certain thresholds then airlines accrue or lose credit points. The noisiest aircraft can also incur a financial penalty.

As part of the IPS, there is a requirement to produce an Annual Community and Airline Report. The relevant text from the IPS is as follows:

*“An annual report shall be produced as part of the Annual Performance Report describing aircraft/airline performance with regard to noise monitoring in terms of good and poor performers and league tables, for the period relating to the immediately preceding calendar year. The most improved airline will be awarded with a partnership delivering the Community Projects Fund with LCA in the following year. The report will be submitted to the airlines, LBN and the LCACC and will also be included in the APR.”*

This report presents the 2022 information to satisfy the IPS requirements.

## 2.0 INCENTIVES AND PENALTIES SCHEME (IPS)

### 2.1 Scheme Details

The IPS makes use of LCA's Noise and Track Keeping (NTK) system, in particular the fixed noise monitors, to monitor departure noise levels. The IPS focuses on incentivising quieter operation of aircraft on departure and penalising noisy departures.

The IPS works as follows:

- The flyover noise level for a given departure is defined as the  $L_{Amax,5}$  noise level measured at the relevant NMT (NMT 5 for runway 27 departures, and NMT 6 for runway 09 departures).
- The measured noise levels are compared with the relevant thresholds.
- If the Fixed Penalty Limit is exceeded, the airline responsible is fined £600<sup>1</sup> per dB(A) of exceedance, and one credit point is removed from the airline's credit account.
- If the Fixed Penalty Limit is not exceeded, but the Credit Removal Threshold is exceeded, one credit point is removed from the airline's credit account.

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<sup>1</sup> Fines were not payable prior to 1st November 2018

- If the Credit Award Threshold is not exceeded, one credit point is added to the airline's credit account.
- An airline may avoid a fixed penalty or credit removal for a particular flight, if they are able to provide a reasonable explanation for the noisy departure. Each exceedance event is considered on a case by case basis to establish whether or not a penalty or credit removal is applied.
- An airline's credit account is reset to zero at the beginning of each calendar year.

The fines for exceeding the Fixed Penalty Limit are paid into London City Airport's Community Fund, and are added to the annual contribution of £75,000 provided to the fund by LCA. The most improved airline each year, as determined by this review, partners the airport in delivering the fund.

## **2.2 London City Airport's Community Fund**

The Community Fund grant provides a financial boost to local groups, such as mental health charities, disability groups, community gardens and sports teams as well as those providing family support, mentoring programmes and employability training. The Community Fund awarded over £77k in 2022, to 28 organisations, including Blind in Business, Get Set Girls, Team Elite Basketball Club, Made in Hackney, and more. A full list is available on the airport website<sup>2</sup>.

Applications are considered twice a year by a board of Trustees from London City Airport and representatives from the local community, as well as an independent chair. This means that with great local insight and expertise, the Trustees evaluate applications using their knowledge to ensure the greatest possible benefit goes to the community.

To qualify for any of the available Grant, an applicant has to be a charity or not for profit organisation and the project is expected to meet one or more of the following criteria:

- build stronger, safer and healthier communities;
- create more sustainable and greener communities;
- raise aspirations of East Londoners; or
- create pathways into employment.

---

<sup>2</sup> <https://www.londoncityairport.com/corporate/responsible-growth/community-fund>

The Community Fund advertises in local newspapers including, Newham & Stratford Recorder, Barking and Dagenham Post, Wharf Life and South London press & Mercury Paper. An example of the advert is reproduced in Figure 1. The fund is also advertised to local MP's and councillors to cascade the information and encourage charities and not-for profit organisations to apply.

**LONDON CITY AIRPORT  
COMMUNITY  
FUND**

**Funding Criteria**  
Applications are open to charities and not-for-profit organisations.  
To qualify your project needs to fit within the following categories:

- Building stronger, safer and healthier communities
- Creating more sustainable and greener communities
- Raising aspirations of East Londoners
- Creating pathways into employment

**£75,000**

To support local charities and organisations that represent inclusive and diverse communities across East London.

**Eligibility**  
See below the eligible locations:

Barking & Dagenham | Bexley | Epping Forest District Council | Greenwich | Hackney | Havering | Newham | Lambeth | Lewisham | Redbridge | Southwark | Tower Hamlets | Waltham Forest

**Apply Now**  
To apply, please fill out the application form on our website:  
[www.londoncityairport.com/corporate/responsible-growth/community-fund](http://www.londoncityairport.com/corporate/responsible-growth/community-fund)  
The Fund has awarded grants to over 100 charities and not-for-profit organisations in East London, distributing more than £360k worth of funding since its launch in May 2019.

Contact us for more information:  
[Community.Fund@londoncityairport.com](mailto:Community.Fund@londoncityairport.com)  
For Terms and Conditions and submission deadlines, please visit our website.

**LONDON CITY AIRPORT**

**Figure 1: Example of Community Fund Advert**

## 2.3 Scheme Operation

The IPS was first implemented on 18 August 2017 on a provisional basis. Credits were awarded or removed but the fixed financial penalties were not payable until the review after 1 year of operation had been carried out.

Following the review of the scheme in 2018, the penalty and credit limits (noise levels) set out in Table 1 were adopted. These have applied from 1<sup>st</sup> November 2018.

Threshold Description	Aircraft Category	Flyover Noise Level, dB L <sub>ASmax</sub>	
		Runway 09	Runway 27
Fixed Penalty Limit	Turbofans	84	84 <sup>1</sup>
	Turboprops	78	78
Credit Removal Threshold	Turbofans	81	82
	Turboprops	75	77
Credit Award Threshold	Turbofans	73	72
	Turboprops	66.5	65.5

<sup>1</sup> If aircraft is between 100m and 300m north of the extended runway centreline, a 0.2 dB reduction is applied

**Table 1: IPS Fixed Penalty Noise Limits and Credit Thresholds**

## 2.4 League Table of Credits

The number of residual credits is given for the most commonly operating airlines (those with at least one departure per week on average) in Table 2. These are based on the thresholds given in Table 1. Full details of the fixed penalties, credit awards and credit removals for 2022 are given by airline in Appendix 1.

<b>Airline</b>	<b>Residual Credits 2022</b>	<b>Residual Credits 2021</b>	<b>Residual Credits Difference 2022 - 2021</b>
Swiss	813	125	688
NetJets Europe	392	232	160
Shell Aircraft	124	24	100
Luxair	134	38	96
BA Cityflyer	174	80	94
Lufthansa	58	11	47
GlobeAir	95	51	44
KLM Royal Dutch Airlines	75	36	39
Aerotaxi del Caribe	42	17	25
Loganair	12	6	6
LOT Polish Airlines	2	5	-3
Sun Air	45	-	-
ITA Airways	37	-	-

**Table 2: 2022 Residual Credits Ranking**

The most improved airline has been determined by comparing the total residual credits in the previous two years. Therefore, Swiss will partner LCA in delivering the Community Fund in 2024.

**Nick Williams**  
for Bickerdike Allen Partners LLP

**David Charles**  
Partner

## APPENDIX 1

### 2022 IPS RESULTS BY AIRLINE AND AIRCRAFT TYPE

Table 3 summarises the number of flights that incurred fixed penalties, credit removals and credit awards in 2022, by airline and aircraft type. Additionally, the total value of fixed penalties which were accrued and the residual number of credits are presented.

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
3AM	FA7X	0	£0	0	1	1
9HJ	F2TH	0	£0	0	3	3
9HL	GLEX	0	£0	0	2	2
AAB	C25C	0	£0	0	1	1
AAB	C56X	0	£0	0	3	3
ABP	E135	0	£0	0	9	9
ABP	FA7X	0	£0	0	2	2
ADN	FA7X	0	£0	0	1	1
ADN	LJ45	0	£0	0	2	2
AHO	C56X	0	£0	0	30	30
AOJ	FA7X	0	£0	0	1	1
ASJ	C510	0	£0	0	9	9
ASJ	C680	0	£0	0	1	1
ASJ	C68A	0	£0	0	4	4
ASJ	FA7X	0	£0	0	2	2
AWU	C25A	0	£0	0	9	9
AWU	C525	0	£0	0	3	3
BAW	E190	0	£0	0	1	1
BFD	F2TH	0	£0	0	8	8
BFD	FA8X	0	£0	0	1	1
BOH	C56X	0	£0	0	3	3
BTX	FA7X	0	£0	0	4	4
BTX	FA8X	0	£0	0	3	3
BTX	PC24	0	£0	0	1	1
CAZ	F2TH	0	£0	0	1	1
CAZ	FA7X	0	£0	0	3	3

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
CFE	E190	0	£0	6	180	174
CLF	E550	0	£0	0	1	1
CLF	FA8X	0	£0	0	3	3
CSC	CL35	0	£0	0	1	1
CSE	C56X	0	£0	0	2	2
CSP	E55P	0	£0	0	1	1
CTM	FA7X	0	£0	0	1	1
DBE	F2TH	0	£0	0	1	1
DBH	E550	0	£0	0	2	2
DBO	F2TH	0	£0	0	6	6
DCA	C56X	0	£0	0	23	23
DCA	C680	0	£0	0	18	18
DCA	C68A	0	£0	0	1	1
DCE	C25C	0	£0	0	1	1
DCS	C56X	0	£0	0	13	13
DCW	C525	0	£0	0	1	1
DLH	E190	0	£0	0	58	58
DSO	F900	0	£0	0	1	1
DSO	FA7X	0	£0	0	1	1
DSO	FA8X	0	£0	0	1	1
ECC	C56X	0	£0	0	3	3
ECC	CL60	0	£0	0	2	2
EDG	G280	0	£0	0	2	2
EFD	C25C	0	£0	0	3	3
EFD	C56X	0	£0	0	1	1
EFD	C680	0	£0	0	2	2
EFD	C68A	0	£0	0	1	1
EFD	FA8X	0	£0	0	1	1
ELJ	C56X	0	£0	0	4	4



<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
ELJ	C680	0	£0	0	4	4
ELJ	C68A	0	£0	0	2	2
EUW	C680	0	£0	0	2	2
FHE	FA7X	0	£0	0	1	1
FHI	FA8X	0	£0	0	1	1
FJO	E550	0	£0	0	1	1
FJO	E135	0	£0	0	3	3
FJO	E550	0	£0	0	9	9
FLJ	E135	0	£0	0	1	1
FLJ	E550	0	£0	0	11	11
FYG	GLEX	0	£0	0	1	1
GAC	C510	0	£0	0	95	95
GER	E190	0	£0	0	1	1
GES	C56X	0	£0	0	3	3
GLJ	GL7T	0	£0	0	1	1
GLJ	GLEX	0	£0	0	1	1
HBJ	FA7X	0	£0	0	4	4
HBJ	FA8X	0	£0	0	1	1
IJM	FA7X	0	£0	0	2	2
IJM	FA8X	0	£0	0	2	2
ITY	E190	0	£0	0	37	37
IXR	C25A	0	£0	0	1	1
IXR	C510	0	£0	0	3	3
IXR	C525	0	£0	0	3	3
JFA	PC24	0	£0	0	16	16
JKH	C25A	0	£0	0	1	1
JSY	C25A	0	£0	0	1	1
KFE	FA7X	0	£0	0	1	1
KL9	E190	0	£0	0	2	2

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
KLM	E190	0	£0	0	75	75
KOC	FA8X	0	£0	0	2	2
LEA	FA7X	0	£0	0	2	2
LGL	DH8D	0	£0	1	134	133
LGL	E190	0	£0	0	1	1
LMJ	C56X	0	£0	0	2	2
LOG	AT42	0	£0	0	11	11
LOG	AT72	0	£0	0	1	1
LOT	E190	0	£0	1	3	2
LXD	PC24	0	£0	0	2	2
LXJ	GLF6	0	£0	0	1	1
MFA	FA7X	0	£0	0	1	1
MFA	FA8X	0	£0	0	2	2
MOZ	C25C	0	£0	0	2	2
N10	CL60	0	£0	0	1	1
N14	GLEX	0	£0	0	1	1
N16	GLEX	0	£0	0	1	1
N17	GLF6	0	£0	0	1	1
N50	GLEX	0	£0	0	5	5
N63	GLF6	0	£0	0	1	1
N65	GLF6	0	£0	0	1	1
N85	G280	0	£0	0	2	2
N88	C680	0	£0	0	5	5
N95	FA8X	0	£0	0	1	1
NJE	C56X	0	£0	0	58	58
NJE	C680	0	£0	0	63	63
NJE	C68A	0	£0	0	71	71
NJE	CL35	0	£0	0	76	76
NJE	E55P	0	£0	0	117	117

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
NJE	GL7T	0	£0	0	1	1
NJE	GLEX	0	£0	0	6	6
NJU	C56X	0	£0	0	1	1
NJU	C650	0	£0	0	11	11
NJU	E55P	0	£0	0	21	21
OML	C68A	0	£0	0	1	1
OOG	C680	0	£0	0	2	2
OOG	F2TH	0	£0	0	25	25
OOH	FA8X	0	£0	0	1	1
OOM	C510	0	£0	0	1	1
OOS	C510	0	£0	0	2	2
OOS	C56X	0	£0	0	16	16
OOV	C560	0	£0	0	1	1
PHC	F2TH	0	£0	0	8	8
PHH	CL60	0	£0	0	2	2
PHJ	F2TH	0	£0	0	10	10
PHT	C510	0	£0	0	1	1
PHW	F2TH	0	£0	0	3	3
PNC	C56X	0	£0	0	1	1
PVT	C510	0	£0	0	1	1
PVT	E135	0	£0	0	1	1
RTG	F2TH	0	£0	0	1	1
SHE	FA7X	0	£0	0	1	1
SHE	FA8X	0	£0	0	123	123
SNM	G280	0	£0	0	1	1
STQ	C25A	0	£0	0	1	1
SUA	C56X	0	£0	0	3	3
SUA	E55P	0	£0	0	1	1
SUI	PC24	0	£0	0	1	1

<b>Airline Code</b>	<b>Aircraft Code</b>	<b>Fixed Penalties (# aircraft)</b>	<b>Fixed Penalties (total value)</b>	<b># Credits Removed</b>	<b># Credits Awarded</b>	<b>Residual Credits</b>
SUS	J328	0	£0	0	45	45
SWR	A221	0	£0	0	482	482
SWR	E290	0	£0	0	331	331
SYB	GLEX	0	£0	0	1	1
TCR	FA8X	0	£0	0	1	1
TVS	C680	0	£0	0	7	7
ULC	FA7X	0	£0	0	1	1
VHF	GL7T	0	£0	0	3	3
VLJ	C25A	0	£0	0	2	2
VPC	CL35	0	£0	0	1	1
VQB	FA8X	0	£0	0	19	19
XGO	P180	0	£0	2	0	-2
XRO	FA7X	0	£0	0	1	1

**Table 3: 2022 IPS results by airline and aircraft type**

## Community Fund 2022 Awardees

### First Tranche – February 2022

Name of the organisation.	£ req.	Boroughs Supporting	Funding Criteria	Category
Breaking Barriers	£ 1,813	All local boroughs	creating pathways into employment	Training & Employment
Kingsley Hall Church and Community Centre	£ 3,000	Barking & Dagenham	building stronger, safer, healthier communities	Food Poverty, helath and wellbeing
Just Kidding	£ 3,000	Hackney	building stronger, safer, healthier communities	Special Education Needs Workshops
Young and Inspired	£ 3,000	Hackney	building stronger, safer, healthier communities	Healthy Eating & support
Misgav	£ 3,000	Hackney	creating pathways into employment	Training & Employment – Women with disabilities
Bags of Taste	£ 3,000	Tower Hamlets	building stronger, safer, healthier communities	Food Poverty, healthy eating
Teen Action	£ 3,000	Hackney	creating pathways into employment	Training and Employment
Inspire Education Business Partnership	£ 3,000	Hackney, WF	raising aspirations of East Londoners	Employability Programme for SEN
Young Lewisham Project	£ 2,970	Lewisham	building stronger, safer, healthier communities	Vocational activities for young people
Caramel Rock	£ 3,000	Newham	raising aspirations of East Londoners, creating pathways into employment	Tutoring & mentoring for young people
Green Schools Project CIC	£ 2,900	Newham	creating more sustainable and greener communities	Sustainability
ELREM FOUNDATION CIC	£ 3,000	Newham	building stronger, safer, healthier communities	Sustainability & Wellbeing (Deaf)
Healthy Living Projects Limited	£ 1,000	Redbridge	building stronger, safer, healthier communities	Mental health & wellbeing
<b>13 organisations</b>	<b>£ 35,683</b>			

## Second Tranche July 2022

Name of the organisation.	£ req.	Boroughs Supporting	Funding Criteria	Category
<b>Newham All Star Sports Academy (NASSA)</b>	£ 3,000	Newham	raising aspirations of East Londoners	Sports, mentoring & wellbeing
<b>Calm Minds-UK</b>	£ 2,970	Newham	building stronger, safer, healthier communities	IT literacy for Elderly
<b>Team Elite Basketball Club</b>	£ 2,780	Hackney, Newham, TH	building stronger, safer, healthier communities, raising aspirations of East Londoners, creating pathways into employment	Sports and wellbeing
<b>Anna Fiorentini Performing Arts School</b>	£ 2,960	Hackney, Newham, TH	raising aspirations of East Londoners	Intergenerational Performing arts
<b>The Magpie Project</b>	£ 3,000	Newham	building stronger, safer, healthier communities	Support for parents-playgroup sessions
<b>Stillness Junior School</b>	£ 3,000	Lewisham	creating more sustainable and greener communities	Bio-diversity project
<b>The Poplar Partnership</b>	£ 3,000	Tower Hamlets	building stronger, safer, healthier communities, raising aspirations of East Londoners, creating pathways into employment	Wellbeing & Raising Aspirations
<b>XLP</b>	£ 2,500	Greenwich, Hackney, Newham, Lambeth, Lewisham, Southwark, TH	raising aspirations of East Londoners	Wellbeing & Raising Aspirations
<b>Early Years Cocoon CIC</b>	£ 3,000	Barking and Dagenham	building stronger, safer, healthier communities	Support for parents-playgroup sessions
<b>Support for All</b>	£ 3,000	Hackney	building stronger, safer, healthier communities	Intergenerational activities (youth and elderly)
<b>EZRA UMARPEH LTD</b>	£ 2,000	Hackney	building stronger, safer, healthier communities	Wheelchair renting for disabled residents
<b>Blind in Business</b>	£ 2,000	Various	raising aspirations of East Londoners, creating pathways into employment	Raising Aspirations of Blind Youth
<b>Get Set Girls</b>	£ 2,510	Hackney	building stronger, safer, healthier communities, raising aspirations of East Londoners, creating pathways into employment	Mental Health and Wellbeing /Mentoring
<b>Dorset Community Association</b>	£ 2,860	Tower Hamlets	building stronger, safer, healthier communities	Exercise and wellbeing
<b>Made In Hackney</b>	£ 3,000	Hackney	building stronger, safer, healthier communities	Food poverty
<b>15 Organisations</b>	<b>£ 41,580</b>			

**Annual  
Performance  
Report 2022**

# **Annex 5**

## Annual Air Quality Monitoring Report





# **London City Airport Air Quality Monitoring Strategy: Annual Report 2022**

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April 2023



Experts in air quality  
management & assessment



## Document Control

<b>Client</b>	London City Airport	<b>Principal Contact</b>	Francesca Pacifico
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## Contents

Executive Summary .....	2
1 Introduction .....	5
2 Assessment Criteria .....	6
3 Monitoring Methodology and Results .....	8
4 Data Analyses .....	19
5 References .....	26
6 Glossary .....	27
A1 Nitrogen Oxides Results .....	28
A2 Diffusion Tube Data .....	29
A3 Bias Adjustment Factor for Diffusion Tubes .....	30
A4 Diffusion Tube Precision .....	32
A5 Adjustment of Short-Term Data to Annual Means .....	33
A6 Detailed Trend Analysis .....	34

## Executive Summary

This document represents the 2022 Annual Report for the Air Quality Monitoring Strategy (AQMS) that is operated by Air Quality Consultants Ltd. on behalf of London City Airport (LCA). This programme measures concentrations of nitrogen dioxide (NO<sub>2</sub>) and fine particles (the so called PM<sub>10</sub> and PM<sub>2.5</sub> fractions, i.e., particles that are less than 10 and 2.5 micrometres in diameter, respectively).

Monitoring is currently carried out at two automatic monitoring stations. One is to the north of Royal Albert Dock adjacent to the Newham Dockside building (LCA-ND), and one is adjacent to King George V House (LCA-KGV). These automatic sites are supplemented by a network of passive monitoring devices (nitrogen dioxide diffusion tubes) located at a further 15 sites in and around the Airport boundary.

The decommissioned monitoring station previously sited on the rooftop of City Aviation House (LCA-CAH) has been replaced by a new automatic nitrogen dioxide analyser located at King George V House, adjacent to the existing FIDAS PM<sub>10</sub> analyser; this re-siting of the NO<sub>x</sub> analyser was agreed and approved by the London Borough of Newham. This new analyser was installed on the 1<sup>st</sup> of June 2022, and underwent a period of testing, configuration and integration for approximately one month. Measured concentrations of nitrogen dioxide from LCA-CAH for 1<sup>st</sup> January 2022 – 31<sup>st</sup> May 2022 (inclusive) are reported, and measured concentrations at LCA-KGV from 1<sup>st</sup> July 2022 to 31<sup>st</sup> December 2022 are reported.

The Government has set a number of air quality objectives to protect human health. These are based on monitoring carried out over the period of a calendar year. In some cases, these objectives refer to average concentrations of pollutants measured over the calendar year (the “annual mean”); in other cases, they refer to the number of hours or days on which a specified pollutant concentration should not be exceeded (for example, no more than 35 days in each calendar year on which PM<sub>10</sub> concentrations exceed 50 µg/m<sup>3</sup>, and no more than 18 hours in each calendar year on which nitrogen dioxide concentrations exceed 200 µg/m<sup>3</sup>). The GLA has also set an aspirational target to achieve the WHO Guideline for PM<sub>2.5</sub> (10 µg/m<sup>3</sup>) by 2030.

In addition to the objectives, the Government has established a set of descriptors for the 1-hour mean concentrations of nitrogen dioxide and 24-hour mean concentrations of PM<sub>10</sub> and PM<sub>2.5</sub>. Air quality is defined by these descriptors as being ‘Low’, ‘Moderate’, ‘High’ or ‘Very High’.

Pollution concentrations measured in and around the Airport are associated with a wide range of sources at the local, regional, national and international scales. On occasions when pollution levels rise, these higher levels are often observed across the whole of London as a “regional pollution episode”. To assist with the interpretation of the results, pollution levels measured at other London monitoring sites are included in this report.

## Nitrogen Dioxide

The 2022 annual mean nitrogen dioxide concentration measured at the automatic station at the Newham Dockside (LCA-ND) site was 22.1  $\mu\text{g}/\text{m}^3$  (micrograms per cubic metre). An estimated annual mean concentration of 18.8  $\mu\text{g}/\text{m}^3$  was measured at the King George V House site, and an estimated annual mean concentration of 20.3  $\mu\text{g}/\text{m}^3$  was measured at City Aviation House; the estimates were derived using “annualisation” approaches published by Defra. The annual mean objective (40  $\mu\text{g}/\text{m}^3$ ) was not exceeded at any of the automatic sites in 2022.

There were 11 exceedances of the 1-hour mean objective value (200  $\mu\text{g}/\text{m}^3$ ) at the Newham Dockside site (believed to be associated with a localised, non-airport source), but no exceedances of the 1-hour mean objective at either the King George V House or City Aviation House sites. The vast majority (> 99%) of the 1-hour mean concentrations across all three sites fell into the “Low” pollution band.

Annual mean concentrations of nitrogen dioxide at other background and roadside sites elsewhere in London over this period ranged from 16.0 to 23.8  $\mu\text{g}/\text{m}^3$ . The 1-hour mean concentrations over the year show similar patterns at all Airport monitoring sites. There was a good correlation between observed peaks at the Airport sites and other London sites, suggesting that these occurrences were principally due to regional sources and changing weather conditions that affect the dispersion and dilution of pollutant emissions.

The annual mean nitrogen dioxide concentrations measured at the diffusion tube sites ranged from 18.7 to 26.7  $\mu\text{g}/\text{m}^3$  compared with the objective value of 40  $\mu\text{g}/\text{m}^3$ . There were no measured exceedances of the air quality objective. As measured concentrations are well below 60  $\mu\text{g}/\text{m}^3$ , it is highly unlikely that the 1-hour mean objective was exceeded (based on empirical relationships published by Defra).

## Fine Particles (PM<sub>10</sub>)

The annual mean PM<sub>10</sub> concentration measured at the automatic station situated at King George V House was 14.6  $\mu\text{g}/\text{m}^3$ . This is well below the objective value of 40  $\mu\text{g}/\text{m}^3$ . There were five recorded exceedances of the 24-hour mean objective (compared with the 35 exceedances allowed in a calendar year). The majority (98.6%) of the running 24-hour mean concentrations were classified as ‘Low’, 1.1% were ‘Moderate’, and the remaining 0.3% were ‘High’. There were no running 24-hour mean concentrations within the ‘Very High’ pollution band.

24-hour mean concentrations of PM<sub>10</sub> at other background sites in London over this period showed a similar pattern to those seen at the Airport site. There was a good correlation between observed peaks at the Airport site and other London sites, suggesting that these occurrences were principally due to regional sources and changing weather conditions that affect the dispersion and dilution of pollutant emissions.

## Fine Particles (PM<sub>2.5</sub>)

The annual mean PM<sub>2.5</sub> concentration measured at the automatic station at King George V House was 9.2 µg/m<sup>3</sup>, well below the objective value of 25 µg/m<sup>3</sup>, and below the GLA target of 10 µg/m<sup>3</sup>. The majority (98.6%) of the running 24-hour mean concentrations were classified as 'Low', 1.1% were 'Moderate', and the remaining 0.3% were 'High'. There were no running 24-hour mean concentrations within the 'Very High' pollution band.

Concentrations of PM<sub>2.5</sub> at other background and roadside sites in London over this period showed similar patterns and correlation in observed peaks as that at the Airport site. As for PM<sub>10</sub>, this suggests that these occurrences were principally attributable to regional sources.

# 1 Introduction

- 1.1 This document represents the 2022 Annual Report for the Air Quality Monitoring Strategy (AQMS), operated on behalf of London City Airport (LCA).
- 1.2 The City Airport Development Programme (CADP) 1 planning application 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. Condition 57 of the CADP 1 planning permission requires that an Air Quality Monitoring Strategy be implemented on commencement of the development.
- 1.3 The AQMS, as defined within Condition 57, requires the operation of two automatic air quality monitoring stations and a network of nitrogen dioxide diffusion tubes situated in and around the Airport site.
- 1.4 The AQMS also included a commitment to commission a new site measuring PM<sub>2.5</sub> concentrations before 31 December 2018 at King George V House. This new site was fully operational on 1<sup>st</sup> January 2019, and records concentrations of both PM<sub>10</sub> and PM<sub>2.5</sub>; both metrics have been included within this report.
- 1.5 The PM<sub>10</sub> and nitrogen dioxide automatic analysers, previously situated on the rooftop of City Aviation House, were decommissioned at the end of September 2020 and May 2022, respectively, in agreement with the London Borough of Newham. They have been replaced with a combined PM<sub>10</sub>/PM<sub>2.5</sub> analyser and a new NO<sub>x</sub> analyser at KGV House
- 1.6 The AQMS is managed by Air Quality Consultants Ltd. (AQC) on behalf of London City Airport. Service support for the automatic monitoring stations is provided by Enviro Technology Services plc and Aecom Ltd, with Ricardo Energy & Environment providing independent audit checks.
- 1.7 Chapter 2 of this Report sets out the various standards and guidelines against which air pollution concentrations should be compared. Chapter 3 describes the monitoring methodology and provides a summary of the measured concentrations in 2022 with respect to these criteria, and compares the measured concentrations with other local monitoring sites. Chapter 4 then provides an analysis of the monitoring data with respect to trends and source contributions.

## 2 Assessment Criteria

- 2.1 The Government has established a set of air quality standards and objectives to protect human health. The 'standards' are set as concentrations below which effects are unlikely even in sensitive population groups, or below which risks to public health would be exceedingly small. 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) and the Air Quality (England) (Amendment) Regulations (2002).
- 2.2 For PM<sub>2.5</sub>, the objective set by Defra for local authorities is to work toward reducing concentrations without setting any specific numerical value. In the absence of a numerical objective, it is convention to assess local air quality impacts against the limit value (see Paragraph 2.5), originally set at 25 µg/m<sup>3</sup> and currently set at 20 µg/m<sup>3</sup>.
- 2.3 The WHO has set a guideline for annual mean PM<sub>2.5</sub> concentrations of 10 µg/m<sup>3</sup>. The guideline is not currently in UK regulations and there is no requirement to assess against it at this time. However, achievement of the guideline is a long-term aspiration of the UK Government and the GLA has set out an intent in the London Environment Strategy to achieve it by 2030<sup>1</sup>. As such, consideration to this guideline has been included within this report.
- 2.4 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 has set two legally binding targets for PM<sub>2.5</sub> to be achieved by 2040. These are a maximum annual mean concentration target of 10 µg/m<sup>3</sup> (AMCT), and a population exposure reduction target of 35% compared to 2018 (PERT). Compliance with these targets is to be based on national monitoring undertaken by Defra. There is no way to project 2022 concentrations forward to 2040 at this stage.
- 2.5 EU Directive 2008/50/EC (The European Parliament and the Council of the European Union, 2008) sets limit values for nitrogen dioxide, PM<sub>10</sub> and PM<sub>2.5</sub>, and is implemented in UK law through the Air Quality Standards Regulations (2010). The limit values for nitrogen dioxide are the same numerical concentrations as the UK objectives, but achievement of these values is a national obligation 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).

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<sup>1</sup> The WHO Guideline of 10 µg/m<sup>3</sup> was set in 2005. In 2021, WHO revised this guideline down to 5 µg/m<sup>3</sup>. The Mayor has made it clear that the aspiration in London is to achieve the 2005 Guideline by 2030.

2.6 The relevant air quality criteria for this report are provided in Table 1.

**Table 1: Relevant Air Quality Criteria**

Pollutant	Time Period	Objective / Value
<b>Nitrogen Dioxide</b>	1-hour mean	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year
	Annual mean	40 $\mu\text{g}/\text{m}^3$
<b>Fine Particles (PM<sub>10</sub>)<sup>a</sup></b>	24-hour mean	50 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 35 times a year <sup>b</sup>
	Annual mean	40 $\mu\text{g}/\text{m}^3$
<b>Fine Particles (PM<sub>2.5</sub>)</b>	Annual mean <sup>c</sup>	20 $\mu\text{g}/\text{m}^3$
	Annual mean <sup>d</sup>	10 $\mu\text{g}/\text{m}^3$

<sup>a</sup> Measured by the gravimetric method.

<sup>b</sup> Equivalent to a 90th percentile of 24-hour mean concentrations of 50  $\mu\text{g}/\text{m}^3$ .

<sup>c</sup> There is no numerical PM<sub>2.5</sub> objective for local authorities. Convention is to assess against the UK limit value which is currently 20  $\mu\text{g}/\text{m}^3$ .

<sup>d</sup> AMCT to be achieved by 2040, based on national monitoring undertaken by Defra.

2.7 In addition to the objectives, Defra has established a set of descriptors for the 1-hour mean values for nitrogen dioxide and for the 24-hour mean values for PM<sub>10</sub> and PM<sub>2.5</sub>, classifying the concentrations in an index from 1 to 10 and thus labelling the levels as 'Low', 'Moderate', 'High' or 'Very High' (Defra, 2022c). The banding is referred to as the Daily Air Quality Index (DAQI). The DAQI criteria are set out in Table 2.

**Table 2: Daily Air Quality Index Bandings ( $\mu\text{g}/\text{m}^3$ )**

Band	Index	Nitrogen Dioxide 1-hour Mean ( $\mu\text{g}/\text{m}^3$ )	PM <sub>10</sub> 24-hour mean ( $\mu\text{g}/\text{m}^3$ ) <sup>a</sup>	PM <sub>2.5</sub> 24-hour mean ( $\mu\text{g}/\text{m}^3$ ) <sup>a</sup>
<b>Very High</b>	10	601 or more	101 or more	71 or more
<b>High</b>	9	535 – 600	92 – 100	65 – 70
	8	468 – 534	84 – 91	59 – 64
	7	401 – 467	76 – 83	54 – 58
<b>Moderate</b>	6	335 – 400	67 – 75	48 – 53
	5	268 – 334	59 – 66	42 – 47
	4	201 – 267	51 – 58	36 – 41
<b>Low</b>	3	135 – 200	34 – 50	24 – 35
	2	68 – 134	17 – 33	12 – 23
	1	0 – 67	0 – 16	0 – 11

<sup>a</sup> Reference equivalent. 24-hour values are for the period 00:00 to 23:59.



### 3 Monitoring Methodology and Results

#### Automatic Monitoring Stations

3.1 Monitoring was carried out at three automatic stations throughout 2022 as follows:

- City Aviation House (LCA-CAH): Nitrogen dioxide (decommissioned 1<sup>st</sup> June 2022).
- Newham Dockside (LCA-ND): Nitrogen dioxide.
- King George V House (LCA-KGV): Nitrogen dioxide (commissioned 1 July 2022), PM<sub>10</sub> and PM<sub>2.5</sub>.

The locations of the three automatic sites are shown in Figure 1.

3.2 The LCA-ND and LCA-CAH automatic stations measure nitrogen dioxide using a M200E TAPI chemiluminescence analyser, while the LCA-KGV site measure nitrogen dioxide using a T200 chemiluminescence analyser. The LCA-KGV site also measures PM<sub>10</sub> and PM<sub>2.5</sub> using a Palas FIDAS 200 Particulate Monitor. The data are stored as 15-minute mean concentrations, with further processing and ratification of the nitrogen dioxide concentrations to adjust to “reference-equivalent” as recommended by Defra (2022a). The PM<sub>10</sub> and PM<sub>2.5</sub> concentrations measured at LCA-KGV are “reference equivalent” and are unadjusted.

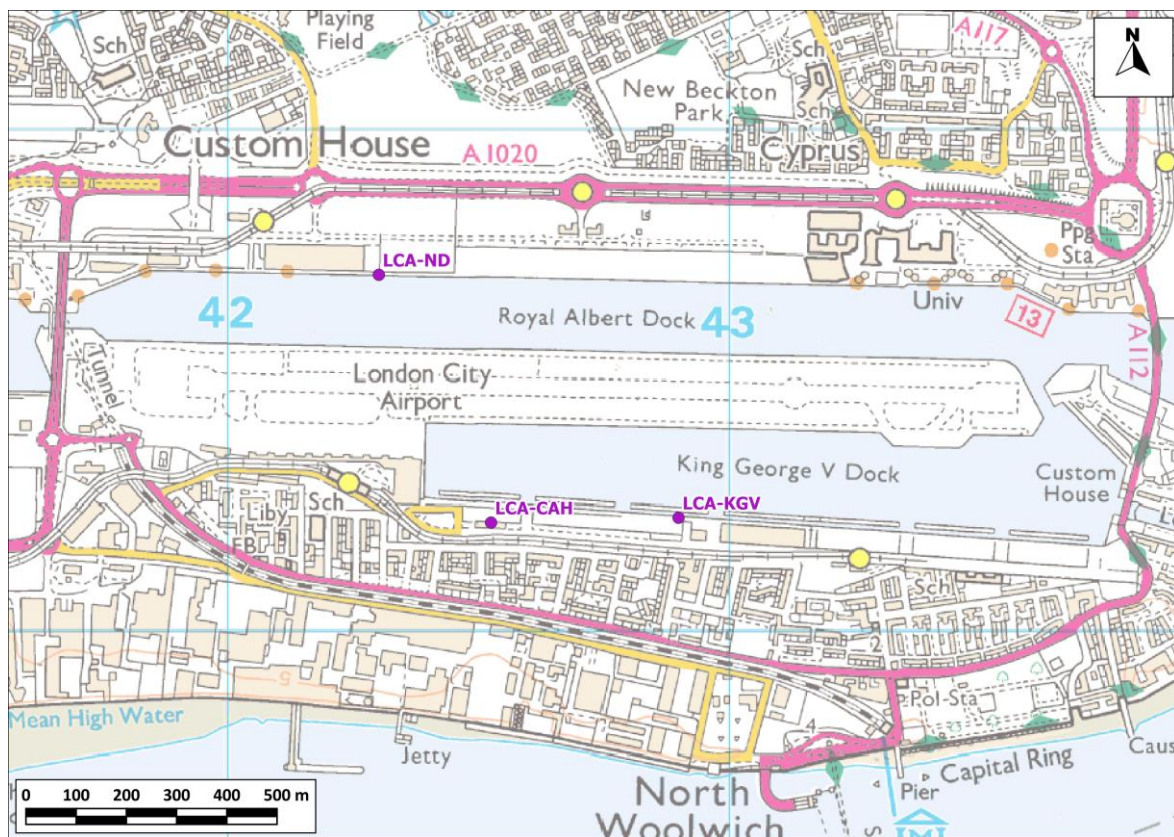
3.3 Independent site audits, conducted by Ricardo-E&E were carried out on 15<sup>th</sup> March 2022, 15<sup>th</sup> September 2022, and 30<sup>th</sup> March 2023. The audits in 2022 confirmed that all automatic monitoring stations were operating above the minimum standards set for the national networks operated by Government. The final audit undertaken in 2023 identified that the LCA-ND site was operating below standard (with regard to the calibration cylinder gas), which has been taken account of in the data ratification process.

3.4 Ratification of the data has been based on calibration factors determined from the calibration reports, along with visual examination of the data and comparison with monitoring data from nearby national network sites (Defra, 2022a). Any erroneous data have been flagged and removed from subsequent analysis. 1-hour, 24-hour, and annual mean concentrations have then been calculated.

3.5 As the LCA-CAH and LCA-KGV sites both had less than 75% data capture for nitrogen dioxide in 2022 (due to the approved decommissioning and recommissioning of the analyser), their respective period means have been ‘annualised’ by deriving an adjustment factor from nearby background monitoring sites in accordance with technical guidance (Defra, 2022a). The annualisation process is detailed further in Appendix A5.

3.6 Pollution concentrations measured at all three automatic Airport monitoring stations are associated with a wide range of sources at the local, regional, national and international scales. On occasions when pollution levels rise, these higher levels are often observed across the whole of London as a “regional pollution episode”. To assist with the interpretation of the results, comparable data have been obtained via the London Air Application Programming Interface (API), which stores data from the UK Automatic Urban and Rural Network (AURN) (Defra, 2022b), London Air Quality Network (LAQM) (Imperial College London, 2023), and monitoring undertaken by local authorities. Data were obtained for the following five sites:

- Bexley – Belvedere (suburban);
- Bexley – Slade Green (suburban);
- Camden – Bloomsbury (background);
- Newham - Wren Close (background); and
- Newham - Cam Road (roadside).



**Figure 1: Automatic Monitoring Locations**

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### Nitrogen Dioxide

- 3.7 The 2022 nitrogen dioxide results for the LCA-CAH, LCA-ND and LCA-KGV automatic monitoring stations are summarised in Table 3. Data capture<sup>2</sup> for LCA-CAH, LCA-ND and LCA-KGV was 41.0%, 85.5% and 47.5%, respectively. The annual mean concentration did not exceed the objective of 40 µg/m<sup>3</sup> at any site. The 1-hour mean objective was also not exceeded at LCA-CAH and LCA-KGV; there were no 1-hour mean concentrations above the objective value (200 µg/m<sup>3</sup>). However, there were 11 recorded concentrations above the objective value at LCA-ND, compared with the 18 exceedances allowed in a calendar year.

**Table 3: Nitrogen Dioxide (NO<sub>2</sub>) Data Summary for LCA-CAH, LCA-ND and LCA-KGV, 2022<sup>a</sup>**

Metric	LCA-CAH <sup>b</sup>	LCA-ND	LCA-KGV <sup>b</sup>	Objectives
	NO <sub>2</sub>	NO <sub>2</sub>	NO <sub>2</sub>	
Maximum 1- Hour Mean	108.8 µg/m <sup>3</sup>	1,091.3 µg/m <sup>3</sup>	100.6 µg/m <sup>3</sup>	-
No. 1-Hour Mean > 200 µg/m <sup>3</sup>	0	11	0	200 µg/m <sup>3</sup> ; no more than 18 exceedances
Annual Mean	22.7 µg/m <sup>3</sup>	22.1 µg/m <sup>3</sup>	18.1 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>
Data Capture	41.0%	85.5%	47.5%	-
Annualisation Factor	0.89	-	1.04	-
Adjusted Annual Mean	20.3 µg/m <sup>3</sup>	-	18.8 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>

<sup>a</sup> Nitrogen oxides concentrations are provided in Appendix 1.

<sup>b</sup> Concentrations annualised due to less than 75% annual data capture.

- 3.8 Table 4 shows the distribution of the 1-hour mean values into the different pollution bands (DAQI). At LCA-CAH and LCA-KGV, all measured 1-hour mean nitrogen dioxide concentrations fell into the 'Low' pollution band during 2022. However, due to a single pollution event<sup>3</sup> on the 23<sup>rd</sup> June (when only the LCA-ND site was recording concentrations) there were three moderately hourly concentrations, three high hourly concentrations, and five very high hourly concentrations at LCA-ND.

<sup>2</sup> It is inevitable that a small amount of data will be "lost" in each year due to routine downtime for calibrations and site servicing. Data capture at CAH and KGV was low due to decommissioning and recommissioning of the analyser.

<sup>3</sup> As detailed in the Q2 2022 report.

**Table 4: DAQI Bandings for Nitrogen Dioxide, 2022**

Band	Index	LCA-CAH	LCA-ND	LCA-KGV
Very High <sup>a</sup>	10		5	
High <sup>a</sup>	9			
	8		1	
	7		2	
Moderate <sup>a</sup>	6			
	5		1	
	4		2	
Low <sup>a</sup>	3		3	
	2	125	225	66
	1	3,466	7,253	4,091

<sup>a</sup> Number of 1-hour values

- 3.9 Nitrogen dioxide concentrations for five monitoring sites across London in 2022 are summarised in Table 5. These sites range from central London (Camden) to outer London (Bexley), with two in east London (Newham). The measured annual mean concentrations at London City Airport (20.3 µg/m<sup>3</sup> at LCA-CAH, 22.1 µg/m<sup>3</sup> LCA-ND, and 18.1 µg/m<sup>3</sup> at LCA-KGV) were higher than those measured at both Bexley sites, similar to those measured at Camden – Bloomsbury and Newham – Wren Close, and lower than those measured at Newham – Cam Road. This is broadly consistent with the location of London City Airport between the areas of high concentrations in central London and lower concentrations towards the outskirts. The maximum 1-hour mean concentrations recorded at LCA-CAH and LCA-KGV are very similar to those measured at other London sites, while the maximum 1-hour mean concentration at LCA-ND is likely to be due to a localised (non-airport) source, as previously concluded in the 2022 Q2 report.

**Table 5: Nitrogen Dioxide (NO<sub>2</sub>) Data Summary for London Monitoring Sites, 2022<sup>a</sup>**

	Background				Roadside
	Bexley Belvedere	Bexley Slade Green	Camden Bloomsbury	Newham Wren Close	Newham Cam Road
Max. 1-hr Mean (µg/m <sup>3</sup> )	112.1	111.5	99.5	113.2	111.7
Period Mean (µg/m <sup>3</sup> )	16.0	17.7	20.7	21.9	23.8
No. 1-hr >200 µg/m <sup>3</sup>	0	0	0	0	0
Data Capture (%)	99.7	96.2	95.9	98.5	97.9

<sup>a</sup> Includes provisional data. Nitrogen oxides concentrations are provided in Appendix 1.

### Particulate Matter PM<sub>10</sub>

- 3.10 The PM<sub>10</sub> results for the LCA-KGV automatic monitoring station are summarised in Table 6. Data capture was good (99.9%) at LCA-KGV during the period. The recorded annual mean concentration at LCA-KGV (14.6 µg/m<sup>3</sup>) was well below the objective value of 40 µg/m<sup>3</sup>. There were five measured exceedances of the 24-hour mean objective level of 50 µg/m<sup>3</sup>, compared with the 35 exceedances allowed in a year. The 90<sup>th</sup> percentile of daily mean concentrations at LCA-KGV (24.1 µg/m<sup>3</sup>) was below 50 µg/m<sup>3</sup>.

**Table 6: PM<sub>10</sub> Data Summary for LCA-KGV, 2022**

Metric	LCA-KGV	PM <sub>10</sub> Objectives
	FIDAS	
Maximum 24-hour Mean	76.3 µg/m <sup>3</sup>	-
No. 24-Hour Means >50 µg/m <sup>3</sup>	5	50 µg/m <sup>3</sup> ; no more than 35 exceedances
90 <sup>th</sup> Percentile	24.1 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
Annual Mean	14.6 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>
Data Capture	99.9%	-

- 3.11 Table 7 includes the distribution of the 24-hour mean values into the different pollution bands (DAQI). Most of the 24-hour mean measured PM<sub>10</sub> concentrations during 2022 fell into the 'Low' pollution band (98.6%), with four occasions falling into the 'Moderate' band, and one occasion falling into the 'High' band. There were no 'Very High' pollution events.

**Table 7: DAQI Bandings for PM<sub>10</sub>, 2022**

Band	Index	LCA-KGV
Very High <sup>a</sup>	10	
High <sup>a</sup>	9	
	8	
	7	1
Moderate <sup>a</sup>	6	2
	5	
	4	2
Low <sup>a</sup>	3	5
	2	89
	1	266

<sup>a</sup> Number of 24-hour mean values falling within band.

- 3.12 PM<sub>10</sub> concentrations for four sites across London in 2022 are summarised in Table 8. These sites range from central London (Camden) to outer London (Bexley), with two in east London

(Newham). The measured period mean concentration at LCA-KGV ( $14.6 \mu\text{g}/\text{m}^3$ ) was lower than all these sites. The number of 24-hour mean exceedances of  $50 \mu\text{g}/\text{m}^3$  was similar to those of all the other London sites. The 90<sup>th</sup> percentile of 24-hour means at LCA-KGV was lower than those recorded at all of the other sites.

**Table 8: PM<sub>10</sub> Data Summary of Background London Monitoring Sites, 2022<sup>a</sup>**

	Background			Roadside
	Bexley Slade Green FIDAS	Camden Bloomsbury	Newham Wren Close	Newham Cam Road
Maximum 24-hr mean ( $\mu\text{g}/\text{m}^3$ )	73.3	80.6	70.8	67.2
Period Mean ( $\mu\text{g}/\text{m}^3$ )	15.2	17.6	17.8	16.5
No. 24-hr mean > $50 \mu\text{g}/\text{m}^3$	5	5	4	4
90 <sup>th</sup> Percentile	25.7	29.0	25.8	25.9
Data Capture (%)	99.7	95.6	97.2	94.3

### Particulate Matter PM<sub>2.5</sub>

- 3.13 The 2022 PM<sub>2.5</sub> results for the LCA-KGV automatic monitoring station are summarised in Table 9. Data capture was 99.9% during the period. The recorded annual mean concentration was  $9.2 \mu\text{g}/\text{m}^3$ , and below both the objective and the GLA target.

**Table 9: PM<sub>2.5</sub> Data Summary for LCA-KGV, 2022**

Pollutant	FIDAS
	PM <sub>2.5</sub>
Period Mean	$9.2 \mu\text{g}/\text{m}^3$
Data Capture	99.9%

- 3.14 Table 10 includes the distribution of the 24-hour mean values into the different pollution bands (DAQI). The majority of 24-hour mean measured PM<sub>2.5</sub> concentrations fell into the 'Low' pollution band (98.6%) during 2022; there were also four 24-hour mean values within the 'Moderate' pollution band (1.1%), and one 24-hour mean value within the 'High' band. There were no 'Very High' pollution events.



**Table 10: DAQI Bandings for PM<sub>2.5</sub>, 2022**

Band	Index	LCA-KGV
Very High <sup>a</sup>	10	
High <sup>a</sup>	9	
	8	
	7	1
Moderate <sup>a</sup>	6	2
	5	
	4	2
Low <sup>a</sup>	3	15
	2	65
	1	280

<sup>a</sup> Number of 24-hour mean values falling within band.

- 3.15 PM<sub>2.5</sub> concentrations for four sites in London in 2022 are summarised in Table 11. The sites are the same as those presented for PM<sub>10</sub> concentrations. The measured period mean concentration at London City Airport (9.2 µg/m<sup>3</sup>) was lower than all the other London sites presented.

**Table 11: PM<sub>2.5</sub> Data Summary of London Monitoring Sites, 2022**

	Background			Roadside
	Bexley Slade Green FIDAS	Camden Bloomsbury	Newham Wren Close	Newham Cam Road
Period Mean (µg/m <sup>3</sup> )	9.4	10.3	11.4	10.3
Data Capture (%)	99.7	97.5	97.0	99.2

## Nitrogen Dioxide Diffusion Tube Network

- 3.16 London City Airport also operates a network of passive diffusion tube samplers for nitrogen dioxide. The intent of this network is to establish the wider spatial pattern of nitrogen dioxide concentrations in the area surrounding the Airport. The locations of the monitoring sites are shown in Figure 2, and are described in Table 9; grid references and the monthly mean data are provided in Appendix A2. The diffusion tubes are exposed for approximately 4-week intervals. They are supplied and analysed by Gradko International Ltd. and are prepared using the 20% TEA in water method.
- 3.17 The diffusion tubes record monthly mean concentrations, which have been averaged to give the annual mean. The results cannot, therefore, be directly compared with the 1-hour mean objective.

However, measurements across the UK have shown that the 1-hour mean nitrogen dioxide objective is unlikely to be exceeded where the annual mean concentration is below 60 µg/m<sup>3</sup> (Defra, 2022a).

**Table 9: Description of Diffusion Tube Monitoring Sites <sup>a</sup>**

Location	Site ID
Lamp post at top of Parker Street, adjacent to housing	LCA-01
Lamp post on Camel Road, adjacent to nearest property on Hartmann Street	LCA-02
Lamp post at waterfront to east end of Newham Dockside	LCA-04
Lamp post on Straight Road, at kerbside	LCA-05
Lamp post on pedestrian walkway adjacent to nearest housing at Gallions Way	LCA-06
Landing Lights	LCA-07
Jet Centre – airside	LCA-10
Lamp post at waterfront, eastern end of the University of East London	LCA-11
ILS, to north of runway and south of Royal Albert Dock	LCA-12
Lamp post at north west corner of Newham Dockside	LCA-13
Lamp post on waterfront at western end of Newham Dockside	LCA-14
Lamp post at kerbside (approx 1 m) of Royal Albert Way	LCA-15
Newham Dockside analyser (duplicate tubes)	LCA-18
Lamp post adjacent to roundabout, near to access road in Silvertown Quay. Approx. 1 metre from kerbside of main road.	LCA-20
Lamp post on Brixham Street	LCA-21

<sup>a</sup> LCA-17 was discontinued from January 2012, as the lamppost on which diffusion tubes were deployed had been removed. LCA-16 and LCA-19 were discontinued from January 2017, as the land on which the sites were located had been vacated for construction works. LCA-03 has been discontinued from April 2018 due to ongoing issues with access. LCA-20 was initiated at the start of April 2018. LCA-08 was discontinued in February 2021 as the lamppost on which diffusion tube was deployed had been removed. The site has been relocated to a nearby lamppost and will become operational (LCA-21) in April 2021.

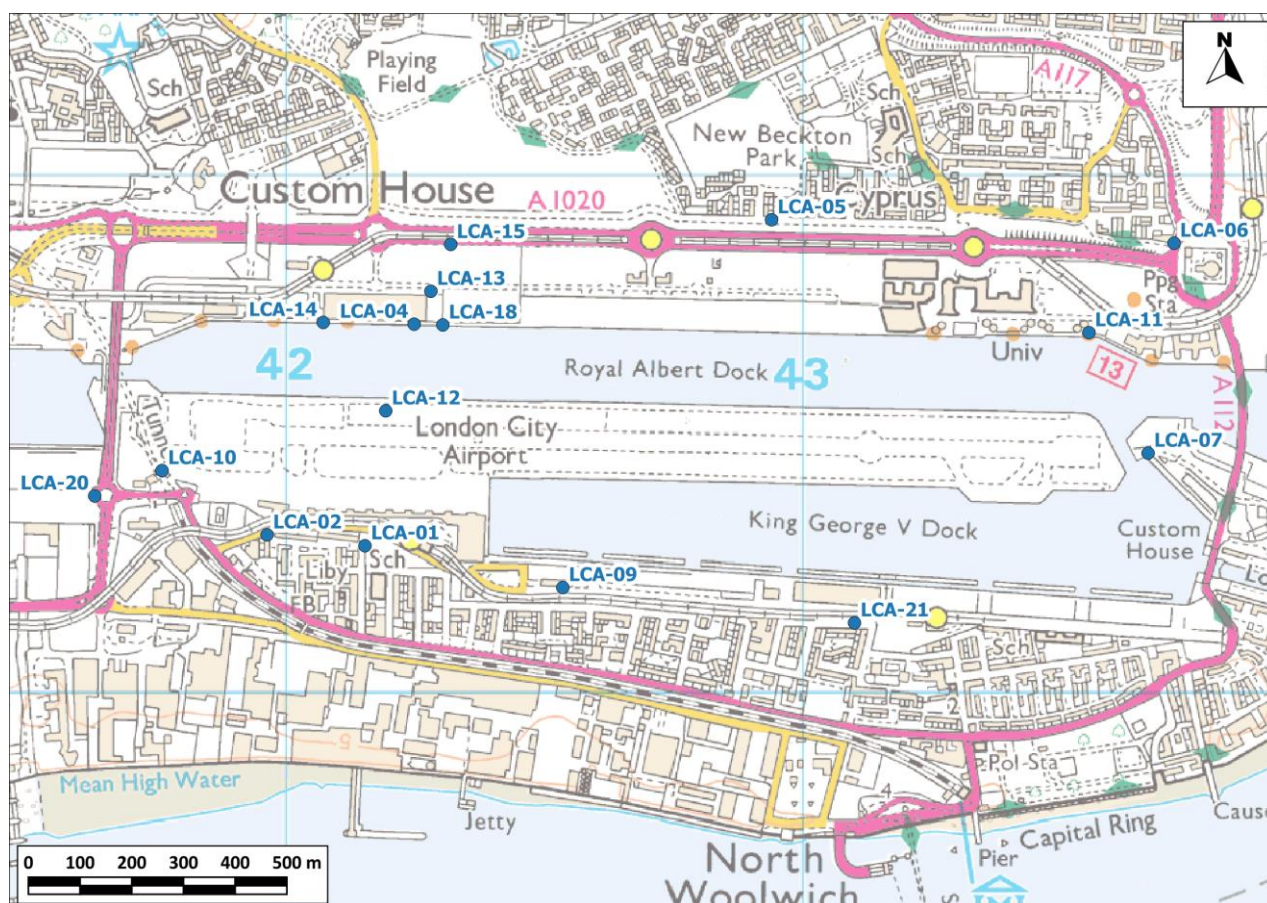
3.18 It is important to note that not all of these monitoring sites represent relevant public exposure for annual mean concentrations of nitrogen dioxide; thus, the objectives are not strictly applicable at all of these sites. For instance, the sites at Landing Lights (LCA 07), the Jet Centre (LCA 10) and the ILS (LCA 12) are located on land that is not generally accessible by the public, or is owned by the Airport. The sites at LCA 04 (at the waterfront of Newham Dockside), LCA 11 (at the waterfront of the University of East London) and LCA 13, 14 and 15 (in the vicinity of Newham Dockside and Royal Albert Way) and LCA 20 would also not represent relevant exposure for annual mean concentrations according to the criteria defined in LLAQM.TG(22)<sup>4</sup>, but are relevant for the 1-hour

<sup>4</sup> Defra Technical Guidance Note LLAQM.TG(22) suggests that in the case of the annual mean objective, relevant locations should not include kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.



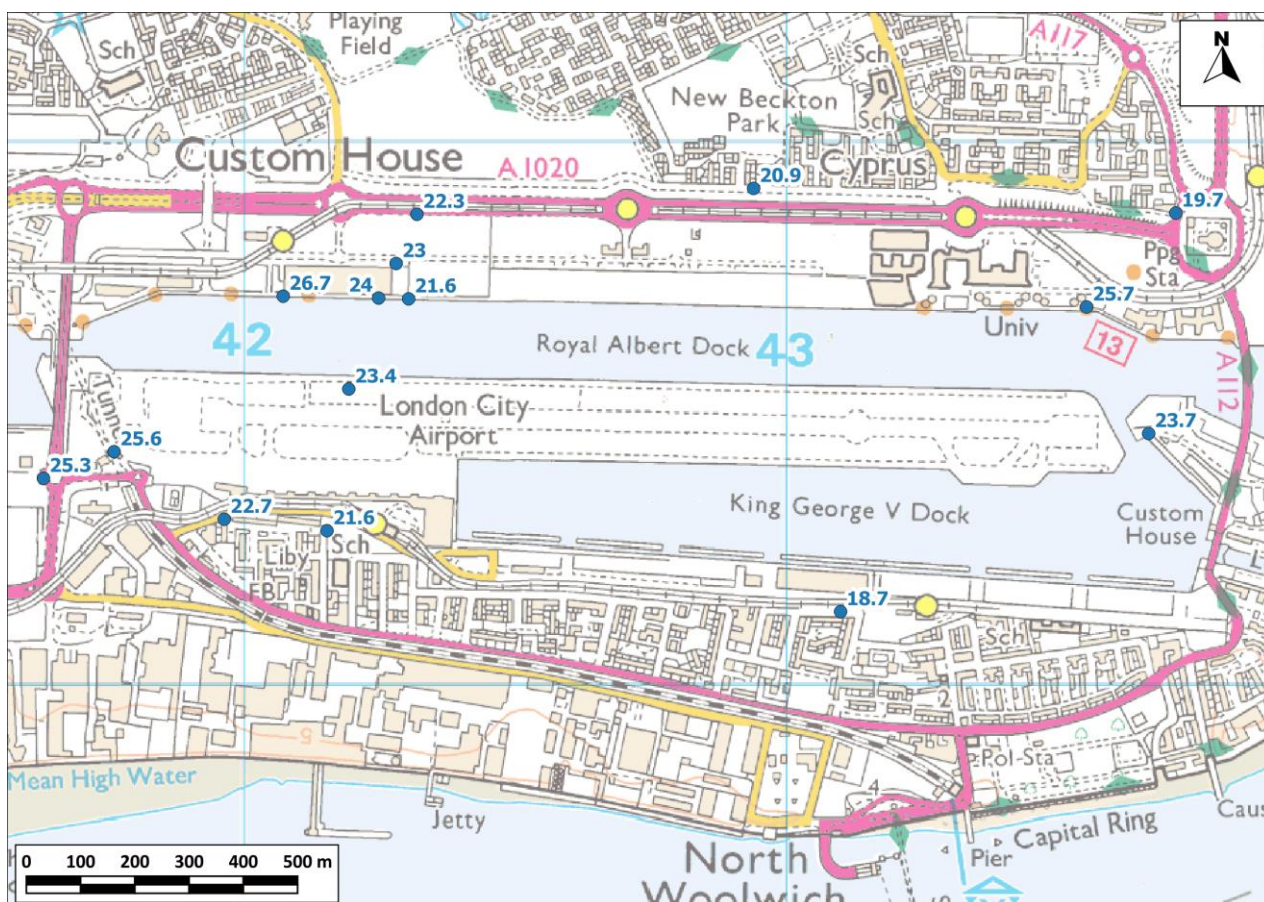
mean objective. These sites have been included in the study to better understand the spatial pattern of nitrogen dioxide concentrations around the Airport.

- 3.19 Diffusion tubes are known to show systematic bias in relation to automatic (reference) monitors. For this reason, a co-location study has been carried out with duplicate tubes exposed near the inlet of the LCA-ND automatic monitor<sup>5</sup>. Comparison of the matched period results shows that the diffusion tubes were over-reading by an average of 14.5%. An adjustment factor of 0.873 has therefore been applied to all diffusion tube results to ensure that they give the best representation of true concentrations (see Appendix 3). The results from the duplicate tubes at LCA-ND indicate overall “good” precision ( $\pm 10.0\%$  at both sites) in 2022 (Defra, 2022a).
- 3.20 The bias-adjusted results are summarised in Table 10, and are also shown in Figure 3. The annual mean objective of  $40 \mu\text{g}/\text{m}^3$  was achieved at all monitoring locations during 2022. All measured annual mean nitrogen dioxide concentrations were well below  $60 \mu\text{g}/\text{m}^3$ , and it is thus unlikely that the 1-hour mean objective was exceeded at any location.



<sup>5</sup> Due to the relocation of the automatic analyser from LCA-CAH to LCA-KGV, the collocation of the diffusions tubes was interrupted. A new collocation of triplicate tubes has been established at LCA-KGV and will be reported in 2023.

**Figure 2: Diffusion Tube Monitoring Locations** © Crown copyright and database right 2023. Ordnance Survey licence number 100046099.



**Figure 3: Nitrogen Dioxide Diffusion Tube Results 2022 (µg/m³)** © Crown copyright and database right 2023. Ordnance Survey licence number 100046099.

**Table 10: Diffusion Tube Data Summary for London City Airport, 2022 (Adjusted for Bias)**

Site ID	Adjusted Value (µg/m³) <sup>a</sup>
LCA 01	21.6
LCA 02	22.7
LCA 04	24.0
LCA 05	20.9
LCA 06	19.7
LCA 07	23.7
LCA 10	25.6
LCA 11	25.7

<b>LCA 12</b>	23.4
<b>LCA 13</b>	23.0
<b>LCA 14</b>	26.7
<b>LCA 15</b>	22.3
<b>LCA 18</b>	21.6
<b>LCA 20</b>	25.3
<b>LCA 21</b>	18.7

<sup>a</sup> Data have been adjusted using a local bias adjustment factor for 2022 of 0.873.

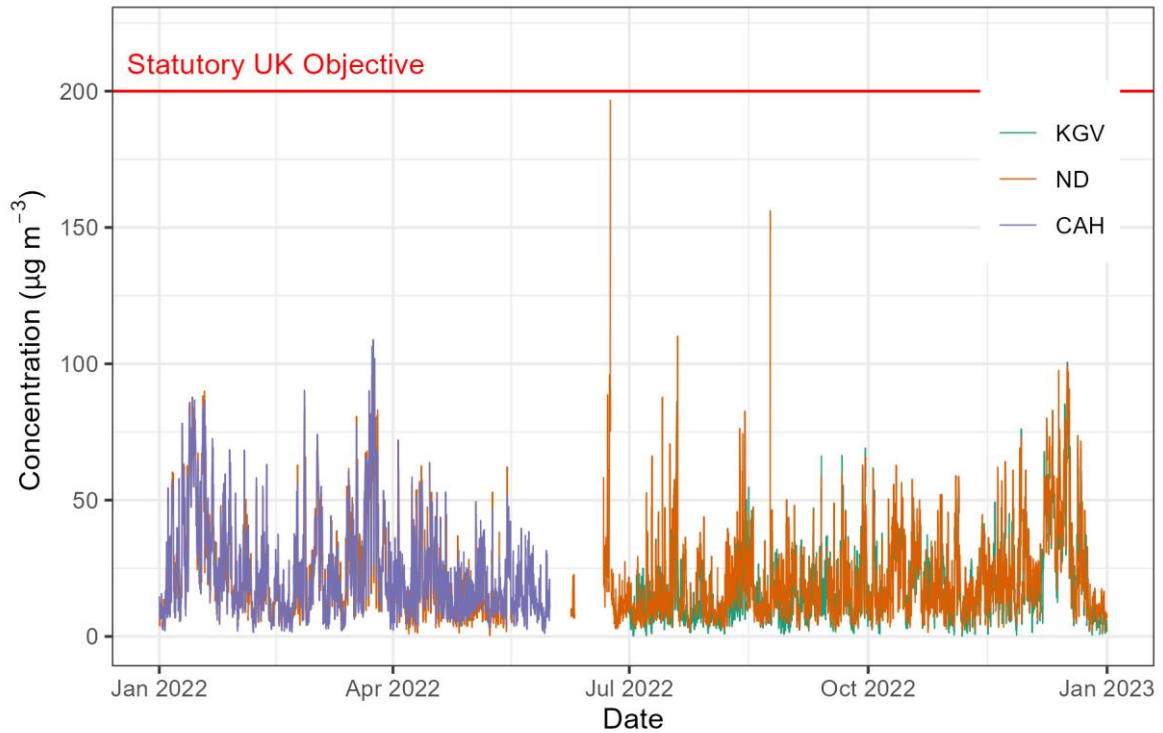
## 4 Data Analyses

- 4.1 This chapter provides analyses of the data, including time series, trends and source contributions.

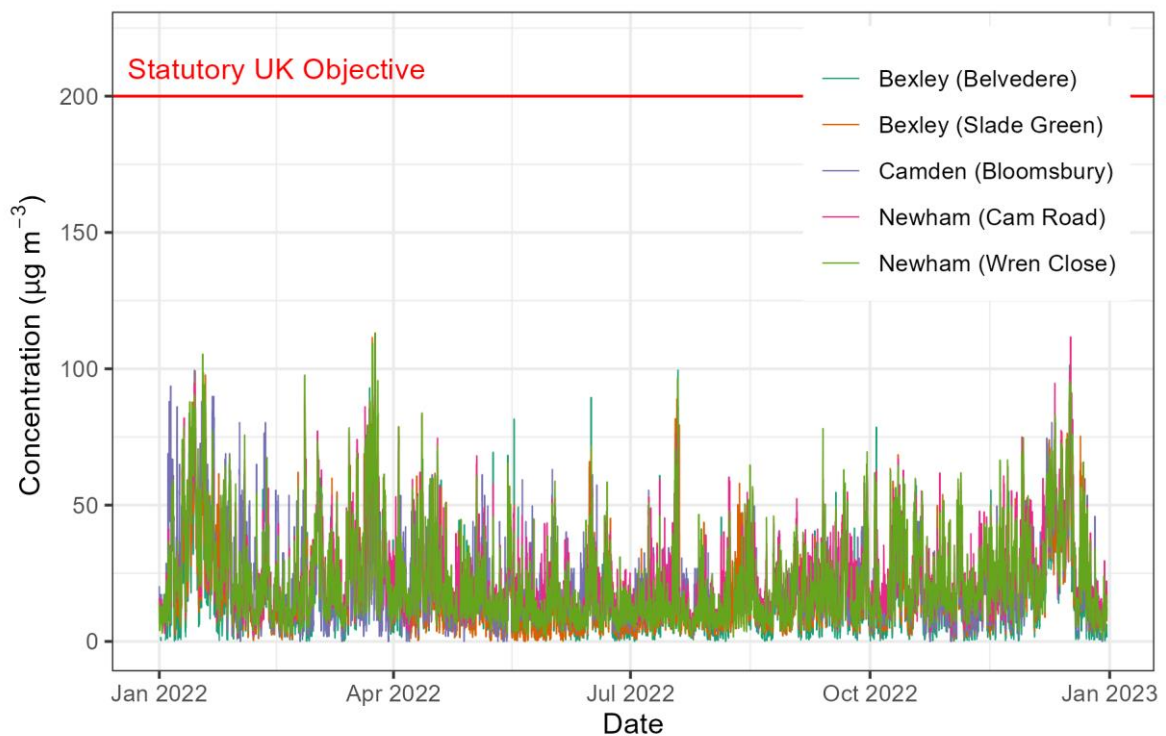
### Time Series

- 4.2 The measured 1-hour mean nitrogen dioxide concentrations at LCA-CAH, LCA-KGV, LCA-ND, Bexley (Belvedere and Slade Green), Camden (Bloomsbury), and Newham (Wren Close and Cam Road), are shown as a time series in Figures 4 and 5 respectively. The concentrations over the year generally show similar patterns at all monitoring sites. The concurrence of periods with elevated concentrations at all sites suggests that these episodes were due to regional changes in concentrations. The only exception to this is the period of high concentrations measured at LCA-ND on the 23<sup>rd</sup> of June which was not recorded at other London monitoring sites, and is thus likely to be due to a localised (and non-airport) source.
- 4.3 The measured daily mean PM<sub>10</sub> concentrations at LCA-KGV, and at Bexley (Slade Green), Camden (Bloomsbury), and Newham (Wren Close and Cam Road), are shown in Figures 6 and 7 respectively. Once again, the analysis suggests that periods of high pollution were principally due to regional changes in concentrations.
- 4.4 As with PM<sub>10</sub>, the concurrence of many periods of elevated PM<sub>2.5</sub> concentrations at all sites (see Figures 8 and 9) suggests that these episodes were due to regional rather than local sources and that changing weather conditions across the region affected the dispersion and dilution of pollutants.

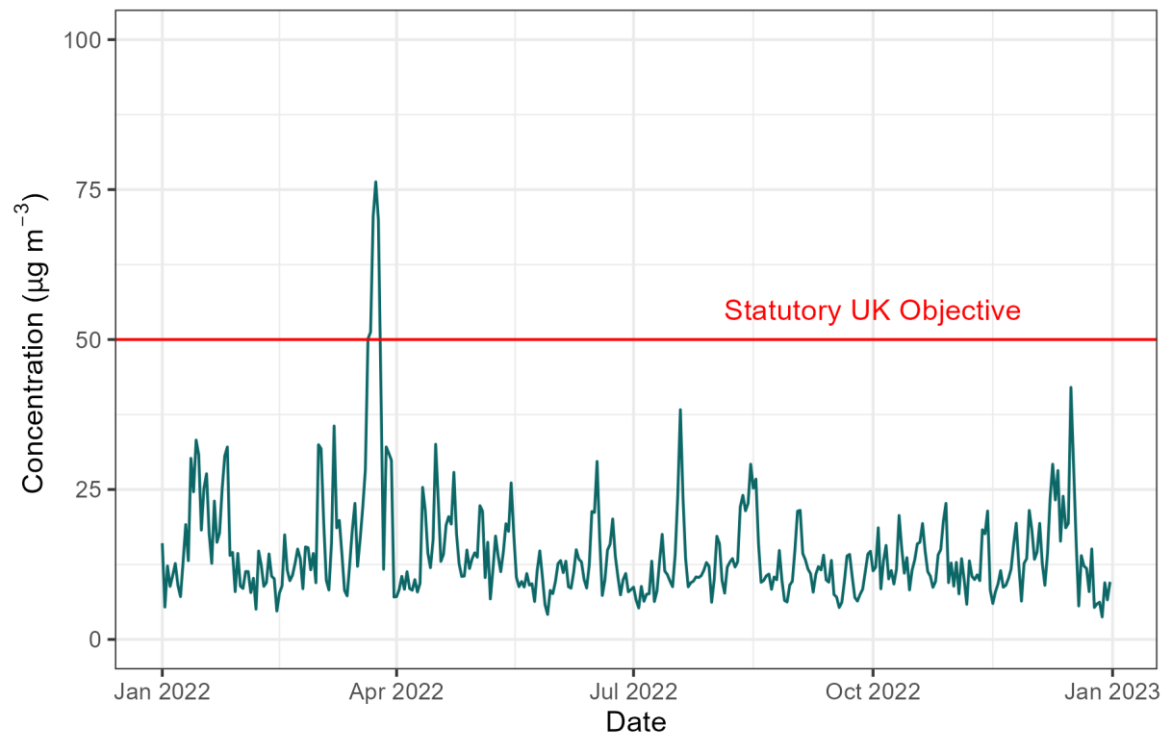




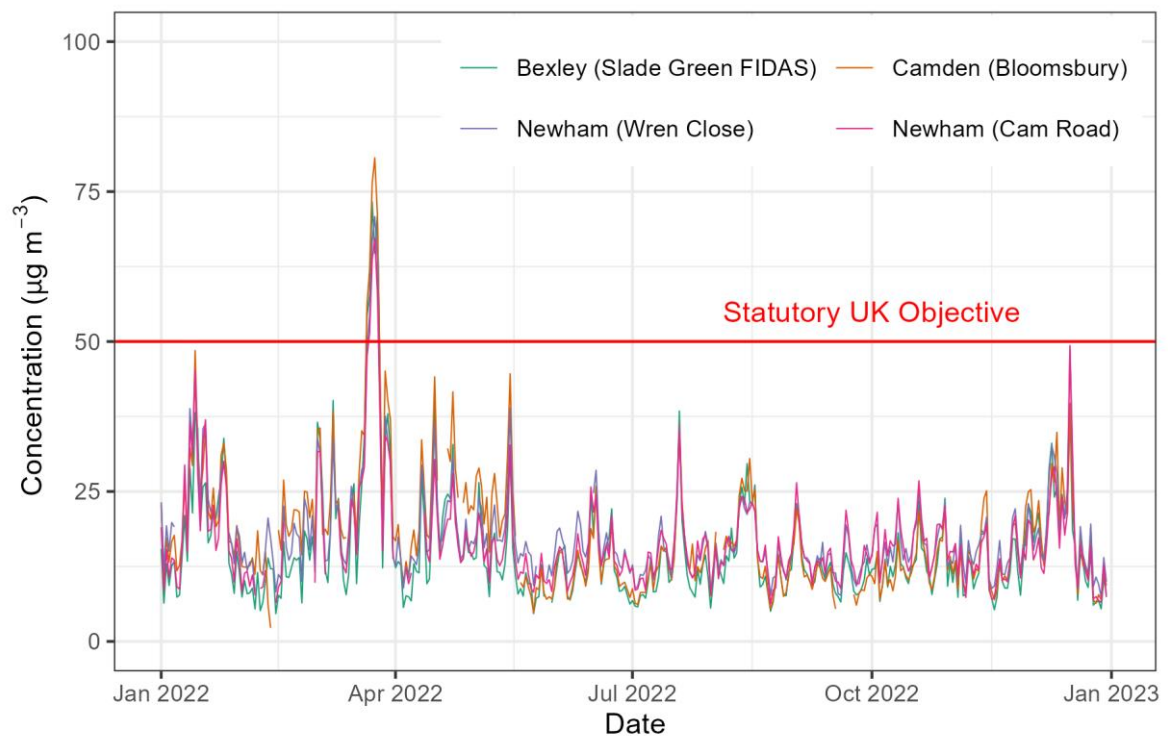
**Figure 4: 1-Hour Mean Nitrogen Dioxide Concentrations at London City Airport, 2022**



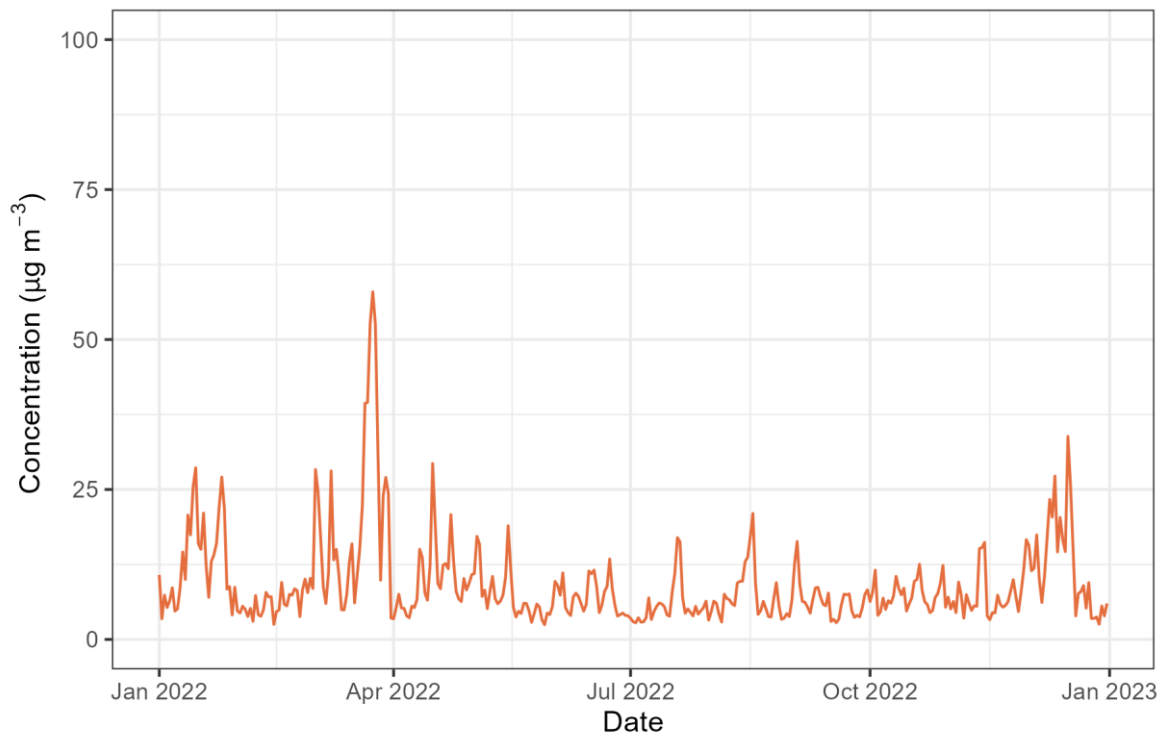
**Figure 5: 1-Hour Mean Nitrogen Dioxide Concentrations at London Monitoring Sites, 2022**



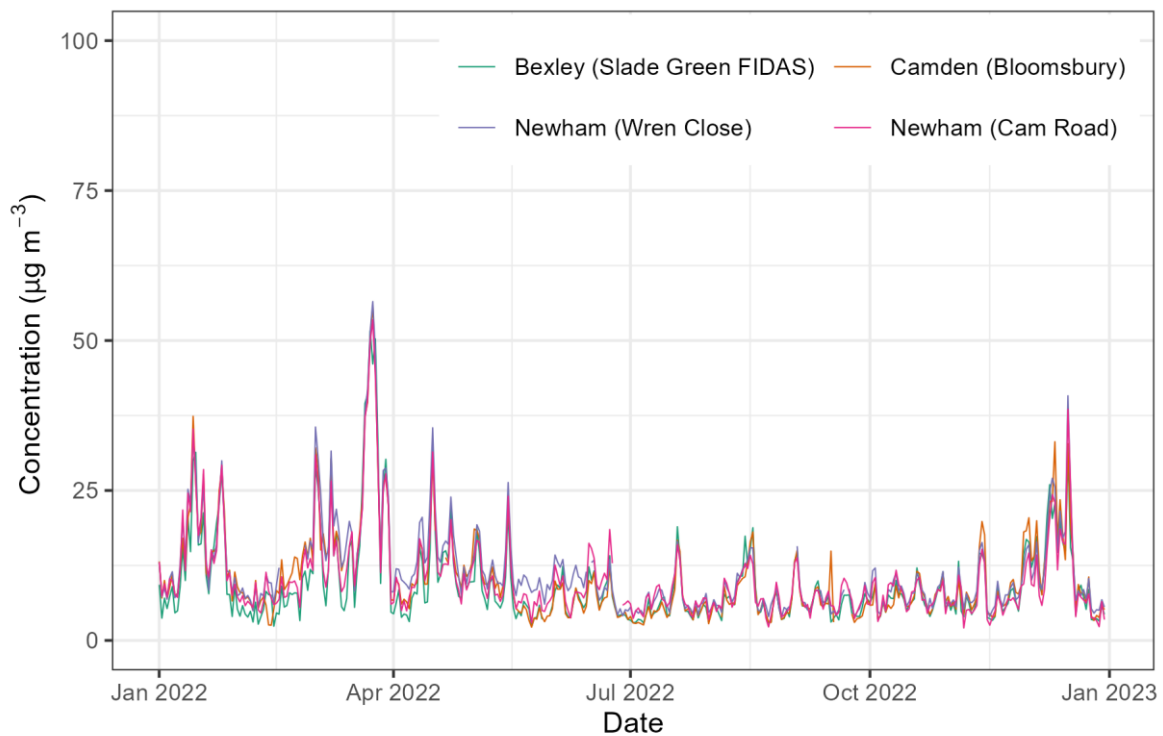
**Figure 6: Daily Mean PM<sub>10</sub> Concentrations at London City Airport (LCA-KGV), 2022**



**Figure 7: Daily Mean PM<sub>10</sub> Concentrations at London Monitoring Sites, 2022**



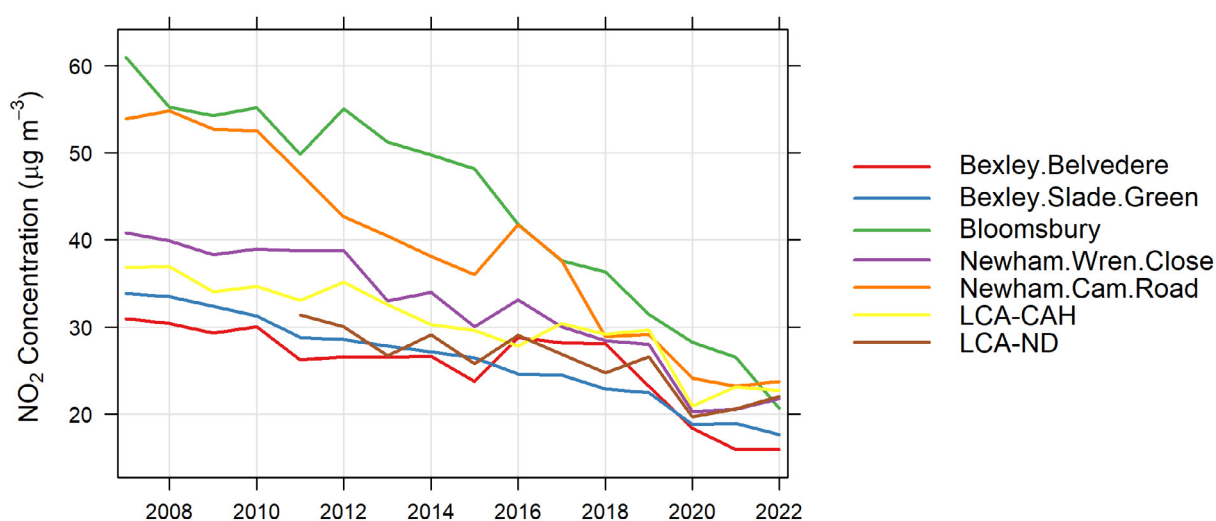
**Figure 8: Daily Mean PM<sub>2.5</sub> Concentrations at London City Airport (LCA-KGV), 2022**



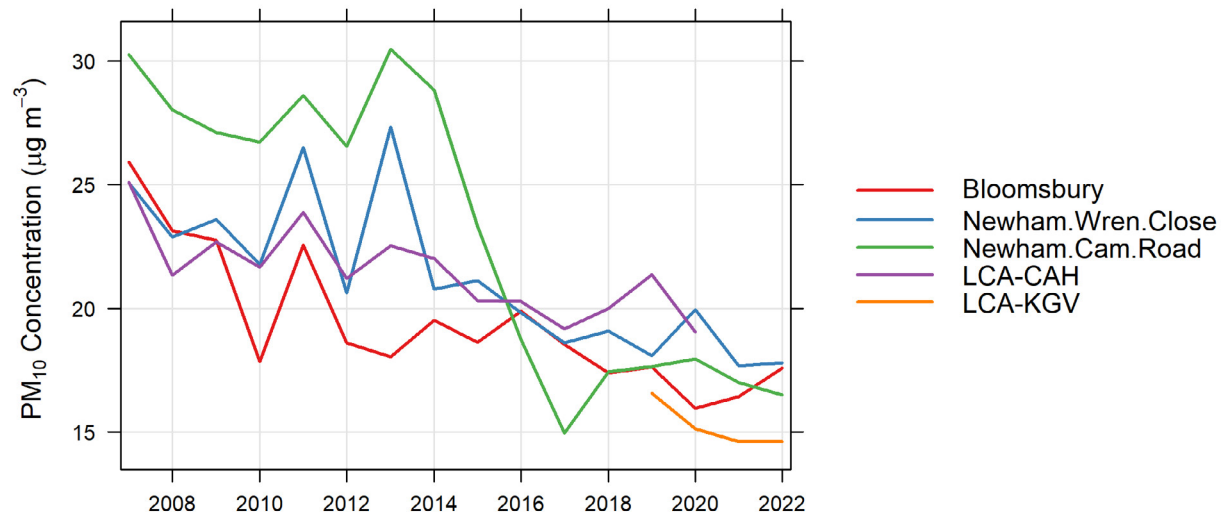
**Figure 9: Daily Mean PM<sub>2.5</sub> Concentrations at London Monitoring Sites, 2022**

## Trends in Pollutant Concentrations

- 4.5 The automatic station at the LCA-CAH site has been in operation since 2006, the LCA-ND site since 2011, and the LCA-KGV site since 2019 (PM<sub>2.5</sub>/PM<sub>10</sub>) and July 2022 (NO<sub>x</sub>/NO<sub>2</sub>). It is therefore appropriate to examine whether there are any trends in the measured pollutant concentrations over time.
- 4.6 Figure 10 shows the trends in measured annual mean nitrogen dioxide concentrations at LCA-CAH, LCA-ND, and at the five other monitoring locations identified for the regional evaluation of pollution episodes (Bexley – Belvedere, Bexley – Slade Green, Camden - Bloomsbury, Newham - Wren Close, and Newham - Cam Road). From a visual examination of Figure 10, there appears to be a general downward trend at all sites from 2007 to 2019, followed by an acceleration of the downward trend in 2020, likely due to Covid-19 lockdown restrictions.
- 4.7 Because of the interest in trends, a more detailed analysis has been carried out, focusing on monitoring sites in the east London area. The results of the detailed analysis are provided in Appendix 6. In summary, there is a statistically significant downward trend at all the east-London monitoring sites for both nitrogen dioxide and nitrogen oxides (NO<sub>x</sub>), including at LCA-CAH and LCA-ND (approximately 0.9 µg/m<sup>3</sup> per annum at both LCA sites over 2007-2022).
- 4.8 The trends in annual mean PM<sub>10</sub> concentrations are shown in Figure 11, for the LCA-KGV site (2019 onwards), LCA-CAH site (2007-2022) and three other monitoring locations, for which sixteen years of data are available. There is generally a downward trend between 2007 and 2022; concentrations in 2007 were all above 20 µg/m<sup>3</sup>, whereas concentrations in 2022 were all lower than 20 µg/m<sup>3</sup>.





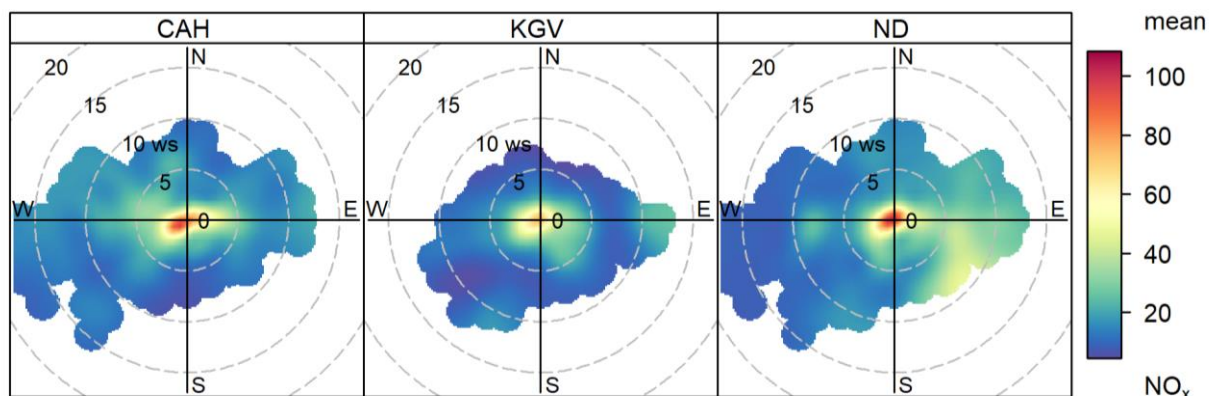
**Figure 10: Annual Mean Nitrogen Dioxide Concentrations, 2007 – 2022 ( $\mu\text{g}/\text{m}^3$ )****Figure 11: Annual Mean PM<sub>10</sub> Concentrations, 2007 – 2022 ( $\mu\text{g}/\text{m}^3$ )**

## Bivariate Pollution Roses

- 4.9 Pollution roses are a useful technique for exploring the influence of different sources of air pollution at a monitoring site. Bivariate pollution roses have been prepared using the “Openair” software<sup>6</sup>. These bivariate roses process average pollution concentration data by both wind direction and wind speed. They provide a powerful tool in identifying source contributions to measured concentrations at monitoring sites. The concentrations are shown by colour shading, with the distance from the centre point representing increasing wind speed.
- 4.10 It is known from both modelling studies and the analysis of empirical data that emissions from different source types behave differently in low and high wind speed conditions. For emissions from ground-level sources (such as road traffic), concentrations are highest during low wind speeds, and decrease rapidly with increasing wind speed (due to greater dilution and dispersion). In contrast, emissions released from elevated (e.g. chimney) sources, give rise to higher concentrations at higher wind speeds, as the plume is more likely to come down to ground close to the source. Emissions from the buoyant plumes of jet aircraft engines tend to behave in a similar manner to elevated sources. Carslaw *et al* (2006) showed how these bivariate plots could be used to identify the contribution of aircraft emissions to measured concentrations at Heathrow Airport.

<sup>6</sup> Carslaw, D. C., and K. Ropkins. 2012. “openair — An R package for air quality data analysis.” *Environmental Modelling & Software* 27–28 (0): 52–61. <https://doi.org/10.1016/j.envsoft.2011.09.008>.

- 4.11 Figure 12 shows bivariate pollution roses for NO<sub>x</sub> concentrations in 2022 at the LCA-CAH, LCA-ND and LCA-KGV sites, using wind data from the meteorological station at London City Airport. During low wind speeds, dispersion is reduced and concentrations from ground-level sources are higher.
- 4.12 The pattern at all monitoring sites is that the highest NO<sub>x</sub> concentrations occur during low wind speeds (i.e. towards the centre of the rose), indicating that the highest concentrations are associated with ground-level source releases. These higher concentrations are not associated with any particular wind direction. There is also some indication that emissions from the apron area are making a small contribution at all sites, with these contributions being associated with moderate wind speeds. The association with higher wind speeds is suggestive of emissions from an elevated, buoyant source reflecting emissions from aircraft engines.
- 4.13 It is concluded that airport sources do not make a significant contribution to local NO<sub>x</sub> concentrations



**Figure 12: Bivariate Pollution Roses at LCA-CAH, LCA-KGV and LCA-ND Sites, 2022 (NO<sub>x</sub>, µg/m<sup>3</sup>)**

## 5 References

Carslaw, D.C., Beevers, S.D., Ropkins, K and Bell, M.C., 2006. Detecting and quantifying aircraft and other on-airport contributions to ambient nitrogen oxides in the vicinity of a large international airport. *Atmos Environ*, 40/28 pp 5424-5434.

Carslaw, D. C., and Ropkins. K., 2012. "openair — An R package for air quality data analysis." *Environmental Modelling & Software* 27–28 (0): 52–61. <https://doi.org/10.1016/j.envsoft.2011.09.008>.

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## 6 Glossary

<b>Exceedance</b>	A period of time where the concentration of a pollutant is greater than the appropriate air quality objective.
<b>FDMS</b>	Filter Dynamics Monitoring System.
<b>LAQN</b>	London Air Quality Network.
<b>LCA</b>	London City Airport
<b>LCA-CAH</b>	London City Airport – City Aviation House monitoring site
<b>LCA-KGV</b>	London City Airport – King George V House monitoring site
<b>LCA-ND</b>	London City Airport – Newham Dockside monitoring site
<b>µg/m<sup>3</sup></b>	Microgrammes per cubic metre.
<b>NO<sub>2</sub></b>	Nitrogen dioxide.
<b>NO<sub>x</sub></b>	Nitrogen oxides (taken to be NO <sub>2</sub> + NO).
<b>NO</b>	Nitric oxide.
<b>Objectives</b>	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date, taking into account costs, benefits, feasibility and practicality. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides.
<b>PM<sub>10</sub></b>	Small airborne particles, more specifically particulate matter less than 10 micrometers in aerodynamic diameter.
<b>PM<sub>2.5</sub></b>	Small airborne particles, more specifically particulate matter less than 2.5 micrometers in aerodynamic diameter.
<b>Standards</b>	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal.
<b>TEA</b>	Triethanolamine – absorbent for nitrogen dioxide used in diffusion tubes.
<b>TEOM</b>	Tapered Element Oscillating Microbalance.
<b>VCM</b>	Volatile Correction Model.

## A1 Nitrogen Oxides Results

A1.1 Nitrogen oxides (NO<sub>x</sub>) concentrations, which are essentially the sum of nitrogen dioxide and nitric oxide, are presented in Table A1.1 for the automatic monitoring stations at London City Airport and for five sites across London in Table A1.2. There are no relevant air quality criteria for nitrogen oxides in an urban area. Nitrogen oxides concentrations are included here for completeness, and because they are relevant for air quality modelling.

**Table A1.1: Nitrogen Oxides (NO<sub>x</sub>) Data Summary for LCA-CAH, LCA-KGV and LCA-ND, 2022**

Site	LCA-CAH	LCA-ND	LCA-KGV
<b>Maximum 1-Hour Mean</b>	486.7 µg/m <sup>3</sup>	1,686.9 µg/m <sup>3</sup>	508.3 µg/m <sup>3</sup>
<b>Annual Mean</b>	34.8 µg/m <sup>3</sup>	32.7 µg/m <sup>3</sup>	27.4 µg/m <sup>3</sup>
<b>Data Capture</b>	50.0%	85.5 %	47.5%

**Table A1.2: Nitrogen Oxides (NO<sub>x</sub>) Data Summary for London Monitoring Sites, 2022**

	<b>Bexley Belvedere</b>	<b>Bexley Slade Green</b>	<b>Camden Bloomsbury</b>	<b>Newham Wren Close</b>	<b>Newham Cam Road</b>
<b>Maximum 1-Hour Mean (µg/m<sup>3</sup>)</b>	414.2	478.8	540.7	599.1	624.1
<b>Period Mean (µg/m<sup>3</sup>)</b>	23.4	26.1	35.1	29.7	36.1
<b>Data Capture %</b>	99.7	96.2	86.8	98.5	97.9

## A2 Diffusion Tube Data

A2.1 Raw monthly average diffusion tube data, along with the location details and monitoring periods, are presented in Table A2.1.

**Table A2.1: Raw Monthly Diffusion Tube Data for 2022, Not Bias Adjusted ( $\mu\text{g}/\text{m}^3$ )**

Site ID	Grid ref	14/01/22 to 01/02/22	01/02/22 to 04/03/22	04/03/22 to 30/03/22	30/03/22 to 05/05/22	05/05/22 to 10/06/22	10/06/22 to 08/07/22	08/07/22 to 04/08/22	04/08/22 to 02/09/22	02/09/22 to 03/10/22	03/10/22 to 31/10/22	31/10/22 to 29/11/22	29/11/22 to 09/01/23	Unadjusted Annual Mean	Data Capture (%)
LCA 01	542154, 180288	40.3	27.3	34.9	-	18.6	16.9	19.9	22.9	24.0	25.5	-	-	24.7	75.0
LCA 02	541965, 180299	38.8	25.2	35.1	-	18.1	21.2	18.2	23.9	26.1	27.0	27.4	30.6	26.0	91.7
LCA 04	542271, 180708	38.6	-	31.7	22.8	22.1	20.0	20.0	22.1	25.5	34.1	34.3	34.6	27.4	91.7
LCA 05	542847, 180914	37.0	24.2	32.5	22.8	18.2	18.5	17.7	20.3	23.3	29.2	26.8	-	24.0	91.7
LCA 06	543712, 180868	36.9	16.4	30.4	22.2	18.3	18.0	16.6	19.9	25.6	25.7	20.9	25.8	22.6	100.0
LCA 07	543662, 180460	38.3	-	31.9	23.3	21.2	21.1	22.5	22.9	29.1	-	33.1	31.9	27.1	83.3
LCA 10	541758, 180428	42.4	29.8	38.7	27.9	22.0	18.6	24.4	27.1	23.0	31.9	35.9	35.9	29.4	100.0
LCA 11	543549, 180693	43.5	34.9	35.6	24.9	21.3	21.6	20.9	19.7	27.2	32.6	38.0	37.5	29.4	100.0
LCA 12	542192, 180561	37.0	28.7	34.9	20.0	-	23.6	19.8	11.3	28.8	29.3	33.5	31.8	26.9	91.7
LCA 13	542280, 180769	41.5	26.3	33.4	-	16.8	18.7	19.9	20.6	-	-	30.8	34.0	26.3	75.0
LCA 14	542070, 180712	44.5	35.6	39.2	25.2	20.4	22.4	21.9	23.4	28.5	36.1	36.7	38.8	30.6	100.0
LCA 15	542316, 180862	42.2	25.6	35.2	24.2	17.7	19.2	18.8	19.0	22.0	29.3	27.6	32.3	25.6	100.0
LCA 18	542303, 180707	38.8	24.6	31.1	21.9	17.8	17.9	18.9	19.4	24.7	30.3	28.9	30.6	24.9	100.0
		38.1	23.9	34.7	21.9	18.1	17.8	19.2	18.7	23.9	27.2	30.1	26.9	24.5	100.0
LCA 20	541632, 180378	39.4	-	45.0	-	20.9	26.3	29.4	11.7	27.8	36.4	31.8	-	29.0	75.0
LCA 21	543100, 180132	33.9	23.3	27.0	19.6	14.9	15.1	16.2	17.0	20.2	23.3	22.8	28.1	21.4	100.0

- not available

## A3 Bias Adjustment Factor for Diffusion Tubes

- A3.1 Diffusion tubes are known to exhibit bias when compared to results from automatic analysers. Therefore, diffusion tube results need to be adjusted to account for this bias. One of the main factors influencing diffusion tube performance is thought to be the laboratory that supplies and analyses the tubes. The diffusion tubes exposed at London City Airport are supplied and analysed by Gradko International Ltd. (20% TEA in water).
- A3.2 In order to determine the bias exhibited by these tubes, a study was carried out using duplicate tubes at LCA-ND. All diffusion tube data presented in this report have been adjusted using the overall factor calculated from the data presented in Table A3.1.
- A3.3 The accuracy of the bias adjustment factor is limited by the exposure periods of the co-located diffusion tubes and time the corresponding automatic monitors were operating for. At LCA-ND there were no missing diffusion tube data and the automatic monitor had a good level of data capture for 2022 (85.5%). A comparison between the 2022 bias adjustment factor calculated at those from previous years (see Table A3.2) shows a close comparison, and as such the factor has been considered appropriate to use.

**Table A3.1: Results of Diffusion Tube and Continuous Monitor Co-location Study in 2022**

	Diffusion Tube <sup>a</sup>	Automatic <sup>b</sup>	Adjustment Factor
<b>LCA-ND</b>	24.71	21.57	0.873

<sup>a</sup> Diffusion tubes were exposed for the period between 14<sup>th</sup> January 2022 to 9<sup>th</sup> January 2023.

<sup>b</sup> The automatic period corresponds with the diffusion tube period.

- A3.4 Table A3.2 presents the bias adjustment factors applied to the data for the last fifteen years.

**Table A3.2: Previous Bias Adjustment Factors**

<b>Year</b>	<b>Factor</b>
<b>2008</b>	0.786
<b>2009</b>	0.717
<b>2010</b>	0.801
<b>2011</b>	0.738
<b>2012</b>	0.744
<b>2013</b>	0.771
<b>2014</b>	0.832
<b>2015</b>	0.858
<b>2016</b>	0.762
<b>2017</b>	0.724
<b>2018</b>	0.784
<b>2019</b>	0.796
<b>2020</b>	0.783
<b>2021</b>	0.846
<b>2022</b>	0.873



## A4 Diffusion Tube Precision

- A4.1 Diffusion tube precision describes the ability of a measurement to be consistently reproduced, i.e., how similar the results of duplicate or triplicate tubes are to each other. It is an indication of how carefully the tubes have been handled in either the laboratory and/or the field. Tube precision is separated into two categories 'Good' or 'Poor' as follows: tubes are considered to have '**Good**' precision where the coefficient of variation (CV) of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20%, and the average CV of all monitoring periods is less than 10%. Tubes are considered to have '**Poor**' precision where the CV of four or more periods is greater than 20% and/or the average CV is greater than 10%.
- A4.2 Table A4.2 shows that monitoring at LCA-ND there was 'Good' precision at every month of the year (Defra, 2011). The precision is consistent with the performance of 20% TEA in water tubes supplied by Gradko International in other co-location studies (Defra, 2022b).

**Table A4.2: Precision of Duplicate Diffusion Tubes, LCA-ND**

Period	Start Date	End Date	Tube 1	Tube 2	Mean	Standard Deviation	CV	Tube Precision
1	14/01/2022	01/02/2022	38.8	38.1	38	0.5	1	4.4
2	01/02/2022	04/03/2022	24.6	23.9	24	0.5	2	4.4
3	04/03/2022	30/03/2022	31.1	34.7	33	2.5	8	22.9
4	30/03/2022	05/05/2022	21.9	21.9	22	0.0	0	0.0
5	05/05/2022	10/06/2022	17.8	18.1	18	0.2	1	1.9
6	10/06/2022	08/07/2022	17.9	17.8	18	0.1	0	0.6
7	08/07/2022	04/08/2022	18.9	19.2	19	0.2	1	1.9
8	04/08/2022	02/09/2022	19.4	18.7	19	0.5	3	4.4
9	02/09/2022	03/10/2022	24.7	23.9	24	0.6	2	5.1
10	03/10/2022	31/10/2022	30.3	27.2	29	2.2	8	19.7
11	31/10/2022	29/11/2022	28.9	30.1	30	0.8	3	7.6
12	29/11/2022	09/01/2023	30.6	26.9	29	2.6	9	23.5
Average CV							3	-

## A5 Adjustment of Short-Term Data to Annual Means

- A5.1 The monitoring sites have been annualised as per Technical Guidance LAQM.TG22 (Defra, 2022a) in instances where valid data capture was less than 75% (and at least 25%). Annualisation was required for both LCA-CAH and LCA-KGV nitrogen dioxide concentrations.
- A5.2 This sites have been annualised against automatic background monitoring sites used throughout this report (Bexley – Belvedere, Bexley – Slade Green, Camden – Bloomsbury, and Newham – Wren Close), which fulfil the criteria specified by LAQM.TG22 guidance of being long-term continuous monitoring sites with data capture over 85% for 2022, and for both respective periods of data capture at LCA-CAH and LCA-KGV.
- A5.3 The annual mean nitrogen dioxide concentrations and the period means for each of the monitoring sites from which adjustment factors have been calculated are presented in Table A5.1, along with the overall Annualisation Factor.

**Table A5.1: Data used to Adjust Short-term Monitoring Data**

<sup>a</sup>

	Nearby Background Monitoring Sites			
	Bexley - Belvedere	Bexley – Slade Green <sup>b</sup>	Camden - Bloomsbury <sup>b</sup>	Newham – Wren Close
<b>CAH Period Mean (Pm)</b>	18.0	19.7	23.0	24.3
<b>KGV Period Mean (Pm)</b>	15.2	17.3	19.6	21.0
<b>Annual Mean (Am)</b>	15.9	17.6	20.7	21.8
<b>CAH Ratio (Am/Pm)</b>	0.89	0.90	0.90	0.90
<b>KGV Ratio (Am/Pm)</b>	1.05	1.02	1.05	1.04
<b>CAH Average (Ra) <sup>a</sup></b>	0.89			
<b>KGV Average (Ra) <sup>a</sup></b>	1.04			

<sup>a</sup> Averages calculated on un-rounded ratios.

<sup>b</sup> Includes some provisional data

## A6 Detailed Trend Analysis

### Nitrogen Dioxide

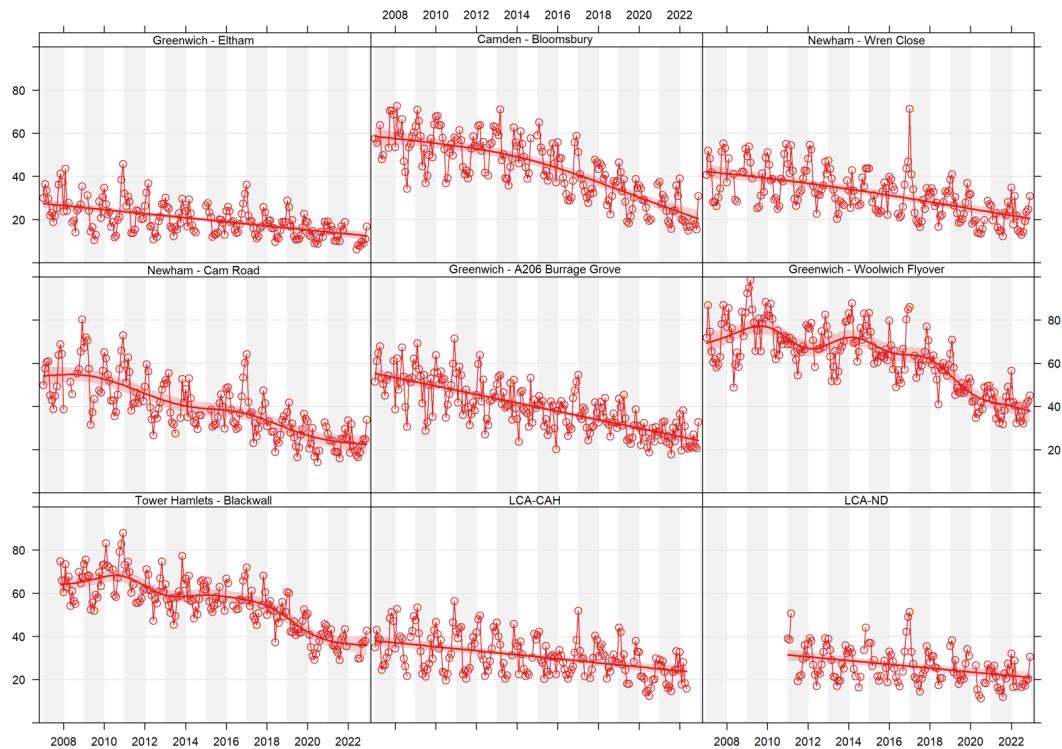
- A6.1 Figure A6.1 shows the smooth-trend analyses of monthly mean nitrogen dioxide concentrations for LCA-CAH, LCA-ND and seven other, nearby monitoring sites (Greenwich Eltham, Camden Bloomsbury, Newham Wren Close, Newham Cam Road, Greenwich Burrage Grove, Greenwich Woolwich Flyover, Tower Hamlets Blackwall), over the period 2007 to 2022.
- A6.2 A Theil-Sen analysis has been applied to the data to identify statistically significant trends and slopes, and the results are described in Table A6.1. There is a statistically significant downward trend in nitrogen dioxide concentrations at LCA-CAH, LCA-ND and all of the seven monitoring sites.

**Table A6.1: Theil-Sen Analysis, NO<sub>2</sub> Concentrations at LCA-CAH, LCA-ND, and Other London Monitoring Sites, 2007 to 2022**

Monitoring Site	Theil-Sen Analysis <sup>a</sup>	Statistically Significant Trend?
Greenwich Eltham	-0.92 [-1.13, -0.70]	Yes
Camden Bloomsbury	-2.57 [-2.88, -2.27]	Yes
Newham Wren Close	-1.46 [-1.77, -1.18]	Yes
Newham Cam Road	-2.24 [-2.53, -1.94]	Yes
Greenwich Burrage Grove	-2.00 [-2.25, -1.74]	Yes
Greenwich Woolwich Flyover	-2.49 [-2.81, -2.14]	Yes
Tower Hamlets Blackwall	-2.21 [-2.48, -1.92]	Yes
LCA-CAH	-0.92 [-1.24, -0.59]	Yes
LCA-ND <sup>b</sup>	-0.88 [-1.30, -0.45]	Yes

<sup>a</sup> The first value is the slope. The number in brackets is the upper and lower 95<sup>th</sup> percentile confidence interval.

<sup>b</sup> Analysis carried out for 2011 to 2022.



**Figure A6.1: Smooth Trend Analysis, Monthly NO<sub>2</sub> Concentrations at LCA-CAH, LCA-ND, and Other Monitoring Sites, 2007 – 2022**

## Nitrogen Oxides (NO<sub>x</sub>)

A6.3 Figure A6.2 shows the smooth trend analysis of monthly mean NO<sub>x</sub> concentrations for LCA-CAH, LCA-ND and other monitoring sites (Greenwich Eltham, Camden Bloomsbury, Newham Wren Close, Newham Cam Road, Greenwich Burrage Grove, Greenwich Woolwich Flyover, Tower Hamlets Blackwall) for the period 2007 to 2022.

A6.4 The Theil-Sen analysis, shown in Table A6.2, indicates a statistically significant downward trend in NO<sub>x</sub> concentrations at LCA-CAH, LCA-ND and all seven of the other London monitoring sites.

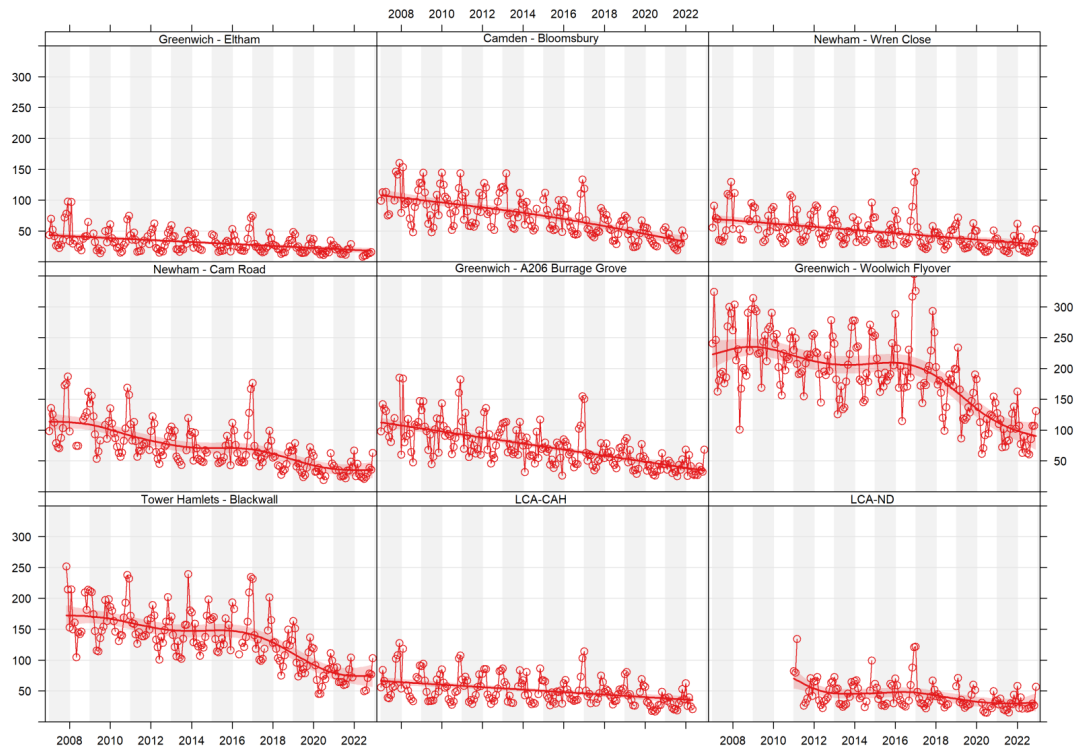
**Table A6.2: Theil-Sen Analysis, NO<sub>x</sub> Concentrations at LCA-CAH, LCA-ND, and Other London Monitoring Sites, 2007 to 2022**

Monitoring Site	Theil-Sen Analysis <sup>a</sup>	Statistically Significant Trend?
Greenwich Eltham	-1.28 [-1.77, -0.91]	Yes
Camden Bloomsbury <sup>b</sup>	-4.97 [-5.87, -4.06]	Yes
Newham Wren Close	-2.43 [-3.10, -1.80]	Yes
Newham Cam Road	-4.81 [-5.56, -4.05]	Yes
Greenwich Burrage Grove	-4.67 [-5.36, -3.93]	Yes
Greenwich Woolwich Flyover	-9.19 [-10.71, -7.74]	Yes
Tower Hamlets Blackwall	-6.92 [-8.07, -5.88]	Yes
LCA-CAH	-1.81 [-2.50, -1.11]	Yes
LCA-ND <sup>c</sup>	-1.90 [-2.96, -1.01]	Yes

<sup>a</sup> The first value is the slope. The value in brackets is the upper and lower 95<sup>th</sup> percentile confidence interval.

<sup>b</sup> Analysis carried out for 2007 to 2021.

<sup>c</sup> Analysis carried out for 2011 to 2022.



**Figure A6.2: Smooth Trend Analysis, Monthly  $\text{NO}_x$  Concentrations at LCA-CAH, LCA-ND, and Other London Monitoring Sites, 2007 – 2022**

**Annual  
Performance  
Report 2022**

# **Annex 6**

## Air Quality Action Plan Progress Update



Measure	Expected emissions / air quality benefit	Outputs / targets / KPIs	Completed by	Status Update 2022
<b>Ground Power</b>				
<b>Measure 1:</b> Maximising availability of Fixed Electrical Ground Power (FEGP).	NOx and PM10 emissions from Auxiliary Power Units (APUs) and Mobile Ground Power Units (MGPUs) were 4.7 and	London City Airport will continue to routinely record the availability of FEGP on all stands where it is has been installed, and the time taken to effect repairs until June 2021 when all diesel MGPUs will be replaced with battery MGPUs. It will also continue to record the use of FEGP within the online portal and document any contraventions of Airfield Operating Instruction AOI 07 until June 2021.	Jun-21	Completed. Diesel MGPU no longer in use. This condition has been superseded by measure 3 below.
<b>Measure 2:</b> Minimising APU Use.	NOx and PM10 emissions from APU use were 4.5 and 1.05 tonnes respectively, in 2017. Airfield Operating Instruction AOI 07 restricts the running of APUs.	London City Airport will continue to monitor the use of APU in accordance with AOI 07, and will continue to record APU use via the Airport's "Qlickview" online reporting tool. Any contraventions of the Airfield Operating Instructions, and any future requirements within the forthcoming APU Strategy, will be documented.	June in each year	Ongoing. This continues to be recorded on Qlik. 360 instances of extended APU usage were recorded in 2022.
<b>Measure 3:</b> Phasing Out Diesel MGPUs.	NOx and PM10 emissions from diesel powered Mobile Ground Power Units (MGPUs) were 0.2 and .1 tonnes respectively, in 2017. Completely restricting their use will eliminate these emissions.	Reliance on diesel MGPUs will be phased out completely by 30 June 2021 in accordance with the requirements of Condition 46 of the CADP1 Conditions. Battery-powered units (B- MGPUs) and FEGP will remain in use	Jun-21	Completed. All diesel units no longer in use as of end Aug 2021. Electric MGPU being operating after delivery delays and adjustment with self-manoeuving.



Measure	Expected emissions / air quality benefit	Outputs / targets / KPIs	Completed by	Status Update 2022
<b>Emissions from Aircraft Taxiing Operations</b>				
<b>Measure 4:</b> Ground Engine Running Strategy – air quality implications	Ground running relates to the use of aircraft engines on stand, during taxiing, and on-hold, and accounted for 15.6 tonnes NOx and 0.35 tonnes PM10 in 2017. The Ground Engine Running Strategy is aimed at ensuring aircraft engines are operated at minimum power necessary and for as short a time as possible.	London City Airport will continue to review the outcomes of the Ground Engine Running Strategy within the quarterly reports and will prepare a report for submission to LBN on the air quality implications where ground running times exceed agreed targets.	Within 2 months of GERS quarterly reports	Ongoing. No exceedances reported.
<b>Measure 5:</b> Reduced thrust during taxiing.	Taxiing accounted for 14.2 tonnes NOx and 0.3 tonnes PM10 in 2017. Emissions can be reduced by "Engine-Out Taxiing" in which one or more engines is switched off. However, while EOT is used, there are current safety concerns. Reduced thrust on taxiing may also be used, but is limited due to the current taxiway infrastructure.	London City Airport will work with the major airlines to explore the potential to introduce reduced thrust during taxiing. A feasibility study will be completed within six months of the new CADP taxiways becoming operational	End of 2021	Engagement with airlines highlighted operational and safety constraints for the use of reduced thrust during taxiing but for some main airlines, including BACF. Report provided to LBN on 21/12/2021.
<b>Measure 6:</b> Electric Taxiing Systems	Emissions from taxiing could be reduced or potentially eliminated by the use of electric tugs or on-board electric systems.	London City Airport will review emerging technologies related to Electric Taxiing Systems and will provide an updated report on feasibility.	Dec-21	Electric pushback tugs required as and when new CADP stands become operational. Report provided to LBN on 20/12/2021.

Measure	Expected emissions / air quality benefit	Outputs / targets / KPIs	Completed by	Status Update 2022
<b>Ground Running, Testing and Maintenance</b>				
<b>Measure 7:</b> Ground Engine Running, Testing and Maintenance	Emissions from engine testing accounted for 0.8 tonnes NOx in 2017.	London City Airport will continue to review the outcomes of the Ground Engine Running, Testing and Maintenance (GERT&M) Strategy and will advise on the air quality implications, specifically with regard to proposals for relocation of the engine ground run positions.	Within 2 months of the revised GERT&M Strategy	Review has concluded that distance from engine testing location to closest receptor remains the same, so there will be no air quality impacts implications.
<b>Airside Vehicles and Plant</b>				
<b>Measure 8:</b> ULEZ Compliance – Airport owned vehicles	The ULEZ will require diesel cars and vans to comply with the Euro 6 emission standard which will, on average, reduce NOx emissions by 65% compared to Euro 5.	A strategy to upgrade the LCY- owned fleet to ULEZ requirements has been developed and shared with LBN. Once the ULEZ is extended London City Airport will carry out a feasibility study as to whether LCA-owned airside vehicles can be made ULEZ compliant. If this is feasible, a programme for vehicle upgrades and/or replacement will be submitted to LBN. London City Airport will also review AOI 12 to reflect the expansion of the ULEZ.	October 2021 or on extension of ULEZ	Closed. All airport owned vehicles on the airfield are compliant with the ULEZ requirements as of 31st October 2021.
<b>Measure 9:</b> ULEZ Compliance	The ULEZ will require diesel cars and vans to comply with the Euro 6 emission standard which will, on average, reduce NOx emissions by 65% compared to Euro 5.	London City Airport will work with third-party operators of airside vehicles and undertake a feasibility study for achievement of full ULEZ compliance.	October 2021 or on extension of ULEZ	All supplier with non-compliant vehicles (16%) were contacted for their plans to upgrade their fleet which will be monitored on an annual basis. Updated report provided to LBN on 21/12/2021.
<b>Measure 10:</b> Airside Vehicle Permits (AVP) – Promote Earlier Introduction of Cleaner Vehicles	<p>Emissions from Ground Support Equipment (principally airside vehicles) accounted for</p> <p>2.7 tonnes NOx in 2017. The AVP system can be used to drive the introduction of cleaner vehicles at an earlier stage, in advance of full ULEZ compliance.</p>	London City Airport will continue to enforce a requirement in AOI 12 that all new vehicles issued with an Airside Vehicle Permit (i.e. not renewal applications for existing AVPs, comply with the latest vehicle emissions standards for road vehicles (Euro Standards) defined as the date by which the Euro Standard comes into force for registration and the sale of new vehicles.	June in each year	Ongoing. As agreed on 21/12/2021, some dispensations may be granted if ULEZ compliant vehicles cannot be deployed on the basis of documented technical, safety, operational and financial constraints. Justification provided will be reviewed by LCY, records retained and updates required annually.

Measure	Expected emissions / air quality benefit	Outputs / targets / KPIs	Completed by	Status Update 2022
<b>Airside Vehicles and Plant</b>				
<b>Measure 11:</b> Vehicle Emissions Testing	Failed abatement systems can lead to substantially high emissions on individual vehicles	<p>London City Airport will continue to undertake routine annual, and periodic, random emissions testing for Airport owned and third-party airside vehicles.</p> <p>Where a vehicle fails, a Vehicle Defect Notice will be used; the operator will have 14 days to rectify the fault or the AVP will be withdrawn. The results of the testing will be reported to LBN on an annual basis.</p>	June in each year	Ongoing. No LCY vehicles failed the testing required.
<b>Measure 12:</b> Introduction of Hybrid and Electric Vehicles	Both hybrid and electric airside vehicles would reduce emissions (above and beyond ULEZ standards), but is dependent on the availability of suitable vehicles	London City Airport will revise the procurement process for the purchase of new vehicles owned by the Airport, with a focus on hybrid or electric alternatives. The outcome of this process will be reported on an annual basis.	June in each year	Ongoing. LCY has been reviewing its vehicle fleet with the aim of maximising the number of hybrid and especially electric vehicles to reach its net zero aspirations.
<b>Emissions from Black Cabs</b>				
<b>Measure 13:</b> Anti-Idling: Black cabs	Idling engines when stationary causes unnecessary pollution emissions. Vehicle Idling Action is a behaviour change campaign supported by LBN.	London City Airport will continue to monitor idling by black cabs and will report any issues to the Airport Transport Forum.	Twice a year	Signs are in place to advise drivers to turn off engines and drivers were compliant with this. No related issues or complaints were raised in the last year.

Measure	Expected emissions / air quality benefit	Outputs / targets / KPIs	Completed by	Status Update 2022
Publicity and Promotion				
<b>Measure 14:</b> Review and Update Website	No direct emissions benefits, but critical in communicating with staff, passengers and members of the public, and disseminating information of air quality	London City Airport will continue to review and update the website to provide clear, concise information to the local and wider community on the performance of the Air Quality Management Strategy.	June in each year	Ongoing. The AQMS continues to be available on the website as well as air quality monitoring data. Progress on Air Quality Action Plan continues to be updated annually and made available on the website as part of the APR. LCY's Sustainability Roadmap publicised and promoted the need to reduce carbon emissions and is available on the website.
<b>Measure 15:</b> RAMP Sampling.	Although subject to workplace air quality standards, staff on the RAMP are likely to be exposed to higher levels of pollution	London City Airport will continue to undertake, on a two-year basis, a RAMP employee air quality monitoring assessment with direct, individual recording apparatus.	April 2021 and April 2023	RAMP sampling completed in Q1 2022 following agreement with LBN to delay until aircraft numbers increased following the pandemic. Following RAMP sampling currently scheduled for 2nd May 2023 due to availability of the machinery required.
<b>Measure 16:</b> Staff Communications.	No direct emissions benefits, but critical in communicating with staff, and in gaining support to this Strategy	London City Airport will publish an article relating to air quality and airport operations at least once per year in the airport newsletter "Inside E16" or in the staff E-Bulletin.	June in each year	News about the installation and use of the electric charging points was promoted through the E-Bulletin in June 2022. Also promoted through the E-Bulletin the Employee Travel Survey in May and June 2022. The Sustainability Roadmap, and Airport Carbon Accreditation level 4+ transition, the Governments Aviation Strategy - Flight Path to the Future were also promoted through it.
Ultra Fine Particles				
<b>Measure 17:</b> Emission Inventories for Ultra Fine Particles (UFPs)	There is increasing evidence related to aircraft operations and UFPs, but there is currently no robust manner in which an emissions inventory can be compiled.	London City Airport will review the emerging evidence on UFPs related to aircraft emission inventories and will provide an update on an annual basis.	June in each year	Ongoing. No change in status in 2022. Note on updated review sent to LBN on 27/04/2023
<b>Measure 18:</b> UFP Emissions and Sulphur Content of Aviation Fuel	Recent evidence has identified a unique size distribution of UFPs related to aviation emissions, which may potentially be linked to the high S content of aviation fuel.	London City Airport will review the emerging evidence on the link between the sulphur content of aviation fuel and UFP emissions and will work with industry partners to assess the benefits and feasibility of reducing the sulphur content of the fuel.	Dec-21	Note on updated review sent to LBN on 27/04/2023.

**Annual  
Performance  
Report 2022**

# **Annex 7**

## Sustainability and Biodiversity Action Plan Progress Update



Target Number	Targets + Actions	Timeframe	Status Update
<b>EMS1</b>	Maintain LCA's current ISO14001:2015 certification.	On-going (evidenced yearly)	Ongoing. Surveillance audit held in Q3.
<b>EMS2</b>	Continue to develop an integrated management system, grouping together similar practices across the airport to achieve a consistent and coordinated approach.	End of 2023	Documentation and processes in place. System being embedded. ISO 9001 Quality Management System accreditation achieved.
<b>WST1</b>	Implement SWMPs and review prior to each phase of CADP.	Prior to each phase of CADP	CADP currently paused.
<b>WST2</b>	Reduce total waste kg per passenger by 10% from 2019 baseline by the end of December 2022.	End of December 2022	Achieved 2019: 0.325 kg waste per pax 2022: 0.285 kg waste per pax
<b>WST3</b>	Recycle 70% of total kg of waste by the end of December 2022.	End of December 2022	Ongoing. 61% in 2022. Waste arrangements are being reviewed in 2023 as part of a new contract, and a circular economy strategy is being developed.
<b>WST4</b>	Promote the furniture reuse scheme to third parties across the airport.	End of April 2021	Completed.
<b>WST5</b>	Include waste management in the criteria for any new concessions, including how they will reduce waste and promote recycling, and integrate site-specific requirements into new contracts where practicable.	End of December 2021	Only one new contract currently issued. The waste procedure was updated and additional sustainability requirements, incl. waste added. Copy of the sustainability requirements shared with LBN on 20/12/2021.
<b>WST6</b>	Carry out a feasibility study for the reduction of single-use plastic bags used by passengers during security checks.	End of July 2021	Completed. Updated evidence provided to LBN on 17/08/2021.
<b>WST7</b>	Carry out two employee and third-party engagement activities per year to promote reduction, reuse and recycling of waste.	On-going (evidenced yearly)	Waste trial completed in 2022 to measure quantity and segregation of waste generated by each concession. Data was fed back to benchmark, compare and identify areas for improvement. On-site training also provided on waste segregation for staff using the landside waste area.
<b>EC1</b>	Improve employee awareness on energy reduction through two campaigns and training sessions per year. This target is ongoing, with evidence on progress being provided yearly.	On-going (evidenced yearly)	Electrical vehicle chargers were introduced in the staff car park in June, and notification went out to staff in June and August to encourage uptake. Promotion of the achievement of Level 4+ of the airport carbon accreditation scheme, and the launch of the Sustainability Roadmap were also sent to staff during the year.
<b>EC2</b>	Include energy minimisation in the criteria for any new concessions.	End of December 2021	Sustainability requirements included in new contract. Copy of the sustainability requirements shared with LBN on 20/12/2021.
<b>EC3</b>	50% reduction in kg of carbon per passenger by the end of December 2022 compared to 2019 baseline.	End of December 2022	Achieved by reducing energy consumption and changing to a renewable energy electricity contract.
<b>EC4</b>	Maintain Level 3+ Neutrality of the ACI Europe airport carbon accreditation scheme.	On-going (evidenced yearly)	Level 4+ (Transition) of the Airport Carbon Accreditation Scheme was achieved in October 2022, demonstrating LCY are on a path towards net zero, and are engaging third parties at the airport to decarbonize too.

Target Number	Targets + Actions	Timeframe	Status Update
<b>EC5</b>	Report on LCY's progress in reducing scope 1 and 2 absolute emissions and provide an update annually on how LCA is intending to support the decarbonisation of the aviation industry to achieve net zero by 2050.	Jun-21	Sustainability Roadmap published May 2022 which this information included. A progress report will also be published each year from 2023 onwards.
<b>WH1</b>	Review the safeguarding guidance for developers available on our website annually, which specifically details safe methods of increasing local biodiversity within developments without compromising aerodrome safety.	On-going (evidenced yearly)	Review carried out Dec 2022. No changes proposed.
<b>WH2</b>	Provide a report to LBN annually summarising where LCY has requested amendments to local development proposals in order to manage the operational safety risk of birds.	End of December 2021	No objection raised for any planning application with potential safeguarding risks. Report provided to LBN on 20/12/2021 2022 report also provided on 23/1/23
<b>WH3</b>	Inspect and maintain the artificial substrate mesh for aquatic colonisation and the provision of shelter for fish fry within KGV Dock, and record whether colonisation is progressing.	End of December 2021	Maintenance works undertaken. Colonisation report issued on 20/04/21 concludes that 'The fish refugia have an excellent coverage of algae. The marine growth on these nets will encourage new species to move into the dock'.
<b>WH4</b>	Provide £10,000 a year to LBN for educational biodiversity and environmental programmes for the local community from 2023 onwards. Where LBN are unable to use the money within 6 months of it becoming available, transfer the money to the Community Trust Fund for use on projects relating to biodiversity in the next round of grant allocation.	2023	Not yet required.
<b>WH5</b>	Fund other environmental and biodiversity projects with preference given to areas of nature deficiency from 2023 onwards. Subject to interest from schools and community groups, options could include (1) funding allotment boxes in SINC's; (2) enhancing biodiversity by installing bat boxes or hedgehog homes to protect these key species; or (3) funding biodiversity related projects in schools. Such projects would be subject to a combined annual funding of £5,000 from 2023.	2023	Not yet required.

Target Number	Targets + Actions	Timeframe	Status Update
<b>W1</b>	Review of the Building Standards and contractual requirements for any tenants and concessionaires in relation to water usage.	End of December 2021	Sustainability requirements for new contract include water usage and minimisation. They will be included in all new contracts. Copy of the sustainability requirements shared with LBN on 20/12/2021.
<b>W2</b>	Operate within the conditions stipulated in LCA's water discharge permit with regards to BOD (biochemical oxygen demand) and evidence performance by the end of May each year.	On-going (evidenced yearly)	Completed for 2022/2023 winter season. One exceedance noted in December during a snow event.
<b>W3</b>	Achieve a reduction in surface water run-off of at least 63% against the 2013 baseline (as assessed in the UES) by completion of the CADP works.	By completion of the CADP works	CADP works currently paused.
<b>N1</b>	Continued operation of The Airspace & Environment Sub-Committee as part of the London City Airport Consultative Committee (LCACC) to achieve the agreed objectives established at the inaugural meeting in October 2016..	On-going until end of December 2023	Ongoing.
<b>N2</b>	Implement and maintain a Construction Noise and Vibration Management and Mitigation Strategy (CNVMMS) as required under the CADP planning permission at the commencement of the CADP works.	On-going	CADP works currently paused.



## **Annex 8**

# List of Employers Onsite and CADP1 Construction Contractors

**Annex 8**

List of Employers Onsite and CADP1 Construction Contractors

**London City Airport**

Annual Performance Report 2022

Company - 2022 list
ABM - omniserive
Aelia - Lagadere
AeroSpa
AVIS
BA CITYFLYER
Boots
BP Installations
Caffé Nero
Dnata
ESP
Europcar
Global Exchange
GSF
Hertz
ITA (previously Alitalia)
InMotion
London City Airport
Luxair
MENZIES
MENZIES (ASIG)
MITIE
MITIE CARE+CUSTODY
NATS
ONE ADVANCED
Pret a Manger
Sky Handling Partner - SHP
SSP - Select Service Providers
Swiss Airlines
SWISSPORT
Big Penny Brews (Trumans)
WHSmith

CADP Main 2022
No CADP Contractors were based on site in 2022 due to works being paused temporarily

**Annual  
Performance  
Report 2022**

**Annex 9**

Our Newham Work 2022  
Statistics



Company - 2022 list	Vacancy's	Starts	13 Week Sustained	26 Week Sustained	Still in Employment
LCY Direct	120	42	37	31	28
Onsite Partners	95	34	20	14	10
Concessions	18	3	2	1	3
<b>Total</b>	233	79	59	46	39

**Annual  
Performance  
Report 2022**

# **Annex 10**

## LCY Employment Policy



# 1. Applications

## 1.1.

London City Airport advertise all vacancies on their dedicated career's page on [www.londoncityairport.com/careers](http://www.londoncityairport.com/careers)

## 1.2.

JThe HR Team manages this careerspage and posts all vacancies.

## 1.3.

It is a core value of London City Airport to ensure that:

- All applicants are dealt with in a courteous, respectful, fair and diplomatic way.
- All applicants are properly informed at all stages of the progress of their application.

## 1.4.

In some limited specific instances, vacancies of a specialist nature may be advertised on both the LCY website, LinkedIn and via specific aviation or other recruitment agencies and job boards. In this instance, advertising and procedure will remain the same as that for all other vacancies to ensure consistency.

## 1.5.

Notwithstanding the above, where recruitment for more than one position is initiated simultaneously, London City Airport will advertise such vacancies through a local employment agency (e.g. Newham Workplace and/or others), notify local recruitment centres of such vacancies and advertise through the LCY website.

## 1.6.

London City Airport works in partnership with the Local Authority (via Newham Workplace) to deliver into-work training for unemployed Newham residents. In some instances, candidates from this training programme may be recruited directly by London City Airport Limited and from Newham Workplace.

## 1.7.

London City Airport endeavours to employ people living in the vicinity of the airport to share its economic and social benefits. Specifically, the airport has agreed targets with the Local Authority to endeavour to employ:

- At least 70% of new recruits for jobs advertised at the Airport are residents of the Local Area<sup>1</sup>
- At least 40% of new recruits for jobs advertised at the Airport are residents of the London Borough of Newham
- At least 70% of new recruits for jobs at the Airport advertised by the Operator are residents of the Local Area
- At least 50% of new recruits for jobs at the Airport advertised by the Operator are residents in the London Borough of Newham

## 1.8.

A standard online application form is used to assist in filling all vacancies as a way of obtaining the same information from each candidate.

## 1.9.

Applicants will have the opportunity to register their interest in specific areas of the business and upload their CVs to our website. We will hold this information on our data base in line with GDPR and LCY retention policy.

## 1.10.

All documentation relating to selection of new staff (e.g. completed application forms) that is not retained must be disposed of securely (i.e. shredded).

<sup>1</sup>The "local area" is defined by the London Borough of Newham as the 11 East London Boroughs of Newham, Tower Hamlets, Hackney, Waltham Forest, Redbridge, Barking & Dagenham, Havering, Bexley, Greenwich, Lewisham, Southwark, Barking and Dagenham, Greenwich, Bexley, Havering and the area of Epping Forest District Council

## 2. Selection

- 2.1.** A candidate will not be appointed without first being interviewed or participating in an assessment process by persons with the authority to select.
- 2.2.** **The purpose of the interview is to:**
- Assess the skills and knowledge of the applicant
  - Assess the attitude of the applicant
  - Identify the strengths and weaknesses not apparent from the application form
  - Probe details or inconsistencies submitted by the applicant
  - Establish suitability for employment
  - Give information about the job and working conditions
- 2.3.** **All interviewers are trained in Recruitment and Selection Skills and Employment Law** to be aware of legal requirements and the Company's equal opportunities policy.
- 2.4.** All interviews are conducted by **two or more** authorised people.
- 2.5.** All interviewers are **senior to** the vacant position.
- 2.6.** All interviews are **conducted in private** and in a place without distractions. Where appropriate, the candidate is shown the environment in which he/she will work if successful.
- 2.7.** Interviews reflect Company philosophy, observe legal requirements, are conducted courteously and give full details of terms and conditions of employment and benefits.
- 2.8.** Written records are kept of all short-listing decisions in case of query at a later stage.
- 2.9.** Written records are kept of all interviews conducted using a standard 'Interview Assessment Form'.
- 2.10.** Successful applicants will receive a standard offer of appointment letter. This is arranged by the HR Team.

## 3. Equal opportunities policy

### 3.1.

The recruitment policy will aim to select the most suitable person for the job in respect of experience and qualifications and the Company will comply with its equal opportunities policy in this regard.

### 3.2.

All recruitment publicity positively encourages applications from suitably qualified, experienced people and avoids any stereotyping of roles.

### 3.3.

**Vacancies are advertised in a variety of ways to ensure that a fair cross section of potential applicants have access to the advertisement, including via:**

- Local Authority "one stop shops" including Newham Workplace, WorkPath and Greenwich Local Labour & Business
- All Job Centre Plus outlets, via their electronic system, Newham College (CIPS) and Anchor House Homeless Charity (entry level roles only).

### 3.4.

All vacancies are advertised on London City Airport's website ([www.londoncityairport.com/careers](http://www.londoncityairport.com/careers)).

### 3.5.

The application form only includes those questions that are necessary at the initial stages of selection. All questions on the application form are relevant and non-discriminatory

### 3.6.

At interview, questions or assumptions about a candidate's personal and domestic circumstances or plans will only be asked where required with regard to the role. Where the requirements of the job affect the candidate's personal life (e.g. shift work, unsociable hours or travel) this will be discussed objectively.

## 4. Selection criteria

### 4.1.

Only those qualifications and skills that are important to the job are criteria for selection. These include, but are not limited to, education and professional qualifications, experience and physical abilities. However, such formal academic or professional qualification requirements may be waived if candidates can demonstrate their suitability for the job by other means including previous experience and a willingness to undergo further training.

### 4.2.

**All applicants will receive with the application form:**

- an outline job description
- a person specification, detailing essential and desirable characteristics

### 4.3.

All applicants short-listed for interview will receive interview details in writing.

### 4.4.

All candidates who are not short-listed receive a standard rejection email immediately after the short-listing process has been completed.

### 4.5.

In the event that two candidates, after interview, equally meet the person specification, the candidate living closer to the airport will normally be given priority.

### 4.6.

Positions will only be filled with suitable candidates. Unsuitable candidates will not be appointed.

### 4.7.

All unsuccessful short-listed candidates will receive Notification informing them of the result of their assessment / interview usually within 7 working days.

### 4.8.

All unsuccessful internal applicants will have a debriefing interview where the reasons for their non appointment will be explained and, where appropriate, general guidance will be given on areas for improvement.



## 5. Selection tests

### 5.1.

Selection tests are used to ensure that applicants have the skills and aptitude requirements for the job.

### 5.2.

All such tests are valid, reliable and free from gender or race bias and are non-discriminatory. Tests are developed in conjunction with education professionals to ensure a level of suitability to the role applied for.

## 6. Other criteria

### 6.1.

Any requirements in relation to age, ability, experience and qualifications will be applied for the particular vacancy in a non-discriminatory way.

### 6.2.

All concessionaires/service partners at London City Airport have a contractual obligation to London City Airport to use all reasonable endeavours to recruit locally.

### 6.3.

London City Airport has an Employers' Forum in which supports on-site partners with a range of issues, one of which is local recruitment.

**Annual  
Performance  
Report 2022**

# **Annex 11**

## Employee Travel Survey



# London City Airport Staff Travel Survey 2022

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May 2023



# Content

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1. Background
2. How do staff travel to and from work
3. When do staff typically start and finish work
4. What would encourage staff to use public transport to commute to work?
5. What would encourage staff to cycle to work?
6. What would encourage staff to walk to work?
7. What would encourage staff to car share to work?

# Who responded and where do they work

London City Airport undertook a travel survey of all staff from 9 May to 8 June 2022.

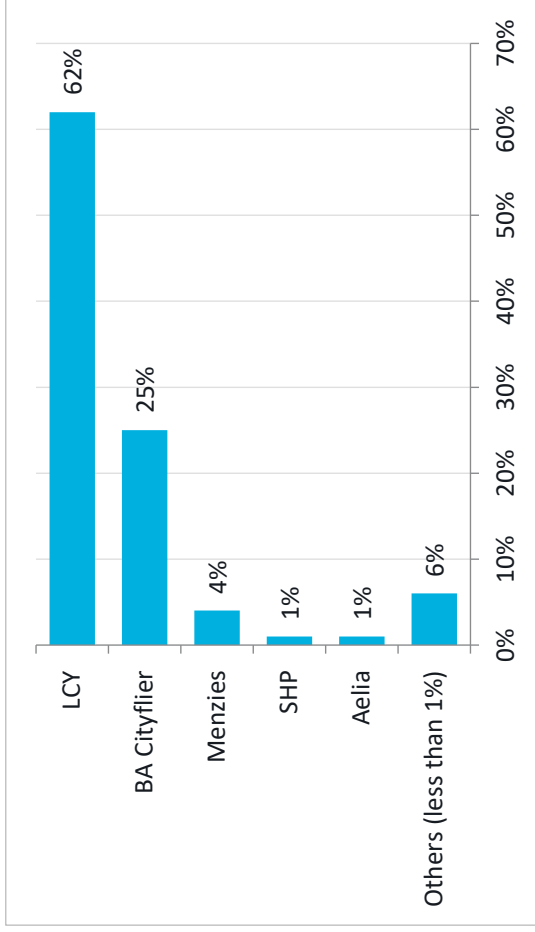
It was undertaken in conjunction with Mobilityways using an online link which was distributed by email or staff could download a QR code. The survey targeted 1,658 staff who worked at City Airport at that time. **Responses were received from 34% of staff** (563 respondents).

- Nearly two thirds of respondents (62%) worked for London City Airport plc.
- The next highest proportion worked for BA Cityflyer (25%). These represent the two largest employers at the airport.
- Staff from 19 onsite employers participated.

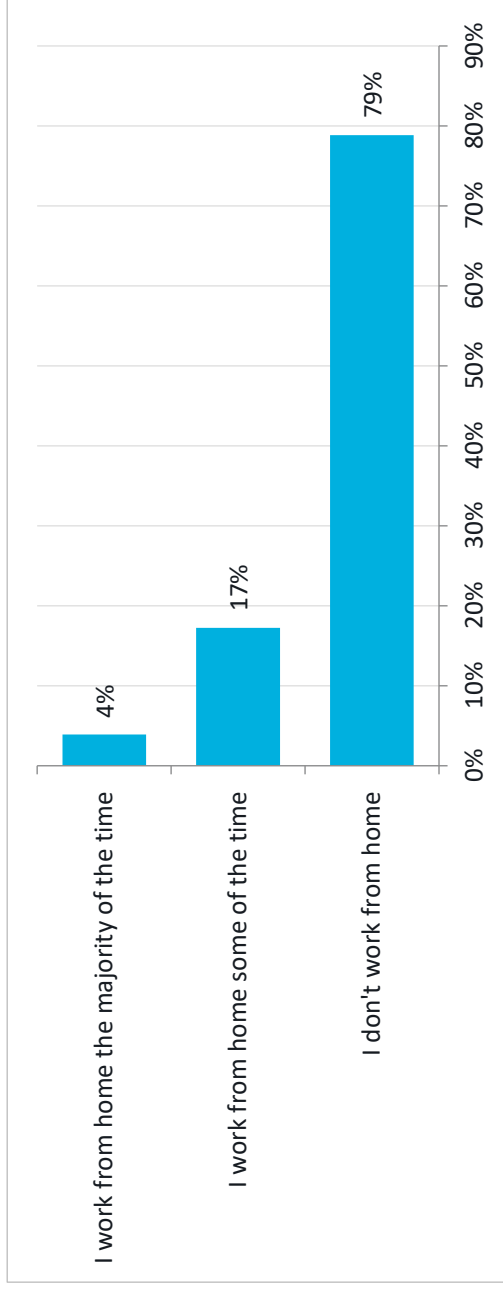
Staff were asked to select how often they worked from the airport or at home.

- **The majority (79%) of respondents said they did not work from home.**
- Only 4% worked from home for the majority of the time, and less than a fifth worked from home some of the time.
- Over three quarters of staff are therefore travelling to the airport to work.

Who do staff work for (responses by employer)?



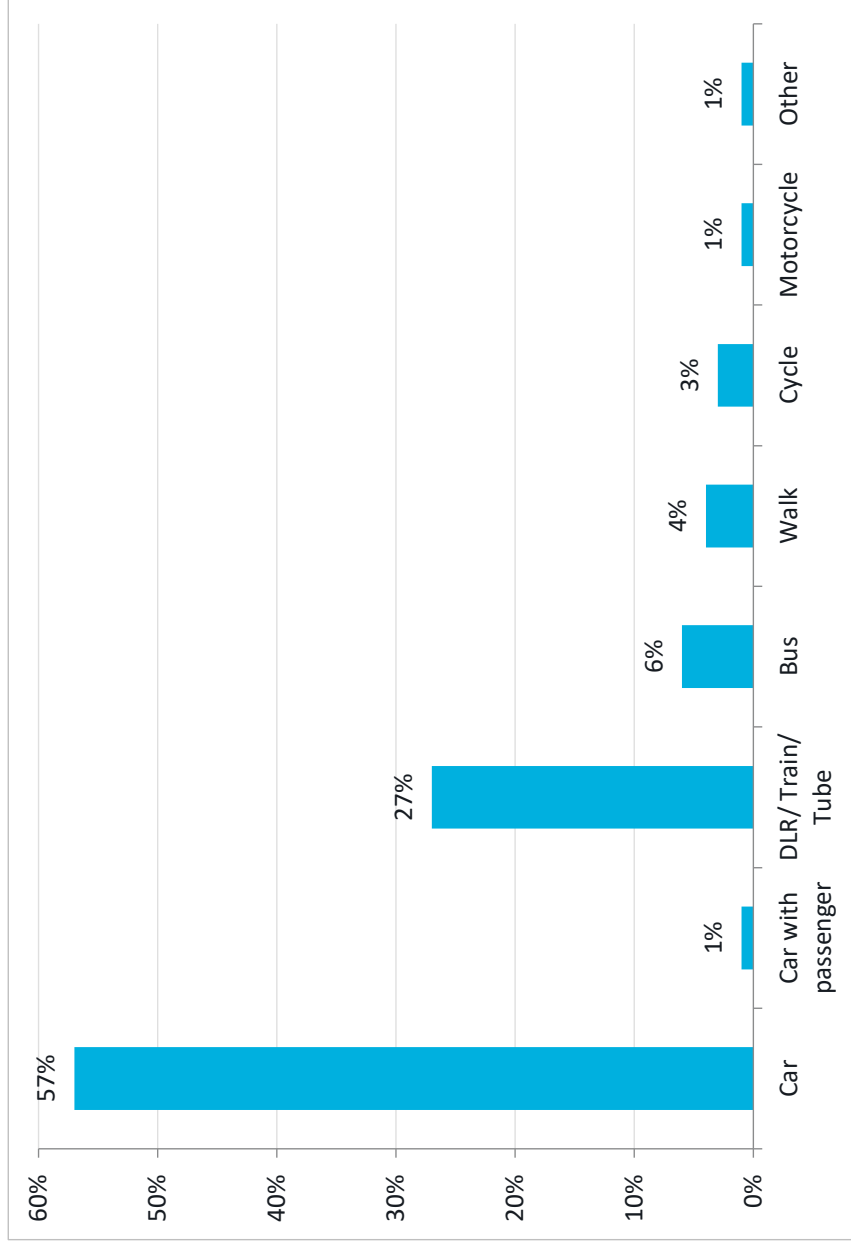
Where do staff work from?



# How do staff travel to and from work

- **More than half of staff (57%) staff drive alone to work.**
  - A small proportion (1%) car share.
- **A third of staff (33%) travel by public transport**
  - DLR/ Train/ Tube is the most popular form of public transport.
  - A smaller number (6%) take the bus to work.
  - 7% of staff travelled by active modes with slightly more walking (4%) than cycling (3%).

Main mode of transport to work

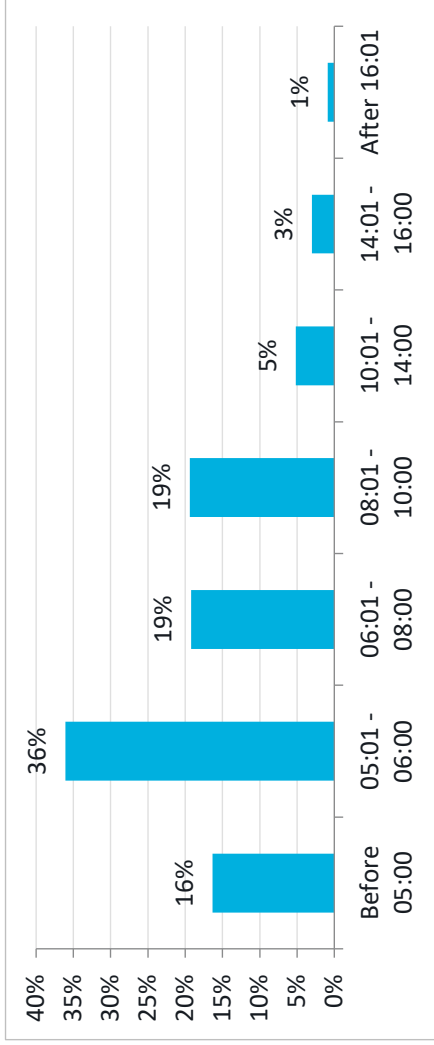


# When do staff typically start and finish work?

London City Airport is an atypical workplace as a far greater proportion of staff start work earlier than a more typical workplace start time

- Over half of staff (52%) start work before 6am
  - Of those, 16% start work before 5am
- A further third (38%) of staff start work between 6am and 10am
- Less than 10% of staff start work after 10am
- Finish times are more staggered across the day with only a small proportion (5%) finishing before 12 noon, and another small proportion (8%) finishing after 10pm
  - The most common finish time is between 4pm and 6pm when a quarter of staff travel home

What time do staff typically start work?



What time do staff typically finish work?

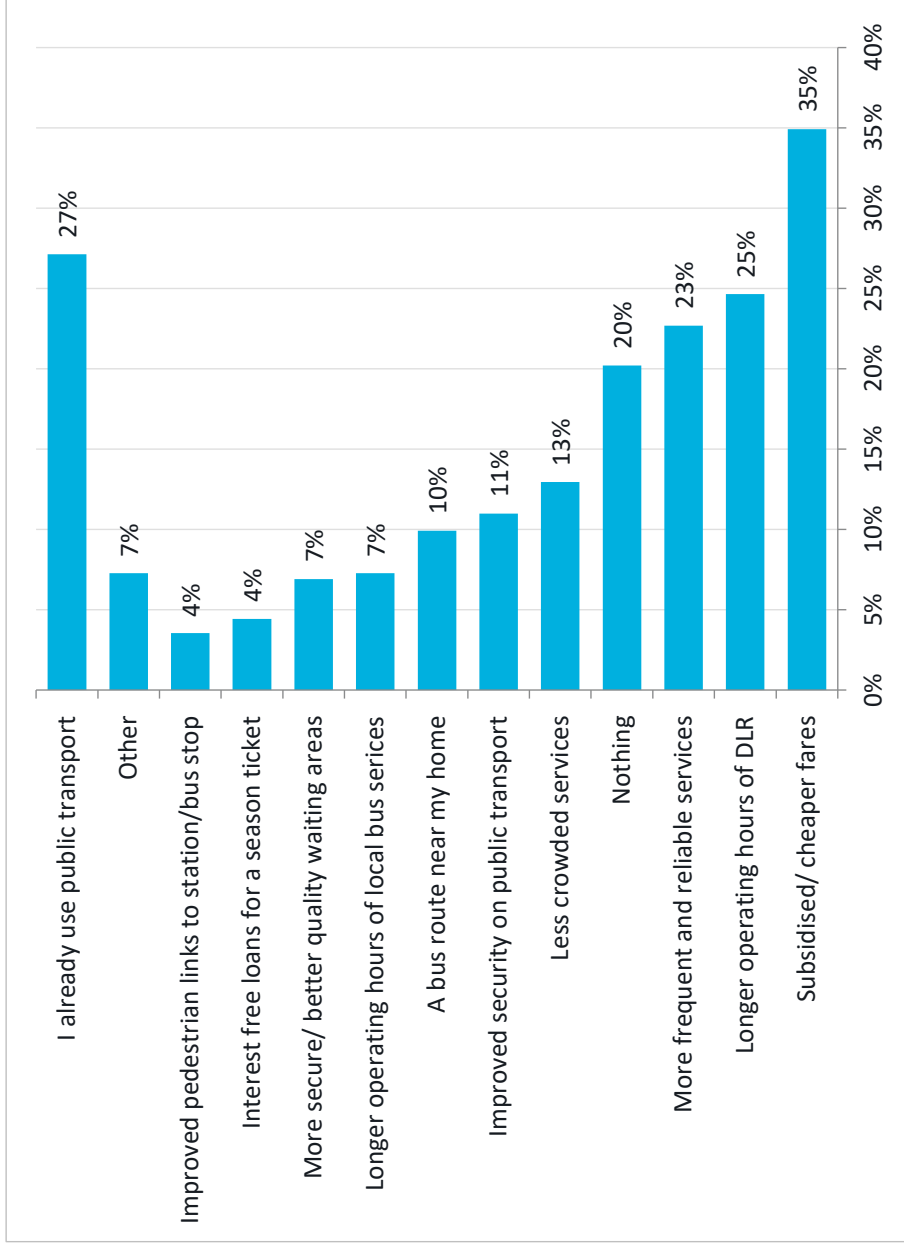




# What would encourage staff to use public transport to commute to work

- Respondents were asked what would encourage them to use public transport for their regular commute to work. Respondents were allowed to choose more than one thing (974 options were selected). The chart shows the number of respondents who chose which option.
- **The most common response was subsidised/ cheaper fares which over a third of respondents chose**, including many who already travel by public transport.
- **A quarter of respondents said longer operating hours of the DLR would encourage them to use public transport to travel to work**, with fewer (7%) choosing longer operating hours of local bus services.
- 4% of respondents selected interest free loans for a season ticket which is something London City Airport already offers, and indicates this needs greater publicity.

Which of the following changes would most encourage you to use public transport on your regular commute to work?

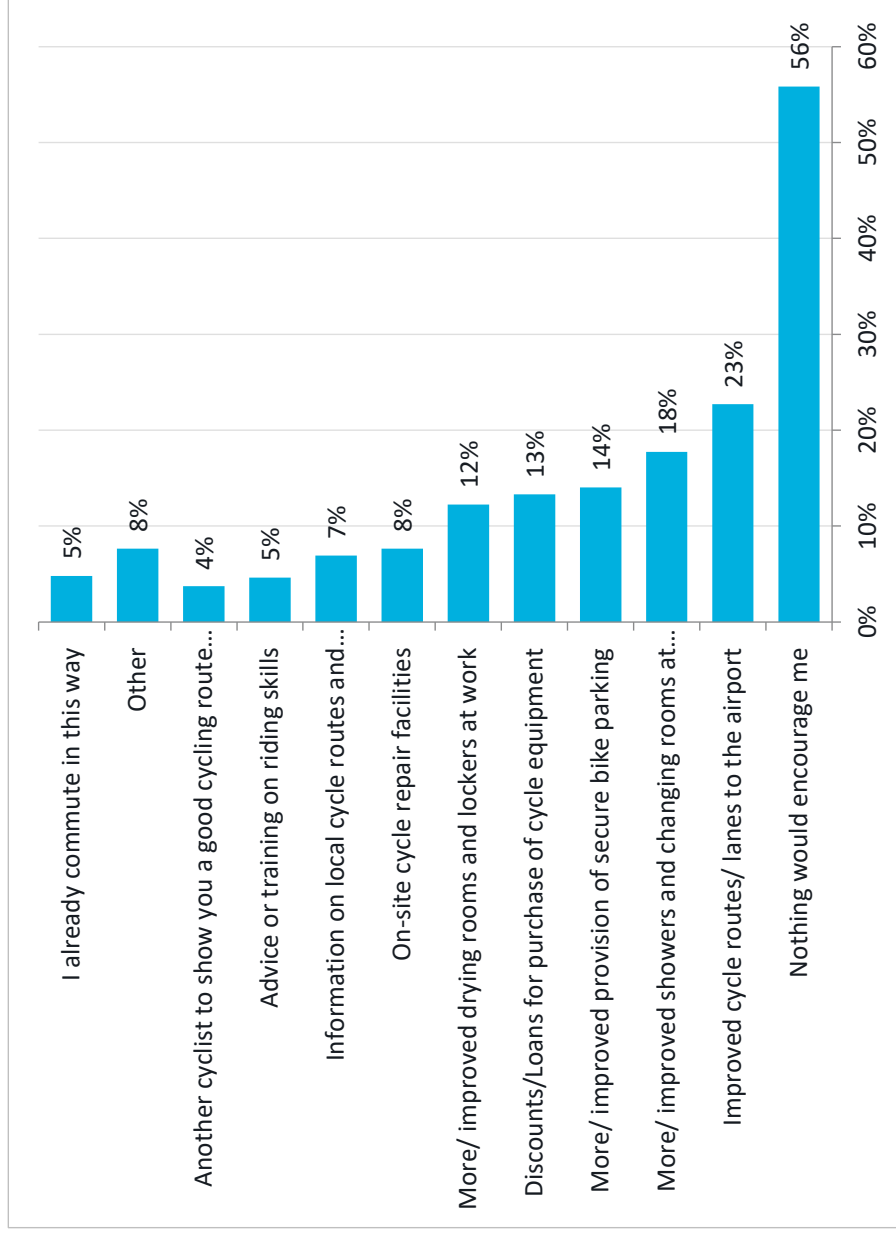




# What would encourage staff to cycle to work

- Respondents were asked which of the following changes would most encourage them to cycle to work. Respondents were allowed to choose more than one thing; 965 options were selected.
- Over half of respondents (56%) said nothing would encourage them to cycle to work; and
- 5% already cycled to work.
- In terms of encouraging staff to cycle to work:
  - **The most common response (23% of respondents) was improved cycle routes/lanes to the airport.**
  - Better provision of facilities for cyclists at the airport was important:
    - 18% of respondents wanted more/ improved showers and changing rooms
    - 14% wanted more/ improved provision of bike parking
    - 12% wanted more/ better provision of drying rooms and lockers.
  - Discounts/ loans for cycle equipment was important for 13% of respondents.

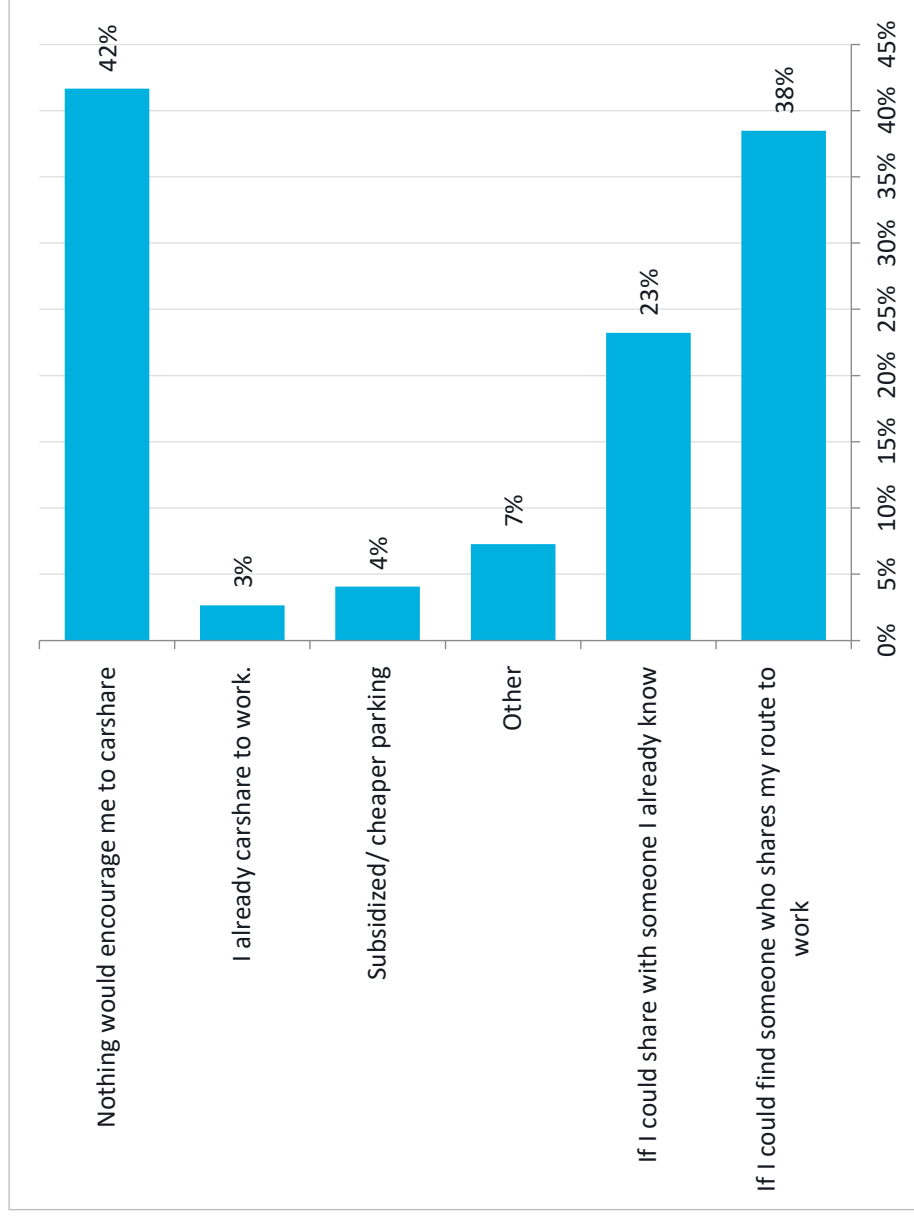
Which of the following changes would most encourage you to cycle to work?



# What would encourage staff to car share to work

- Respondents were asked which of the following changes would most encourage them to car share to work. Respondents were allowed to choose more than one thing; 662 options were selected.
- Just under half of respondents (42%) said nothing would encourage them to car share to work; and
- 3% already car share.
- In terms of encouraging staff to car share to work:
- **The most common response (38% of respondents) was if they could find someone who shares their route to work;**
- 23% responded that they would if they could share with someone they already knew; and
- 4% indicated that subsidised/ cheaper parking would encourage them.

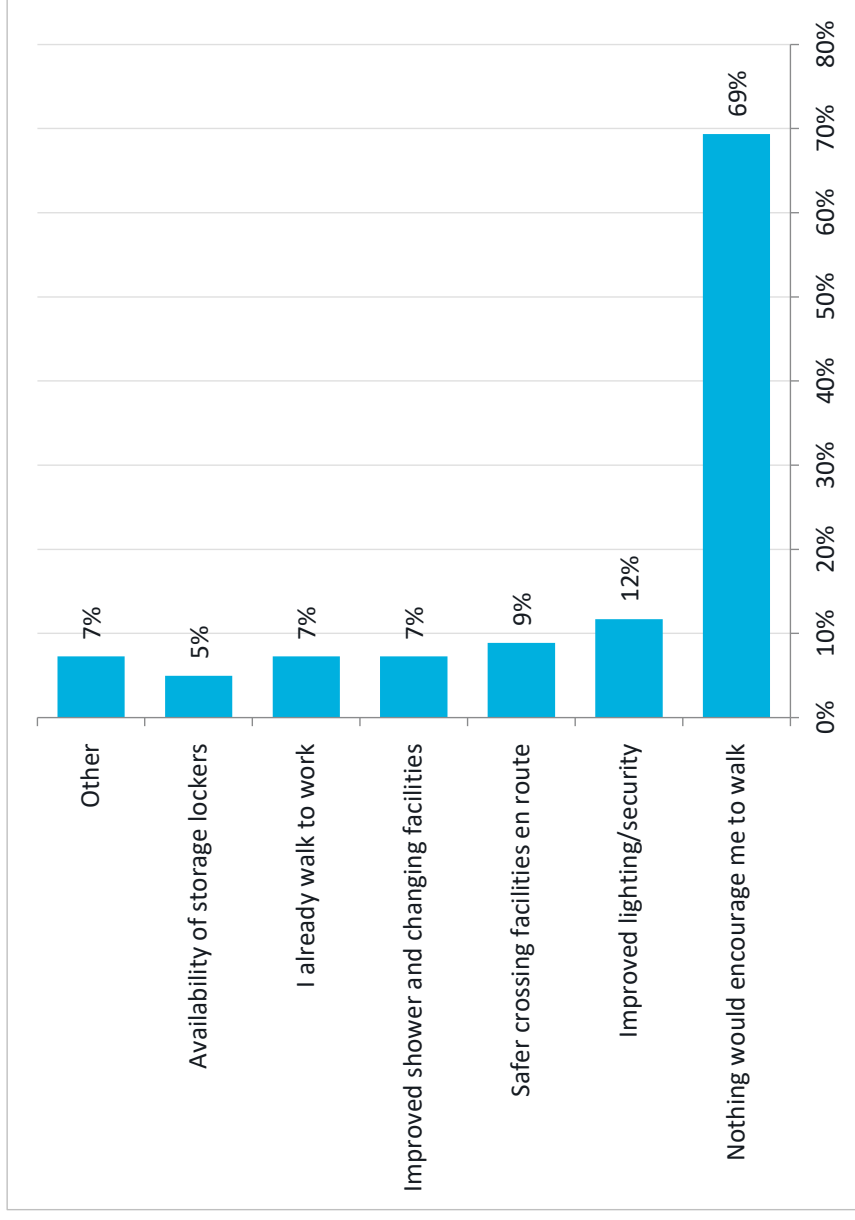
Which of the following would most encourage you to car share to work?



# What would encourage staff to walk to work

- Respondents were asked which of the following changes would most encourage them to walk to work. Respondents were allowed to choose more than one thing; 658 options were selected.
- More than two-thirds of respondents (69%) said nothing would encourage them to walk to work; and
- 7% already walked to work.
- In terms of encouraging staff to walk to work:
- **The most common response (12% of respondents) was improved lighting and security;** and
- 9% said more safer crossing facilities would encourage them.
- 12% of responses sought better facilities at the airport:
- 7% said improved shower and changing facilities would encourage them; and
- 5% said availability of storage lockers would encourage them.

Which of the following changes would most encourage you to walk to work?



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