Annual Performance Report 2020

(Compliance with planning permission)

Annex 1
Summary of CADP1 APR Requirements & References

Condition Requirements	Section	Format	Reference/ Source
Approved PCCs			
31 NOMMS A.8 – Reporting publish noise monitoring data in APR in June each year	Environment	Report in Appendix	Annex 2 NOMMS 2.1
31 NOMMS – Appendix D2/D5 present annually (in APR) the measurements and calculations showing whether ground running noise limit has been exceeded in previous year	Environment	Report in Appendix	Annex 2 NOMMS 5.3
31 NOMMS - H3 adhere to a prescribed auxiliary power unit strategy, and report in the APR on use of the units each year	Environment	Report in Appendix	Annex 2 NOMMS 8.0
31 NOMMS – Appendix F produce annual daytime noise contours depicting air noise produced during an average summer day following defined method	Environment	Contours in Appendix and summary in text	Annex 2 NOMMS Appendix 7
31 NOMMS – C3/2.7 produce and issue a community and airline annual report on 31 march each year	Environment	Report in Appendix	Annex 5 IPS Report
44 Fixed Electric Ground Power (FEGP) - Para 4.3 monitoring of FEGP performance to be reported annually in APR	Environment	Summary of AQMS progress	Annex 2 NOMMS 8.0
51 Ground Running Noise Limit engine running summary logs to be produced monthly and for publication annually in APR	Environment	Summary of AQMS progress	Annex 2 NOMMS 5.0 & Appendix 6
58 Air Quality Management Strategy - Measure 1 Measure 1: Record availability of FEGP on all Stands	Environment	Report in Appendix	Annex 2 NOMMS Report 8.0 Annex 7 Air Quality Action Plan Progress Update
58 Air Quality Management Strategy - Measure 2 Measure 2: Record APU use in line with Airfield Operating Instructions and forthcoming APU Strategy	Environment	Summary of AQMS progress	Annex 7 Air Quality Action Plan Progress Update
58 Air Quality Management Strategy - Measure 9 Measure 9: all vehicles with airside vehicle permit comply with latest vehicle emissions standards - by June each year	Environment	Summary of AQMS progress	Annex 7 Air Quality Action Plan Progress Update
58 Air Quality Management Strategy - Measure 10 Measure 10: undertake routine annual, and periodic emissions testing for airside vehicles report findings to LBN annually (June)	Environment	Summary of AQMS progress	Annex 7 Air Quality Action Plan Progress Update
58 Air Quality Management Strategy - Measure 13 Measure 13: Review and update the website to provide clear and concise information on the performance of the Air Quality Management Strategy	Environment	Report in Appendix	Annex 7 Air Quality Action Plan Progress Update

Condition Requirements	Section	Format	Reference/ Source
58 Air Quality Management Strategy - Measure 15 Measure 15: Publish an article related to air quality and airport operations in "Airport Life"	Environment	Report in Appendix	Annex 7 Air Quality Action Plan Progress Update
70 Waste Management Strategy – Para 4.7 LCA to report progress annually on the targets for the management and recycling of the wastes	Environment	Report in Appendix	Annex 8 Sustainability and Biodiversity Action Plan Progress Update
60 Use of River Thames For Construction – Para 4.2 LCA to report to LBN number of vehicles taken off the road each year as part of APR	Surface Access	Summary of progress	APR Section 4.3.2

Condition Requirements	Section	Format	Reference/ Source
s106			
Schedule 8 produce noise contours – Para 2 (30 Noise Monitoring System & 31 NOMMS – Appendix F) 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 Appendix and summary in text	Annex 2 NOMMS Appendix 7
Schedule 9 purchase offer – Para 8.2 - 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	Annex 2 NOMMS 10.2 and Appendix 10
Schedule 9 reinspection scheme – Para 5.3 - a list of properties which have become eligible for the Reinspection Scheme in the preceding 12 months.	Environment	Report in Appendix	Annex 3
Schedule 11 – Para 1.3 Provide list of existing employers	Employment	Summary in text and schedule in appendix	Annex 9 Contractor/ Supplier Name and Postcode
Schedule 11 – Para 1.5 Report job numbers and target performance to LBN and LCACC (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 numbers of full-time and part-time employees at the Airport and those employed directly by the Operator	Employment	Stats in text	a) Section 3.2.2 b) Section 3.3.2 c) Section 3.2.2 & 3.3.2 d) Section 3.2.2 & 3.3.2
Schedule 11– Para 3.2 Maximise supply chain opportunities for LBN and local area businesses and report progress (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	a) Section 3.4.2 b) Section 3.5.1 c) Annex 9 Contractor/ Supplier Name and Postcode d) Section 3.5.1

Condition Requirements	Section	Format	Reference/ Source
Schedule 11 – Recruitment Policy – Para 1.4 - 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 Annual Performance Report	Employment	Summary in text	Annex 11 2020 updated recruitment policy
Schedule 12 Value Compensation Scheme (VCS 1) - which payments have been made under VCS 1	Financial Contributions	N/A	N/A for 2020
Schedule 12 VCS 2 - which payments have been made under VCS 2 + The existence of the adopted VCS2 and its closing date will be publicised 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	N/A	N/A for 2020
Schedule 9 NIPS 1 - which payments have been made under NIPS 1	Financial Contributions	N/A	N/A for 2020
Schedule 9 NIPS2 - which payments have been made under NIPS 2	Financial Contributions	N/A	N/A for 2020
Annexure 2 – First Tier Scheme - para 3.1 - With effect from the Commencement of Development the Annual Performance Report shall specify the geographic area within which the properties which are eligible for this Scheme are situated.	Compensation	N/A	N/A for 2020
Annexure 4 – NIPS2 – para 3.8 the existence of NIPS2 (once adopted) will be publicised by its inclusion in the Annual Performance Report	Compensation	N/A	N/A for 2020
Annexure 7 – Second Tier Noise Insulation Scheme – para 3.1 - the geographic area within which the properties which are eligible for this Scheme are situated.	Compensation	N/A	N/A for 2020
Annexure 9 – VCS – para 5.1 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	N/A	N/A for 2020
Annexure 12 – Intermediate Tier Scheme – para 3 - specify the geographic area within which the properties which are eligible for this Scheme are situated.	Compensation	N/A	N/A for 2020
Schedule of Payments Made	Financial Contributions	Summary of annual payments in text	APR Section 6.1

Condition Requirements	Section	Format	Reference/ Source
Conditions			
19 Review and Reporting on ANCS A report as part of the APR on the performance and/or compliance with the approved ANCS during the previous calendar year	Environment	Summary in text and report in Appendix	APR Section 2.3 Annex 4 ANCS Report
47 Auxiliary Power Units (/31 NOMMS - H3) A report containing details of the use of Auxiliary Power Units at the Airport in the previous calendar year & adhere to a prescribed auxiliary power unit strategy, and report in the APR on use of the units each year	Environment	Summary in text and report in Appendix	Annex 2 NOMMS 8.0 Annex 2 NOMMS Appendix 7
48 Ground Engine Running Strategy 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.	Environment	Summary in text and report in Appendix	Annex 2 NOMMS 5.2
49 Ground Running, Testing and Maintenance Strategy A Report as part of the APR on the performance and compliance during the previous calendar year with the targets in the GRTMS.	Environment	Summary in text and report in Appendix	Annex 2 NOMMS 5.3
52 Ground Running Annual Performance Report (inc. 51 Ground Running Noise Limit) (/31 NOMMS – Appendix D2/D5) A Ground Running Annual Performance Report as part of the APR including engine running summary logs to be produced monthly and for publication annually in APR & present annually (in APR) & the measurements and calculations showing whether ground running noise limit has been exceeded in previous year	Environment	Summary in text and report in Appendix	Annex 2 NOMMS 5.3
56 Sustainability and Biodiversity Strategy 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/Strategies.	Environment	Report as Appendix	Annex 8 Sustainability and Biodiversity Action Plan Progress Update
57 Air Quality Monitoring An annual report for each calendar year published and included in APR (1 June).	Environment	Report as appendix	Annex 7 2020-AQ Annual Monitoring Report
59 Complaints About Environmental Impact As part of the Annual Performance Report in relation to such complaints and actions in the preceding calendar year.	Environment	Summary in text	APR Section 2.12

Annual Performance Report 2020

(Compliance with planning permission)

Annex 2

Noise Management and Mitigation Strategy (NOMMS) Report

Bickerdike Allen Partners
Architecture
Acoustics
Technology

LONDON CITY AIRPORT

NOISE MANAGEMENT AND MITIGATION STRATEGY (NOMMS) REPORT 2020

Report to

London City Airport
The Royal Docks
London E16 2PB

A11327_05_RP022_1.0
7 May 2021

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Bickerdike Allen Partners LLP is an integrated practice of Architects, Acousticians, and Construction Technologists, celebrating over 50 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.

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1.0 INTRODUCTION

The City Airport Development Programme (CADP1) planning application (13/01228/FUL) 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 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 5th year after approval and every 5th 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.

This report reviews the performance and compliance with the NOMMS in 2020, 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 1st January 2020 up to and including 31st December 2020, to show compliance with Conditions 21 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 three mobile NMTs. The fixed NMTs (NMTs 1-6) are used to measure arrivals and departures of aircraft using the airport. One of the mobile NMTs (NMT 7) is used primarily for the monitoring of aircraft related ground noise. The other two mobile NMTs (NMTs 8 & 9) are used as and when required, either as back-up for the other NMTs or for off-site monitoring. The location of NMTs 1-7 is shown in Figure 1.

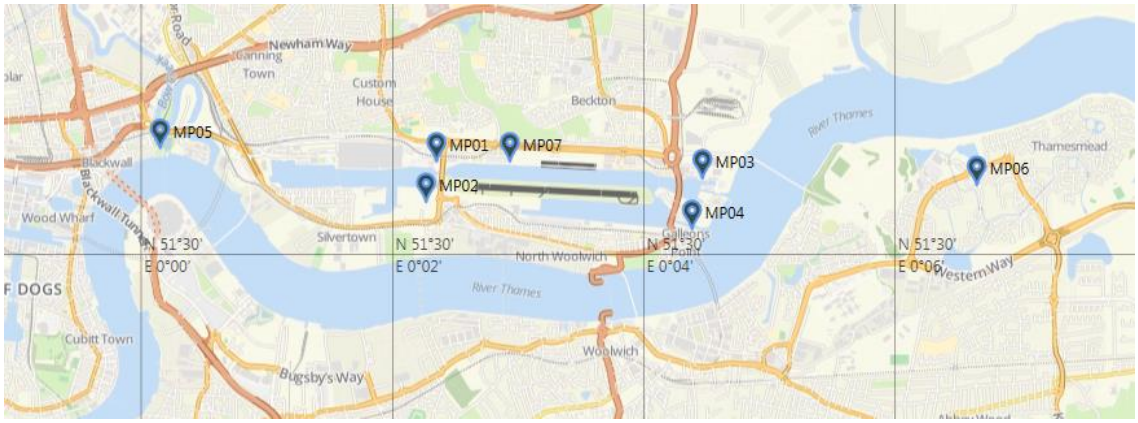


Figure 1: Location of NMTs 1-7

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 2.3 below.

The average departure and arrival noise levels measured in 2020, 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 have introduced a

web-based system (known as TRAVIS[1]) 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. The airport are required to maintain a log of 'off track' departures that do not stay within a certain distance of the agreed routes, with the aim of working towards achieving at least 95% of all departures within agreed swathes.

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, analysis has been carried out on the tracks flown in 2020 in order to identify any aircraft which appear to be 'off track'. This analysis is presented in Appendix 1 and summarised in this section.

2.2.1 Runway 27 Departures

Departures using Runway 27 initially go straight before turning right to head east. All Standard Instrument Departures (SIDs) follow the same route initially. To illustrate the spread of aircraft departing from Runway 27 during 2020, track plots are presented by quarter in Appendix 1.

For runway 27 departures, a 2 km wide gate has been set up in the track keeping system at the location of NMT 5.

In 2020 all departures passed through the gate.

2.2.2 Runway 09 Departures

Departures using Runway 09 initially go straight before following departure routes that diverge soon after depending on which SID is being followed. There are two distinct initial routes; the DVR, CLN and LYD SIDs turn towards the north-east whereas the BPK and CPT SIDs turn towards the north west soon after departure. For the purpose of this analysis, these have been treated as two routes, a north-east one and a north-west one. Track plots are presented by quarter in Appendix 1.

For the north-east SIDs, a 2 km wide gate has been established at the location of NMT 6 and set up to coincide with the extended centreline of the runway, similar to the corresponding gate for NMT 5. In 2020, all departures following the DVR, CLN and LYD SIDs passed through this gate before turning north.

[1] https://travislcy.topsonic.aero/

For the north-west SIDs, aircraft commence a turn as they track over NMT 6, so a 2 km wide gate has been established prior to the turn commencing. In 2020, all departures following the BPK and CPT SIDs passed through this gate.

2.3 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 A2.1 of Appendix 2 of this report details the daily operational status of each of NMTs 1-6 between 1st January 2020 and 31st December 2020. Table A2.2 sets out the monthly correlation rate of noise events to aircraft movements for the same period, and Table A2.3 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 1st January 2020 and 31st December 2020. Each noise monitoring terminal was in operation every day.

The target correlation rate (80%) for departures measured at NMTs 1-4 was met for 2020. A total of 8,649 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 89% was achieved.

A total of 8,584 (89%) departures and 8,719 (90%) arrivals were correlated at NMTs 5 and 6 in 2020.

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[2] system (see Section 5.0).

[2] Electronic Flight Progress Strips (EFPS) which has replaced the system of writing on paper Flight Plan Strips (FPLs) for Air Traffic Control personnel.

4.0 INCENTIVES AND PENALTIES SCHEME

4.1 NOMMS Scheme

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[3] 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.

[3] Fines were not payable prior to 1st November 2018

Threshold Description	Aircraft Category	Flyover Noise Level, dB L_{ASmax}	
		Runway 09	Runway 27
Fixed Penalty Limit	Turbofans	84	84[1]
	Turboprops	78	78
Credit Removal Threshold	Turbofans	81	82
	Turboprops	75	77
Credit Award Threshold	Turbofans	73	72
	Turboprops	66.5	65.5

[1] 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_{ASmax}

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. Around £35,000 worth of grants were announced in March 2020, supporting a broad range of initiatives that enable positive and significant change within and across diverse communities in East London. The remainder of the fund was planned to be awarded later in the year, however given the severe impact of coronavirus locally, the airport together with its Community Fund trustees decided to increase that amount in 2020 and made £50,000 available for East London foodbanks. The Community Fund plans to return to two rounds of grants in 2021.

The grantees were selected by a judging panel that included representatives from the airport, local authorities and the airline with the leading noise performance in the previous year. They reported a number of common themes across all the recipients, that they either:

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

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 was also advertised to local MPs and councillors to cascade the information and encourage charities and not-for profit organisations to apply.

Figure 2: Example of Community Fund Advert

In order to decide the grantees, trustees board meetings were held and applicants were selected to be awarded a grant of up to £3,000. A robust scoring system was used in order to score the applications, based on the funding criteria they applied for, the number of beneficiaries for the amount requested along with how the local community will benefit from the fund. Taking all this into consideration trustees selected projects which will benefit the local community and enable positive impact. Details of the selected projects and the grants made are given in Appendix 3.

4.3 Scheme Review

The NOMMS IPS is subject to an annual review. The review shall consider amongst other matters, the efficacy of the noise limits and threshold values, the suitability of the financial penalty, and the effectiveness of the noise threshold system as a component of the LCA NOMMS scheme. Written agreement shall be received from LBN prior to the introduction of any modifications to the system.

A review of the scheme was carried out in March 2021. No changes were made to the scheme.

4.4 Reporting

A summary of the number of fixed penalties, credit awards and credit removals by month is given in Table 2. Full details of the fixed penalties, credit awards and credit removals for 2020 are given by airline in Appendix 4.

Month	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded
January	0	£0	5	335
February	0	£0	8	260
March	0	£0	1	206
April	0	£0	0	0
May	0	£0	0	0
June	0	£0	0	0
July	0	£0	0	23
August	0	£0	0	38
September	0	£0	0	55
October	0	£0	0	60
November	0	£0	0	34
December	0	£0	0	34
Total	**0**	**£0**	**14**	**1045**

Table 2: Monthly Penalties, Credit Removals and Credit Awards, 2020

As reported in the Community and Airline Annual Report, the number of residual credits is given for the most commonly operating airlines in Table 3.

Airline	Residual Credits 2020	Residual Credits 2019	Residual Credits Difference 2020 - 2019
Aer Lingus	-13	-62	49
BA Cityflyer	171	142	29
Flybe	10	-2	12
Lufthansa	47	66	-19
British Airways	8	35	-27
Luxair	27	56	-29
LOT Polish Airlines	8	38	-30
GlobeAir	44	96	-52
Alitalia	82	150	-68
KLM Royal Dutch Airlines	56	145	-89
Sun-Air of Scandinavia	45	180	-135
Swiss	153	497	-344
NetJets Europe	173	595	-422
Loganair[1]	4	-	-

[1] Airline did not operate at LCA in 2019 and therefore its improvement cannot be assessed.

Table 3: 2020 Residual Credits Ranking

The most improved airline has been determined by comparing the total residual credits in the two years. Aer Lingus was the best performing airline according to the above table. However, Aer Lingus left the airport in 2020. Therefore, the airport will partner with the following best performing airline in delivering the Community Fund in 2022.

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 is currently 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-manoeuvring.

An Electronic Flight Progress Strips (EFPS) system has been installed 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 maintenances 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 2020:

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 for 2020 is given in Appendix 5.

The overall average ERS time for 2020 was 4 minutes and 22 seconds.

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. This information is recorded in the EFPS. The average time by aircraft type and airline is given in Appendix 5.

The overall average TTA for 2020 across all aircraft was 3 minutes and 31 seconds.

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. This information is recorded in the EFPS. The average time by aircraft type and airline is given in Appendix 5.

The overall average TTD for 2020 across all aircraft was 8 minutes.

5.2.4 Average Hold Time (HT)

This is the time that departing aircraft are held at a remote hold position. Hold time is recorded at other airports where remote holds are available. This is an area used where an aircraft is held off stand during a departure if (for example) the flight plan expires or the flight is delayed for another reason. This frees up the stand to allow other arriving aircraft to disembark. LCA have no such remote hold points so this measure isn't currently relevant.

The Ground Engine Running Strategy was reviewed in 2020 and an updated strategy was formally approved by LBN in December 2020. The updated strategy no longer requires the reporting of HT and introduces targets for TTA and TTD. The 2021 quarterly reports and APR will reflect these changes.

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 6 of this report sets out the official record of ground running of engines for test and maintenance for 2020 (Table A6.1), the summary of high power running for the same period (Table A6.2), and the prediction of ground running noise for comparison with the Ground Running Noise Limit. In 2020 LCA's ground running noise level was 57.2 dB $L_{Aeq,12h}$ which is 2.8 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[4]. 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.

[4] http://lcacc.org/meeting-papers-key-documents/recent-minutes-of-meetings/

7.0 ANNUAL NOISE CONTOURS

The following noise contours are normally 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 2020
- Forecast average mode summer daytime for 2021
- Forecast average mode summer daytime for 2021, factored to account for the typical differences between the forecast and actual movements (referred to as "forecast reduced")

When the airport is operating normally, producing these contours allows the determination of newly eligible properties for the sound insulation scheme. Due to the ongoing coronavirus pandemic and associated drop in aircraft traffic, the 2020 noise contours were significantly smaller than those in 2019. Although there is a large amount of uncertainty relating to the 2021 forecast, it is very unlikely that aircraft traffic will have recovered to exceed that which occurred in 2019. In light of the situation LBN have agreed that it is not necessary to produce 2021 forecast contours as part of this 2020 APR.

The 2020 noise contours, presented in Appendix 7, are produced at values of 57, 63, 66, and 69 dB $L_{Aeq,16h}$. Additionally, the 54 dB $L_{Aeq,16h}$ contour is shown for information purposes, at the request of third parties during the CADP1 planning inquiry. The 69 dB $L_{Aeq,16h}$ contour has been omitted from the figure in Appendix 7 for clarity; it does not leave the airport site.

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^2.

The contours have been calculated by the Aviation Environmental Design Tool (AEDT) version 2d. This software, also supplied by the Federal Aviation Administration, has replaced the previously used Integrated Noise Model (INM), although the calculation procedures are similar. The areas of each of the contours presented in Appendix 7 are given in Table 4.

Contour Value, dB $L_{Aeq,16h}$	Contour Area, km^2
	2020 Actual Summer Average Mode
54	1.1
57	0.6
63	0.2
66	0.1
69	0.1

Table 4: Contour Area Results

This demonstrates that LCA operated within their contour area limit in 2020. They are expected to continue to do so in 2021, as the 57 dB contour is expected to be smaller than that in 2019, which also complied with the contour area limit.

However due to the continued uncertainty around international travel and further lockdowns it is not possible to include any meaningful forecast at this time. The forecast 2021 contours would only trigger the Sound Insulation Scheme if they are larger than the actual 2020 contours. It remains unlikely that this will be the case, in light of the uncertainty related to the restart of national and international travel. The airport will keep this under review and will update the forecast contours subject to advice from the government on the back of the outputs from the Global Task Force. Consequently, it has been agreed with Local Planning Authority that it is not necessary to produce 2021 forecast contours as part of this report.

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. As previously advised in the APR and in discussions with London Borough of Newham (LBN), Stands 21-24 will be upgraded as part of the City Airport Development Programme (CADP) and a feasibility study on installing FEGP at Stands 12-14 has been submitted to LBN as per the airport's Air Quality Action Plan 2016-2018.

London City Airport currently has 9 mobile diesel ground power units (MGPUs) in operation, the oldest of which has had an engine rebuild so that it meets current European standards. These MGPUs service Stands 12-14 and 21-24 and other stands where necessary. Results from noise testing has shown that all units comply with the noise criteria set for mobile ground servicing equipment detailed within the IATA 910 – *Airport Handling Manual*[5].

Appendix 8 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.

[5] The standard is set that at a distance of 4.6 m, measured from the perimeter for the equipment, noise levels should be less than 85 dB.

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_{ASmax} for runway 09 arrivals and 90 dB L_{ASmax} for runway 27 arrivals.

8 aircraft arrivals exceeded these thresholds at NMT 7 in 2020. Details of these are presented in Table 5.

Date	Arrival Time	Runway	Aircraft Type	Airline	NMT 7 Noise Level, dB L_{ASmax}
13/01/2020	07:14	27	A318	BAW	90.2
16/01/2020	21:05	27	E190	AZA	90.7
26/01/2020	19:45	27	ER3	ABP	91.6
15/02/2020	06:34	27	A318	BAW	92.3
16/02/2020	20:29	27	DH8D	LGL	91.3
20/02/2020	06:36	27	A318	BAW	90.7
27/02/2020	06:58	09	FA7X	LMJ	88.5
29/02/2020	06:34	27	A318	BAW	91.1

Table 5: Log of Potentially Unusual or Excessive Reverse Thrust Use, 2020

Responses relating to these flights have not yet been received from the airlines involved.

BAW have previously advised that reverse thrust is required for the A318 as part of standard operating procedures when there are adverse conditions such as a wet runway.

Where responses are not received within a month of notification, follow up emails are sent and the issue will be escalated with the airline if necessary.

The distribution of measured noise levels at NMT7 in 2020 are presented in Appendix 9 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.[6]

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 10. This is because any properties within the actual contours for 2020, or the forecast for 2021 if they had been produced, would also have been inside the contours produced for the 2018 APR and therefore any eligible properties would already have been offered insulation.

[6] 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 2020 APR, and the previous 2019 APR, there have been no newly eligible properties and so instead the 2020 actual contours have been presented alongside the 2018 eligibility boundaries in Appendix 7.

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), compliant with approved European calculation methodology. 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[7].

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 2020.

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 when the treatment was originally undertaken[8]. 10 properties have been identified for reinspection in 2020. A list of these properties is provided in Appendix 10.

[7] 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).

[8] 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).

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 2020 under either scheme.

11.0 AIRCRAFT MOVEMENT NUMBERS

Conditions 21 to 27 of the planning permission of July 2016, which are reproduced in Appendix 11, detail the maximum number of actual and noise factored movements that are permitted at the airport.

Under the Noise Factored Scheme, which was superseded by the ANCS as of 29th March 2019, all aircraft operating at LCA were required to be categorised by their departure noise levels into one of five noise categories. Only aircraft which had been approved by the Council and had been categorised in this manner, provisionally or otherwise, were permitted to land or depart the airport (excepting emergencies).

The 2016 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, as well as limits on the numbers of noise factored 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 2020 are presented in Appendix 12, where they are compared with the relevant daily, weekly and annual limits.

Appendix 12 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 last operating period (late evening) of weekdays and Sundays from 22:00 to 22:30 hours and on Saturdays from 12:30 to 13:00 hours.

The data shows that throughout 2020, 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	**Nick Williams**	**David Charles**
for Bickerdike Allen Partners LLP	**Associate**	**Partner**

APPENDIX 1
FLIGHT TRACK MONITORING

This appendix presents the flight track monitoring data for 2020, broken down by quarter.

Quarter 1

Figure A1.1 shows a heat map of all departures from LCA during the first quarter of 2020. 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 represent the highest, as per the key in the bottom left of the image.

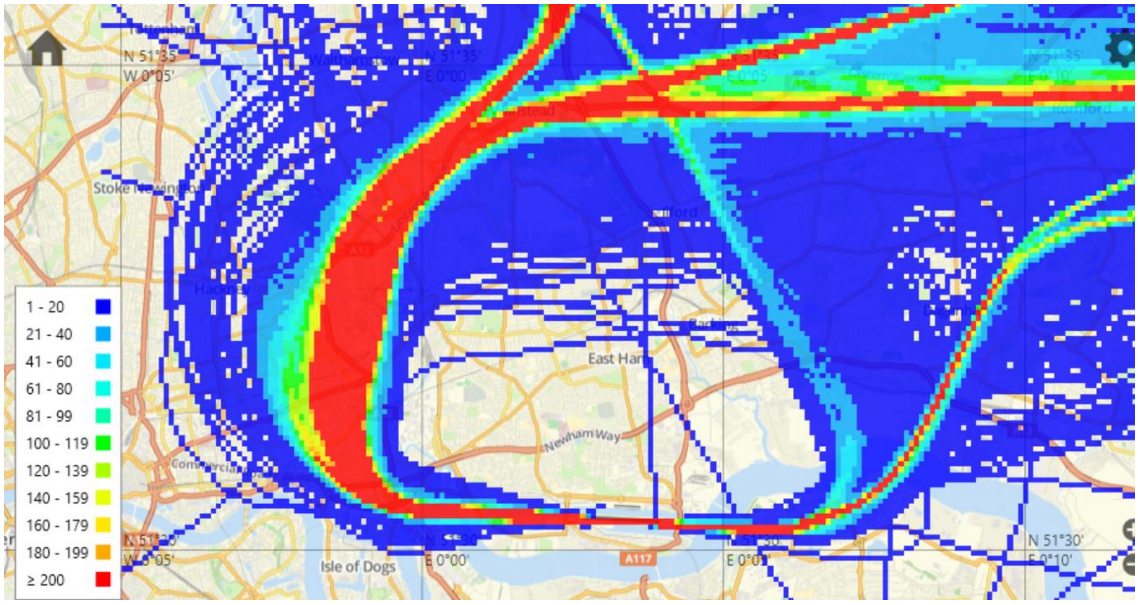


Figure A1.1: Departure Heat Map, 2020 Q1

Runway 27 Departures

Departures using runway 27 initially go straight before turning right (northwards) to head in a northerly or easterly direction. All Standard Instrument Departures (SIDs) follow the same route initially. Figure A1.2 illustrates the spread of aircraft departing from runway 27 during the first quarter of 2020.

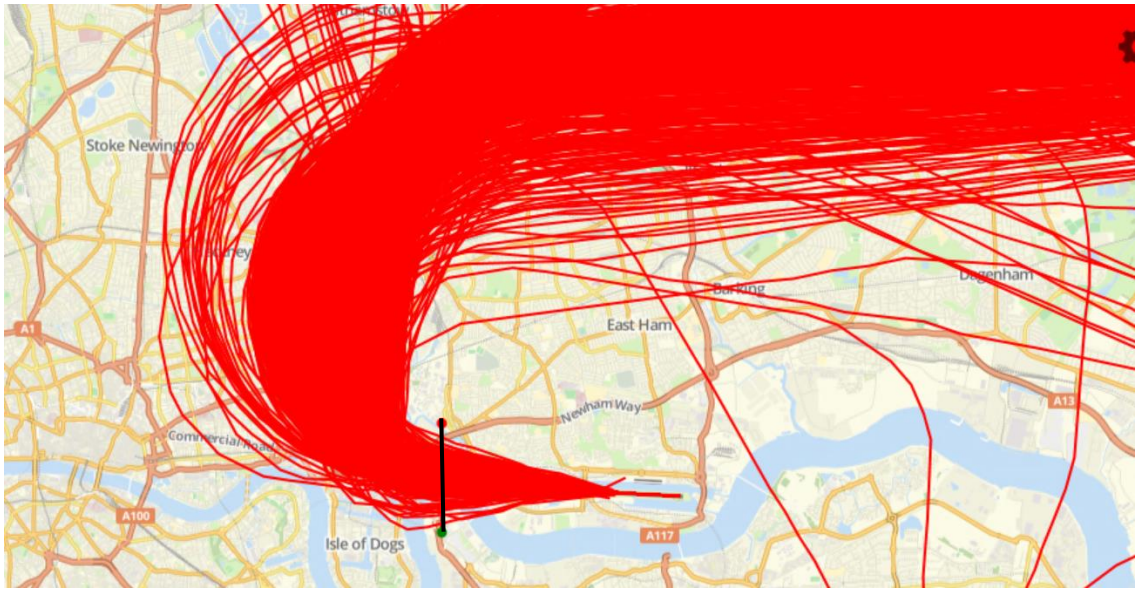


Figure A1.2: Runway 27 Departure Track Plot, 2020 Q1

A gate has been set up in the track keeping system at the location of NMT 5. The gate is 2 km wide and is shown in the above figure as a black line. The middle of the gate has been set up to coincide with the extended centreline of the runway.

All runway 27 departures passed through this gate in the first quarter of 2020.

Runway 09 Departures

Departures using Runway 09 initially go straight before following departure routes that diverge soon after departure depending on which SID is being followed. There are two distinct initial routes; the DVR, CLN and LYD SIDs turn towards the north-east whereas the BPK and CPT SIDs turn towards the north west soon after departure. For the purpose of this analysis, these have been split into two separate groups with track plots in Figure A1.3 and Figure A1.4.

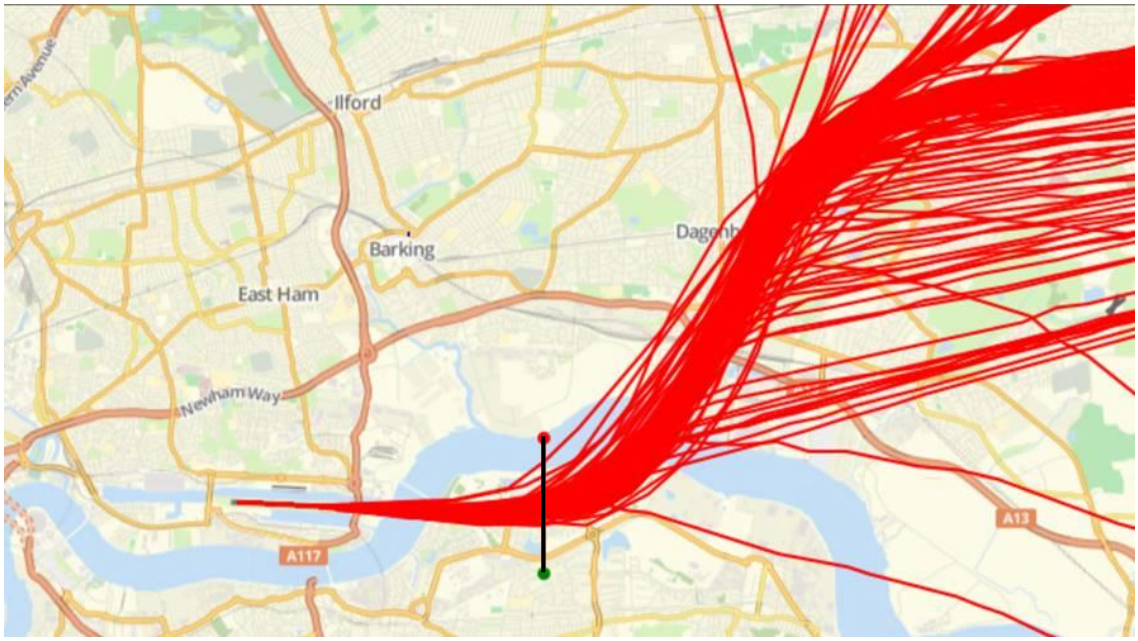


Figure A1.3: Runway 09 Departure Track Plot for 2020 Q1 – DVR, CLN and LYD SIDs

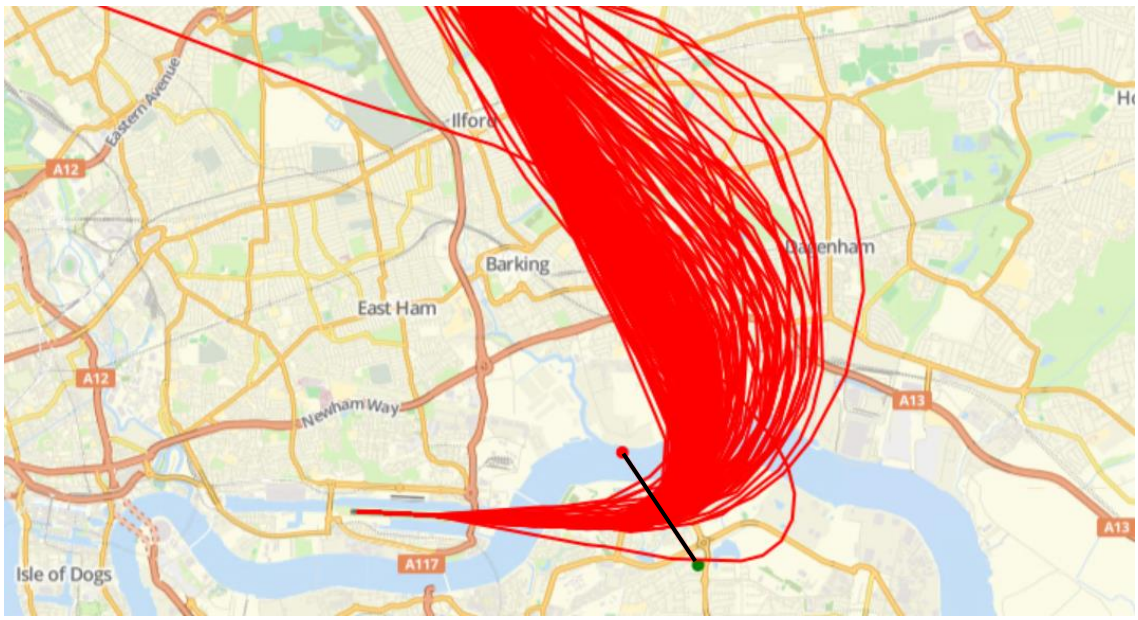


Figure A1.4: Runway 09 Departure Track Plot for 2020 Q1 – BPK and CPT SIDs

For the DVR, CLN and LYD routes, a gate was established at the location of NMT 6. The gate is 2 km wide and set up to coincide with the extended centreline of the runway, similar to the

corresponding gate at NMT 5. All aircraft following these SIDs passed through this gate during the first quarter of 2020.

For the BPK and CPT routes, aircraft commence a turn as they track over NMT 6, so a 2 km wide gate was established prior to the turn commencing. All aircraft following these SIDs passed through this gate during the first quarter of 2020.

Quarter 2 & 3

Due to the coronavirus pandemic, the airport was only open for commercial flights for 10 days during the second quarter of 2020. The second and third quarters have therefore been combined for this analysis.

Figure A1.5 shows a heat map of all departures from LCA during the second and third quarters of 2020. 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 represent the highest, as per the key in the bottom left of the image.

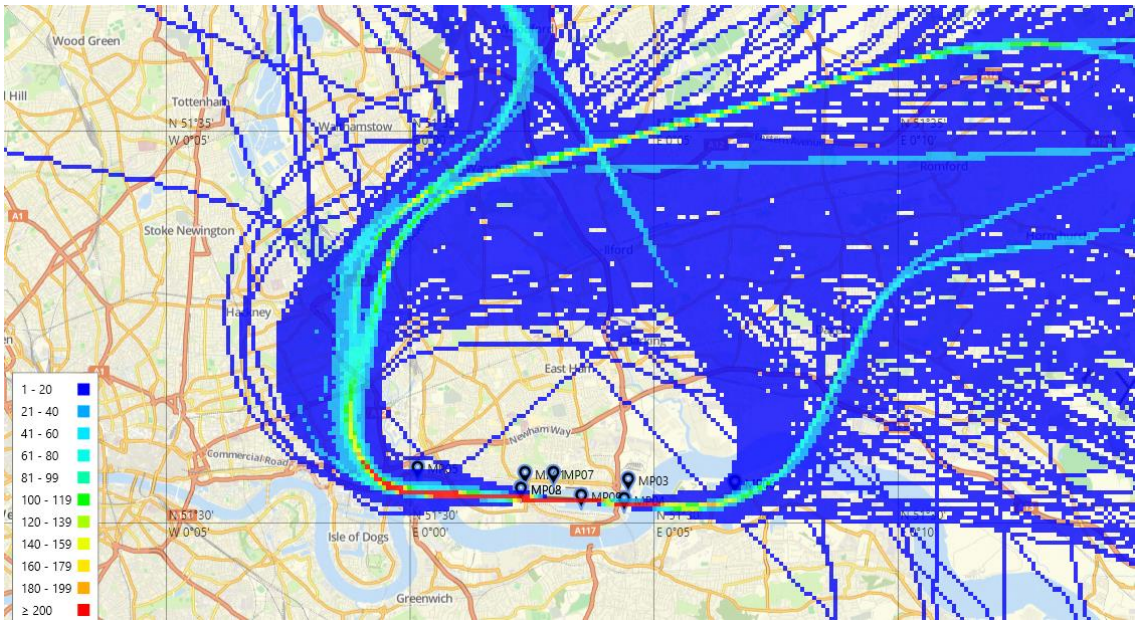


Figure A1.5: Departure Heat Map, 2020 Q2 & Q3

Runway 27 Departures

Departures using runway 27 initially go straight before turning right (northwards) to head in a northerly or easterly direction. All Standard Instrument Departures (SIDs) follow the same route

initially. Figure A1.6 illustrates the spread of aircraft departing from runway 27 during the second and third quarters of 2020.

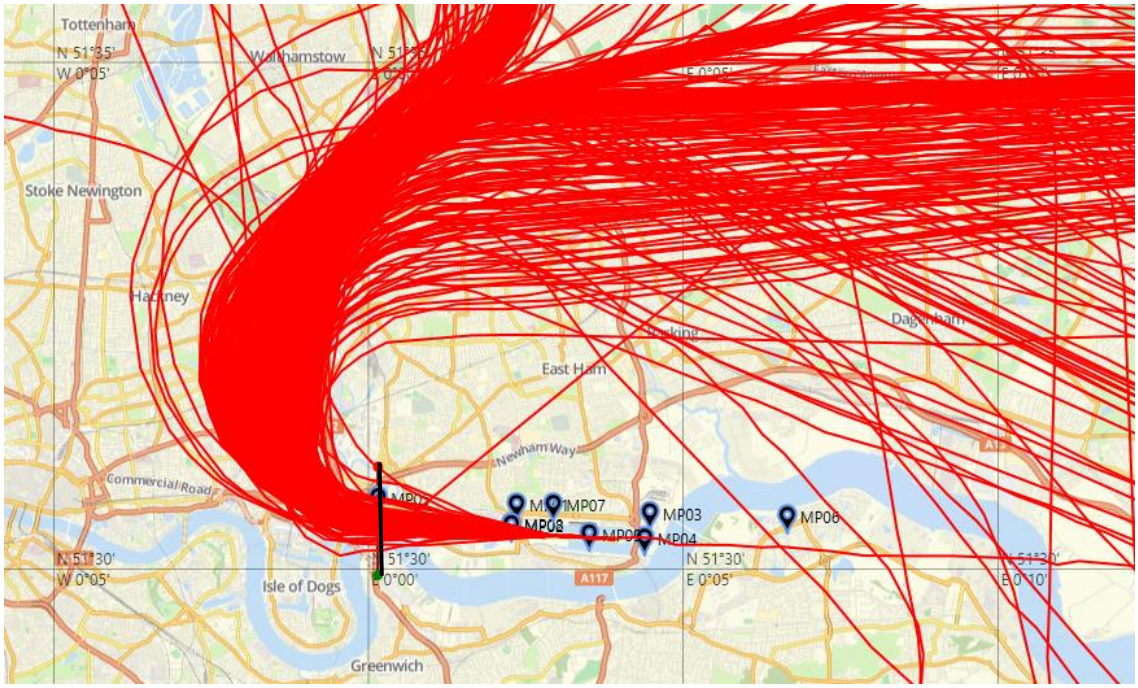


Figure A1.6: Runway 27 Departure Track Plot, 2020 Q2 & Q3

A gate has been set up in the track keeping system at the location of NMT 5. The gate is 2 km wide and is shown in the above figure as a black line. The middle of the gate has been set up to coincide with the extended centreline of the runway.

All runway 27 departures passed through this gate in the second and third quarters of 2020.

Runway 09 Departures

Departures using Runway 09 initially go straight before following departure routes that diverge soon after departure depending on which SID is being followed. There are two distinct initial routes; the DVR, CLN and LYD SIDs turn towards the north-east whereas the BPK and CPT SIDs turn towards the north west soon after departure. For the purpose of this analysis, these have been split into two separate groups with track plots in Figure A1.7 and Figure A1.8.

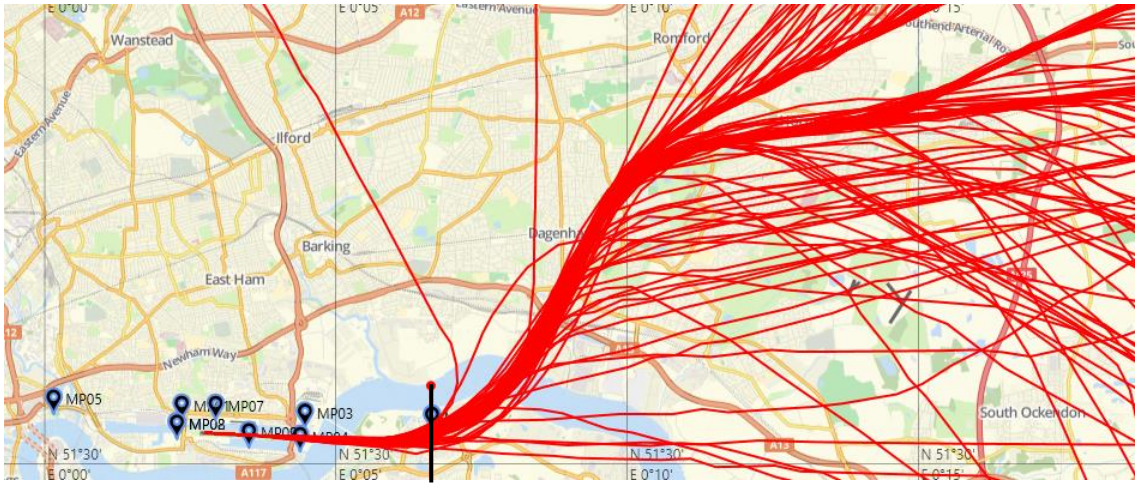


Figure A1.7: Runway 09 Departure Track Plot for 2020 Q2 & Q3 – DVR, CLN and LYD SIDs

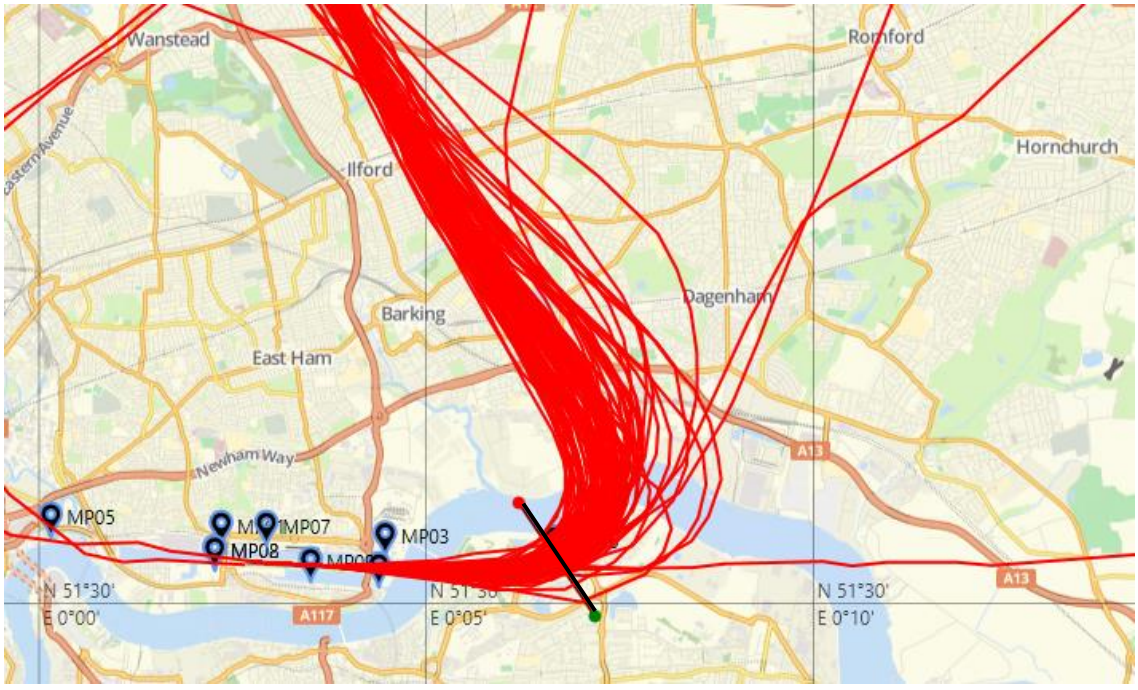


Figure A1.8: Runway 09 Departure Track Plot for 2020 Q2 & Q3 – BPK and CPT SIDs

For the DVR, CLN and LYD routes, a gate was established at the location of NMT 6. The gate is 2 km wide and set up to coincide with the extended centreline of the runway, similar to the corresponding gate at NMT 5. All aircraft following these SIDs passed through this gate during the second and third quarters of 2020.

For the BPK and CPT routes, aircraft commence a turn as they track over NMT 6, so a 2 km wide gate was established prior to the turn commencing. All aircraft following these SIDs passed through this gate during the second and third quarters of 2020.

Quarter 4

Figure A1.9 shows a heat map of all departures from LCA during the fourth quarter of 2020. 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 represent the highest, as per the key in the bottom left of the image.

Figure A1.9: Departure Heat Map, 2020 Q4

Runway 27 Departures

Departures using runway 27 initially go straight before turning right (northwards) to head in a northerly or easterly direction. All Standard Instrument Departures (SIDs) follow the same route initially. Figure A1.10 illustrates the spread of aircraft departing from runway 27 during the fourth quarter of 2020.

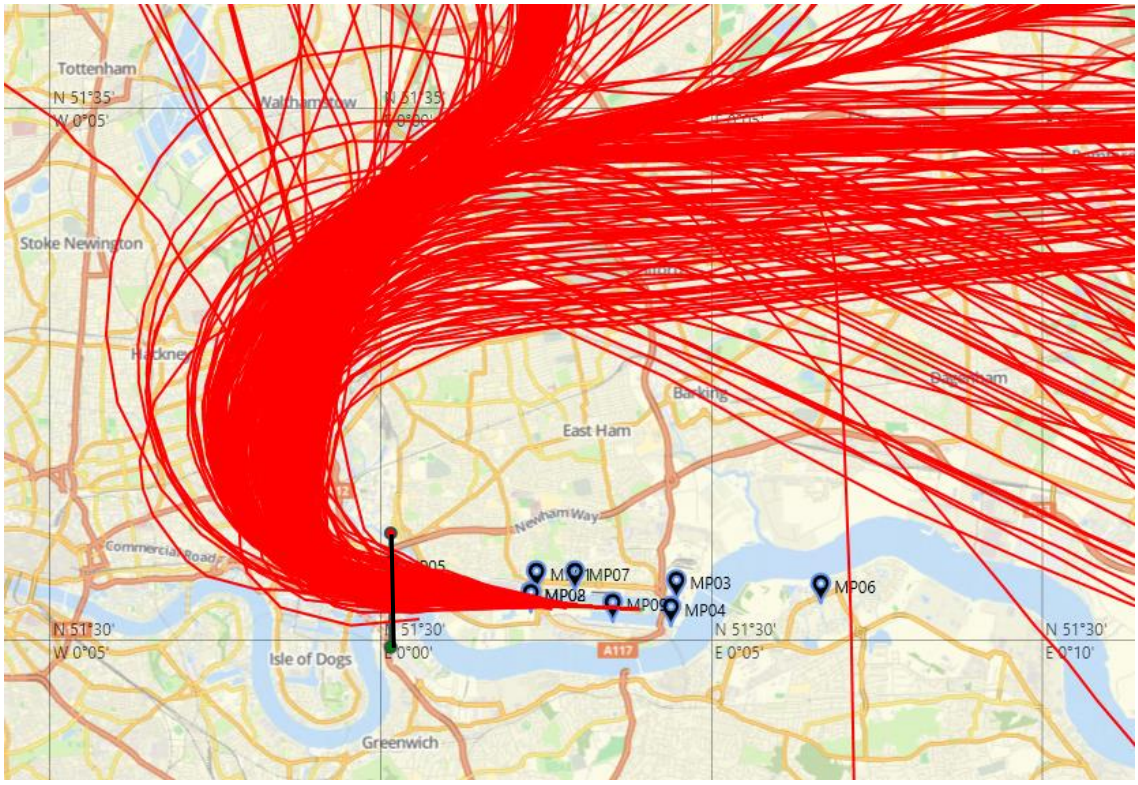


Figure A1.10: Runway 27 Departure Track Plot, 2020 Q4

A gate has been set up in the track keeping system at the location of NMT 5. The gate is 2 km wide and is shown in the above figure as a black line. The middle of the gate has been set up to coincide with the extended centreline of the runway.

All runway 27 departures passed through this gate in the fourth quarter of 2020.

Runway 09 Departures

Departures using Runway 09 initially go straight before following departure routes that diverge soon after departure depending on which SID is being followed. There are two distinct initial routes; the DVR, CLN and LYD SIDs turn towards the north-east whereas the BPK and CPT SIDs turn towards the north west soon after departure. For the purpose of this analysis, these have been split into two separate groups with track plots in Figure A1.11 and Figure A1.12.

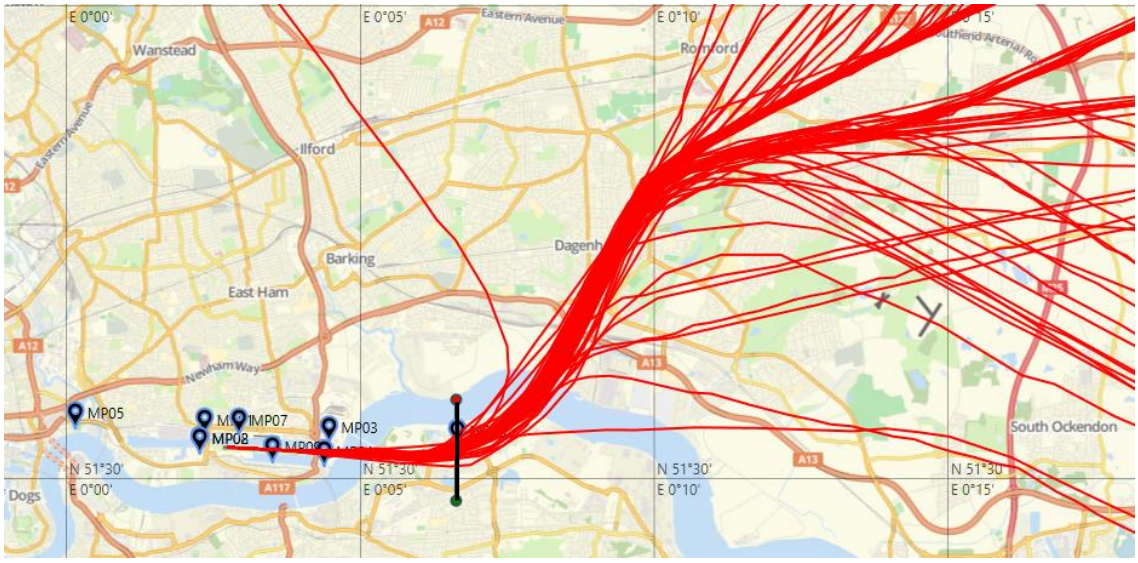


Figure A1.11: Runway 09 Departure Track Plot for 2020 Q4 – DVR, CLN and LYD SIDs

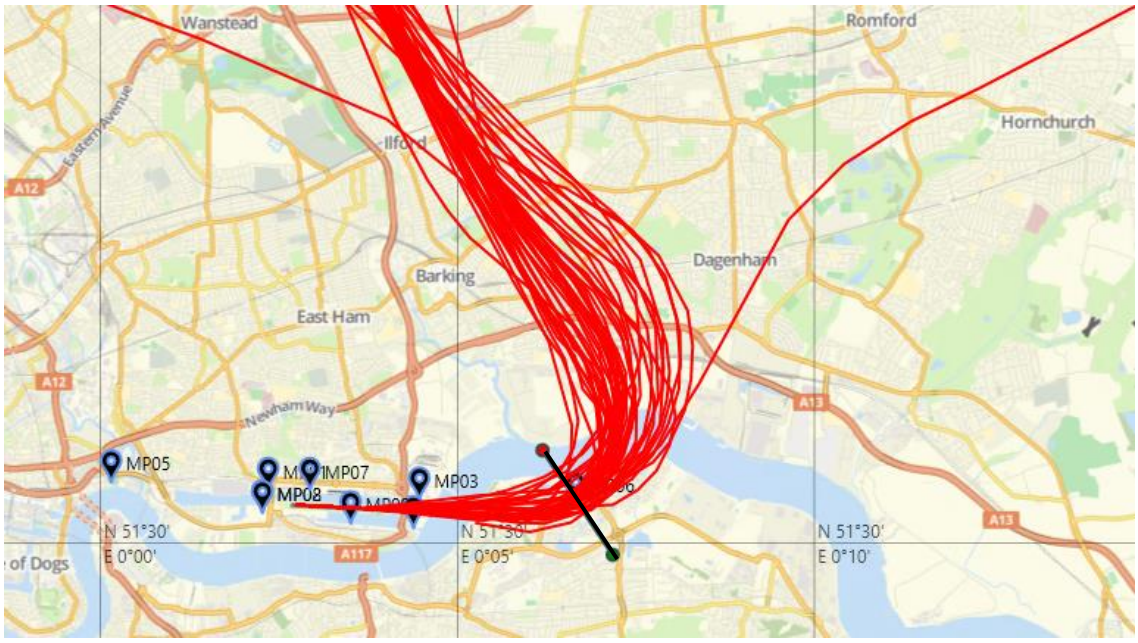


Figure A1.12: Runway 09 Departure Track Plot for 2020 Q4 – BPK and CPT SIDs

For the DVR, CLN and LYD routes, a gate was established at the location of NMT 6. The gate is 2 km wide and set up to coincide with the extended centreline of the runway, similar to the corresponding gate at NMT 5. All aircraft following these SIDs passed through this gate during the fourth quarter of 2020.

For the BPK and CPT routes, aircraft commence a turn as they track over NMT 6, so a 2 km wide gate was established prior to the turn commencing. All aircraft following these SIDs passed through this gate during the fourth quarter of 2020.

This appendix presents the flight track monitoring data for 2020, broken down by quarter.

Quarter 1

Figure A1.1 shows a heat map of all departures from LCA during the first quarter of 2020. 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 represent the highest, as per the key in the bottom left of the image.

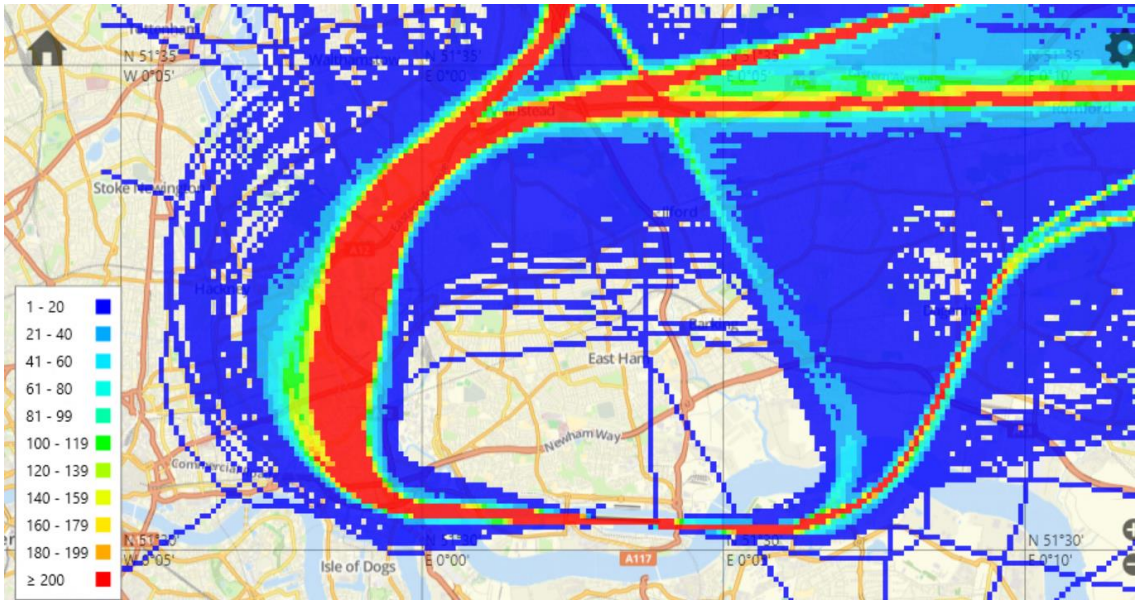


Figure A1.1: Departure Heat Map, 2020 Q1

Runway 27 Departures

Departures using runway 27 initially go straight before turning right (northwards) to head in a northerly or easterly direction. All Standard Instrument Departures (SIDs) follow the same route initially. Figure A1.2 illustrates the spread of aircraft departing from runway 27 during the first quarter of 2020.

Table A2.1 gives the daily operation status of each NMT for the 2020 calendar year.

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
01/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/01/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
28/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/01/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/02/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
25/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/02/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/03/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
24/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/03/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/04/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
21/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/04/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/05/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
19/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/05/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/06/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
16/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/06/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/07/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
14/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/07/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/08/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
11/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/08/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/09/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
08/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/09/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/10/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
06/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/10/2020	Yes	Yes	Yes	Yes	Yes	Yes
01/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/11/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
03/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
29/11/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/11/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
01/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
02/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
03/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
04/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
05/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
06/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
07/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
08/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
09/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
10/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
11/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
12/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
13/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
14/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
15/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
16/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
17/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
18/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
19/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
20/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
21/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
22/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
23/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
24/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
25/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
26/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
27/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
28/12/2020	Yes	Yes	Yes	Yes	Yes	Yes

Date	NMT Operational?					
	NMT1	NMT2	NMT3	NMT4	NMT5	NMT6
29/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
30/12/2020	Yes	Yes	Yes	Yes	Yes	Yes
31/12/2020	Yes	Yes	Yes	Yes	Yes	Yes

Table A2.1: 2020 NTK daily operational status

A summary of the correlation rate for each month of 2020 is given in Table A2.2. 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
January	6305	2924	2957	3028
February	6266	2530	2495	2557
March	3286	1529	1515	1508
April	0	0	0	0
May	0	0	0	0
June	18	7	6	6
July	442	199	183	201
August	588	280	273	270
September	905	436	424	429
October	852	418	411	414
November	372	177	172	168
December	346	149	148	138

Table A2.2: Summary of Correlated Aircraft Movements, 2020

Table A2.3 gives a summary of the NTK operational status for each quarter.

Quarter	Operational Summary
January – March	All 6 NMTs were operational, and data was received from each NMT for all days. The target correlation rate (80%) at NMTs 1-4 for departures was met for the first quarter of 2020. A total of 6,983 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 88% was achieved. The monthly correlation rates were affected by a significant amount of recorded noise events being marked as invalid due to high winds, particularly in February. In the first quarter of 2020, a total of 6,967 (88%) departures and 7,093 (89%) arrivals were correlated at NMTs 5 and 6.
April – June	All 6 NMTs were operational, and data was received from each NMT for all days. The target correlation rate (80%) at NMTs 1-4 for departures was not met for the second quarter of 2020. A total of 7 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 78% was achieved. In the second quarter of 2020, a total of 6 (67%) departures and 6 (67%) arrivals were correlated at NMTs 5 and 6. Due to the negligible number of flights, these slightly lower correlation rates are not a concern considering that the correlation rates returned to the normal value of well above 80% in the third quarter.
July – September	All 6 NMTs were operational, and data was received from each NMT for all days. The target correlation rate (80%) at NMTs 1-4 for departures was met for the third quarter of 2020. A total of 915 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 95% was achieved. In the third quarter of 2020, a total of 880 (91%) departures and 900 (93%) arrivals were correlated at NMTs 5 and 6.
October - December	All 6 NMTs were operational, and data was received from each NMT for all days. The target correlation rate (80%) at NMTs 1-4 for departures was met for the fourth quarter of 2020. A total of 744 aircraft departures were recorded, and an average correlation rate of noise events to aircraft departures of 95% was achieved. In the fourth quarter of 2020, a total of 731 (93%) departures and 720 (92%) arrivals were correlated at NMTs 5 and 6.

Table A2.3: 2020 Quarterly Operations Summary

Bickerdike Allen Partners
Architecture Acoustics Technology

APPENDIX 3

LONDON CITY AIRPORT COMMUNITY FUND GRANTS 2020

LONDON CITY AIRPORT
COMMUNITY
FUND

Community Fund 2020 Awardees

First Tranche - March 2020

Amount awarded	Organisation	Boroughs Supporting	Category	Funding Criteria
£2,990	Ability Bow	Tower Hamlets	Activities for people with reduced mobility (PRM)	building stronger, safer, healthier communities
£2,303	Bexley Foodbank	Bexley	food bank	building stronger, safer, healthier communities
£3,000	Cardboard Citizens	Hackney, Lambeth, Lewisham, Southwark, TH, WF	Homelessness	raising aspirations of East Londoners
£2,865	Carers FIRST	Hackney, Newham, WF	Mental health and wellbeing	building stronger, safer, healthier communities
£2,000	CREST Waltham Forest	Waltham Forest	Intergenerational project	building stronger, safer, healthier communities
£2,825	Grit Breakthrough Programmes	Barking, Newham	Mentor/coaching for hard to reach	building stronger, safer, healthier communities
£600	Irish Community Services working in	Bexley, Greenwich, Lewisham	Chair exercise for elderly	building stronger, safer, healthier communities

£3,000	Manorfield Primary School	Tower Hamlets	Bio-diversity project	creating more sustainable and greener communities
£3,000	Patient Participation Group (PPG)	Newham	Environment and wellbeing	creating more sustainable and greener communities
£617	REDBRIDGE TALKING NEWSPAPER ASSOCIATION	Redbridge	Vision impaired	building stronger, safer, healthier communities
£3,000	River Roding Trust	Barking & Dagenham	Environment – river cleaning/sustainability	building stronger, safer, healthier communities
£2,775	Salmagundi Films	Newham	Digital training for elderly	building stronger, safer, healthier communities
£2,855	Thamesmead Arts and Culture Office (TACO!	Bexley, Greenwich	Raising aspiration and providing training	raising aspirations of East Londoners
£3,000	The Community Hub	Hackney	Employability skills and training	creating pathways into employment
£1,005	Woman's Talk	Newham	Raising aspiration and providing training	building stronger, safer, healthier communities
£35,834.8	**15 Organisations**			

Second Tranche April 2020 - COVID 19

Amount awarded	Organisation	Boroughs Supporting	Category	Funding Criteria
£12,500	Greenwich Foodbank	Greenwich	Food Poverty	building stronger, safer, healthier communities
£6,250	RCCG - Dagenham Foodbank	Baring & Dagenham	Food Poverty	building stronger, safer, healthier communities
£6,250	Barking Foodbank	Baring & Dagenham	Food Poverty	building stronger, safer, healthier communities
£6,250	Newham Foodbank	Newham	Food Poverty	building stronger, safer, healthier communities
£6,250	CFE Foodbank	Newham	Food Poverty	building stronger, safer, healthier communities
£3,125	First Love Foundation	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£3,125	Bow Foodbank	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£3,125	Bethnal Green Foodbank	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£3,125	Mile End Foodbank Burdett FC	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£50,000.00	**9 Organisations**			

APPENDIX 4
INCENTIVES AND PENALTIES

The following table summarises the number of flights that incurred fixed penalties, credit removals and credit awards in the period between 1st January 2020 to 31st December 2020, by airline and aircraft type. Additionally, the total value of fixed penalties accrued and the residual number of credits are presented.

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
AAB	C25A	0	£0	0	1	1
AAB	C525	0	£0	0	1	1
ABP	E135	0	£0	0	3	3
AHO	C560	0	£0	0	4	4
AHO	C56X	0	£0	0	20	20
AOJ	CNJ	0	£0	0	1	1
ASJ	C510	0	£0	0	11	11
ASJ	C680	0	£0	0	2	2
ASJ	CNJ	0	£0	0	6	6
AWU	C25A	0	£0	0	1	1
AWU	CNJ	0	£0	0	1	1
AZA	E190	0	£0	0	82	82
BA9	E190	0	£0	0	1	1
BAW	A318	0	£0	0	8	8
BEE	DH8D	0	£0	0	2	2
BEE	E190	0	£0	0	8	8
BFD	F2TH	0	£0	0	3	3
BFD	F2TX	0	£0	0	2	2
BFD	FA7X	0	£0	0	1	1
CAZ	F2TH	0	£0	0	1	1
CAZ	F2TX	0	£0	0	1	1
CAZ	FA7X	0	£0	0	5	5
CFE	AT42	0	£0	0	1	1
CFE	E170	0	£0	0	35	35
CFE	E190	0	£0	0	135	135

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
CLF	CNJ	0	£0	0	1	1
CSD	GLEX	0	£0	0	1	1
DBE	F2TH	0	£0	0	2	2
DBO	FA7X	0	£0	0	1	1
DCA	C56X	0	£0	0	4	4
DCA	C680	0	£0	0	4	4
DCA	CNJ	0	£0	0	2	2
DCH	C680	0	£0	0	1	1
DCS	C56X	0	£0	0	3	3
DCS	CNJ	0	£0	0	2	2
DLH	E190	0	£0	0	47	47
EFD	C25A	0	£0	0	1	1
EFD	C25C	0	£0	0	2	2
EFD	CNJ	0	£0	0	1	1
EIN	RJ85	0	£0	13	0	-13
ELJ	CNJ	0	£0	0	1	1
ENZ	B462	0	£0	0	1	1
ENZ	RJ85	0	£0	0	1	1
ETI	C25B	0	£0	0	1	1
EZE	SB20	0	£0	0	3	3
FGS	C25B	0	£0	0	1	1
FHV	FA7X	0	£0	0	1	1
FLJ	CNJ	0	£0	0	1	1
FWW	FA8X	0	£0	0	1	1
FYG	FA7X	0	£0	0	1	1
FYG	GLEX	0	£0	0	2	2
GAC	C510	0	£0	0	44	44
GDK	C680	0	£0	0	2	2
GES	CNJ	0	£0	0	1	1

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
GLJ	CCX	0	£0	0	1	1
GLJ	GLEX	0	£0	0	3	3
GXI	FA7X	0	£0	0	1	1
GXI	FA8X	0	£0	0	2	2
HBJ	F2TH	0	£0	0	1	1
HKH	DA90	0	£0	0	1	1
HTM	C56X	0	£0	0	1	1
HTM	CNJ	0	£0	0	3	3
JAR	C550	0	£0	0	2	2
JDI	C56X	0	£0	0	2	2
JET	C56X	0	£0	0	4	4
JET	CNJ	0	£0	0	1	1
JFA	C25B	0	£0	0	1	1
JFA	PC24	0	£0	0	2	2
JIV	CNJ	0	£0	0	1	1
JSY	CNJ	0	£0	0	2	2
KFE	FA7X	0	£0	0	1	1
KLM	E190	0	£0	1	57	56
LEA	CNJ	0	£0	0	2	2
LEA	H25B	0	£0	0	1	1
LGL	DH8D	0	£0	0	27	27
LMJ	FA7X	0	£0	0	3	3
LNX	CNJ	0	£0	0	1	1
LNX	E135	0	£0	0	2	2
LOG	AT42	0	£0	0	4	4
LOT	E190	0	£0	0	8	8
MJF	E135	0	£0	0	3	3
MMD	F2TH	0	£0	0	2	2
N15	GLEX	0	£0	0	1	1

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
N28	G280	0	£0	0	1	1
N51	GJ6	0	£0	0	1	1
N88	CNJ	0	£0	0	1	1
NJE	C56X	0	£0	0	46	46
NJE	C680	0	£0	0	26	26
NJE	C68A	0	£0	0	39	39
NJE	CJ8	0	£0	0	1	1
NJE	CL35	0	£0	0	10	10
NJE	CL5	0	£0	0	1	1
NJE	E55P	0	£0	0	48	48
NJE	GL7T	0	£0	0	1	1
NJE	GLEX	0	£0	0	1	1
NOH	B461	0	£0	0	1	1
OKS	E135	0	£0	0	1	1
OOA	CNJ	0	£0	0	1	1
OOG	F2TH	0	£0	0	5	5
OOG	F2TX	0	£0	0	2	2
OOG	FA7X	0	£0	0	1	1
OOM	CNJ	0	£0	0	2	2
OOR	CNJ	0	£0	0	1	1
OOS	C56X	0	£0	0	4	4
OOX	C56X	0	£0	0	1	1
PHJ	F2TH	0	£0	0	1	1
PHT	CNJ	0	£0	0	1	1
PHV	BE20	0	£0	0	1	1
PHW	F2TH	0	£0	0	1	1
PVT	C510	0	£0	0	2	2
PVT	DF7	0	£0	0	1	1
RBB	FA7X	0	£0	0	3	3

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
SHE	FA7X	0	£0	0	20	20
SHE	FA8X	0	£0	0	3	3
SIO	E135	0	£0	0	2	2
SUS	J328	0	£0	0	45	45
SVW	DFL	0	£0	0	1	1
SWR	A221	0	£0	0	134	134
SWR	E190	0	£0	0	19	19
SYB	CCX	0	£0	0	2	2
TEU	F2TH	0	£0	0	1	1
TVS	CNJ	0	£0	0	1	1
ULC	CNJ	0	£0	0	1	1
XRO	DA90	0	£0	0	2	2

Table A4.1: 2020 Penalties and Credits Summary

APPENDIX 5
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 2020, 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.

Aircraft Code	Airline	Count of TTA	Average of TTA (mm:ss)	Count of ERS	Average of ERS (mm:ss)	Count of TTD	Average of TTD (mm:ss)
A221	Swiss International Air Lines	326	02:56	327	06:09	327	07:46
A318	British Airways	60	03:24	60	04:29	60	07:55
AT42	BA CityFlyer	128	02:51	127	04:59	127	06:25
AT42	Loganair	244	02:34	245	05:52	245	04:42
AT72	Blue Islands	96	04:07	96	05:24	96	09:04
C510	Globe Air	64	03:26	64	07:26	64	07:09
C56X	NetJets Transportes Aereos	81	02:41	80	05:06	80	07:22
C68A	NetJets Transportes Aereos	99	03:18	99	06:31	99	07:10
DH8D	Flybe	373	03:26	373	04:09	373	08:39
DH8D	Luxair	410	03:20	408	05:00	408	06:29
E170	BA CityFlyer	1173	03:29	1174	03:50	1174	08:24
E190	Alitalia	290	03:42	291	03:50	291	07:46
E190	Flybe	202	03:39	200	04:14	200	09:14
E190	BA CityFlyer	3069	03:34	3068	03:58	3068	08:19
E190	Lufthansa	181	03:35	181	04:23	181	08:26
E190	KLM Royal Dutch Airlines	723	03:40	722	03:23	722	07:16
E190	LOT Polish Airlines	488	04:08	489	03:46	489	08:41
E190	Swiss International Air Lines	158	03:41	157	04:37	157	07:28
E55P	NetJets Transportes Aereos	64	02:59	65	05:37	65	06:58
F50	Air Antwerp	194	03:22	194	05:49	194	07:32
J328	Sun Air of Scandinavia	89	04:21	90	04:37	90	10:37

Aircraft Code	Airline	Count of TTA	Average of TTA (mm:ss)	Count of ERS	Average of ERS (mm:ss)	Count of TTD	Average of TTD (mm:ss)
RJ85	Aer Lingus	400	03:22	398	04:56	398	07:54
SB20	BA CityFlyer	101	03:42	101	03:47	101	09:19
Other		433	03:25	429	05:45	429	07:47
Overall		9446	03:31	9438	04:22	9438	08:00

Table A5.1: 2020 Ground Running Summary

APPENDIX 6
GROUND RUNNING OF ENGINES

Table A6.1 sets out the official record of ground running of engines for test and maintenance for 2020.

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
05/01/2020	Stand 5	NW	Ground Idle	E190	GLCYT	12:55	13:04	00:09
06/01/2020	Stand 7	NW	Ground Idle	DH8D	GPRPN	17:43	17:47	00:04
09/01/2020	Abeam 23	W	High Power	E190	GLCYV	13:40	13:49	00:09
09/01/2020	Stand 22	W	High Power	E190	GLCYV	15:22	15:32	00:10
09/01/2020	Stand 3	NW	Ground Idle	DH8D	GPRPK	18:24	18:29	00:05
09/01/2020	Stand 22	W	High Power	E190	GLCYV	21:04	21:17	00:13
10/01/2020	Stand 22	W	High Power	E190	GLCYV	10:05	10:21	00:16
10/01/2020	Stand 22	W	High Power	E190	GLCYV	10:31	10:43	00:12
10/01/2020	Stand 22	W	High Power	E190	GLCYV	10:52	11:04	00:12
14/01/2020	JC	E	Ground Idle	C56X	CSDXL	12:12	12:25	00:13
14/01/2020	Stand 22	W	High Power	C56X	CSDXL	16:15	16:30	00:15
15/01/2020	JC	E	High Power	C56X	CSDXL	14:20	14:39	00:19
18/01/2020	Stand 13	E	Low Power	E190	GLCYV	10:26	10:40	00:14
21/01/2020	Stand 13	E	Ground Idle	E190	GLCYY	06:58	07:04	00:06
21/01/2020	Stand 9	NW	Ground Idle	E190	GLCAB	16:49	16:58	00:09
26/01/2020	Stand 8	NW	Ground Idle	E190	GLCYO	12:45	12:53	00:08
27/01/2020	Abeam 24	W	High Power	E190	GLCYN	19:58	20:30	00:32
28/01/2020	Abeam 24	W	High Power	E190	GLCYN	12:32	12:59	00:27
28/01/2020	Stand 6	NW	Ground Idle	E170	GLCYG	13:31	13:54	00:23
28/01/2020	Abeam 24	W	High Power	E190	GLCYN	20:23	20:43	00:20
02/02/2020	Stand 8	NW	Ground Idle	E190	GLCYV	12:38	12:43	00:05
06/02/2020	Stand 24	NW	Ground Idle	E170	GLCYG	-	-	-
09/02/2020	Stand 8	NW	Ground Idle	E190	GLCYT	19:58	20:18	00:20
09/02/2020	Stand 24	W	High Power	E190	GLCYP	20:43	21:16	00:33
10/02/2020	Stand 21	NW	Ground Idle	A318	GEUNA	11:06	11:09	00:03
13/02/2020	Abeam 24	W	High Power	E190	GLCYY	10:24	10:41	00:17
15/02/2020	Stand 7	NW	Ground Idle	E190	GLCYF	07:04	07:09	00:05
17/02/2020	Abeam 24	W	High Power	RJ85	EIRJD	21:45	21:54	00:09
18/02/2020	Abeam 12	W	High Power	RJ85	EIRJD	21:34	21:38	00:04

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
26/02/2020	Stand 22	NW	Low Power	A221	HBJBI	08:30	08:34	00:04
28/02/2020	Stand 21	NW	Ground Idle	A318	GEUNA	09:22	09:30	00:08
03/03/2020	Abeam 24	W	High Power	E190	GLCYY	11:54	12:14	00:20
04/03/2020	Abeam 24	W	High Power	E190	GLCYV	13:48	14:22	00:34
08/03/2020	Stand 8	NW	Ground Idle	E170	GLCYG	12:38	-	-
08/03/2020	Stand 8	NW	Ground Idle	E170	GLCYG	14:28	14:37	00:09
08/03/2020	Stand 8	NW	Ground Idle	E170	GLCYG	15:02	15:09	00:07
09/03/2020	Stand 22	NW	Ground Idle	A221	HBJBI	14:14	14:18	00:04
10/03/2020	Stand 7	NW	Ground Idle	E190	GLCYV	11:13	11:21	00:08
18/03/2020	Abeam 24	W	High Power	E170	GLCYE	07:13	07:42	00:29
24/03/2020	Stand 10	NW	Ground Idle	E190	GLCYX	14:07	14:14	00:07
08/07/2020	Stand 7	NW	Ground Idle	E190	GLCYX	15:35	15:47	00:12
08/07/2020	Stand 8	NW	Ground Idle	E190	GLCYN	15:58	16:04	00:06
17/07/2020	Stand 23	NW	Ground Idle	E190	GLCYT	14:41	14:45	00:04
02/08/2020	JC	E	Ground Idle	CL35	CSCHB	12:15	12:18	00:03
13/08/2020	Stand 28	NW	Ground Idle	E190	GLCYK	18:18	18:27	00:09
15/08/2020	Stand 25	NW	Ground Idle	E190	GLCYO	07:16	07:23	00:07
16/08/2020	Stand 3	NW	Ground Idle	E190	GLCYL	13:04	13:10	00:06
16/08/2020	Stand 25	E	High Power	E170	GLCYI	18:36	19:09	00:33
16/08/2020	Stand 28	NW	Ground Idle	E190	GLCYX	12:38	12:44	00:06
19/08/2020	Stand 25	W	High Power	E190	GLCYX	12:33	12:50	00:17
31/08/2020	Stand 10	NW	Ground Idle	E190	GLCYX	09:06	09:09	00:03
19/09/2020	Stand 25	NW	Ground Idle	E190	GLCYX	06:56	07:04	00:08
19/09/2020	Stand 28	NW	Ground Idle	E190	GLCYT	09:56	10:02	00:06
21/09/2020	Stand 25	NW	Ground Idle	E190	GLCYL	16:01	16:13	00:12
21/09/2020	Stand 24	W	High Power	E190	GLCYL	19:05	19:34	00:29
09/10/2020	Stand 24	NW	Ground Idle	E190	GLCYK	06:47	07:00	00:13
13/10/2020	Stand 21	NW	Ground Idle	E190	GLCYK	11:29	11:40	00:11
08/11/2020	Abeam 12	E	Ground Idle	E190	GLCYT	19:17	19:25	00:08
20/11/2020	Stand 27	NW	Ground Idle	E190	GLCYT	19:48	19:57	00:09
05/12/2020	Stand 24	NW	Ground Idle	E190	GLCYO	09:23	09:28	00:05
06/12/2020	Stand 9	NW	Ground Idle	E190	GLCYM	16:06	16:16	00:10

Date	Location	A/C Orientation	Type of Run / Power Set	A/C Type	Reg.	Start Time	Stop Time	Duration (hh:mm)
11/12/2020	Stand 9	NW	Ground Idle	E190	GLCYL	13:47	14:01	00:14
11/12/2020	Stand 24	NW	Ground Idle	E190	GLCYM	17:52	18:02	00:10
13/12/2020	Stand 25	NW	Ground Idle	E190	GLCYZ	13:40	13:52	00:12
27/12/2020	Stand 6	NW	Ground Idle	E190	GLCYM	14:39	14:42	00:03
28/12/2020	Stand 10	-	Ground Idle	E190	GLCYL	11:52	12:10	00:18
30/12/2020	Stand 22	NW	Ground Idle	E190	GLCYZ	10:25	10:33	00:08

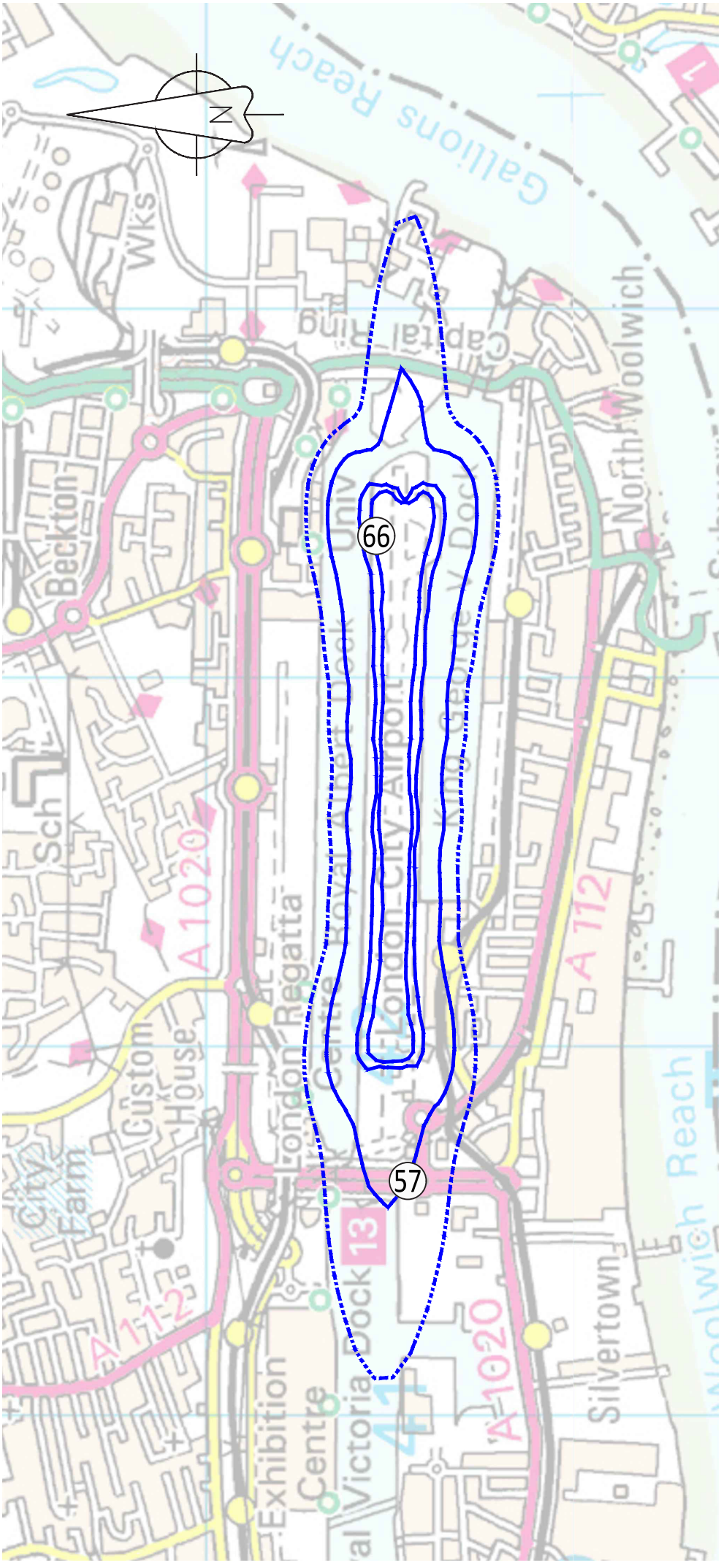
Table A6.1: Official record of ground running of engines for test and maintenance for 2020

Table A6.2 gives a summary of high power running for 2020.

Month	Minutes	A/C Type
January	185	C56X / E190
February	63	E190 / RJ85
March	83	E170 / E190
April	0	-
May	0	-
June	0	-
July	0	-
August	50	E170 / E190
September	29	E190
October	0	-
November	0	-
December	0	-
Total	**410**	-

Table A6.2: Summary of high power ground running, 2020

APPENDIX 8
AUXILIARY POWER UNIT USAGE



LEGEND:

54 dB Noise Contour

57,63 and 66 dB Noise Contours

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London City Airport

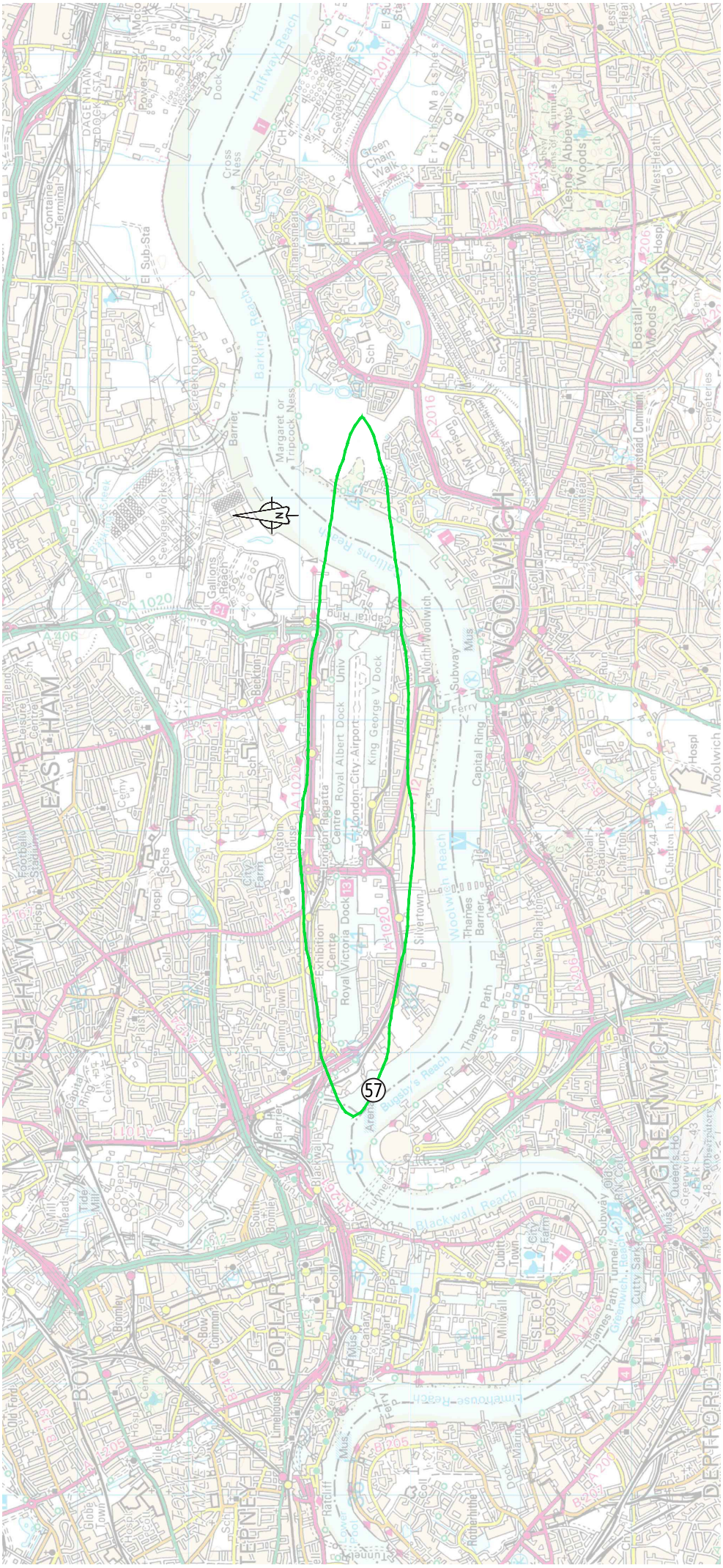
Actual Noise Contours
Summer 2020 Average Mode

DRAWN: MP CHECKED: NW

DATE: 16/04/2021 SCALE: 1:15000@A4

FIGURE No:

A11327_10_DR003_1.0



LEGEND:

Noise Contours

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London City Airport

$L_{Aeq,16h}$ Noise Contours
1998 Planning Contour

DRAWN: NW CHECKED: DC

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

FIGURE No:

A11327_10_DR002_1.0

SCHEDULED AIRCRAFT

AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
BAe 146	✓
RJ Series	✓
Airbus A318	✓
Bombardier CS100	✓
Embraer 135	✓
Embraer 170	✓
Embraer 190	✓
ATR 42	✓
ATR 72	✓
DHC 8-100	✓
DHC 8-300	✓
DHC 8-400	✓
Fokker 50	
Dornier 328	✓
Dornier 328 Jet	✓
Saab 2000	✓

Table A8.1: APU Usage Details, Scheduled Aircraft

GENERAL AVIATION AIRCRAFT

AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
B300 Beechcraft	
BE20 Beechcraft 200	
BE58 PA Beechcraft Baron	
BE9L Beechcraft 900	
Beech 400 A	
Bombardier Challenger 350	✓
Bombardier Challenger 604/5	✓

AIRCRAFT	A.P.U. USAGE REQUIRED? (✓)
Bombardier Global 5000/6000	✓
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	✓
G650 Gulfstream GVI	✓
Hawker 800 XP	✓
Learjet 40/45	✓
P180 (Piaggio Avanti)	
P68C (Partenavia 68)	
PA31 (Navajo)	
PA34 (Seneca)	
Pilatus PC24	✓

Table A8.2: APU Usage Details, General Aviation Aircraft

APPENDIX 9
SUMMARY OF REVERSE THRUST DATA

The following charts show the distribution of measured levels of arriving aircraft at NMT7 in 2020, 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}.

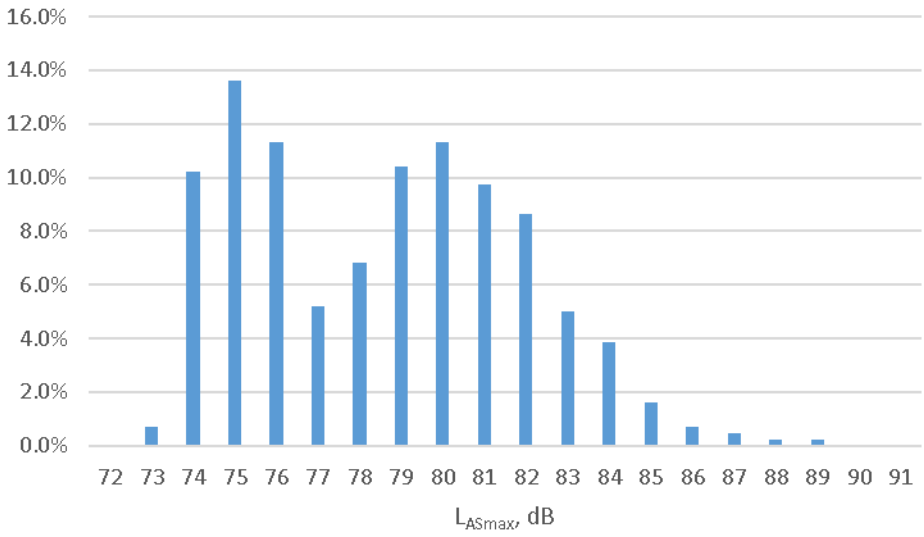


Figure A9.1: Runway 09 Distribution of NMT 7 Noise Levels, 2020 (441 events)

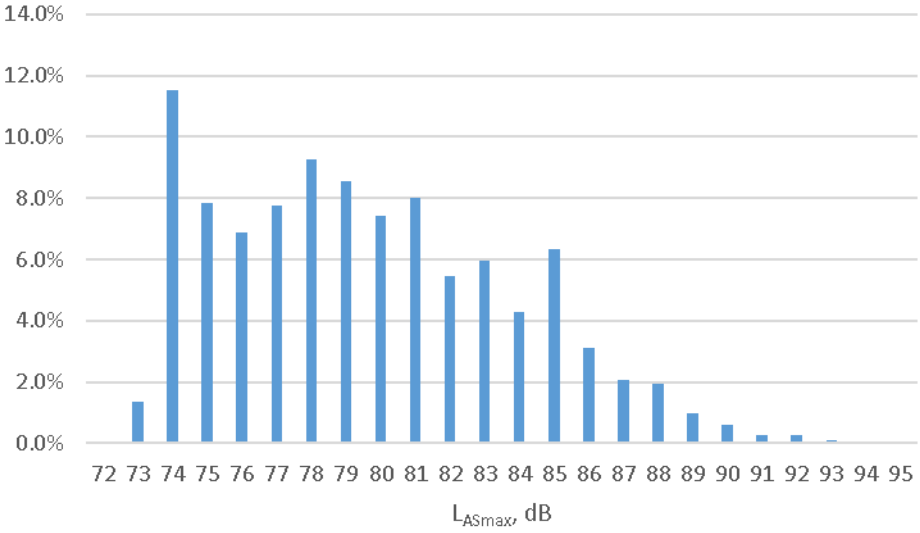


Figure A9.2: Runway 27 Distribution of NMT 7 Noise Levels, 2020 (1121 events)

APPENDIX 10
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 A10.1: 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 A10.2: 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 A10.3: 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 A10.4: 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 A10.5: 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 A10.6: Newly Eligible Public Buildings, Second Tier Scheme

Re-inspection Scheme						
Building Name	**No.**	**Sub Building Name**	**Thorough-fare**	**Post Code**	**uprn**	**Further Info**
	5		POLLARD CLOSE	E16 1LG	46058427	
	6		POLLARD CLOSE	E16 1LG	46058428	
	18		COLLIER CLOSE	E6 6FZ	46086122	
	10		BARGE HOUSE ROAD	E16 2NH	46003280	
	22		CAMPION CLOSE	E6 5PF	46010732	
	4		COLLIER CLOSE	E6 6FZ	46086127	
		THE FOX AT CONNAUGHT	LYNX WAY	E16 1JR	10009018546	
	7		DEVALLS CLOSE	E6 5PL	46021225	
	28		WOOLWICH MANOR WAY	E16 2NJ	46082206	
	6		YEOMAN CLOSE	E6 6NN	46088109	

Table A10.7: Buildings Eligible for Re-Inspection

APPENDIX 11
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).

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

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 12
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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
30/12/2019	208	-	592	-	43	214.9	742.5	384	-	527.6	1	5	1	1	0	-
31/12/2019	138	-	592	-	28			454	-		0	4	2	2	0	46
01/01/2020	107	-	132	-	22			25	-		0	0	2	6	0	-
02/01/2020	204	-	592	-	42			388	-		0	5	2	1	0	-
03/01/2020	204	-	592	-	41			388	-		0	2	2	4	1	-
04/01/2020	65	199	100	280	13			35	81		2	3	0	3	4	-
05/01/2020	134		200		27			66			-	-	-	-	0	-
06/01/2020	227	-	592	-	44	273.2	742.5	365	-	469.3	1	5	1	1	0	-
07/01/2020	231	-	592	-	46			361	-		2	6	0	0	0	-
08/01/2020	237	-	592	-	47			355	-		2	6	0	0	0	-
09/01/2020	244	-	592	-	48			348	-		2	5	0	1	1	-
10/01/2020	244	-	592	-	47			348	-		1	4	1	2	1	-
11/01/2020	67	203	100	280	13			33	77		1	6	1	0	0	-
12/01/2020	136		200		27			64			-	-	-	-	0	-
13/01/2020	206	-	592	-	42	265.3	742.5	386	-	477.2	2	6	0	0	0	-
14/01/2020	171	-	592	-	34			421	-		0	3	2	3	0	-
15/01/2020	254	-	592	-	50			338	-		2	4	0	2	0	-
16/01/2020	256	-	592	-	50			336	-		2	6	0	0	0	-
17/01/2020	246	-	592	-	49			346	-		1	6	1	0	0	-
18/01/2020	67	209	100	280	13			33	71		2	5	0	1	2	-
19/01/2020	142		200		28			58			-	-	-	-	0	-
20/01/2020	260	-	592	-	50	289.7	742.5	332	-	452.8	2	5	0	1	1	-
21/01/2020	247	-	592	-	48			345	-		1	4	1	2	0	-
22/01/2020	227	-	592	-	45			365	-		0	4	2	2	0	-
23/01/2020	269	-	592	-	52			323	-		2	5	0	1	0	-
24/01/2020	265	-	592	-	52			327	-		1	5	1	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
25/01/2020	71	217	100	280	14			29	63		2	5	0	1	1	-
26/01/2020	146		200		28			54			-	-	-	-	1	-
27/01/2020	274	-	592	-	54			318	-		1	4	1	2	0	-
28/01/2020	266	-	592	-	53			326	-		1	5	1	1	0	-
29/01/2020	287	-	592	-	57	315.7	742.5	305	-	426.8	2	5	0	1	0	-
30/01/2020	282	-	592	-	55			310	-		2	5	0	1	0	-
31/01/2020	269	-	592	-	54			323	-		2	5	0	1	1	37
01/02/2020	70	211	100	280	13			30	69		1	2	1	4	1	-
02/02/2020	141		200		28			59			-	-	-	-	0	-
03/02/2020	289	-	592	-	56			303	-		2	4	0	2	0	-
04/02/2020	276	-	592	-	54			316	-		2	5	0	1	0	-
05/02/2020	289	-	592	-	57			303	-		2	5	0	1	0	-
06/02/2020	284	-	592	-	56	293.0	742.5	308	-	449.5	2	6	0	0	1	-
07/02/2020	275	-	592	-	54			317	-		1	5	1	1	0	-
08/02/2020	76	89	100	280	14			24	191		2	4	0	2	0	-
09/02/2020	13		200		3			187			-	-	-	-	0	-
10/02/2020	227	-	592	-	47			365	-		0	2	2	4	2	-
11/02/2020	268	-	592	-	53			324	-		1	5	1	1	1	-
12/02/2020	287	-	592	-	55			305	-		1	3	1	3	0	-
13/02/2020	272	-	592	-	54	301.7	742.5	320	-	440.8	2	4	0	2	0	-
14/02/2020	272	-	592	-	53			320	-		2	3	0	3	0	-
15/02/2020	64	198	100	280	12			36	82		2	4	0	2	1	-
16/02/2020	134		200		26			66			-	-	-	-	3	-
17/02/2020	284	-	592	-	55			308	-		1	4	1	2	0	-
18/02/2020	268	-	592	-	54	312.1	742.5	324	-	430.4	1	4	1	2	0	-
19/02/2020	281	-	592	-	56			311	-		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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
20/02/2020	269	-	592	-	54			323	-		2	5	0	1	1	-
21/02/2020	261	-	592	-	53			331	-		2	6	0	0	0	-
22/02/2020	69	204	100	280	14			31	76		1	4	1	2	4	-
23/02/2020	135		200		26			65			-	-	-	-	0	-
24/02/2020	272	-	592	-	54	314.8	742.5	320	-	427.7	0	6	2	0	2	-
25/02/2020	283	-	592	-	55			309	-		2	5	0	1	0	-
26/02/2020	288	-	592	-	56			304	-		1	3	1	3	0	-
27/02/2020	288	-	592	-	56			304	-		2	5	0	1	0	-
28/02/2020	265	-	592	-	53			327	-		1	4	1	2	0	-
29/02/2020	66	216	100	280	13			34	64		2	4	0	2	2	46
01/03/2020	150		200		29			50			-	-	-	-	1	-
02/03/2020	277	-	592	-	55	294.9	742.5	315	-	447.6	2	5	0	1	0	-
03/03/2020	282	-	592	-	55			310	-		2	5	0	1	0	-
04/03/2020	277	-	592	-	54			315	-		1	5	1	1	0	-
05/03/2020	238	-	592	-	48			354	-		2	5	0	1	0	-
06/03/2020	230	-	592	-	47			362	-		2	6	0	0	0	-
07/03/2020	59	179	100	280	12			41	101		2	5	0	1	1	-
08/03/2020	120		200		25			80			-	-	-	-	0	-
09/03/2020	223	-	592	-	44	217.0	742.5	369	-	525.5	2	6	0	0	0	-
10/03/2020	201	-	592	-	41			391	-		1	6	1	0	0	-
11/03/2020	205	-	592	-	40			387	-		2	6	0	0	0	-
12/03/2020	187	-	592	-	37			405	-		2	6	0	0	0	-
13/03/2020	166	-	592	-	32			426	-		1	4	1	2	1	-
14/03/2020	37	119	100	280	7			63	161		2	5	0	1	0	-
15/03/2020	82		200		17			118			-	-	-	-	1	-
16/03/2020	126	-	592	-	24	100.3	742.5	466	-	642.2	1	4	1	2	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
17/03/2020	94	-	592	-	18			498	-		1	3	1	3	0	-
18/03/2020	79	-	592	-	16			513	-		1	1	1	5	1	-
19/03/2020	71	-	592	-	15			521	-		0	1	2	5	0	-
20/03/2020	68	-	592	-	15			524	-		0	0	2	6	0	-
21/03/2020	19	63	100	280	4			81	217		0	0	2	6	0	-
22/03/2020	44		200		8			156			-	-	-	-	0	-
23/03/2020	22	-	592	-	4			570	-		0	0	2	6	0	-
24/03/2020	20	-	592	-	4			572	-		0	0	2	6	0	-
25/03/2020	9	-	592	-	2			583	-		0	0	2	6	0	-
26/03/2020	0	-	592	-	0	10.2	742.5	592	-	732.3	0	0	2	6	0	-
27/03/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
28/03/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
29/03/2020	0		200		0			200			-	-	-	-	0	-
30/03/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
31/03/2020	0	-	592	-	0			592	-		0	0	2	6	0	36
01/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
02/04/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
03/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
04/04/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
05/04/2020	0		200		0			200			-	-	-	-	0	-
06/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
07/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
08/04/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
09/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
10/04/2020	0	-	164	-	0			164	-		0	0	2	6	0	-
11/04/2020	0	0	100	280	0			100	280		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
12/04/2020	0		200		0			200			-	-	-	-	0	-
13/04/2020	0	-	198	-	0			198	-		0	0	2	6	0	-
14/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
15/04/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
16/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
17/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
18/04/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
19/04/2020	0		200		0			200			-	-	-	-	0	-
20/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
21/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
22/04/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
23/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
24/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
25/04/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
26/04/2020	0		200		0			200			-	-	-	-	0	-
27/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
28/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
29/04/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
30/04/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	23
01/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
02/05/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
03/05/2020	0		200		0			200			-	-	-	-	0	-
04/05/2020	0	-	248	-	0			248	-		0	0	2	6	0	-
05/05/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
06/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
07/05/2020	0	-	592	-	0			592	-		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
08/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
09/05/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
10/05/2020	0		200		0			200			-	-	-	-	0	-
11/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
12/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
13/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
14/05/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
15/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
16/05/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
17/05/2020	0		200		0			200			-	-	-	-	0	-
18/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
19/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
20/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
21/05/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
22/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
23/05/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
24/05/2020	0		200		0			200			-	-	-	-	0	-
25/05/2020	0	-	230	-	0			230	-		0	0	2	6	0	-
26/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
27/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
28/05/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
29/05/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
30/05/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
31/05/2020	0		200		0			200			-	-	-	-	0	5
01/06/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
02/06/2020	0	-	592	-	0			592	-		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
03/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
04/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
05/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
06/06/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
07/06/2020	0		200		0			200			-	-	-	-	0	-
08/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
09/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
10/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
11/06/2020	0	-	592	-	0	0.0	742.5	592	-	742.5	0	0	2	6	0	-
12/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
13/06/2020	0	0	100	280	0			100	280		0	0	2	6	0	-
14/06/2020	0		200		0			200			-	-	-	-	0	-
15/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
16/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
17/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
18/06/2020	0	-	592	-	0	0.5	742.5	592	-	742.0	0	0	2	6	0	-
19/06/2020	0	-	592	-	0			592	-		0	0	2	6	0	-
20/06/2020	0	2	100	280	0			100	278		0	0	2	6	0	-
21/06/2020	2		200		0			198			-	-	-	-	0	-
22/06/2020	2	-	592	-	0			590	-		0	0	2	6	0	-
23/06/2020	2	-	592	-	0			590	-		0	0	2	6	0	-
24/06/2020	2	-	592	-	0			590	-		0	0	2	6	0	-
25/06/2020	2	-	592	-	0	2.9	742.5	590	-	739.7	0	0	2	6	0	-
26/06/2020	2	-	592	-	0			590	-		0	0	2	6	0	-
27/06/2020	0	2	100	280	0			100	278		0	0	2	6	0	-
28/06/2020	2		200		0			198			-	-	-	-	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
29/06/2020	2	-	592	-	0	4.2	742.5	590	-	738.3	0	0	2	6	0	-
30/06/2020	2	-	592	-	0			590	-		0	0	2	6	0	0
01/07/2020	3	-	592	-	1			589	-		0	0	2	6	0	-
02/07/2020	2	-	592	-	0			590	-		0	0	2	6	0	-
03/07/2020	4	-	592	-	1			588	-		0	0	2	6	0	-
04/07/2020	2	4	100	280	0			98	276		0	0	2	6	0	-
05/07/2020	2		200		0			198			-	-	-	-	0	-
06/07/2020	7	-	592	-	1	12.9	742.5	585	-	729.6	0	0	2	6	0	-
07/07/2020	7	-	592	-	2			585	-		0	0	2	6	0	-
08/07/2020	6	-	592	-	1			586	-		0	0	2	6	0	-
09/07/2020	6	-	592	-	1			586	-		0	0	2	6	0	-
10/07/2020	16	-	592	-	3			576	-		0	0	2	6	0	-
11/07/2020	5	16	100	280	1			95	264		0	0	2	6	0	-
12/07/2020	11		200		2			189			-	-	-	-	0	-
13/07/2020	20	-	592	-	4	20.7	742.5	572	-	721.8	0	0	2	6	0	-
14/07/2020	17	-	592	-	3			575	-		0	0	2	6	0	-
15/07/2020	11	-	592	-	2			581	-		0	0	2	6	0	-
16/07/2020	13	-	592	-	3			579	-		0	0	2	6	0	-
17/07/2020	19	-	592	-	4			573	-		0	0	2	6	0	-
18/07/2020	11	27	100	280	2			89	253		0	0	2	6	0	-
19/07/2020	16		200		3			184			-	-	-	-	0	-
20/07/2020	23	-	592	-	5	26.5	742.5	569	-	716.0	0	1	2	5	0	-
21/07/2020	22	-	592	-	3			570	-		0	0	2	6	0	-
22/07/2020	17	-	592	-	3			575	-		1	1	1	5	0	-
23/07/2020	31	-	592	-	5			561	-		0	1	2	5	0	-
24/07/2020	27	-	592	-	6			565	-		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
25/07/2020	8	24	100	280	1			92	256		0	0	2	6	1	-
26/07/2020	16		200		3			184			-	-	-	-	0	-
27/07/2020	23	-	592	-	5			569	-		0	0	2	6	0	-
28/07/2020	21	-	592	-	3			571	-		0	0	2	6	0	-
29/07/2020	23	-	592	-	4	29.8	742.5	569	-	712.7	0	0	2	6	0	-
30/07/2020	21	-	592	-	4			571	-		0	0	2	6	0	-
31/07/2020	32	-	592	-	6			560	-		0	1	2	5	0	1
01/08/2020	13	40	100	280	2			87	240		0	0	2	6	1	-
02/08/2020	27		200		5			173			-	-	-	-	0	-
03/08/2020	27	-	592	-	6			565	-		0	1	2	5	0	-
04/08/2020	17	-	592	-	3			575	-		0	0	2	6	0	-
05/08/2020	14	-	592	-	2			578	-		0	0	2	6	0	-
06/08/2020	15	-	592	-	3	27.6	742.5	577	-	714.9	0	0	2	6	0	-
07/08/2020	29	-	592	-	6			563	-		0	0	2	6	0	-
08/08/2020	11	32	100	280	2			89	248		0	1	2	5	0	-
09/08/2020	21		200		5			179			-	-	-	-	0	-
10/08/2020	25	-	592	-	5			567	-		0	0	2	6	0	-
11/08/2020	11	-	592	-	2			581	-		0	0	2	6	0	-
12/08/2020	11	-	592	-	2			581	-		0	0	2	6	0	-
13/08/2020	22	-	592	-	4	24.0	742.5	570	-	718.5	0	0	2	6	0	-
14/08/2020	21	-	592	-	5			571	-		0	1	2	5	0	-
15/08/2020	10	29	100	280	2			90	251		0	2	2	4	0	-
16/08/2020	19		200		4			181			-	-	-	-	0	-
17/08/2020	25	-	592	-	5			567	-		0	0	2	6	0	-
18/08/2020	16	-	592	-	3	25.4	742.5	576	-	717.1	0	0	2	6	0	-
19/08/2020	10	-	592	-	2			582	-		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
20/08/2020	18	-	592	-	4			574	-		0	0	2	6	0	-
21/08/2020	20	-	592	-	4			572	-		0	0	2	6	0	-
22/08/2020	12	34	100	280	2			88	246		0	0	2	6	0	-
23/08/2020	22		200		5			178			-	-	-	-	0	-
24/08/2020	25	-	592	-	5			567	-		0	0	2	6	0	-
25/08/2020	12	-	592	-	2			580	-		0	0	2	6	0	-
26/08/2020	15	-	592	-	3			577	-		0	0	2	6	0	-
27/08/2020	23	-	592	-	4	27.5	742.5	569	-	715.0	0	0	2	6	0	-
28/08/2020	30	-	592	-	6			562	-		0	1	2	5	0	-
29/08/2020	8	31	100	280	2			92	249		0	1	2	5	0	-
30/08/2020	23		200		5			177			-	-	-	-	1	-
31/08/2020	36	-	230	-	7			194	-		0	0	2	6	0	3
01/09/2020	25	-	592	-	5			567	-		0	0	2	6	0	-
02/09/2020	23	-	592	-	5			569	-		0	1	2	5	0	-
03/09/2020	24	-	592	-	5	35.1	742.5	568	-	707.4	0	0	2	6	0	-
04/09/2020	37	-	592	-	7			555	-		0	0	2	6	0	-
05/09/2020	6	26	100	280	1			94	254		0	0	2	6	0	-
06/09/2020	20		200		4			180			-	-	-	-	0	-
07/09/2020	38	-	592	-	7			554	-		0	1	2	5	0	-
08/09/2020	33	-	592	-	7			559	-		0	0	2	6	0	-
09/09/2020	32	-	592	-	7			560	-		0	0	2	6	0	-
10/09/2020	40	-	592	-	7	41.9	742.5	552	-	700.6	0	0	2	6	0	-
11/09/2020	42	-	592	-	8			550	-		0	0	2	6	0	-
12/09/2020	6	28	100	280	1			94	252		0	0	2	6	0	-
13/09/2020	22		200		4			178			-	-	-	-	0	-
14/09/2020	39	-	592	-	8	44.4	742.5	553	-	698.1	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
15/09/2020	41	-	592	-	8			551	-		0	1	2	5	0	-
16/09/2020	34	-	592	-	7			558	-		0	0	2	6	0	-
17/09/2020	43	-	592	-	8			549	-		0	0	2	6	0	-
18/09/2020	41	-	592	-	8			551	-		0	1	2	5	0	-
19/09/2020	8	32	100	280	1			92	248		0	0	2	6	0	-
20/09/2020	24		200		5			176			-	-	-	-	0	-
21/09/2020	33	-	592	-	7			559	-		0	1	2	5	0	-
22/09/2020	37	-	592	-	8			555	-		0	0	2	6	0	-
23/09/2020	38	-	592	-	8			554	-		0	0	2	6	0	-
24/09/2020	47	-	592	-	9	44.1	742.5	545	-	698.4	0	1	2	5	0	-
25/09/2020	30	-	592	-	7			562	-		0	0	2	6	0	-
26/09/2020	9	29	100	280	1			91	251		0	1	2	5	0	-
27/09/2020	20		200		4			180			-	-	-	-	0	-
28/09/2020	44	-	592	-	9			548	-		0	1	2	5	0	-
29/09/2020	36	-	592	-	8			556	-		0	1	2	5	0	-
30/09/2020	33	-	592	-	7			559	-		0	0	2	6	0	3
01/10/2020	43	-	592	-	9	42.4	742.5	549	-	700.1	0	0	2	6	0	-
02/10/2020	13	-	592	-	4			579	-		0	0	2	6	0	-
03/10/2020	9	32	100	280	1			91	248		0	0	2	6	0	-
04/10/2020	23		200		5			177			-	-	-	-	0	-
05/10/2020	50	-	592	-	11			542	-		0	0	2	6	0	-
06/10/2020	44	-	592	-	9			548	-		0	0	2	6	0	-
07/10/2020	42	-	592	-	9	56.2	742.5	550	-	686.3	0	0	2	6	0	-
08/10/2020	48	-	592	-	10			544	-		0	0	2	6	0	-
09/10/2020	42	-	592	-	9			550	-		0	0	2	6	0	-
10/10/2020	7	38	100	280	1			93	242		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
11/10/2020	31		200		7			169			-	-	-	-	0	-
12/10/2020	30	-	592	-	6			562	-		0	0	2	6	0	-
13/10/2020	26	-	592	-	5			566	-		0	0	2	6	0	-
14/10/2020	26	-	592	-	5	36.6	742.5	566	-	705.9	0	0	2	6	0	-
15/10/2020	33	-	592	-	6			559	-		0	0	2	6	0	-
16/10/2020	33	-	592	-	7			559	-		0	0	2	6	0	-
17/10/2020	7	32	100	280	1			93	248		0	0	2	6	0	-
18/10/2020	25		200		5			175			-	-	-	-	0	-
19/10/2020	29	-	592	-	6			563	-		0	0	2	6	0	-
20/10/2020	27	-	592	-	6			565	-		0	0	2	6	0	-
21/10/2020	28	-	592	-	5	36.1	742.5	564	-	706.4	0	0	2	6	0	-
22/10/2020	29	-	592	-	6			563	-		0	0	2	6	0	-
23/10/2020	29	-	592	-	7			563	-		0	0	2	6	0	-
24/10/2020	6	34	100	280	1			94	246		0	0	2	6	0	-
25/10/2020	28		200		6			172			-	-	-	-	0	-
26/10/2020	30	-	592	-	6			562	-		0	0	2	6	0	-
27/10/2020	21	-	592	-	5			571	-		0	0	2	6	0	-
28/10/2020	26	-	592	-	6	34.7	742.5	566	-	707.8	0	0	2	6	0	-
29/10/2020	26	-	592	-	6			566	-		0	0	2	6	0	-
30/10/2020	29	-	592	-	6			563	-		0	0	2	6	0	-
31/10/2020	12	38	100	280	2			88	242		0	0	2	6	0	2
01/11/2020	26		200		5			174			-	-	-	-	0	-
02/11/2020	19	-	592	-	4			573	-		0	0	2	6	0	-
03/11/2020	19	-	592	-	3	18.8	742.5	573	-	723.7	0	0	2	6	0	-
04/11/2020	18	-	592	-	3			574	-		0	0	2	6	0	-
05/11/2020	8	-	592	-	2			584	-		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
06/11/2020	17	-	592	-	3			575	-		0	0	2	6	0	-
07/11/2020	2	19	100	280	0			98	261		0	0	2	6	0	-
08/11/2020	17		200		4			183			-	-	-	-	0	-
09/11/2020	10	-	592	-	2			582	-		0	0	2	6	0	-
10/11/2020	6	-	592	-	1			586	-		0	0	2	6	0	-
11/11/2020	8	-	592	-	2			584	-		0	0	2	6	0	-
12/11/2020	11	-	592	-	2	14.2	742.5	581	-	728.3	0	0	2	6	0	-
13/11/2020	18	-	592	-	3			574	-		0	0	2	6	0	-
14/11/2020	4	22	100	280	1			96	258		0	0	2	6	0	-
15/11/2020	18		200		4			182			-	-	-	-	0	-
16/11/2020	12	-	592	-	3			580	-		0	0	2	6	0	-
17/11/2020	10	-	592	-	2			582	-		0	0	2	6	0	-
18/11/2020	8	-	592	-	1			584	-		0	0	2	6	0	-
19/11/2020	9	-	592	-	2	14.6	742.5	583	-	727.9	0	0	2	6	0	-
20/11/2020	16	-	592	-	3			576	-		0	0	2	6	0	-
21/11/2020	5	21	100	280	1			95	259		0	0	2	6	0	-
22/11/2020	16		200		3			184			-	-	-	-	0	-
23/11/2020	14	-	592	-	2			578	-		0	0	2	6	0	-
24/11/2020	10	-	592	-	1			582	-		0	0	2	6	0	-
25/11/2020	15	-	592	-	3			577	-		0	0	2	6	0	-
26/11/2020	9	-	592	-	2	15.0	742.5	583	-	727.5	0	0	2	6	0	-
27/11/2020	16	-	592	-	3			576	-		0	0	2	6	0	-
28/11/2020	0	17	100	280	0			100	263		0	0	2	6	0	-
29/11/2020	17		200		4			183			-	-	-	-	0	-
30/11/2020	14	-	592	-	3	14.6	742.5	578	-	727.9	0	0	2	6	0	0
01/12/2020	6	-	592	-	1			586	-		0	0	2	6	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
02/12/2020	8	-	592	-	1			584	-		0	0	2	6	0	-
03/12/2020	12	-	592	-	3			580	-		0	0	2	6	0	-
04/12/2020	14	-	592	-	3			578	-		0	0	2	6	0	-
05/12/2020	4	25	100	280	1			96	255		0	0	2	6	0	-
06/12/2020	21		200		4			179			-	-	-	-	0	-
07/12/2020	13	-	592	-	2			579	-		0	0	2	6	0	-
08/12/2020	12	-	592	-	2			580	-		0	0	2	6	0	-
09/12/2020	13	-	592	-	2			579	-		0	0	2	6	0	-
10/12/2020	24	-	592	-	4	18.2	742.5	568	-	724.3	0	0	2	6	0	-
11/12/2020	20	-	592	-	3			572	-		0	0	2	6	0	-
12/12/2020	4	25	100	280	1			96	255		0	0	2	6	0	-
13/12/2020	21		200		3			179			-	-	-	-	0	-
14/12/2020	20	-	592	-	4			572	-		0	0	2	6	0	-
15/12/2020	16	-	592	-	3			576	-		0	0	2	6	0	-
16/12/2020	12	-	592	-	2			580	-		0	0	2	6	0	-
17/12/2020	21	-	592	-	3	20.9	742.5	571	-	721.6	0	0	2	6	0	-
18/12/2020	19	-	592	-	4			573	-		0	0	2	6	0	-
19/12/2020	9	33	100	280	2			91	247		0	0	2	6	0	-
20/12/2020	24		200		4			176			-	-	-	-	0	-
21/12/2020	10	-	592	-	2			582	-		0	0	2	6	0	-
22/12/2020	4	-	592	-	1			588	-		0	0	2	6	0	-
23/12/2020	4	-	592	-	1			588	-		0	0	2	6	0	-
24/12/2020	2	-	592	-	0	6.1	742.5	590	-	736.4	0	0	2	6	0	-
25/12/2020	0	-	0	-	0			0	-		0	0	2	6	0	-
26/12/2020	4	11	100	280	1			96	269		0	0	2	6	0	-
27/12/2020	7		200		1			193			-	-	-	-	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[2]	
								Actual Movements		QC Total	Early Morning		Early Morning		Late Eve / Sat Afternoon	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	06:30-06:44	06:30-06:59	22:00-22:30 / 12:30-13:00	
28/12/2020	3	-	330	-	0	9.4	742.5	327	-	738.7	0	0	2	6	0	-
29/12/2020	2	-	592	-	0			590	-		0	0	2	6	0	-
30/12/2020	9	-	592	-	2			583	-		0	0	2	6	0	-
31/12/2020	8	-	592	-	1			584	-		0	0	2	6	0	0
01/01/2021	6	-	132	-	1			126	-		0	0	2	6	0	-
02/01/2021	8	24	100	280	1			92	256		0	0	2	6	0	-
03/01/2021	16		200		3			184			-	-	-	-	0	-
Annual Total	**19,380**		**111,000**		**3,832**		**22,000**	**91,620**		**18,168**	**99**	**326**	**-**	**-**	**39**	**-**

Annual Performance Report 2020

(Compliance with planning permission)

Annex 3

A Summary of the Operational and Construction Controls and Correspondence

Nick Fenwick
Director of Planning and Development
Chief Planning Officer
London Borough of Newham
1st Floor, West Wing Newham Dockside
1000 Dockside Road London
E16 2QU

15h October 2020

By email

Dear Nick

Town and Country Planning Act 1990
London City Airport – City Airport Development Programme (CADP)
Planning Permission dated 26 July 2016 (Application Reference 13/01228/FUL – Appeal Reference APP/G5750/W/15/3035673) and related Section 106 Agreement dated 27 April 2016

Thank you for your letter dated 15th September 2020 in which you raised a number of queries relating to my previous correspondence dated 26th August 2020.

Since my previous correspondence, little has changed in that the circumstances arising from the COVID-19 pandemic continue to pose significant challenges for the airport. Unfortunately, the number of passengers and aircraft using the airport remain significantly below normal levels. As a result, we continue to consult on our proposed restructuring plans which are intended to safeguard the future of the airport in the extremely difficult conditions which we now face. As previously brought to your attention, construction on the City Airport Development Programme (CADP) is also being wound down ahead of a planned pause at the end of the year.

Despite the significant challenges we are facing, I would like to reassure you that we continue to prioritise compliance with the requirements of our planning permission. To that extent, those responsible for the day to day monitoring and reporting against the requirements of the CADP permission have either partially or fully returned from the governments furlough scheme. Despite the ongoing restructuring we will continue to maintain adequate resource to deliver planning compliance. Should there be any change to personnel, we will notify officers and seek to identify alternative arrangements.

Temporary Suspension of CADP Planning Requirements
We are grateful to the LPA for using its discretion to agree the initial suspension of the airports Sound Insulation Scheme and other relevant planning conditions/obligations during the temporary 3-month closure of the airport.

I note from your letter that the review of the suspended requirements for monitoring and reporting was due to be carried out by the airport on 30th June 2020. However, subsequent to the LPA letter on 12th June 2020, the Airport Monitoring Officer (AMO) wrote to the airport on 19th June 2020 confirming that there were no matters where changes (to temporary suspensions) were required. He also confirmed that the temporary suspension was to be extended beyond the re-opening of the airport and that an extension beyond the 30th June 2020 would be acceptable in principle, subject to review meetings and further exchange of correspondence. Two review meetings were held on 27th June and 03rd July 2020 and a further 3 month extension was discussed, with details to be agreed via correspondence once the full extent of matters to be further suspended were fully understood following the return of staff from furlough. Weekly meetings continued with the AMO during this period and a formal request issued to the LPA on 26th August.

In my letter of 26th August 2020, I detailed our proposals to further suspend a number of requirements and to restart others. The schedule of monitoring and reporting requirements attached to that letter was intended to provide a helpful position for agreement rather than incorporating all previous comments from the LPA. We have since updated the schedule to reflect the current position as of 15th October 2020 and this is included at Annex 1. To assist with the LPA's review, its 12th June comments, referred to in your letter, have also been incorporated[1]. Ahead of issuing this letter I have discussed the details of the schedule at Annex 1 with the AMO and we agreed that it will need to be kept under continuous review given the quickly changing circumstances.

[1]The LPA comments of 03rd April are not included in the schedule at Annex 1 as these have been largely superseded by the comments on 12th June 2020.

In summary, the schedule at Annex 1 confirms that we have now restarted works on the airports Sound Insulation Scheme (subject to an ongoing review of Government advice). Our environment team confirmed to the AMO that the scheme recommenced on 01st of October and will continue to provide the LPA with updates on installation progress regularly. All other previously suspended monitoring and reporting requirements have also restarted, and operational reports will be submitted for Q3 2020 (with relevant Q2 data included where possible).

Separate to your letter dated 15th September, the AMO raised a number of additional queries regarding the temporary suspension of obligations, including the Sound Insulation Scheme. For completeness, responses to these queries are also included at Annex 1.

Impact of CADP pause on CADP Planning Requirements
As confirmed above, construction of CADP will be paused later this year. The final monthly construction meeting with the LPA took place on 08th October with no material or outstanding compliance issues raised. The airport will confirm the pause date in due course and propose the temporary suspension of the construction related monitoring and reporting requirements at that point. These requirements are provisionally outlined in the schedule at Annex 1.

Review of Strategies
As outlined in my previous letter, the review of five mitigation strategies previously approved by the LPA was due after a period of three years (1 June 2020). It was originally proposed that all reviews be deferred by up to 6 months, but the LPA approved an initial deferral of 3 months. Due to staff being furloughed at that time, the airport was unable to progress the reviews in the timescales proposed by the LPA. Again, this was documented in regular discussions with the AMO and we requested a further short deferral on the basis that it would not adversely affect any of the elements covered by the strategies.

We understand that the LPA wish to ensure that the reviews are carried as soon as is practicable to align with the recent publication of the Council's Climate Emergency Action Plan and Air Quality Action Plan. With this in mind, it is proposed expedite the submissions and we are seeking agreement from the LPA to share drafts of the five strategies with officers by the end of October, with submission for approval planned for November 2020

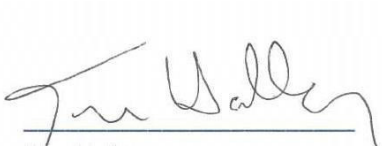
Modifications to Section 106 Agreement
Separate to this letter, an application has been submitted to the LPA to modify the CADP Planning Obligations, pursuant to section 106A (1)(b) of the Town and Country Planning Act 1990, to permit the deferral of the next instalments of the Employment Contribution and the Education Contribution, which are due on the 25th of October 2020, by an initial period of 12 months. As a consequence, all subsequent instalments would be deferred by the same period.

The application is required due to the job opportunities associated with the airport and construction programme (for which the contributions are used) not currently being available. The purpose of making the payments would be better fulfilled when new job opportunities associated with CADP and the operation of the airport become available again, as the aviation industry recovers from the COVID-19 pandemic.

The application currently being considered by the LPA does not affect the Environmental Monitoring Contribution of £70,000 (+RPI) which will be paid to the Council when falling due in October 2020.

I trust that the above clarifications are helpful, clear and enable the LPA to agree to the current position as outlined in Appendix 1. Please let me know should you have any queries.

Yours sincerely,



Tim Halley, Director of Infrastructure and Planning
cc. Jennifer Bishop, Dave Hughes, Dave Whittaker.

Appendix 1

London City Airport – Monitoring and Reporting Requirements Through Planning Controls and Other Reporting

Reference	Requirement	LBN Comment on 12/6/20	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Planning Conditions			
Conditions 17 and 22-27 Restrictions on Aircraft Movements and Flying Times	None specific	Quarterly and Annual Noise Reports submitted as required to date. Next Quarterly Report due July 2020. Agreed suspension of requirements until the Airport reopens - subject to the caveats	Monitoring of operational data continued during airport closure. Quarterly reporting to resume for Q3 (to include limited Q2 data where possible).
Condition 19 Review and Reporting on the Approved Aircraft Noise Categorisation Scheme (ANCS)	1) Annual report on the ANCS to be included in each APR. The ANCS includes the requirement to: a. Submit an Annual Noise Report (ANR) 2) Next ANCS review required four years after ANCS approval	1) APR submitted to LPA 1/6/20 2) Unlikely to be affected by Airport closure. Not applicable at present 3) Monitoring and reporting to be suspended until Airport reopens Agreed subject to caveats listed below this table and satisfactory submission of APR	Monitoring of operational data continued during airport closure. Quarterly reporting to resume for Q3 (to include limited Q2 data where possible).

Reference	Requirement	LBN Comment on 12/6/20	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Condition 31 Noise Management and Mitigation Strategy (NOMMS)	Annual report on the NOMMS to be included in each APR. Quarterly Noise reports also cover NOMMS. NOMMS specifies subject areas to be reported. Includes the requirements to: a. Review the Incentives and Penalties Scheme (IPS) annually. The requirements of the IPS include: i) An annual Community and Airline Report (CAR) b. Submit an Air Noise Contour Validation (ANCV) Assessment every three years c. Submit quarterly 'off track' departures reports d. Submit quarterly reverse thrust reports e. Sound Insulation Scheme eligibility Contours to be included in APR f. Appendix A: Combined NTK system; current maintenance contract issues? 3) Appendix A: Local Authority Data Access	1) APR submitted to LPA 1/6/20 2) Monitoring and reporting to be suspended until Airport reopens Agreed subject to caveats listed below this table and satisfactory submission of APR	2019 APR was submitted to LBN on 01 June 2020 and published on the airport and Consultative Committee's websites at the end of June 2020. Quarterly reporting to resume for Q3 (to include limited Q2 data where possible).
Condition 33 Fixing the Size of the Noise Contour	Submission of Noise Contour Strategy to LBN within five years of Commencement of Development (26/10/17	Unlikely to be affected by Airport closure. Not applicable at present	
Condition 43 Passenger Numbers	Quarterly report to Local Planning Authority	Further reporting to be suspended until the Airport reopens Agreed subject to caveats listed below this table	Report issued on 28 July. Next due on 28 Oct. Maintained data collection since the reopening.
Condition 47 Auxiliary Power Units (APUs)	Annual report on use of APUs to be included in each APR	1) APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20 Maintained data collection since the reopening.

Reference	Requirement	LBN Comment on 12/6/20	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Condition 48 Ground Engine Running Strategy (GERS)	1) Annual report on the GERS be included in each APR. 2) Quarterly reports required 3) Review of the GERS required every three years	1) APR submitted to LPA 1/6/20 2) Further reporting to be suspended until Airport reopens Agreed subject to caveats listed below this table and satisfactory submission of APR 3) Review of GERS to be deferred by up to six months Agreed deferral of deadline for GERS review until 1/9/20 subject to caveats listed below this table	2019 APR was submitted to LBN on 1 June 20. Maintained data collection since the reopening. Proposed that the review of GERS will be submitted in draft by end of October 2020. Formal submission (subject to LBN comments) in November 2020.
Condition 49 Ground Running Testing and Maintenance Strategy (GRTMS)	1) Annual report on the GRTMS to be included in each APR. 2) Review of the GRTMS required every three years 3) Verification assessment and report required when location to be changed	1) APR submitted to LPA 1/6/20 2 Review of GRTMS to be deferred by up to six months Agreed deferral of deadline for GRTMS review until 1/9/20 subject to caveats listed below this table and satisfactory submission of APR	2019 APR was submitted to LBN on 1 June 20. Maintained data collection since the reopening. Proposed that the review of GRTMS will be submitted in draft by end of October 2020. Formal submission (subject to LBN comments) in November 2020.
Condition 51 Ground Running Noise Limit (GRNL)	Approved GRNL Strategy requires a review and report on the high power engine running reference noise level every three years	Not applicable at this stage	LCY provided an update on 4 Aug. LBN confirmed no comment on this on 22 Sep.
Condition 52 Ground Running Annual Performance Report (GRAPR)	Annual report on the GRAPR to be included in each APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20. Maintained data collection since airport reopening.
Condition 055 Ground Noise Study (GNS)	GNS required to be reviewed every three years	APR submitted to LPA 1/6/20	Approved March 2018. Unaffected by temporary closure

Reference	Requirement	LBN Comment on 12/6/20	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Condition 56 Sustainability and Biodiversity Strategy (SaBS)	1) Annual report on the SaBS to be included in each APR. a. Water quality 2) Review of the SaBS required every three years	1) APR submitted to LPA 1/6/20 2) Review of SaBS to be deferred by up to six months Agreed deferral of deadline for SaBS review until 1/9/20 subject to caveats listed below this table and satisfactory submission of APR	2019 APR was submitted to LBN on 1 June 20. Proposed that the review of SaBS will be submitted in draft by end of October 2020. Formal submission (subject to LBN comments) in November 2020.
Condition 57 Air Quality Monitoring (AQM)	1) Annual report on the Air Quality Monitoring Strategy (AQMS) to be included in each APR 2) Also to be reported quarterly Specific requirements of the AQMS: a. Continuous monitoring of NO2 b. Continuous monitoring of PM10 c. Monitoring of NO2 by diffusion tube d. Publishing continuous monitoring online 3) Review of the AQMS required every three years	1) APR submitted to LPA 1/6/20 2) Review of AQMS to be deferred by up to six months Agreed deferral of deadline for AQMS review until 1/9/20 subject to caveats listed below this table and satisfactory submission of APR	2019 APR was submitted to LBN on 1 June 20. Proposed that the review of AQMS will be submitted in draft by end of October 2020. Formal submission (subject to LBN comments) in November 2020.
Condition 58 Air Quality Management Strategy (AQMS)	1) Progress report on AQMS required in APR 2) Review of the AQMS required every three years 3) Report on air quality required if GERS exceeds limits	1) APR submitted to LPA 1/6/20 2) Review of AQMS to be deferred by up to six months Agreed deferral of deadline for AQMS review until 1/9/20 subject to caveats listed below this table and satisfactory submission of APR	2019 APR was submitted to LBN on 1 June 20. Proposed that the review of AQMS will be submitted in draft by end of October 2020. Formal submission (subject to LBN comments) in November 2020.
Condition 59 Complaints about Environmental Impact	Submission of report to LBN required every fortnight (includes queries)	Amend reporting period to monthly Agreed subject to caveats listed below this table and satisfactory submission of APR	LCY provided monthly report to LBN while airport closed. Fortnightly reporting recommenced since airport reopened.

Reference	Requirement	LBN Comment on 12/6/20	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Condition 60 Air Quality Management Strategy (AQMS)	Requires report on number of HGVs removed from roads to be included in the APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20. Monitoring continued while construction active during airport closure and will be reported in 2020 APR.
Condition 70 Waste Management Strategy	Requires: 1) Progress on management and recycling waste targets to be reported annually 2) Any non- compliances to be reported	APR submitted to LPA 1/6/20	Included in 2019 APR which was submitted to LBN on 1 June 20.
Condition 71 Travel Plan	The Travel Plan requires: 1) Some monitoring to be included in each APR 2) Monitoring to be reported to ATF 3) An annual update to the Airport Transport Forum (ATF) following approval in December 2019	1) APR submitted to LPA 1/6/20 2) Further reporting to be suspended until Airport reopens Agreed subject to caveats listed below this table and satisfactory submission of APR	2019 APR was submitted to LBN on 1 June 20. ATF was held in Sep 20 via virtual meeting. Next ATF due in Dec 20. Airport clarifying whether full dataset will be available for surface access in 2020 given limitations of carrying out passenger surveys etc. This was documented in the ATF.

Reference	Requirement	LBN Comment on 12/6/20	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Condition 88 Construction Environmental Management Plan (CEMP)	Monitoring and reporting requirements in Section 8: 1) Complaints management 2) Dust monitoring 3) Water monitoring and reporting (8.43) 4) Contaminated land - risk mitigation 'to the satisfaction of LBN' 5) Environmental Audit six months after approval and every 12 months thereafter 6) CEMP Review – allowance made if needed 7) CNVMMS (Appendix A): a. Lists requirements of Condition 93(see below) b. Web-based monitoring to be accessible to LBN c. Numerous requirements to monitor; limited requirements to report (refer to CEMP)	Monitoring and reporting requirements to continue as approved with the exception of the modification of complaints management procedures Agreed subject to caveats listed below this table	Reduced reporting (monthly) continued while construction active during airport closure. A CEMP audit was carried out by the delivery partner and it confirmed no issue. The result was updated in the Oct 20 Construction mtg. Proposed to pause requirements when CADP construction works are paused. Date to be confirmed in writing to LBN.
Condition 93 Monitoring and Reporting (Construction)	Requires: 1) Continuous monitoring of noise and vibration 2) Manual short-term noise measurements 3) Continuous noise monitoring to verify 'a' above 4) Continuous noise monitoring information should be available online	Monitoring and reporting requirements to continue as approved with the exception of the modification of complaints management procedures Agreed subject to caveats listed below this table	Reduced reporting (monthly) continued while construction active during airport closure. Proposed to pause requirements when CADP construction works are paused. Date to be confirmed in writing to LBN.
Condition 95 Construction Complaints Handling	Requires: 1) Person responsible for liaison 2) 24 hour complaints line	Not applicable	Reduced reporting (monthly) continued while construction active during airport closure. 24-hour complaints line will continue to be in place during pause in CADP construction.

Reference	Requirement	LBN Comment	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Planning Obligations (S106 Agreement)			
Schedule 5, Paragraphs 1 and 2	Covenants with Council and TfL	Not applicable	
Schedule 5, Paragraphs 3, 4 and 8; Schedule 14, Paragraphs 3, 4 and 5: Financial Contributions	contributions required in financial year 2020/21: 1) Annual Monitoring Payment 2) Environmental Health Monitoring Contribution 3) Employment Contribution 4) Education Contribution 5) Development Management Contribution 6) Community Recreation Contribution possible contribution in 2020/21 if claimed by LBN: 7) Parking Improvement Contribution	Not applicable at this stage	Application submitted to LBN on 08 October to defer payments on (3) and (4). All other payments unaffected for 2020.
Schedule 8, Paragraph 2	Noise contours to be published in APR	1) APR submitted to LPA 1/6/20 2) Agreed subject to caveats listed below this table	2019 APR was submitted to LBN on 1 June 20.
Schedule 8, Paragraph 3	Inclusion of Noise Contour Verification Report in third APR after Commencement of Development (2019 APR) and every three years after	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20.
Schedule 9, Paragraphs 1-3	Operation of SIS Tiers (Is there provision to include a list in the APR?)	See Annexures section below	2019 APR was submitted to LBN on 1 June 20. See Annexures section.
Schedule 9, Paragraph 5.3	Operate Reinspection Scheme and list of eligible properties under Reinspection Scheme in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20. See Annexures section.
Schedule 9, Paragraph 6	Operate NIPS 1 and list properties eligible under NIPS 1 in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20. See Annexures section.
Schedule 9, Paragraph 7	Operate NIPS 2 and list properties eligible under NIPS 2 in APR	1/6/20	submitted to LBN on 1 June 20.

Reference	Requirement	LBN Comment	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Schedule 9, Paragraph 8	Operate and list properties eligible under Purchase Scheme in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20. See Annexures section.
Schedule 9, Paragraph 9	Complete 2 x Neighbouring Authority Agreements	APR submitted to LPA 1/6/20	It was updated in the SIS mtg on 7th Oct that the NAA with LBTH was signed off by the Airport ad was now being circulated for agreement by all signatories. LCY is seeking updates from RBG on their progress.
Schedule 11, Paragraph 1.4	Report LCY job vacancy policy in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20.
Schedule 11, Paragraph 1.2	Employers' Forum at least twice a year	Meetings to be suspended up to 30th June 2020 Agreed subject to caveats listed below this table	LCY is planning to hold the meetings via remote means for the remainder of 2020. LBN and LCY met on 30 September and agreed to defer the next Employers Forum until the ongoing restructuring of the airport business is complete. It is proposed to liaise with the AMO to agree a date for the next meeting and a revised programme of remote meetings for 2021
Schedule 11, Paragraph 1.5	Report employment statistics in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20.

Reference	Requirement	LBN Comment	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Schedule 11, Paragraph 2 and Definitions	Employment of 3 x embedded posts. Definitions section lists specific responsibilities of each, including regular reporting to LBN	Employees furloughed until Airport reopens. Temporary limited cover to be provided by LCY Executive Board Agreed subject to caveats listed below this table and that the period of suspension is to be excluded from the requirement to retain posts for eight years.	All embedded posts remain in place. As discussed with the AMO, some individuals were on the Governments furlough scheme but LCY Exec team (Tim Halley and Liam McKay) were available to carry out functions as required during airport closure. Embedded post functions are now being carried out again, albeit some individuals remain in partial furlough but role being carried out regardless.
Schedule 11, Paragraph 3.1	Maximise supply chain opportunities – specific requirements listed	Employees responsible furloughed until Airport reopens. Temporary limited cover to be provided by LCY Executive Board Agreed subject to caveats listed below this table	As above
Schedule 11, Paragraph 3.2	Monitor supply chain opportunities and report details of contractors on site in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20.
Schedule 11, Paragraph 4.2	Local Economic Partnership Board to meet at least four months before commencement of academic year to review Education/ Employment initiatives	Meetings to be suspended up to 30th June 2020 Agreed subject to caveats listed below this table	LCY is planning to hold the meetings via remote means for the remainder of 2020. LBN and LCY met on 30 September and agreed to defer the next Employers Forum until the ongoing restructuring of the airport business is complete. It is proposed to liaise with the AMO to agree a date for the next meeting and a revised programme of remote meetings for 2021
Schedule 12, Paragraph 1.3	Report on VCS 1 in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20.
Schedule 12, Paragraph 2.3	Report on VCS 2 in APR	APR submitted to LPA 1/6/20	2019 APR was submitted to LBN on 1 June 20.

Reference	Requirement	LBN Comment	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Schedule 12, Paragraph 3.3	Vortex Turbulence report required following introduction of new aircraft types at Airport. Written approval required by LBN	Further reporting to be suspended until the Airport reopens Agreed subject to caveats listed below this table. Matter to be discussed on return of LCY officers from furlough	A review was now being undertaken and no complaints or issues relating to wake turbulence. LCY is currently reviewing the S106 requirements and will provide an update in due course.
Schedule 13, Paragraph 1.3	LCACC meeting arrangements required	Meetings to be suspended until 30th June 2020 Agreed subject to caveats listed below this table	Meetings held on 18 June and 10 Sep via remote means. Next meeting due Dec 2020
Schedule 13, Paragraph 2.3	Requirements for Transport Forum meetings, including monitoring ASAS and Travel Plan	Meetings to be suspended until 30th June 2020 Agreed subject to caveats listed below this table	ATF was held in Sep 20 via virtual meeting Next ATF due in Dec 20.
Schedule 14, Paragraph 1.1	Requirement to publish APR	APR submitted to LPA 16/20	2019 APR was submitted to LBN on 1 June 20.
Schedule 14, Paragraph 2	Programme of quarterly meetings and reports on compliance	Meetings to be suspended up to 30th June 2020; monthly construction updates and Planning catch-ups to take place by telecon or other means Agreed subject to caveats listed below this table	Meetings have been held in recent weeks as staff return from furlough. An updated S106 mtg rolling programme was shared with LBN officer on 14/9. The officer suggested this will be kept under review.
Schedule 14, Paragraph 6	LCY reporting breaches	Further monitoring and reporting to be suspended until the Airport reopens. LCY Director of Planning to provide temporary limited cover Agreed subject to caveats listed below this table	LCY Director of Planning and AMO maintained weekly dialogue during temporary closure. See letter dated 13 October for up to date position
Schedule 14, Paragraph 6.3	LBN to add APR link to web site and report to SDC	May need to be delayed or not be possible for 2019	2019 APR was submitted to LBN on 1 June 20. And published it on the airport's and London City Airport Consultative Committee's website in end June
Schedule 14: Financial Contributions – see above, with Schedule 5	N/A	N/A	See above

Reference	Requirement	LBN Comment	LCY Status Update Underlined if any further update since LBN/LCY Compliance Mtg 06/10/20
Annexures 2, 6, 7 and 12 et al: Sound Insulation Scheme/ Reinspection/ NIPS/Purchase Scheme – Time allowed for Inspections and Works, etc.	1) LBN has agreed suspension of surveys, works, etc, for three months where it is empowered to do so (excludes some provisions) 2) Other related procedures, e.g. notification of eligibility, are excluded from the above	Suspension of SIS- related requirements should include: First Tier Scheme: Paragraph 6.5; Second Tier Scheme: Paragraphs 13.4 and 13.5; and Reinspection Scheme: Paragraphs 3a and 3b Agreed subject to caveats listed below this table	LCY updated Council officers in the SIS mtg on 7/10 that the SIS recommenced on 01st October 2020 i

Response to queries raised by Airport Monitoring Officer via email on 28 September 2020

1) Letter from Nick Fenwick dated 3rd April 2020 – Sound Insulation Scheme:

LPA Query: 'where possible, occupiers of relevant properties be informed of the delay to delivery times.' I have not received any notification of this – has it happened?
LCY RESPONSE: The airport confirm that those who were eligible for works were notified by the contractor that works would be delayed due to the impacts of COVID-19.

LPA Query: 'engagement should continue with the Local Planning Authority's Airport Monitoring Officer in relation to any enquiries from eligible residents and representatives of community buildings – with aggregated details submitted on a weekly basis (compliant with General Data Protection Regulations / Data Protection Act 2018).' I have not received any weekly reports – the Royal Docks Academy is mentioned in your letter of 26th August 2020, but is there anything further?
LCY RESPONSE: Engagement and reporting to the AMO continued on a weekly basis throughout the period of the airports temporary closure and suspension of the Sound Insulation Scheme. Given that there were no commercial aircraft movements during the period of closure, there were no complaints regarding noise impacts or sound insulation. There were numerous correspondence exchanges and enquiries regarding works to eligible properties and these were typically responded to by the environment team within a month of receipt. It was not deemed appropriate to share details of individual enquiries / correspondence exchanges given sensitivities around GDPR at a time when the relevant LCY departments were furloughed. Notwithstanding this, where circumstances allowed, works on certain public buildings were prioritised during the summer months where safe to do so (as in the case of the Royal Docks Academy). The Sound Insulation Scheme has now recommenced along with regular SIS meetings.

LPA Query: 'if this amendment of operations is likely to need to extend beyond the agreed 12 weeks that a further agreement is sought at the earliest opportunity, but not later than 7 days prior to the expiry of this agreement'. A further agreement was not sought by this deadline, which as amended by the letter from Nick Fenwick dated 12th June 2020, was 23rd June. Although as you point out, discussions did take place between ourselves, further agreement has still not been sought, and I note that you propose in a number of cases to extend deadlines still further.
LCY RESPONSE: See details in the attached letter dated 15th October 2020

2) Letter from Nick Fenwick dated 12th June 2020:

LPA Query: 'If the period of suspension is likely to need to extend beyond 30th June 2020, a further agreement should be sought by the Airport at the earliest opportunity, but not later than 7 days prior to the expiry of the agreement.' See comments above.
LCY RESPONSE: See details in the attached letter dated 15th October 2020

LPA Query: 'All London City Airport officers responsible for monitoring and reporting, together with all relevant consultants and contractors should be available to liaise with Council officers by the recommencement date.' Clarification sought here please – I am aware of certain LCY officers returning from furlough but not how many hours are involved. I note that in your letter of 26th August 2020 that you state that this is still an issue and is a reason for your proposal to extend the agreed deadlines for submission for the 5 x strategy reviews. We do, however, appreciate that LCY's restructuring programme may affect some of the individual employees involved.
LCY RESPONSE: See details in the attached letter dated 15th October 2020. Where any specific roles are affected by the ongoing consultation on our restructuring process, we will write to the AMO to agree satisfactory alternative arrangements

Annual Performance Report 2020

(Compliance with planning permission)

Annex 4
Aircraft Noise Categorisation Scheme (ANCS) Report

Bickerdike Allen Partners
Architecture
Acoustics
Technology

LONDON CITY AIRPORT

AIRCRAFT NOISE CATEGORISATION SCHEME (ANCS) REPORT 2020

Report to

London City Airport
The Royal Docks
London E16 2PB

A11327_05_RP023_1.0
7 May 2021

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Bickerdike Allen Partners LLP is an integrated practice of Architects, Acousticians, and Construction Technologists, celebrating over 50 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.

Contents

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1.0 INTRODUCTION

The City Airport Development Programme (CADP1) planning application (13/01228/FUL) 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 18 of the permission required a new Aircraft Noise Categorisation Scheme (ANCS) to be submitted and approved to 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. The ANCS was run in parallel with the previous Noise Factored Scheme (NFS) until 29th March 2019, when the London Borough of Newham (LBN) formally approved the review of the ANCS following its first year of operation. Following the approval of the review, the NFS has been superseded by the ANCS.

The ANCS comprises a Quota Count system as well as a maximum permitted noise level for aircraft based on their noise certificate.

Condition 19 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 2020.

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 normally based on operations at a glide slope of 3 degrees, not 5.5 degrees as used at LCA. To account for this difference, aircraft noise modelling software (INM)[1] has been used to compute, at the approach noise certification point, the noise level based on a 5.5 degree glide slope using the INM in-built aircraft database. Whereas this method provides a reasonable correlation with measurements of turbofan aircraft at LCA, it does not reflect well the noisiness of turboprop aircraft on approach. As a result, measured data at LCA has been used to validate the turboprop aircraft types within the INM software to achieve a reasonable correlation between prediction of approach noise at the noise certification point and measurement.

The ANCS takes manufacturers' noise certification data to categorise aircraft and allocate a specific 'QC score' to each aircraft permitted to fly into and out of the airport. Each aircraft has a certified '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 (or 'count') 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 under the previous Noise Factored Movements system). As an example, the ANCS would allocate 0.5 'counts' to one aircraft departure or arrival in a noise band range of 88.0 dB to 88.9 dB and 0.1 'counts' to a quieter aircraft departure or arrival in a noise band range of 81.0 dB to 81.9 dB.

[1] Integrated Noise Model (INM) Version 7.0d, developed by the Federal Aviation Administration (FAA)

The QC classification bands are set out in Table 1 below:

Noise Level Band[2], EPNdB	Quota Count (QC) Classification	Noise Level Band[2], 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)

[2] 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[3], all aircraft of the types used at LCA are required to hold a certificate that sets out the departure noise certification levels for the aircraft and states the weight at which the aircraft was certified.

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 (potentially quieter) modifications, such as new engines or winglets, 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[4] database for the specific aircraft type[5] 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, and only under exceptional circumstances,

iii. 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.

[3] Commission Regulation (EU) 748/2012

[4] European Aviation Safety Agency *Aircraft type certificate data sheets*, [Online], Available: http://www.easa.europa.eu/certification/type-certificates/aircraft.php [20/05/2020].

[5] 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 INM software is used to predict the noise generated by an aircraft on arrival at LCA and 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.

The approach noise level for a given type of turbofan aircraft is derived by modelling with a glide slope of 5.5 degrees using the INM software, at the approach noise certification point described in ICAO Annex 16[6]. 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 INM software to best match the approach noise level measured at LCA during a 5.5 degree approach. This aircraft type is then modelled using the INM to derive the noise value at the approach noise certification point described in ICAO Annex 16[6]. 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.

[6] Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume 1, Aircraft Noise

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 in the UK AIP[7]. For the purposes of an annual assessment of the quota count and quota, the calendar year shall apply.

3.2 Quota Count Budget

LCA are required to operate within an overall noise quota budget as 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, the higher its QC score and the more it counts towards the total, resulting in fewer permitted flights within the budget. The use of 1 dB bands means that a small reduction in noise levels from a particular aircraft may result in it being assigned 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 then adding together the total QCs for each aircraft using the airport.

All aircraft operating at LCA are included in the quota, other than those engaged in training, 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 is determined based on the schedule of actual aircraft movements for the year and established QC scores. The results are compared against LCA's permitted quota count budget as specified in i) and ii) above.

3.3 2020 QC Assessment

The QC score has been calculated for each aircraft movement during 2020. Totals for each day and week are presented in Appendix 2. These show that the airport has operated within its quota budget of 742.5 per week during this period.

[7] The UK Aeronautical Information Package, NATS Aeronautical Information Service

Table 2 presents the total QC score for 2020, broken down by aircraft type. This shows that the airport has operated within its quota budget of 22,000 for 2020.

Aircraft Type	Average QC Score[1]		2020 Total Mvts		2020 Quota Count[2]		
	Arr	Dep	Arr	Dep	Arr	Dep	Total
Airbus A221	0.050	0.125	338	337	17	42	59
Airbus A318	0.080	0.400	61	62	5	25	30
ATR 42	0.315	0.160	382	382	120	61	181
ATR 72	0.250	0.113	100	101	25	11	36
Avro RJ85	0.063	0.251	419	421	26	106	132
BAe 146	0.063	0.315	11	9	1	3	4
Dash 8-400	0.125	0.106	803	803	100	85	185
Dornier 328 Jet	0.125	0.160	95	95	12	15	27
Embraer E135	0.050	0.108	16	16	1	2	3
Embraer E170	0.063	0.400	1210	1206	76	482	559
Embraer E190	0.050	0.391	5300	5290	265	2069	2334
Fokker 50	0.400	0.160	202	202	81	32	113
Saab 2000	0.315	0.160	136	136	43	22	65
General Aviation: Jet Aircraft	0.050	0.111	602	622	30	69	99
General Aviation: Non-Jet Aircraft	0.309	0.155	11	12	3	2	5
TOTAL			9686	9694	806	3026	3832

[1] Some aircraft types can have different departure QC scores depending on the specific aircraft flown. Therefore the average is given.

[2] QC totals rounded to nearest whole number. Overall totals are sum of unrounded values.

Table 2: 2020 QC Assessment

3.4 2021 Forecast

Due to the ongoing coronavirus pandemic, there is a large amount of uncertainty relating to the 2021 forecast. The primary purpose of the 2021 forecast QC total is to assess whether the airport is likely to be approaching or above the QC budget in 2021. As it is very likely that the total for 2021 will be lower than that for 2019, in light of the situation LBN have agreed that it is not necessary to assess a 2021 forecast as part of this 2020 APR.

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[8] 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.

[8] 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.

4.1.1 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 2020, on-site microphone calibration was carried out quarterly. The sensitivity adjustment was 0.2 dB or lower for each calibration check. This is within normal tolerances and suggests that the NMTs were functioning normally.

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 only aircraft and airline combinations which recorded at least one arrival and departure measurement per day on average have been included in the comparison. This approach has been agreed with LBN.

The noise levels for the aircraft and airline combinations which recorded at least one arrival and departure measurement per day in 2020 are presented in Table 3, alongside their change from 2019[9]. The 2020 noise levels for all aircraft and airline combinations are given in Appendix 3.

[9] The 2019 noise levels used here differ slightly from those presented in the 2019 APR, as the original data included a small number of noise events where no EPNL was recorded.

Aircraft Type Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		2020 Avg Level, EPNdB	Change from 2019[1]	2020 Avg Level, EPNdB	Change from 2019[1]	2020 Avg Level, EPNdB	Change from 2019[1]
E170	BA	97.6	-0.7	88.0	-1.0	84.4	0.2
E190	BA	98.7	-0.8	87.7	-0.6	85.3	0.3
E190	KL	98.2	-1.1	87.0	-1.1	85.5	0.2
E190	LO	99.3	-0.9	87.7	-0.6	84.9	0.1

[1] Averages are rounded to 1 decimal place. Changes are based on the unrounded values. Negative change indicates a reduction in noise level.

Table 3: 2020 Noise Monitoring Results and Comparison to 2019

The results in Table 3 show that for all of the most commonly operating aircraft and airline combinations, there has been no significant change in the average measured arrival noise levels when compared to 2019, while the average measured departure noise levels are around 1 dB lower. This effect is attributed to the Covid-19 pandemic which has meant many aircraft departing with fewer passengers on board than normal. This is expected to be a temporary situation so the Quota Count (QC) classifications used in 2019 are 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[10].

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:

Departure Noise Level = (Sideline EPNL + 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:

Arrival Noise Level = 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.

[10] 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[11] and ANCS[12] 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.

[11] NOMMS – Noise Management and Mitigation Strategy

[12] 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[13].

Certification levels, determined in accordance with prescribed procedures under ICAO Annex 16[14] 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[15]
- they are reliable and independently verified indicators of aircraft noise performance;
- they are freely available for practically every relevant aircraft type[16].

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[17], illustrates these three noise certification points below.

[13] 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.

[14] Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume 1, Aircraft Noise

[15] Aerodrome (Noise Restrictions) (Rules and Procedures) Regulations 2003

[16] European Aviation Safety Agency (2016) *Aircraft type certificate data sheets*, [Online], Available: http://www.easa.europa.eu/certification/type-certificates/aircraft.php [6/09/2016].

[17] ERCD Report 0205 Quota Count Validation Study: Noise Measurements and Analysis, Civil Aviation Authority

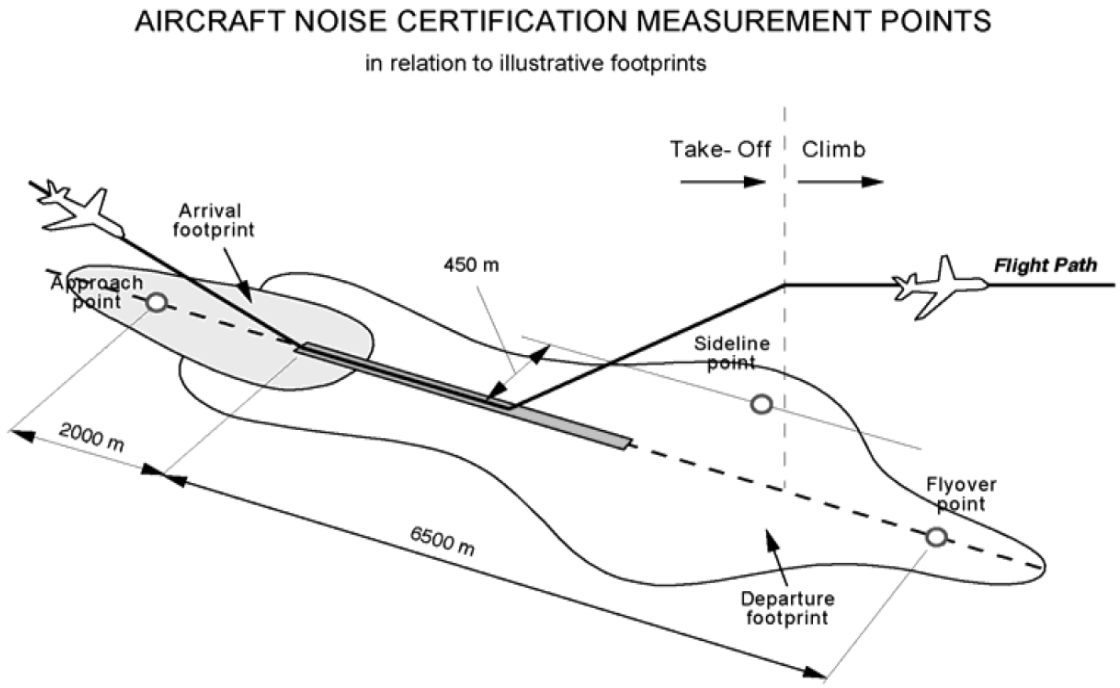

Figure A1.2: Aircraft noise certification measurement points

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
QUOTA COUNT DAILY AND WEEKLY TOTALS

The following table gives the daily and weekly Quota Count totals for 2020. 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
30/12/2019	43	215
31/12/2019	28	
01/01/2020	22	
02/01/2020	42	
03/01/2020	41	
04/01/2020	13	
05/01/2020	27	
06/01/2020	44	273
07/01/2020	46	
08/01/2020	47	
09/01/2020	48	
10/01/2020	47	
11/01/2020	13	
12/01/2020	27	
13/01/2020	42	265
14/01/2020	34	
15/01/2020	50	
16/01/2020	50	
17/01/2020	49	
18/01/2020	13	
19/01/2020	28	
20/01/2020	50	290
21/01/2020	48	
22/01/2020	45	
23/01/2020	52	

Date	Daily Quota Count	Weekly Total
24/01/2020	52	
25/01/2020	14	
26/01/2020	28	
27/01/2020	54	316
28/01/2020	53	
29/01/2020	57	
30/01/2020	55	
31/01/2020	54	
01/02/2020	13	
02/02/2020	28	
03/02/2020	56	293
04/02/2020	54	
05/02/2020	57	
06/02/2020	56	
07/02/2020	54	
08/02/2020	14	
09/02/2020	3	
10/02/2020	47	302
11/02/2020	53	
12/02/2020	55	
13/02/2020	54	
14/02/2020	53	
15/02/2020	12	
16/02/2020	26	
17/02/2020	55	312
18/02/2020	54	
19/02/2020	56	
20/02/2020	54	

Date	Daily Quota Count	Weekly Total
21/02/2020	53	
22/02/2020	14	
23/02/2020	26	
24/02/2020	54	315
25/02/2020	55	
26/02/2020	56	
27/02/2020	56	
28/02/2020	53	
29/02/2020	13	
01/03/2020	29	
02/03/2020	55	295
03/03/2020	55	
04/03/2020	54	
05/03/2020	48	
06/03/2020	47	
07/03/2020	12	
08/03/2020	25	
09/03/2020	44	217
10/03/2020	41	
11/03/2020	40	
12/03/2020	37	
13/03/2020	32	
14/03/2020	7	
15/03/2020	17	
16/03/2020	24	100
17/03/2020	18	
18/03/2020	16	
19/03/2020	15	

Date	Daily Quota Count	Weekly Total
20/03/2020	15	
21/03/2020	4	
22/03/2020	8	
23/03/2020	4	10
24/03/2020	4	
25/03/2020	2	
26/03/2020	0	
27/03/2020	0	
28/03/2020	0	
29/03/2020	0	
30/03/2020	0	0
31/03/2020	0	
01/04/2020	0	
02/04/2020	0	
03/04/2020	0	
04/04/2020	0	
05/04/2020	0	
06/04/2020	0	0
07/04/2020	0	
08/04/2020	0	
09/04/2020	0	
10/04/2020	0	
11/04/2020	0	
12/04/2020	0	
13/04/2020	0	0
14/04/2020	0	
15/04/2020	0	
16/04/2020	0	

Date	Daily Quota Count	Weekly Total
17/04/2020	0	
18/04/2020	0	
19/04/2020	0	
20/04/2020	0	0
21/04/2020	0	
22/04/2020	0	
23/04/2020	0	
24/04/2020	0	
25/04/2020	0	
26/04/2020	0	
27/04/2020	0	0
28/04/2020	0	
29/04/2020	0	
30/04/2020	0	
01/05/2020	0	
02/05/2020	0	
03/05/2020	0	
04/05/2020	0	0
05/05/2020	0	
06/05/2020	0	
07/05/2020	0	
08/05/2020	0	
09/05/2020	0	
10/05/2020	0	
11/05/2020	0	0
12/05/2020	0	
13/05/2020	0	
14/05/2020	0	

Date	Daily Quota Count	Weekly Total
15/05/2020	0	
16/05/2020	0	
17/05/2020	0	
18/05/2020	0	0
19/05/2020	0	
20/05/2020	0	
21/05/2020	0	
22/05/2020	0	
23/05/2020	0	
24/05/2020	0	
25/05/2020	0	0
26/05/2020	0	
27/05/2020	0	
28/05/2020	0	
29/05/2020	0	
30/05/2020	0	
31/05/2020	0	
01/06/2020	0	0
02/06/2020	0	
03/06/2020	0	
04/06/2020	0	
05/06/2020	0	
06/06/2020	0	
07/06/2020	0	
08/06/2020	0	0
09/06/2020	0	
10/06/2020	0	
11/06/2020	0	

Date	Daily Quota Count	Weekly Total
12/06/2020	0	
13/06/2020	0	
14/06/2020	0	
15/06/2020	0	0
16/06/2020	0	
17/06/2020	0	
18/06/2020	0	
19/06/2020	0	
20/06/2020	0	
21/06/2020	0	
22/06/2020	0	3
23/06/2020	0	
24/06/2020	0	
25/06/2020	0	
26/06/2020	0	
27/06/2020	0	
28/06/2020	0	
29/06/2020	0	4
30/06/2020	0	
01/07/2020	1	
02/07/2020	0	
03/07/2020	1	
04/07/2020	0	
05/07/2020	0	
06/07/2020	1	13
07/07/2020	2	
08/07/2020	1	
09/07/2020	1	

Date	Daily Quota Count	Weekly Total
10/07/2020	3	
11/07/2020	1	
12/07/2020	2	
13/07/2020	4	21
14/07/2020	3	
15/07/2020	2	
16/07/2020	3	
17/07/2020	4	
18/07/2020	2	
19/07/2020	3	
20/07/2020	5	27
21/07/2020	3	
22/07/2020	3	
23/07/2020	5	
24/07/2020	6	
25/07/2020	1	
26/07/2020	3	
27/07/2020	5	30
28/07/2020	3	
29/07/2020	4	
30/07/2020	4	
31/07/2020	6	
01/08/2020	2	
02/08/2020	5	
03/08/2020	6	28
04/08/2020	3	
05/08/2020	2	
06/08/2020	3	

Date	Daily Quota Count	Weekly Total
07/08/2020	6	
08/08/2020	2	
09/08/2020	5	
10/08/2020	5	24
11/08/2020	2	
12/08/2020	2	
13/08/2020	4	
14/08/2020	5	
15/08/2020	2	
16/08/2020	4	
17/08/2020	5	25
18/08/2020	3	
19/08/2020	2	
20/08/2020	4	
21/08/2020	4	
22/08/2020	2	
23/08/2020	5	
24/08/2020	5	28
25/08/2020	2	
26/08/2020	3	
27/08/2020	4	
28/08/2020	6	
29/08/2020	2	
30/08/2020	5	
31/08/2020	7	35
01/09/2020	5	
02/09/2020	5	
03/09/2020	5	

Date	Daily Quota Count	Weekly Total
04/09/2020	7	
05/09/2020	1	
06/09/2020	4	
07/09/2020	7	42
08/09/2020	7	
09/09/2020	7	
10/09/2020	7	
11/09/2020	8	
12/09/2020	1	
13/09/2020	4	
14/09/2020	8	44
15/09/2020	8	
16/09/2020	7	
17/09/2020	8	
18/09/2020	8	
19/09/2020	1	
20/09/2020	5	
21/09/2020	7	44
22/09/2020	8	
23/09/2020	8	
24/09/2020	9	
25/09/2020	7	
26/09/2020	1	
27/09/2020	4	
28/09/2020	9	42
29/09/2020	8	
30/09/2020	7	
01/10/2020	9	

Date	Daily Quota Count	Weekly Total
02/10/2020	4	
03/10/2020	1	
04/10/2020	5	
05/10/2020	11	56
06/10/2020	9	
07/10/2020	9	
08/10/2020	10	
09/10/2020	9	
10/10/2020	1	
11/10/2020	7	
12/10/2020	6	37
13/10/2020	5	
14/10/2020	5	
15/10/2020	6	
16/10/2020	7	
17/10/2020	1	
18/10/2020	5	
19/10/2020	6	36
20/10/2020	6	
21/10/2020	5	
22/10/2020	6	
23/10/2020	7	
24/10/2020	1	
25/10/2020	6	
26/10/2020	6	35
27/10/2020	5	
28/10/2020	6	
29/10/2020	6	

Date	Daily Quota Count	Weekly Total
30/10/2020	6	
31/10/2020	2	
01/11/2020	5	
02/11/2020	4	19
03/11/2020	3	
04/11/2020	3	
05/11/2020	2	
06/11/2020	3	
07/11/2020	0	
08/11/2020	4	
09/11/2020	2	14
10/11/2020	1	
11/11/2020	2	
12/11/2020	2	
13/11/2020	3	
14/11/2020	1	
15/11/2020	4	
16/11/2020	3	15
17/11/2020	2	
18/11/2020	1	
19/11/2020	2	
20/11/2020	3	
21/11/2020	1	
22/11/2020	3	
23/11/2020	2	15
24/11/2020	1	
25/11/2020	3	
26/11/2020	2	

Date	Daily Quota Count	Weekly Total
27/11/2020	3	
28/11/2020	0	
29/11/2020	4	
30/11/2020	3	15
01/12/2020	1	
02/12/2020	1	
03/12/2020	3	
04/12/2020	3	
05/12/2020	1	
06/12/2020	4	
07/12/2020	2	18
08/12/2020	2	
09/12/2020	2	
10/12/2020	4	
11/12/2020	3	
12/12/2020	1	
13/12/2020	3	
14/12/2020	4	21
15/12/2020	3	
16/12/2020	2	
17/12/2020	3	
18/12/2020	4	
19/12/2020	2	
20/12/2020	4	
21/12/2020	2	6
22/12/2020	1	
23/12/2020	1	
24/12/2020	0	

Date	Daily Quota Count	Weekly Total
25/12/2020	0	
26/12/2020	1	
27/12/2020	1	
28/12/2020	0	
29/12/2020	0	
30/12/2020	2	
31/12/2020	1	-
01/01/2021	-	
02/01/2021	-	
03/01/2021	-	

Table A2.1: 2020 Daily and Weekly Quota Count Totals

APPENDIX 3

2020 NOISE MONITORING RESULTS BY AIRLINE AND AIRCRAFT TYPE

Table A3.1 presents the 2020 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	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB
A221	LX	622	93.4	309	83.7	317	83.9
A318	BA	100	98.5	50	85.7	59	86.1
AT42	BA	234	91.2	116	81.9	120	87.8
AT42	LM	460	91.0	226	81.7	233	87.9
AT42	LO	10	90.7	5	82.3	4	88.0
AT72	BE	165	92.9	80	82.9	85	87.7
AT72	SI	14	92.9	7	82.0	7	87.3
B350	Other	1	91.0	0	-	1	85.3
B461	Other	8	98.6	4	86.4	3	81.4
B462	BA	12	97.7	6	87.4	5	82.9
B462	Other	4	97.2	2	82.1	4	83.8
BE20	Other	2	89.8	1	81.3	0	-
C130	Other	0	-	0	-	1	83.4
C25A	Other	16	92.8	8	80.7	8	81.8
C25B	Other	15	90.4	5	78.2	5	79.6
C25C	Other	4	95.5	2	80.1	0	-
C510	AS	28	91.1	14	79.5	4	78.2
C510	GA	108	91.0	49	80.1	22	78.6
C510	Other	8	91.7	4	81.0	0	-
C510	PV	12	91.8	6	80.0	2	78.7
C550	Other	8	89.4	4	78.0	5	80.2
C560	Other	4	89.8	1	78.9	2	80.9

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB
C56X	AH	50	90.7	23	79.6	22	80.6
C56X	DC	18	89.8	9	79.2	7	81.0
C56X	JE	10	91.2	5	80.0	6	80.5
C56X	NJ	138	90.4	46	78.2	71	80.6
C56X	OO	20	91.0	7	78.3	10	81.9
C56X	Other	28	91.6	14	80.0	11	80.5
C680	DC	12	92.2	5	80.1	7	79.4
C680	NJ	14	90.8	5	76.5	7	79.1
C680	Other	10	92.5	3	80.2	5	77.6
C68A	AS	10	91.6	3	77.6	5	77.6
C68A	NJ	176	90.8	63	77.7	79	78.6
C68A	Other	15	92.2	8	79.2	7	78.7
CL30	NJ	26	94.1	13	78.1	12	81.0
CL60	Other	6	89.6	1	76.4	3	83.9
DH8D	BE	655	92.8	321	81.7	335	84.1
DH8D	LG	783	92.1	349	81.5	391	84.4
E135	Other	28	92.2	13	78.5	14	80.3
E170	BA	2165	97.6	1084	88.0	1080	84.4
E190	AZ	527	97.9	263	86.6	268	85.0
E190	BA	5738	98.7	2871	87.7	2882	85.3
E190	BE	365	98.9	181	87.3	188	85.4
E190	KL	1375	98.2	688	87.0	692	85.5
E190	LH	345	98.1	173	86.8	177	86.1
E190	LO	909	99.3	454	87.7	471	84.9
E190	LX	302	99.1	150	87.5	150	86.3
E190	Other	2	98.0	1	86.2	1	84.5

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB
E550	Other	4	94.4	1	76.2	1	79.1
E55P	NJ	118	92.4	50	78.4	53	79.9
E55P	Other	2	89.5	0	-	1	78.9
F2TH	BF	12	91.6	6	79.5	4	78.0
F2TH	OO	20	92.9	10	79.8	8	80.4
F2TH	Other	28	93.0	13	80.2	8	78.2
F50	WP	374	92.5	188	84.3	185	88.7
F900	Other	16	93.9	8	83.3	9	79.0
FA7X	CA	19	89.3	10	82.8	8	81.1
FA7X	Other	43	90.8	21	82.9	21	81.4
FA7X	SH	28	89.6	14	80.7	12	83.2
FA8X	GX	10	89.8	5	82.6	5	80.8
FA8X	Other	4	90.6	2	79.4	1	80.6
FA8X	SH	18	89.7	9	80.3	6	81.6
G280	Other	4	90.6	1	81.6	2	82.0
GL5T	Other	4	93.0	2	81.3	1	81.9
GLEX	GL	12	96.5	6	81.5	6	81.0
GLEX	Other	16	93.7	7	79.6	6	80.3
GLF6	Other	2	89.1	1	78.4	2	81.6
H25B	Other	12	93.4	6	83.2	5	80.3
J328	BA	161	92.7	81	84.4	85	86.6
J328	Other	2	91.5	1	82.4	1	86.8
P180	XG	10	93.1	5	86.3	7	91.3
PC24	JF	12	95.5	6	80.6	4	83.9
RJ85	EI	722	98.6	361	90.0	361	83.7
RJ85	Other	10	98.5	5	86.6	2	81.5

Aircraft Code	Airline Code	Sideline (NMTs 1-4)		Flyover (NMTs 5-6)		Approach (NMTs 5-6)	
		No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB	No. Results	2020 Avg Level, EPNdB
SB20	BA	188	93.2	94	83.6	97	82.1
SB20	T3	64	90.5	19	82.0	30	81.8

Table A3.1: 2020 Noise Monitoring Results

Annual Performance Report 2020

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Annex 5

Community and Airline Annual Report (IPS Report)

Bickerdike
Allen
Partners
Architecture
Acoustics
Technology

LONDON CITY AIRPORT

ANNUAL COMMUNITY AND AIRLINE REPORT

2020

Report to

London City Airport
The Royal Docks
London E16 2PB

A11327_07_RP019_1.0
22 March 2021

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Bickerdike Allen Partners LLP is an integrated practice of Architects, Acousticians, and Construction Technologists, celebrating over 50 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.

Contents

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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 on 31 March describing aircraft/airline performance with regard to noise monitoring and flight track keeping 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 2020 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 sideline noise level for a given departure is defined as the arithmetic average of the $L_{Amax,s}$ noise level measured at the relevant pair of NMTs (NMTs 1 and 2 for runway 27 departures, and NMTs 3 and 4 for runway 09 departures).
- 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 relevant thresholds.
- If the Fixed Penalty Limit is exceeded, the airline responsible is fined £600[1] 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.

[1] Fines were not payable prior to 1st November 2018

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. Around £35,000 worth of grants were announced in March 2020, supporting a broad range of initiatives that enable positive and significant change within and across diverse communities in East London. The remainder of the fund was planned to be awarded later in the year, however given the severe impact of coronavirus locally, the airport together with its Community Fund trustees decided to increase that amount in 2020 and made £50,000 available for East London foodbanks. The Community Fund plans to return to two rounds of grants in 2021.

The grantees were selected by a judging panel that included representatives from the airport, local authorities and Flybe, which joined the Fund's board of trustees following the airline's leading noise performance in 2018. They reported a number of common themes across all the recipients, that they either:

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

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 was also advertised to local MP's and councillors to cascade the information and encourage charities and not-for profit organisations to apply.

Figure 1: Example of Community Fund Advert

In order to decide the grantees trustees board meetings were held and applicants were selected to be awarded a grant of up to £3,000. A robust scoring system was used in order to score the applications, based on the funding criteria they applied for, the number of beneficiaries for the amount requested along with how the local community will benefit from the fund. Taking all this into consideration trustees selected projects which will benefit the local community and enable positive impact. Details of the selected projects and the grants made are given in Appendix 1.

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 1st November 2018.

Threshold Description	Aircraft Category	Flyover Noise Level, dB L_{ASmax}	
		Runway 09	Runway 27
Fixed Penalty Limit	Turbofans	84	84[1]
	Turboprops	78	78
Credit Removal Threshold	Turbofans	81	82
	Turboprops	75	77
Credit Award Threshold	Turbofans	73	72
	Turboprops	66.5	65.5

[1] 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 2020 are given by airline in Appendix 2.

Airline	Residual Credits 2020	Residual Credits 2019	Residual Credits Difference 2020 - 2019
Aer Lingus	-13	-62	49
BA Cityflyer	171	142	29
Flybe	10	-2	12
Lufthansa	47	66	-19
British Airways	8	35	-27
Luxair	27	56	-29
LOT Polish Airlines	8	38	-30
GlobeAir	44	96	-52
Alitalia	82	150	-68
KLM Royal Dutch Airlines	56	145	-89
Sun-Air of Scandinavia	45	180	-135
Swiss	153	497	-344
NetJets Europe	173	595	-422
Loganair[1]	4	-	-

[1] Airline did not operate at LCA in 2019 and therefore its improvement cannot be assessed.

Table 2: 2020 Residual Credits Ranking

The most improved airline has been determined by comparing the total residual credits in the two years. Therefore, Aer Lingus will partner LCA in delivering the Community Fund in 2021.

2.5 Flight Track Keeping

The NTK system is permanently linked to the airport's radar feed, which is provided by the local Air Traffic Control (ATC) centre. Aircraft flight tracks are correlated with flight information and noise events. Based around this information, the airport have introduced a web-based system (known as TRAVIS[2]) to share data from the flight track monitoring system with the public.

[2] https://travislcy.topsonic.aero/

LCA do not currently operate noise preferential routes such as those that are in place at some other airports. Analysis is carried out to identify any aircraft which appear to be obviously 'off track'. This analysis is reported quarterly, and in the Annual Performance Report (APR).

There are only a very small number of aircraft which are found to be 'off track' and therefore it is not possible to rank airlines by track-keeping performance.

Nick Williams
for Bickerdike Allen Partners LLP

David Charles
Partner

APPENDIX 1

LONDON CITY AIRPORT COMMUNITY FUND GRANTS 2020

LONDON CITY AIRPORT
COMMUNITY
FUND

Community Fund 2020 Awardees

First Tranche - March 2020

Amount awarded	Organisation	Boroughs Supporting	Category	Funding Criteria
£2,990	Ability Bow	Tower Hamlets	Activities for people with reduced mobility (PRM)	building stronger, safer, healthier communities
£2,303	Bexley Foodbank	Bexley	food bank	building stronger, safer, healthier communities
£3,000	Cardboard Citizens	Hackney, Lambeth, Lewisham, Southwark, TH, WF	Homelessness	raising aspirations of East Londoners
£2,865	Carers FIRST	Hackney, Newham, WF	Mental health and wellbeing	building stronger, safer, healthier communities
£2,000	CREST Waltham Forest	Waltham Forest	Intergenerational project	building stronger, safer, healthier communities
£2,825	Grit Breakthrough Programmes	Barking, Newham	Mentor/coaching for hard to reach	building stronger, safer, healthier communities
£600	Irish Community Services working in	Bexley, Greenwich, Lewisham	Chair exercise for elderly	building stronger, safer, healthier communities

£3,000	Manorfield Primary School	Tower Hamlets	Bio-diversity project	creating more sustainable and greener communities
£3,000	Patient Participation Group (PPG)	Newham	Environment and wellbeing	creating more sustainable and greener communities
£617	REDBRIDGE TALKING NEWSPAPER ASSOCIATION	Redbridge	Vision impaired	building stronger, safer, healthier communities
£3,000	River Roding Trust	Barking & Dagenham	Environment – river cleaning/sustainability	building stronger, safer, healthier communities
£2,775	Salmagundi Films	Newham	Digital training for elderly	building stronger, safer, healthier communities
£2,855	Thamesmead Arts and Culture Office (TACO!	Bexley, Greenwich	Raising aspiration and providing training	raising aspirations of East Londoners
£3,000	The Community Hub	Hackney	Employability skills and training	creating pathways into employment
£1,005	Woman's Talk	Newham	Raising aspiration and providing training	building stronger, safer, healthier communities
£35,834.8	**15 Organisations**			

Second Tranche April 2020 - COVID 19

Amount awarded	Organisation	Boroughs Supporting	Category	Funding Criteria
£12,500	Greenwich Foodbank	Greenwich	Food Poverty	building stronger, safer, healthier communities
£6,250	RCCG - Dagenham Foodbank	Baring & Dagenham	Food Poverty	building stronger, safer, healthier communities
£6,250	Barking Foodbank	Baring & Dagenham	Food Poverty	building stronger, safer, healthier communities
£6,250	Newham Foodbank	Newham	Food Poverty	building stronger, safer, healthier communities
£6,250	CFE Foodbank	Newham	Food Poverty	building stronger, safer, healthier communities
£3,125	First Love Foundation	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£3,125	Bow Foodbank	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£3,125	Bethnal Green Foodbank	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£3,125	Mile End Foodbank Burdett FC	Tower Hamlets	Food Poverty	building stronger, safer, healthier communities
£50,000.00	**9 Organisations**			

APPENDIX 2

2020 IPS RESULTS BY AIRLINE AND AIRCRAFT TYPE

Table 3 summarises the number of flights that incurred fixed penalties, credit removals and credit awards in 2020, by airline and aircraft type. Additionally, the total value of fixed penalties which were accrued and the residual number of credits are presented.

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
AAB	C25A	0	£0	0	1	1
AAB	C525	0	£0	0	1	1
ABP	E135	0	£0	0	3	3
AHO	C560	0	£0	0	4	4
AHO	C56X	0	£0	0	20	20
AOJ	CNJ	0	£0	0	1	1
ASJ	C510	0	£0	0	11	11
ASJ	C680	0	£0	0	2	2
ASJ	CNJ	0	£0	0	6	6
AWU	C25A	0	£0	0	1	1
AWU	CNJ	0	£0	0	1	1
AZA	E190	0	£0	0	82	82
BA9	E190	0	£0	0	1	1
BAW	A318	0	£0	0	8	8
BEE	DH8D	0	£0	0	2	2
BEE	E190	0	£0	0	8	8
BFD	F2TH	0	£0	0	3	3
BFD	F2TX	0	£0	0	2	2
BFD	FA7X	0	£0	0	1	1
CAZ	F2TH	0	£0	0	1	1
CAZ	F2TX	0	£0	0	1	1
CAZ	FA7X	0	£0	0	5	5
CFE	AT42	0	£0	0	1	1
CFE	E170	0	£0	0	35	35
CFE	E190	0	£0	0	135	135
CLF	CNJ	0	£0	0	1	1

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
CSD	GLEX	0	£0	0	1	1
DBE	F2TH	0	£0	0	2	2
DBO	FA7X	0	£0	0	1	1
DCA	C56X	0	£0	0	4	4
DCA	C680	0	£0	0	4	4
DCA	CNJ	0	£0	0	2	2
DCH	C680	0	£0	0	1	1
DCS	C56X	0	£0	0	3	3
DCS	CNJ	0	£0	0	2	2
DLH	E190	0	£0	0	47	47
EFD	C25A	0	£0	0	1	1
EFD	C25C	0	£0	0	2	2
EFD	CNJ	0	£0	0	1	1
EIN	RJ85	0	£0	13	0	-13
ELJ	CNJ	0	£0	0	1	1
ENZ	B462	0	£0	0	1	1
ENZ	RJ85	0	£0	0	1	1
ETI	C25B	0	£0	0	1	1
EZE	SB20	0	£0	0	3	3
FGS	C25B	0	£0	0	1	1
FHV	FA7X	0	£0	0	1	1
FLJ	CNJ	0	£0	0	1	1
FWW	FA8X	0	£0	0	1	1
FYG	FA7X	0	£0	0	1	1
FYG	GLEX	0	£0	0	2	2
GAC	C510	0	£0	0	44	44
GDK	C680	0	£0	0	2	2
GES	CNJ	0	£0	0	1	1
GLJ	CCX	0	£0	0	1	1

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
GLJ	GLEX	0	£0	0	3	3
GXI	FA7X	0	£0	0	1	1
GXI	FA8X	0	£0	0	2	2
HBJ	F2TH	0	£0	0	1	1
HKH	DA90	0	£0	0	1	1
HTM	C56X	0	£0	0	1	1
HTM	CNJ	0	£0	0	3	3
JAR	C550	0	£0	0	2	2
JDI	C56X	0	£0	0	2	2
JET	C56X	0	£0	0	4	4
JET	CNJ	0	£0	0	1	1
JFA	C25B	0	£0	0	1	1
JFA	PC24	0	£0	0	2	2
JIV	CNJ	0	£0	0	1	1
JSY	CNJ	0	£0	0	2	2
KFE	FA7X	0	£0	0	1	1
KLM	E190	0	£0	1	57	56
LEA	CNJ	0	£0	0	2	2
LEA	H25B	0	£0	0	1	1
LGL	DH8D	0	£0	0	27	27
LMJ	FA7X	0	£0	0	3	3
LNX	CNJ	0	£0	0	1	1
LNX	E135	0	£0	0	2	2
LOG	AT42	0	£0	0	4	4
LOT	E190	0	£0	0	8	8
MJF	E135	0	£0	0	3	3
MMD	F2TH	0	£0	0	2	2
N15	GLEX	0	£0	0	1	1
N28	G280	0	£0	0	1	1

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
N51	GJ6	0	£0	0	1	1
N88	CNJ	0	£0	0	1	1
NJE	C56X	0	£0	0	46	46
NJE	C680	0	£0	0	26	26
NJE	C68A	0	£0	0	39	39
NJE	CJ8	0	£0	0	1	1
NJE	CL35	0	£0	0	10	10
NJE	CL5	0	£0	0	1	1
NJE	E55P	0	£0	0	48	48
NJE	GL7T	0	£0	0	1	1
NJE	GLEX	0	£0	0	1	1
NOH	B461	0	£0	0	1	1
OKS	E135	0	£0	0	1	1
OOA	CNJ	0	£0	0	1	1
OOG	F2TH	0	£0	0	5	5
OOG	F2TX	0	£0	0	2	2
OOG	FA7X	0	£0	0	1	1
OOM	CNJ	0	£0	0	2	2
OOR	CNJ	0	£0	0	1	1
OOS	C56X	0	£0	0	4	4
OOX	C56X	0	£0	0	1	1
PHJ	F2TH	0	£0	0	1	1
PHT	CNJ	0	£0	0	1	1
PHV	BE20	0	£0	0	1	1
PHW	F2TH	0	£0	0	1	1
PVT	C510	0	£0	0	2	2
PVT	DF7	0	£0	0	1	1
RBB	FA7X	0	£0	0	3	3
SHE	FA7X	0	£0	0	20	20

Airline Code	Aircraft Code	Fixed Penalties (# aircraft)	Fixed Penalties (total value)	# Credits Removed	# Credits Awarded	Residual Credits
SHE	FA8X	0	£0	0	3	3
SIO	E135	0	£0	0	2	2
SUS	J328	0	£0	0	45	45
SVW	DFL	0	£0	0	1	1
SWR	A221	0	£0	0	134	134
SWR	E190	0	£0	0	19	19
SYB	CCX	0	£0	0	2	2
TEU	F2TH	0	£0	0	1	1
TVS	CNJ	0	£0	0	1	1
ULC	CNJ	0	£0	0	1	1
XRO	DA90	0	£0	0	2	2

Table 3: 2020 IPS results by airline and aircraft type

Annual Performance Report 2020

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Annex 6
Air Quality Action Plan Progress Update

Air Quality Action Plan (2017-2020)	Indicative Timescale	Status update
Measure 1: 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. It will also continue to record the use of FEGP within the online portal and document any contraventions of Airfield Operating Instruction AOI 07. The Standard Terms and Conditions will be amended to require mandatory use of FEGP on any Stand where it is available, as and when FEGP availability is increased.	June each year	Use of FEGP where available is mandatory, and no contraventions to this were recorded in 2020. Eight faults were recorded during the year relating to failure of the FEGP supply, all but one of which were rectified within 24 hours. A further 48 faults were reported with the Powervamp units, and all but one of these were also rectified within 24 hours.
Measure 2: London City Airport will monitor the use of APU in accordance with the relevant Airfield Operating Instruction 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 each year	In place. 26 aircraft requested use of APUs during 2020. 1 aircraft was recorded as being in breach of the operating instruction, and this was raised with the airline accordingly.
Measure 3: With the continued procurement of Fixed Electrical Ground Power (FEGP) reliance on MGPUs will be phased out completely by December 2020 in accordance with the requirements of Condition 46 of the CADP1 Conditions. Prior to this date, the early decommissioning of the older MGPUs will minimise emissions; all remaining MGPUs with Stage II emissions will be decommissioned by March 2017.	March 2017	All MGPUs with stage II emissions have been decommissioned. An amendment to Condition 46 was agreed during 2020 which resulted in zero emission battery-powered MGPUs being acceptable for use from 30 June 2021.
Measure 4: London City Airport will 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	There was no exceedance of limits. This will be continually monitored.
Measure 5: London City Airport will work with the major airlines to explore the potential to introduce "Engine Out Taxi" (EOT) procedures i.e. single engine taxiing. A feasibility study will be submitted to LBN for approval. Pending the outcome of the feasibility study, a Code of Practice to encourage EOT will be introduced at a later date.	Sept 2017 (feasibility study) Dec 2017 (COP)	Single Engine Taxi assessment has been complete and may occur 20% of the time however there are safety concerns surrounding the operation of this however hence why it cannot be a fundamental change. Reduced thrust has also been discussed with the airlines but not considered to be possible at LCY due to the short taxiing times.

Air Quality Action Plan (2017-2020)	Indicative Timescale	Status update
Measure 6: London City Airport will undertake a feasibility study to understand the potential of using Electric Taxiing Systems at LCA, without affecting time performance. A feasibility study will be submitted to LBN for approval, and will include, if practicable, timescales for implementation.	Dec-18	Completed November 2018. No suitable technology is currently available.
Measure 7: London City Airport will 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 during CADP1 construction.	Within 2 months of GERT&M reports	A report was completed within 2 months of the strategy review being submitted. The review has concluded the distance from the engine testing location to the closest receptor remains unchanged, so there will be no air quality implications.
Measure 8: London City Airport will continue to work with operators at the Airport (in accordance with AOI 12) to increase the percentage of London Low Emissions Zone (LLEZ) compliant vehicles year on year, with the target of achieving 100% compliance with the LLEZ by December 2017. If the ULEZ is expanded to encompass London City Airport, LCA will review AOI 12 with the intent of achieving ULEZ compliance for all airside vehicles as soon as December 2020.	Dec 17	All vehicles are compliant with LLEZ, with the exception of 1 fire appliance which is only used in exceptional circumstances. A strategy for upgrading the fleet to comply with the ULEZ requirements has been developed and shared with LBN.
Measure 9: London City Airport will continue to enforce the requirement in AOI 12 that all new vehicles issued with a 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 each year	In effect and internally audited annually.
Measure 10: London City Airport will continue to undertake routine annual, and periodic, random emissions testing for airside vehicles. The results of the testing will be reported to LBN on an annual basis.	June each year	15 vehicles have been tested since the last APR was published. No issues were raised as a result of the test.
Measure 11: London City Airport will undertake a feasibility study for the procurement of low emission vehicles (hybrid or electric) to replace the existing fleet, together with a timescale for subsequent implementation. The feasibility report will be submitted to LBN for approval.	Dec 2017	Submitted December 2018 following agreement with LBN to postpone submission. The consideration of hybrid or electric alternatives is now being considered through the procurement process.

Air Quality Action Plan (2017-2020)	Indicative Timescale	Status update
Measure 12: London City Airport will investigate and implement provisions to reduce idling black cabs. This will involve liaison through the Airport's Transport Forum with the relevant service providers to understand the causes for such instances and implementation, if necessary, of methods to reduce such impacts occurring.	Dec 2017	A black cab emissions study was submitted to LBN in July 2017 and approved October 2018.
Measure 13: 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 each year	The website has been reviewed regularly and updated throughout 2020.
Measure 14: 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 2017	Completed in 2019 and shared with LBN. Levels of pollutants identified were well below workplace exposure levels. RAMP staff monitoring review in 2021 to be postponed until aircraft movement numbers have recovered.
Measure 15: London City Airport will publish an article relating to air quality and airport operations at least once per year in the airport staff newsletter "Airport Life".	June each year	A vastly reduced version of 'Inside E16' (previously called Airport Life) was published in 2020 due to the pandemic. A Sharepoint site detailing air quality at LCY was however developed instead to share news with airport staff.

Annual Performance Report 2020

(Compliance with planning permission)

LONDON CITY AIRPORT

Annex 7
Annual Air Quality Monitoring Report

London City Airport Air Quality Monitoring Strategy: Annual Report 2020

April 2021

Experts in air quality management & assessment

Document Control

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Contents

Executive Summary

This document represents the 2020 Annual Report for the Air Quality Monitoring Strategy (AQMS) that is operated by Air Quality Consultants Ltd. on behalf of London City Airport. This programme measures concentrations of nitrogen dioxide (NO_2) and fine particles (the so called PM_{10} and $PM_{2.5}$ fractions, i.e. particles that are less than 10 and 2.5 micrometres in diameter, respectively).

Monitoring is currently carried out at three automatic monitoring stations. One is situated on the roof of City Aviation House (LCA-CAH), 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 16 sites in and around the Airport boundary.

In early 2020, activity and travel patterns in the UK were severely disrupted by the COVID-19 pandemic, with London City Airport closed completely to all commercial airline operations from 26th March until 21st June. Aircraft movements throughout the remainder of 2020 remained well below normal levels of activity. Concentrations of nitrogen dioxide across London fell appreciably during the periods of lockdown as a result of a "*reduction in road traffic, rail services and aviation, as well as a reduction in overall energy use*" (Defra, Air Quality Expert Group, 2020), and as such, 2020 represents an atypically low pollution year.

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_{10} concentrations exceed 50 µg/m^3, and no more than 18 hours in each calendar year on which nitrogen dioxide concentrations exceed 200 µg/m^3). The World Health Organisation has also set a guideline for $PM_{2.5}$.

The Government has also established a set of descriptors for the 1-hour mean concentrations of nitrogen dioxide and 24-hour mean concentrations of PM_{10}. Air quality is defined by these descriptors as being Low, Moderate, High and 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 2020 annual mean nitrogen dioxide concentration measured at the automatic station on the roof of City Aviation House was 20.9 µg/m^3 (microgrammes per cubic metre); a slightly lower concentration, 19.7 µg/m^3, was measured at the Newham Dockside site. The annual mean objective (40 µg/m^3) was not exceeded at either site in 2020.

There were no exceedances of the 1-hour mean objective value (200 µg/m^3) at either site. At both sites, all of the 1-hour mean concentrations 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 13.4 to 28.8 µg/m^3. The 1-hour mean concentrations over the year show similar patterns at all seven 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 19 to 26 µg/m^3 compared with the objective value of 40 µg/m^3. There were no measured exceedances of the air quality objective. As measured concentrations are well below 60 µg/m^3, it is highly unlikely that the 1-hour mean objective was exceeded.

Fine Particles (PM_{10})

The annual mean PM_{10} concentration measured at the automatic station situated at King George V House was 14.9 µg/m^3. The automatic station on the roof of City Aviation House was decommissioned at the end of September 2020; the period mean concentration for the nine months in 2020 was 19.0 µg/m^3. These are both well below the objective value of 40 µg/m^3. There were four recorded exceedances of the 24-hour mean objective at LCA-KGV and six exceedances at LCA-CAH (compared with the 35 exceedances allowed in a calendar year). At KGV the majority (98.2%) of the running 24-hour mean concentrations were classified as 'Low', and the remaining 1.8% were 'Moderate'. There were no running 24-hour mean concentrations within the 'High' or 'Very High' pollution bands. At LCA-CAH, the majority of the 24-hour mean concentrations were classified as "Low" (98.9%), with 24-hour mean concentrations classified as "Moderate" for 1.1% of the time. There were no concentrations within the 'High' or 'Very High' pollution bands.

24-hour mean concentrations of PM_{10} 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 ($PM_{2.5}$)

The annual mean $PM_{2.5}$ concentration measured at the automatic station at King George V House was 8.6 µg/m^3, well below the objective value of 25 µg/m^3, and below the WHO guideline of 10 µg/m^3. The majority (97.9%) of the running 24-hour mean concentrations were classified as 'Low', with the remaining 2.1% of the running 24-hour mean concentrations classified as "Moderate". There were no running 24-hour mean concentrations within the 'High' or 'Very High' pollution bands.

Concentrations of $PM_{2.5}$ at two other background sites in London over this period showed similar patterns and correlation in observed peaks as that at the Airport site. As for PM_{10}, this suggests that these occurrences were principally attributable to regional sources.

1 Introduction

1.1 This document represents the 2020 Annual Report for the Air Quality Monitoring Strategy (AQMS), operated on behalf of London City Airport (LCA).

1.2 In early 2020, activity and travel patterns in the UK were severely disrupted by the COVID-19 pandemic, with London City Airport closed completely to all commercial airline operations from 26th March until 21st June. Aircraft movements throughout the remainder of 2020 remained well below normal levels of activity. Concentrations of nitrogen dioxide across London fell appreciably during the periods of lockdown as a result of a "reduction in road traffic, rail services and aviation, as well as a reduction in overall energy use" (Defra, Air Quality Expert Group, 2020), and as such, 2020 represents an atypically low pollution year.

1.3 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.

1.4 The AQMS, as defined within Condition 57, requires the operation of two automatic air quality monitoring stations, situated on the roof of City Aviation House and at Newham Dockside, and a network of nitrogen dioxide diffusion tubes, situated in and around the Airport site.

1.5 The AQMS also included a commitment to commission a new site measuring $PM_{2.5}$ concentrations before 31 December 2018 at KGV House. This new site was fully operational on 1 January 2019, and records concentrations of both PM_{10} and $PM_{2.5}$; both metrics have been included within this report.

1.6 The PM_{10} analyser situated on the rooftop of City Aviation House was decommissioned at the end of September 2020, and the data presented in this report cover these nine months of operation.

1.7 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 Air Monitors Ltd, with Ricardo Energy & Environment providing independent audit checks.

1.8 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 2020 with respect to these criteria, and compares the measured concentrations with other local monitoring sites. Chapter 4 then provides some 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). The relevant objectives for this report are provided in Table 1.

2.2 EU Directive 2008/50/EC (The European Parliament and the Council of the European Union, 2008) sets limit values for nitrogen dioxide, PM_{10} and $PM_{2.5}$, 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).

Table 1: Relevant Air Quality Objectives

Pollutant	Time Period	Objective / Value
Nitrogen Dioxide	1-hour mean	200 μg/m^3 not to be exceeded more than 18 times a year
	Annual mean	40 μg/m^3
Fine Particles (PM_{10})[a]	24-hour mean	50 μg/m^3 not to be exceeded more than 35 times a year [b]
	Annual mean	40 μg/m^3
Fine Particles ($PM_{2.5}$)[c]	Annual mean	25 μg/m^3

[a] Measured by the gravimetric method.

[b] Equivalent to a 90th percentile of 24-hour mean concentrations of 50 μg/m^3.

[c] The $PM_{2.5}$ objective, which is to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it. The limit value was to be met by 1 January 2015.

2.3 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_{10} and $PM_{2.5}$, classifying the concentrations in an index from 1 to 10 and thus labelling the levels as 'Low', 'Moderate', 'High' or

'Very High' (Defra, 2013). 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 (µg/m³)

Band	Index	Nitrogen Dioxide 1-hour Mean (µg/m³)	PM_{10} 24-hour mean (µg/m³) [a]	$PM_{2.5}$ 24-hour mean (µg/m³) [a]
Very High	**10**	601 or more	101 or more	71 or more
High	**9**	535 – 600	92 – 100	65 – 70
	8	468 – 534	84 – 91	59 – 64
	7	401 – 467	76 – 83	54 – 58
Moderate	**6**	335 – 400	67 – 75	48 – 53
	5	268 – 334	59 – 66	42 – 47
	4	201– 267	51 – 58	36 – 41
Low	**3**	135 – 200	34 – 50	24 – 35
	2	68 – 134	17 – 33	12 – 23
	1	0 – 67	0 – 16	0 – 11

[a] Reference equivalent. 24-hour values are for the period 00:00 to 23:59.

World Health Organisation Guideline for Annual Mean $PM_{2.5}$

2.4 The WHO has set a guideline for annual mean $PM_{2.5}$ of 10 µg/m³. The guideline is not currently in UK regulations and there is no explicit requirement to assess against it. However, achievement of the guideline is a long-term aspiration of the UK Government (Defra, 2019b) and the GLA has set out an intent in the London Environment Strategy to achieve it by 2030. As such, consideration to this guideline has been included within this report.

3 Monitoring Methodology and Results

Automatic Monitoring Stations

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

- City Aviation House (LCA-CAH): nitrogen dioxide and PM_{10}.
- Newham Dockside (LCA-ND): nitrogen dioxide.
- King George V House (LCA-KGV): PM_{10} and $PM_{2.5}$.

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

3.3 The LCA-CAH automatic monitoring station measures PM_{10} using a Rupprecht and Patashnick TEOM 1400 Particulate Monitor, whilst both automatic monitoring stations measuring nitrogen dioxide (LCA-CAH and LCA-ND) use M200E TAPI chemiluminescence analysers. The LCA-KGV automatic monitoring station measures PM_{10} and $PM_{2.5}$ using a Palas FIDAS 200 Particulate Monitor. The data are stored as 15-minute mean concentrations. Before further processing and ratification, the raw PM_{10} concentrations measured at LCA-ND have been adjusted to a "reference-equivalent" using the Volatile Correction Model (VCM) as recommended by Defra (2016). This adjusts the TEOM data using the "purge" concentration measured by an FDMS analyser, assuming this represents the volatile component that has been lost. A "VCM web portal" has been established that allows this correction to be derived from the mean of up to three, nearby FDMS analysers in the national network. The PM_{10} and $PM_{2.5}$ concentrations measured at LCA-KGV are "reference equivalent" and are unadjusted.

3.4 Independent site audits, conducted by Ricardo Energy & Environment, confirmed that both automatic monitoring stations were operating above the minimum standards set for the national networks operated by Government. Audits were carried out on 19th March 2020, 23rd September 2020 and 5th March 2021, and have been taken into account in producing the fully ratified dataset.

3.5 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 background sites (Bexley, Bloomsbury and Eltham) (Defra, 2021). Any erroneous data have been flagged and removed from subsequent analysis. 1-hour, 24-hour, and annual mean concentrations have then been calculated.

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 from the national Air Quality Archive (Defra, 2021) for three background sites,

Bexley, Bloomsbury and Eltham, and from the Air Quality England website (AQE, 2021) for two sites within the London Borough of Newham at Wren Close, Canning Town (background) and Cam Road, Stratford (roadside).

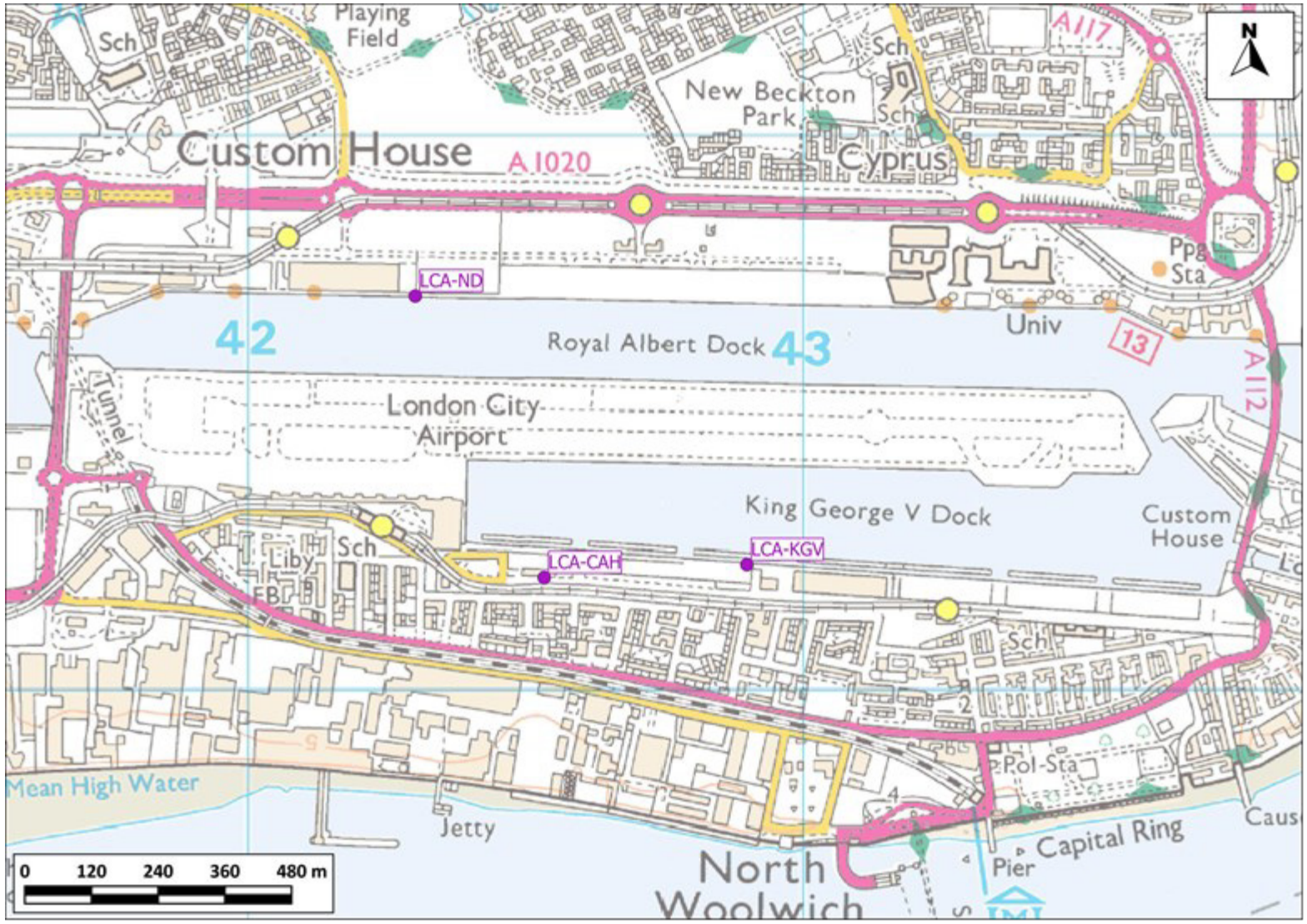

Figure 1: Automatic Monitoring Locations (purple dots).

Nitrogen Dioxide

3.7 The 2020 nitrogen dioxide results for the LCA-CAH and LCA-ND automatic monitoring stations are summarised in Table 3. Data capture[1] for LCA-CAH and LCA-ND was 93.6% and 76.8%, respectively. The annual mean concentration did not exceed the objective of 40 µg/m^3 at either site. The 1-hour mean objective was also not exceeded, and there were no 1-hour mean concentrations above the objective value (200 µg/m^3) recorded at either site.

Table 3: Nitrogen Dioxide (NO_2) Data Summary for LCA-CAH and LCA-ND, 2020[a]

Metric	LCA-CAH	LCA-ND	Objectives
	NO_2	NO_2	
Maximum 1- Hour Mean	101.0 µg/m^3	187.4 µg/m^3	-
No. 1-Hour Mean > 200 µg/m^3	0	0	200 µg/m^3; no more than 18 exceedances
Annual Mean	20.9 µg/m^3	19.7 µg/m^3	40 µg/m^3
Data Capture	93.6%	76.8%	-

[a] Nitrogen oxides concentrations are provided in Appendix 1.

3.8 Table 4 shows the distribution of the 1-hour mean values into the different pollution bands (DAQI). At both sites, all measured 1-hour mean nitrogen dioxide concentrations fell into the 'Low' pollution band during 2020.

Table 4: DAQI Bandings for Nitrogen Dioxide, 2020

Band	Index	LCA-CAH	LCA-ND
Very High [a]	**10**		
High [a]	**9**		
	8		
	7		
Moderate [a]	**6**		
	5		
	4		
Low [a]	**3**		2
	2	161	98
	1	8042	6630

[a] Number of 1-hour values

[1] It is inevitable that a small amount of data will be "lost" in each year due to routine downtime for calibrations and site servicing. The lower data capture at LCA-ND (primarily between the 20th January and 11th March) was due to a loss of power at the unit, which was associated with the adjacent construction works, and a subsequent failure of the air-conditioning unit.

3.9 Nitrogen dioxide concentrations for five monitoring sites across London in 2020 are summarised in Table 5. These sites range from central London (Bloomsbury) to outer London (Bexley). The measured annual mean concentrations at London City Airport (20.9 µg/m^3 at LCA-CAH and 19.7 µg/m^3 at LCA-ND) were lower than those at London Bloomsbury and Stratford (28.8 µg/m^3 and 24.1 µg/m^3 respectively), similar to those at Canning Town (20.2 µg/m^3), and higher than those measured at Eltham and Bexley (13.4 µg/m^3 and 18.8 µg/m^3, respectively). 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 both sites at London City Airport were similar as those recorded at all of the monitoring sites, in that there were no exceedances of the 1-hour mean objective.

Table 5: Nitrogen Dioxide (NO_2) Data Summary for London Monitoring Sites, 2020[a]

Metric	Background Site				Roadside Site
	Bexley	Bloomsbury	Eltham	Canning Town	Stratford
Max. 1-hr Mean (µg/m^3)	102.5	128.0	80.6	116.8	115.9
No. 1-hr >200 µg/m^3	0	0	0	0	0
Annual Mean (µg/m^3)	18.8	28.8	13.4	20.2	24.1
Data Capture (%)	96.7	92.6	93.8	94.8	80.4

[a] Includes provisional data. Nitrogen oxides concentrations are provided in Appendix 1.

Particulate Matter PM_{10}

3.10 The 2020 PM_{10} results for the LCA-CAH and LCA-KGV automatic monitoring stations are summarised in Table 6. Data capture was good at LCA-CAH (70.4%[2]) and LCA-KGV (90.2%[3]) during the period. The recorded annual mean concentrations at LCA-CAH (19.0 µg/m^3) and LCA-KGV (15.1 µg/m^3) were both well below the objective value of 40 µg/m^3. There were three measured exceedances of the 24-hour mean objective level of 50 µg/m^3 at LCA-CAH and four at LCA-KGV, compared with the 35 exceedances allowed in a year. The 90th percentile of daily mean concentrations at both LCA-CAH (32.3 µg/m^3) and LCA-KGV (28.8 µg/m^3) were below 50 µg/m^3.

[2] The monitor was decommissioned at the end of September 2020. Data capture was 94.1% between January and September 2020.

[3] The monitor was removed from the site on the 2nd November 2020 in order to resolve a firmware issue. The reinstallation of the monitor was delayed until 23rd January 2021, due to national lockdown restrictions.

Table 6: PM_{10} Data Summary for LCA-CAH and LCA-KGV, 2020

Metric	LCA-CAH	LCA-KGV	PM_{10} Objectives
	TEOM, VCM-corrected	FIDAS	
Maximum 24-hour Mean	56.1 µg/m³	63.0 µg/m³	-
No. 24-Hour Means >50 µg/m³	3	6	50 µg/m³; no more than 35 exceedances
90th Percentile	32.3 µg/m³	28.8 µg/m³	50 µg/m³
Annual Mean	19.0 µg/m³	15.1 µg/m³	40 µg/m³
Data Capture	70.5%	90.2%	-

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_{10} concentrations during 2020 fell into the 'Low' pollution band at both sites (98.9% at LCA-CAH and 98.2% at LCA-KGV), with three occasions falling into the 'Moderate' at LCA-CAH and six at LCA-KGV. There were no 'High' or 'Very High' pollution events at either site.

Table 7: DAQI Bandings for PM_{10}, 2020

Band	Index	LCA-CAH	LCA-KGV
Very High [a]	**10**		
High [a]	**9**		
	8		
	7		
Moderate [a]	**6**		
	5		1
	4	3	5
Low [a]	**3**	22	16
	2	112	73
	1	124	235

[a] Number of 24-hour mean values.

3.12 PM_{10} concentrations for six sites across London in 2020 are summarised in Table 8. These sites range from central London (Bloomsbury and Eltham) to outer London (Bexley), with two in east London (Stratford). The measured period mean concentration at LCA-CAH (19.0 µg/m³) was higher than all these sites, with the exception of Canning Town, whilst the measured annual mean at LCA-KGV was lower than all sites, with the exception of Eltham. The number of 24-hour mean exceedances of 50 µg/m³ was similar to that at Canning Town and Stratford, and fell in the middle of the range of the remaining sites.

Table 8: PM_{10} Data Summary of Background London Monitoring Sites, 2020[a]

	Background Sites					Roadside Site
	Bexley (TEOM)	Bexley (FDMS)	Bloomsbury (FDMS)	Eltham (FDMS)	Canning Town (FDMS)	Stratford (FDMS)
Maximum 24-hr mean (µg/m³)	58.0	63.9	59.8	51.9	59.4	57.1
Annual Mean (µg/m³)	17.4	17.9	16.5	13.5	19.9	18.0
No. 24-hr mean >50 µg/m³	5	7	6	1	4	4
90th Percentile	33.4	30.5	29.1	25.1	34.0	31.7
Data Capture (%)	98.7	89.7	86.3	99.4	97.1	93.8

[a] All values are reference equivalent. All data, except where stated, are reported as VCM-corrected TEOM concentrations.

Particulate Matter $PM_{2.5}$

3.13 The 2020 $PM_{2.5}$ results for the LCA-KGV automatic monitoring station are summarised in Table 9. Data capture was 90.2% during the period. The recorded annual mean concentration was 8.9 µg/m³, and below both the objective and the WHO guideline.

Table 9: $PM_{2.5}$ Data Summary for LCA-KGV, 2020

Pollutant	FIDAS
	$PM_{2.5}$
Period Mean	8.9 µg/m³
Data Capture	90.2%

3.14 Table 7 includes the distribution of the 24-hour mean values into the different pollution bands (DAQI). The majority of 24-hour mean measured $PM_{2.5}$ concentrations fell into the 'Low' pollution band (97.9%) during 2020; there were also seven 24-hour mean values within the 'Moderate' pollution band (2.1%). There were no 'High' or 'Very High' pollution events.

Table 10: DAQI Bandings for $PM_{2.5}$, 2020

Band	Index	LCA-KGV
Very High [a]	10	
High [a]	9	
	8	
	7	
Moderate [a]	6	1
	5	3
	4	3
Low [a]	3	14
	2	49
	1	260

[a] Number of 24-hour mean values falling within band.

3.15 $PM_{2.5}$ concentrations for two sites in London in 2020 are summarised in Table 11. The Bloomsbury site is located in central London and the Eltham site is located between central and outer London. The measured annual mean concentration at London City Airport (8.9 µg/m^3) is lower than those measured at Bloomsbury and Eltham.

Table 11: $PM_{2.5}$ Data Summary of London Monitoring Sites, 2020

	Background Site	
	Bloomsbury (FDMS)	Eltham (FDMS)
Period Mean (µg/m^3)	9.9	9.8
Data Capture (%)	86.1	95.8

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 3. 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^3 (Defra, 2016).

Table 9: Description of Diffusion Tube Monitoring Sites [a]

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
Lamp post on Brixham Street	LCA 08
City Aviation House (triplicate tubes)	LCA 09
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

[a] 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.

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(16)[4], but are relevant for the 1-hour 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 triplicate tubes exposed alongside

[4] Defra Technical Guidance Note LLAQM.TG(16) 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.

the inlet to the automatic monitor at LCA-CAH, and duplicate tubes exposed in close proximity to the inlet of the LCA-ND automatic monitor. Comparison of the matched period results shows that the diffusion tubes were over-reading by an average of 27.7%. An adjustment factor of 0.783 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 triplicate tubes at LCA-CAH and the duplicate tubes at LCA-ND indicate overall "good" precision (±10.0% at both sites) in 2020 (Defra 2016).

3.20 London City Airport closed completely to commercial aircraft operations from 26th March until 21st June due to the Covid-19 pandemic. As a result of the closure, it was not possible to service some of the diffusion tube sites, and consequently data capture is low for these sites. Furthermore, the laboratory used to prepared and analyse the tubes (Gradko) also closed due to the lockdown that has inevitably led to a short period of missing data at all diffusion tube sites. Diffusion tube sites with fewer than 75% data capture have been annualised as per LAQM.TG16 guidance (see Appendix A5).

3.21 The bias-adjusted and annualised results are summarised in Table 10, and are also shown in Figure 3. The annual mean objective of 40 µg/m^3 was achieved at all monitoring locations during 2020. All measured annual mean nitrogen dioxide concentrations were well below 60 µg/m^3, and it is thus unlikely that the 1-hour mean objective was exceeded at any location.

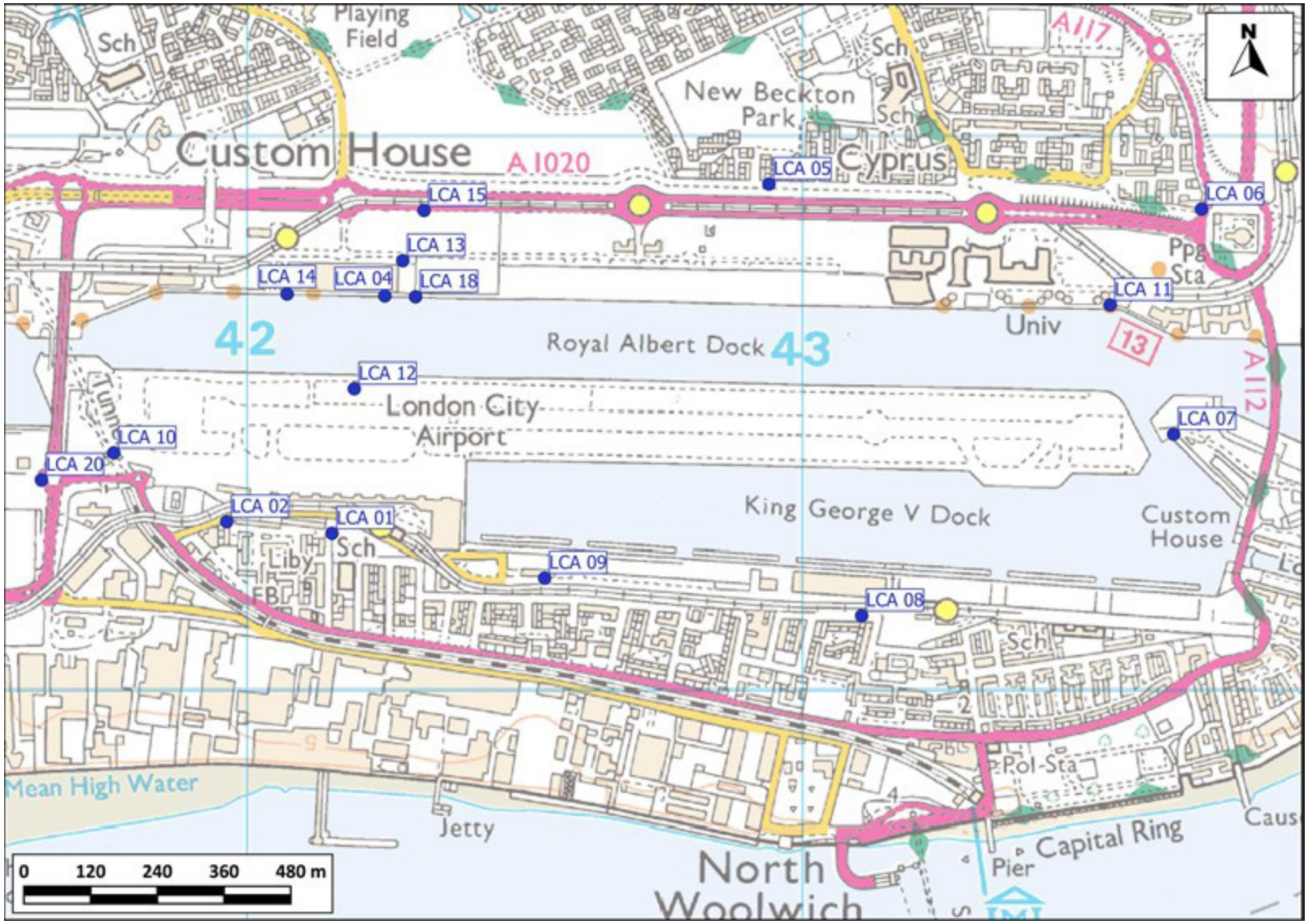

Figure 2: Diffusion Tube Monitoring Locations (blue dots)

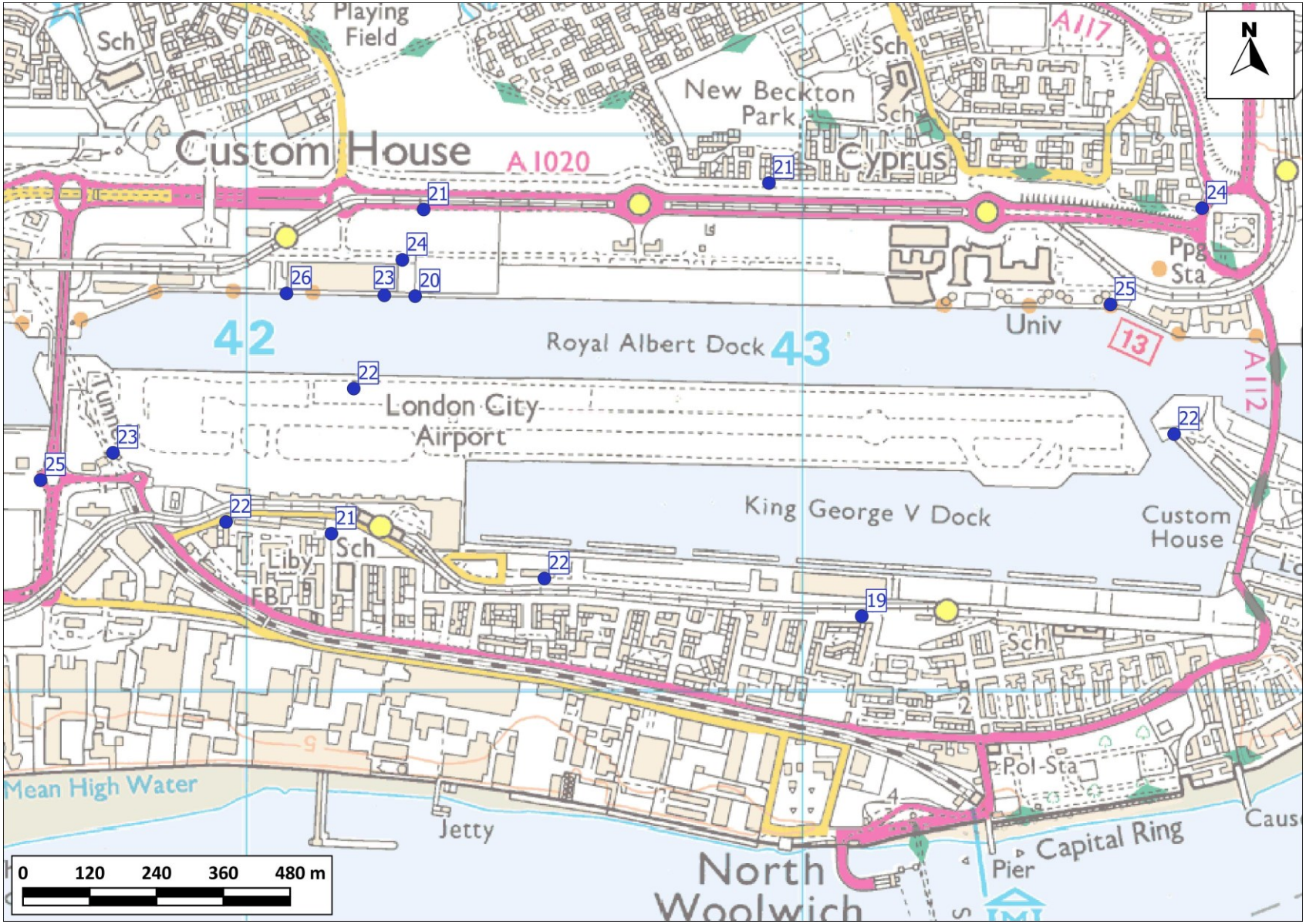

Figure 3: Nitrogen Dioxide Diffusion Tube Results, 2020 (µg/m^3)

Table 10: Diffusion Tube Data Summary for London City Airport, 2020 (Adjusted for Bias)

Site ID	Adjusted Value (µg/m^3) [a]
LCA 01	21.4
LCA 02	21.8
LCA 04	22.8
LCA 05	20.8
LCA 06	23.8
LCA 07	22.3
LCA 08	19.0
LCA 09	21.7
LCA 10	23.4
LCA 11	25.2
LCA 12	21.6
LCA 13	23.7
LCA 14	26.2
LCA 15	21.3
LCA 18	19.9
LCA 20	24.9

[a] Data have been adjusted using a local bias adjustment factor for 2020 of 0.783. The co-location studies are carried out at LCA-CAH using triplicate tubes and at LCA-ND with a duplicate tube located at the automatic monitors. Diffusion tubes were exposed for the period between 10th January 2020 to 8th January 2021.

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 and LCA-ND, and at Bexley, Bloomsbury, Eltham, Canning Town (Wren Close) and Stratford (Cam Road), are shown as a time series in Figures 4 and 5 respectively. The concentrations over the monitoring period show similar patterns at all seven monitoring sites. The concurrence of periods with elevated concentrations at all sites suggests that these episodes were due to regional changes in concentrations.

4.3 The measured daily mean PM_{10} concentrations at LCA-CAH and at the two Bexley monitors, Bloomsbury, Eltham, Canning Town (Wren Close) and Stratford (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 nitrogen dioxide and PM_{10}, the concurrence of many periods of elevated $PM_{2.5}$ 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.

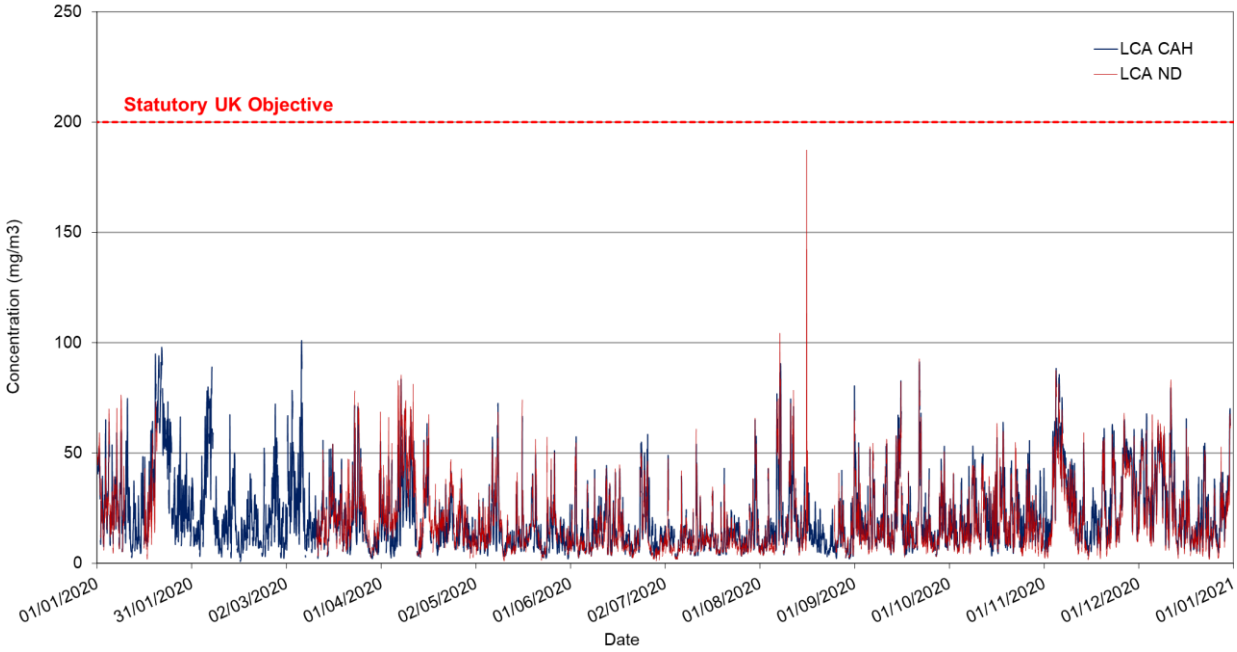

Figure 4: 1-Hour Mean Nitrogen Dioxide Concentrations at London City Airport, 2020

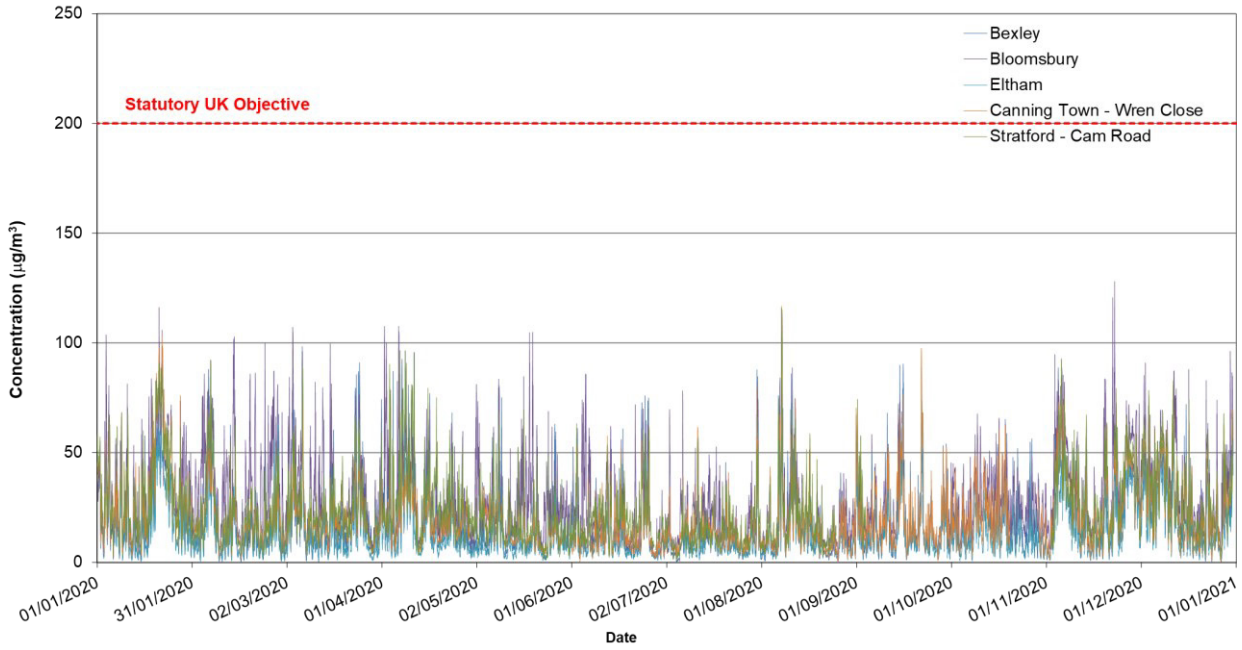

Figure 5: 1-Hour Mean Nitrogen Dioxide Concentrations at London Monitoring Sites, 2020

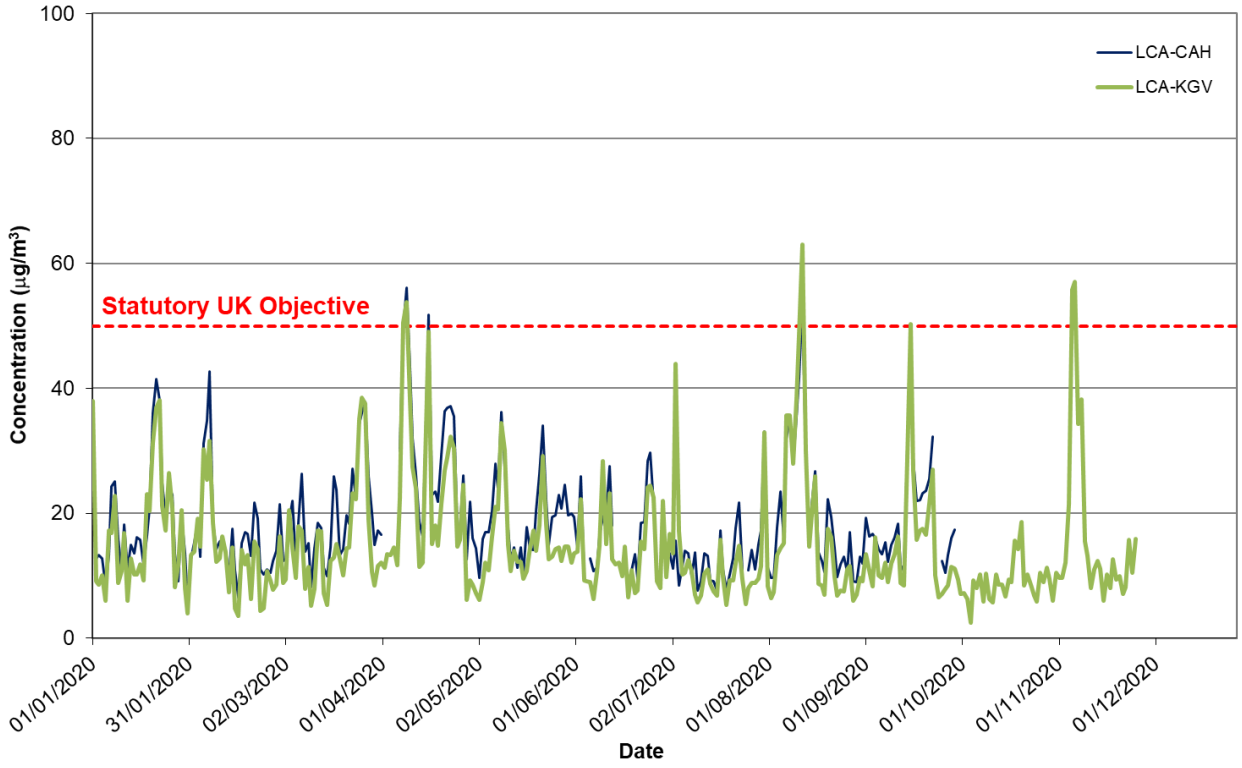

Figure 6: Daily Mean PM_{10} Concentrations at London City Airport (LCA-CAH and LCA-KGV), 2020

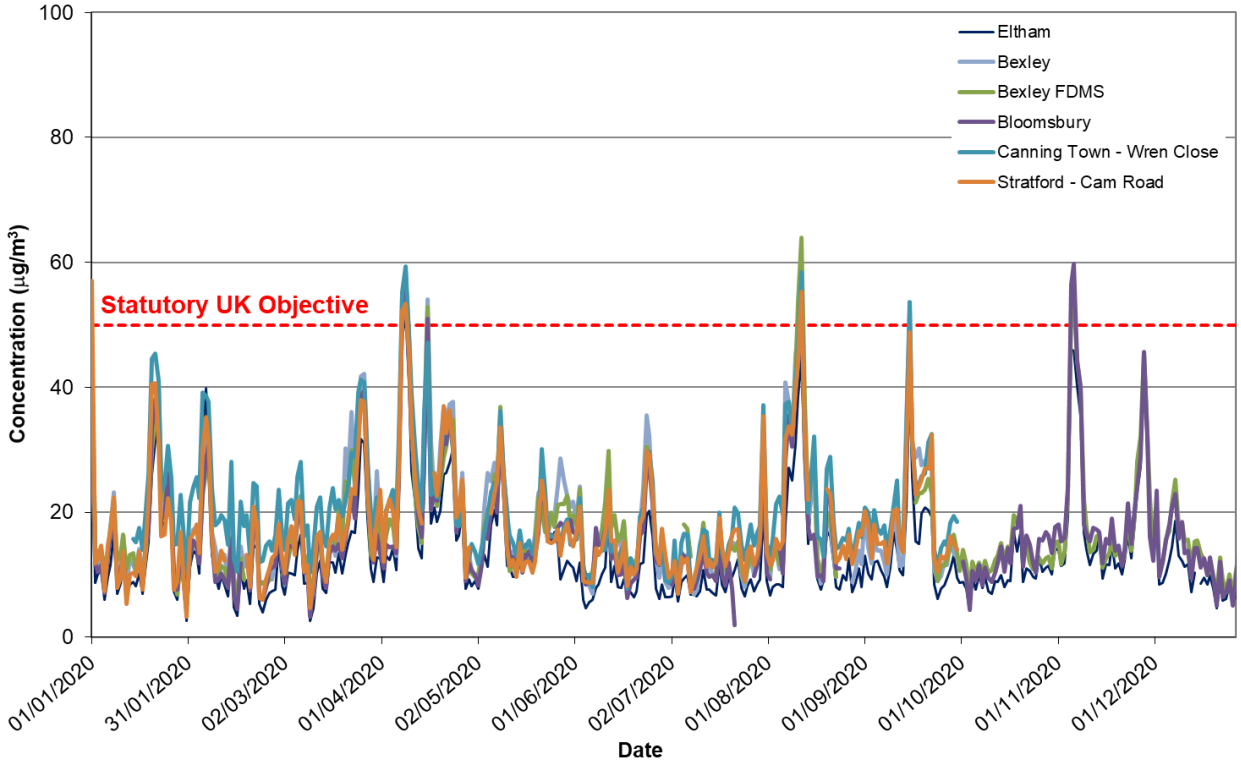

Figure 7: Daily Mean PM_{10} Concentrations at London Monitoring Sites, 2020

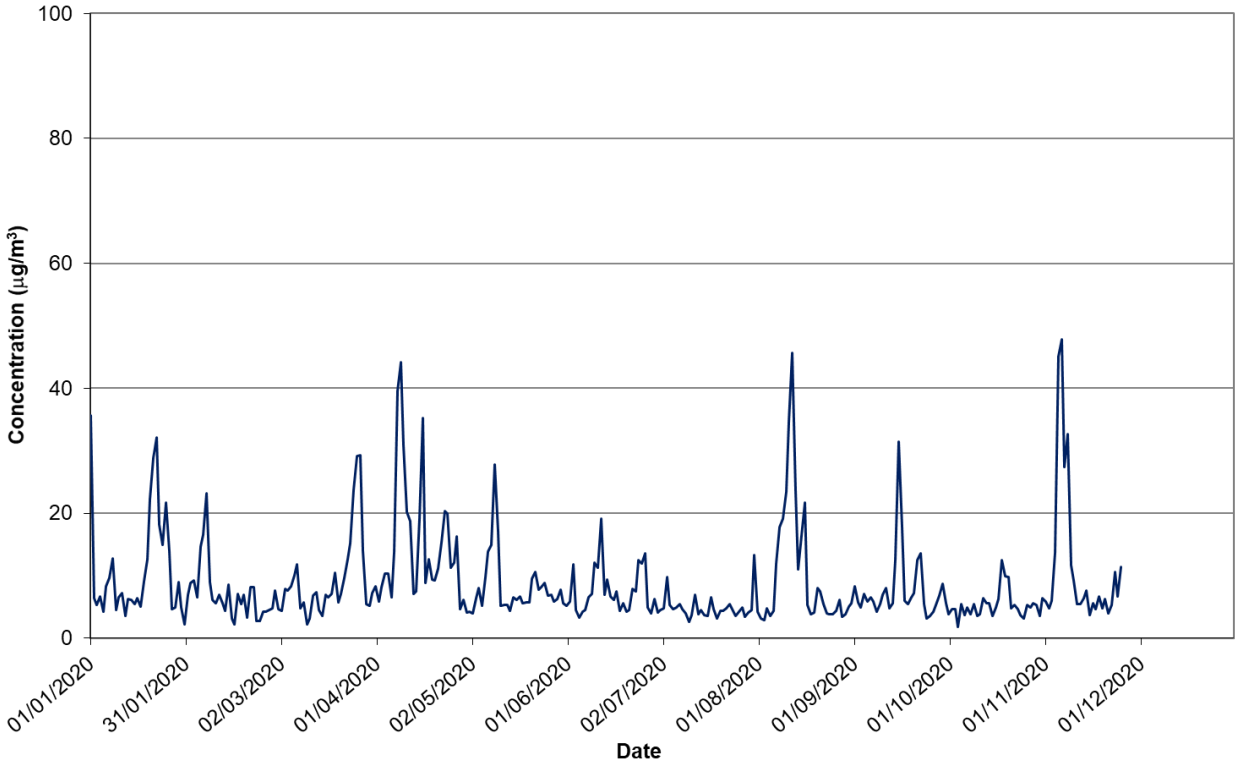

Figure 8: 24-hour Mean $PM_{2.5}$ Concentrations at London City Airport (LCA-KGV), 2020

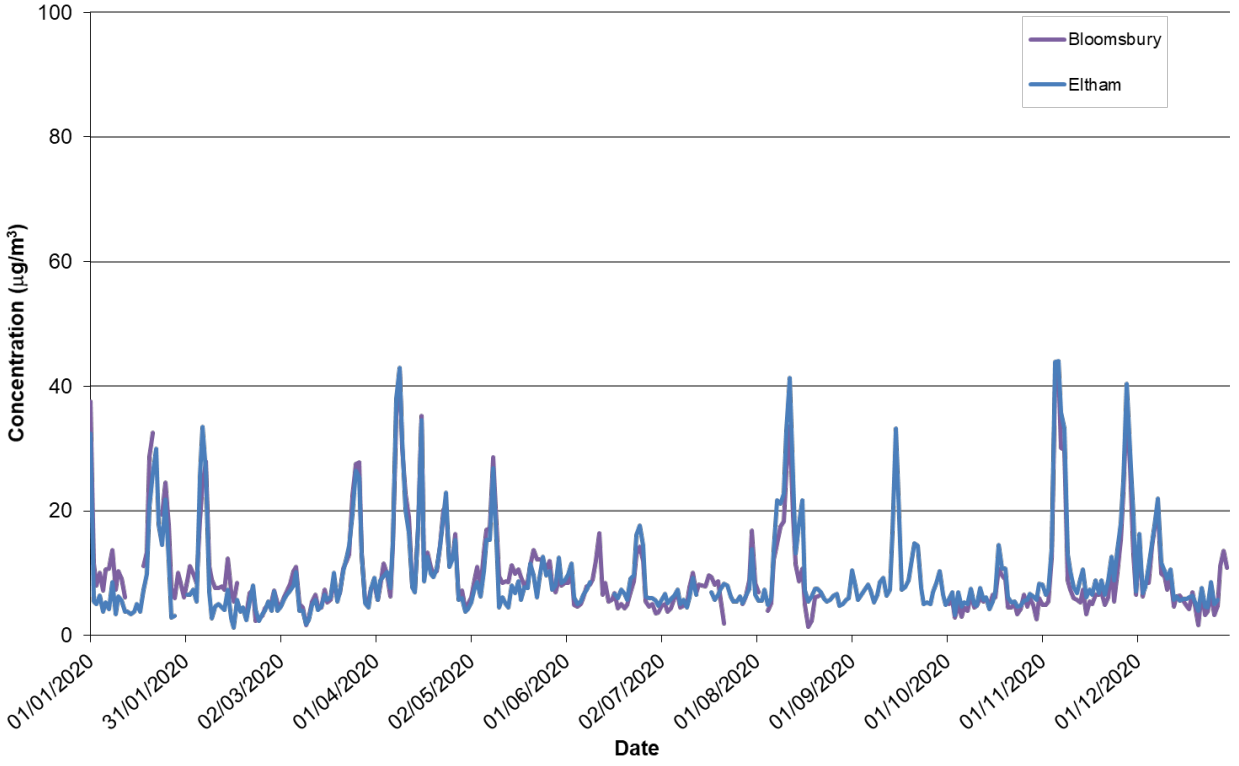

Figure 9: 24-hour Mean $PM_{2.5}$ Concentrations at London Monitoring Sites, 2020

Trends in Pollutant Concentrations

4.5 The automatic station at the LCA-CAH site has been in operation since September 2006 and that at LCA-ND since September 2008. 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 and LCA-ND (NO_2 only[5]) and at the five other monitoring locations identified for the regional evaluation of pollution episodes (Bexley, Bloomsbury, Eltham, Canning Town and Stratford). From a visual examination of Figure 10, there appears to be a general downward trend at all sites over the last fourteen years.

4.7 However, as described in Paragraph 1.2, pollution concentrations during 2020 have been affected by travel restrictions associated with the Covid-19 pandemic, and 2020 is likely to present an atypically low pollution year.

4.8 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 5. In summary, there is a statistically significant downward trend at all the east-London monitoring sites for both nitrogen dioxide and nitrogen oxides (NOx), including at LCA-CAH and LCA-ND.

4.9 The trends in annual mean PM_{10} concentrations are shown in Figure 11, for the LCA-CAH and LCA-KGV sites and three other monitoring locations, for which fourteen years of data are available. There is no clear trend between 2007 and 2020, with concentrations remaining largely unchanged over this period.

[5] For the period 2009 to 2020 only.

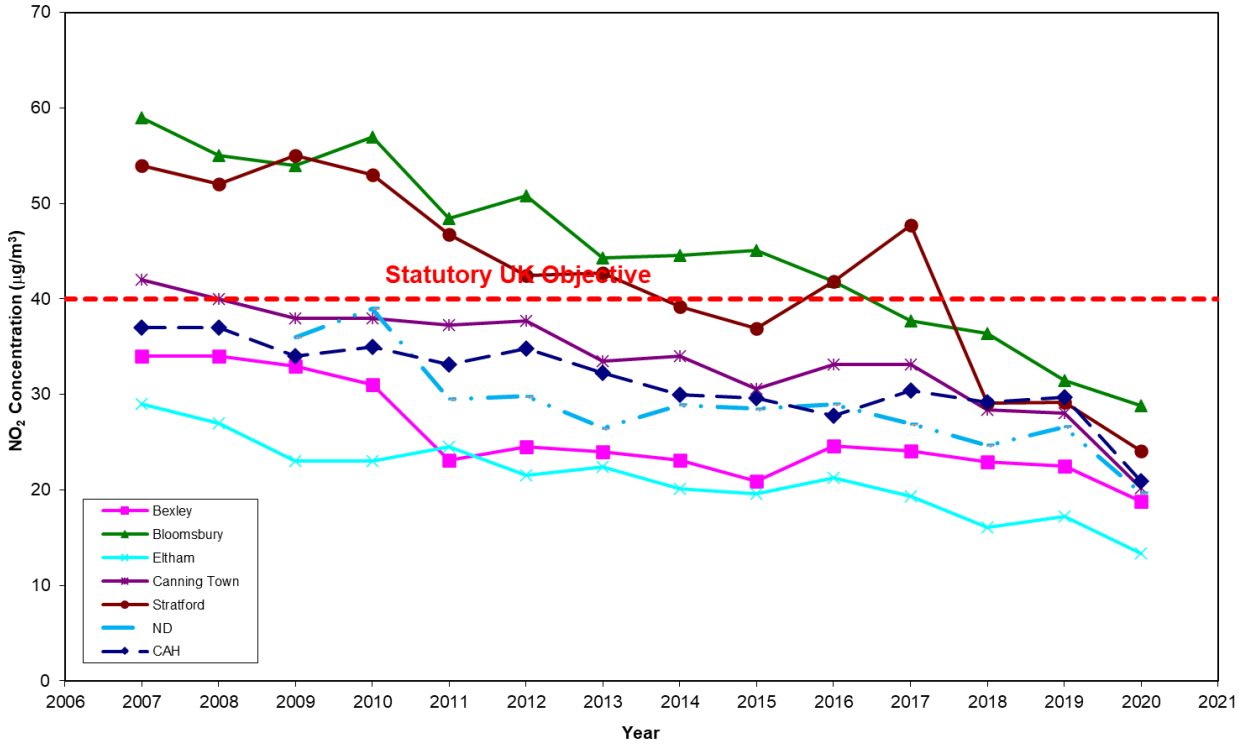

Figure 10: Annual Mean Nitrogen Dioxide Concentrations, 2007 – 2020 (µg/m^3)

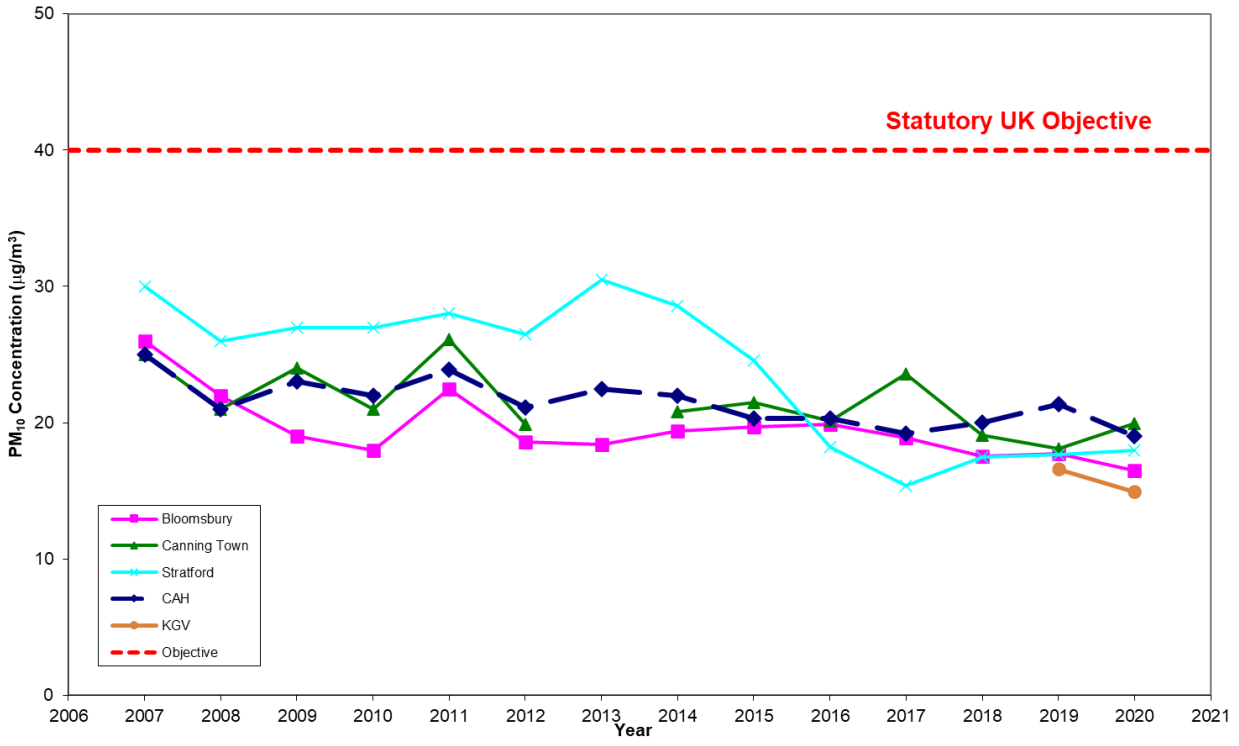

Figure 11: Annual Mean PM_{10} Concentrations, 2007 – 2020 (µg/m^3) [a]

[a] The Canning Town TEOM was decommissioned in 2013 and re-commissioned again in 2014.

Bivariate Pollution Roses

4.10 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[6]. 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.

4.11 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.

4.12 Figure 12 shows bivariate pollution roses for NOx concentrations in 2020 at the LCA-CAH and LCA-ND 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. The pattern at both monitoring sites is that the highest NOx 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 (the wind-speed scale runs from 0 to 15 m/s, with the concentration scale running from 0 to around 150 µg/m^3). 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 both sites, with these contributions being associated with moderate wind speeds (especially for winds from the northwest for LCA-CAH). The association with higher wind speeds is suggestive of emissions from an elevated, buoyant source reflecting emissions from aircraft engines.

[6] www.openair-project.org/about_us.php

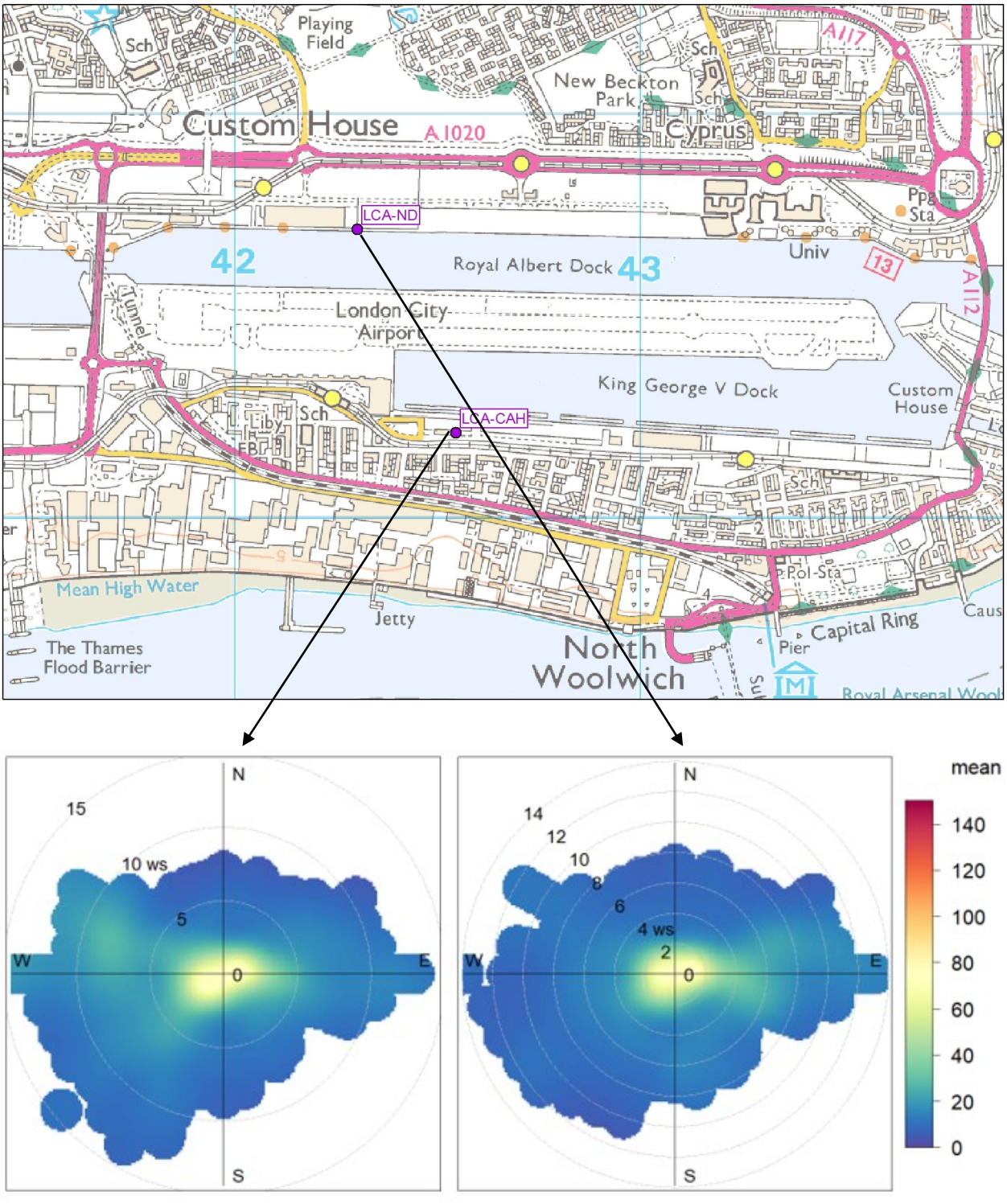

Figure 12: Bivariate Pollution Roses at LCA-CAH and LCA-ND Sites, 2020 (NO_x, µg/m^3)

5 References

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6 Glossary

Exceedance	A period of time where the concentration of a pollutant is greater than the appropriate air quality objective.
FDMS	Filter Dynamics Monitoring System.
LAQN	London Air Quality Network.
LCA-CAH	London City Airport – City Aviation House monitoring site.
LCA-ND	London City Airport – Newham Dockside monitoring site
$\mu g/m^3$	Microgrammes per cubic metre.
NO_2	Nitrogen dioxide.
NO_x	Nitrogen oxides (taken to be NO_2 + NO).
NO	Nitric oxide.
Objectives	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.
PM_{10}	Small airborne particles, more specifically particulate matter less than 10 micrometers in aerodynamic diameter.
$PM_{2.5}$	Small airborne particles, more specifically particulate matter less than 2.5 micrometers in aerodynamic diameter.
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal.
TEA	Triethanolamine – absorbent for nitrogen dioxide used in diffusion tubes.
TEOM	Tapered Element Oscillating Microbalance.
VCM	Volatile Correction Model.

A1 Nitrogen Oxides Results

A1.1 Nitrogen oxides (NO_x) 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.

Table A1.1: Nitrogen Oxides (NO_x) Data Summary for LCA-CAH and LCA-ND, 2020

Site	LCA-CAH	LCA-ND
Maximum 1-Hour Mean	370.4 µg/m^3	420.4 µg/m^3
Annual Mean	29.8 µg/m^3	26.4 µg/m^3
Data Capture	93.6%	76.5%

Table A1.2: Nitrogen Oxides (NO_x) Data Summary for London Monitoring Sites, 2020

Site	Bexley	Bloomsbury	Eltham	Canning Town	Stratford
Maximum 1-Hour Mean (µg/m^3)	361.3	396.1	328.6	441.3	476.5
Annual Mean (µg/m^3)	27.2	41.6	19.4	28.2	37.8
Data Capture %	96.7	92.6	93.8	94.8	80.4

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 2020, Not Bias Adjusted (µg/m^3)

Site ID	Grid ref	10/01/20 to 07/02/20	07/02/20 to 02/03/20	02/03/20 to 03/04/20	03/04/20 to 30/04/20	12/05/20 to 09/06/20	09/06/20 to 06/07/20	06/07/20 to 07/08/20	07/08/20 to 17/09/20	17/09/20 to 12/10/20	12/10/20 to 10/11/20	10/11/20 to 04/12/20	04/12/20 to 08/01/21	Unadjusted Annual Mean	Data Capture (%)
LCA 01	542154, 180288	41.9	27.6	-	-	17.3	-	17.5	21.4	26.8	32.9	32.5	32.1	27.4	75%
LCA 02	541965, 180299	33.8	35.1	32.6	25.2	19.8	-	20.3	22.6	26.8	31.6	32.5	29.2	27.8	92%
LCA 04	542271, 180708	-	-	29.5	26.7	19.6	21.1	-	23.6	31.1	37.3	38.7	35.5	29.0	75%
LCA 05	542847, 180914	33.4	26.3	27.2	25.9	-	20.5	19.1	22.5	28.5	30.7	31.8	29.6	26.6	92%
LCA 06	543712, 180868	35.9	31.1	33.3	31.2	-	21.5	19.1	24.5	27.6	34.5	34.7	41.9	30.4	92%
LCA 07	543662, 180460	42.4	38.7	-	-	-	-	19.1	20.7	28.7	32.2	35.2	34.4	30.6	67%
LCA 08	543120, 180133	32.7	23.6	26.9	23.7	17.4	18.8	16.2	21.1	25.9	30.1	29.9	26.6	24.2	100%
LCA 09	542532, 180196	39.1	30.4	-	-	-	-	20.0	23.9	28.9	35.3	31.0	32.2	29.7	67%
		36.3	30.3	-	-	-	-	19.2	23.5	28.1	33.2	38.4	33.1	29.7	67%
		39.9	29.4	-	-	-	-	19.0	24.3	27.9	36.1	37.4	31.8	30.2	67%
LCA 10	541758, 180428	38.6	34.2	-	-	-	-	23.5	26.0	33.9	34.2	37.1	34.3	32.1	67%
LCA 11	543549, 180693	48.4	41.7	34.3	25.0	20.0	22.7	23.4	25.5	34.0	38.2	39.0	38.4	32.2	100%
LCA 12	542192, 180561	35.8	31.0	-	-	-	-	17.3	18.7	27.3	52.6	28.3	31.2	29.6	67%
LCA 13	542280, 180769	37.6	29.8	31.5	27.4	18.8	-	19.6	25.0	32.9	37.4	41.3	35.3	30.2	92%
LCA 14	542070, 180712	42.8	31.4	35.1	34.9	18.9	25.9	23.2	28.6	34.3	42.3	47.1	39.9	33.5	100%
LCA 15	542316, 180862	34.3	25.7	28.2	28.7	19.9	19.9	19.8	23.2	30.4	31.3	33.6	33.6	27.2	100%
LCA 18	542303, 180707	42.0	26.2	27.0	25.6	17.2	20.1	17.7	22.3	26.0	31.8	35.4	24.1	25.9	100%
		37.2	25.7	27.2	14.2	16.8	18.6	17.6	21.7	24.8	31.7	34.5	29.7	24.8	100%
LCA 20	541632, 180378	40.2	26.8	33.6	38.9	23.9	24.7	21.1	28.5	30.2	38.2	40.2	36.2	31.7	100%

– 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, studies are carried out using triplicate tubes co-located at LCA-CAH and 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, with the optimum relationship defined using orthogonal regression.

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. The first three diffusion tube monitoring periods at LCA-ND had low data capture at the automatic monitor, due to power supply issues and a subsequent failure of the air-conditioning unit. Monitoring periods three to six have no diffusion tube data at LCA-CAH, due to lack of access as a result of restrictions caused by the Covid-19 pandemic. As such, the bias adjustment factor was calculated based on only nine months of data from LCA-ND and eight months of data at LCA-CAH. A comparison between the 2020 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 Studies in 2020 [a]

	Diffusion Tube	Automatic	Adjustment Factor
LCA-CAH [b]	29.8	22.6	0.775
LCA-ND [c]	23.6	19.2	0.804
Overall Factor [d]			**0.783**

[a] Diffusion tubes were exposed for the period between 10th January 2020 to 8th January 2021.

[b] The automatic period corresponds with the diffusion tube period (10th January to 2nd March and 6th July to 8th January 2021), where the diffusion tubes were not put up due to restricted access from the Covid-19 pandemic).

[c] The diffusion tube data from 10th January 2020 to 3rd April have been removed from the bias adjustment calculations at ND to account for low data capture at the automatic monitor during this period.

[d] The overall factor has been determined using orthogonal regression.

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

Table A3.2: Previous Bias Adjustment Factors

Year	Factor
2008	0.786
2009	0.717
2010	0.801
2011	0.738
2012	0.744
2013	0.771
2014	0.832
2015	0.858
2016	0.762
2017	0.724
2018	0.784
2019	0.796
2020	0.783

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 A4.1 shows that monitoring at LCA-CAH there was 'Good' precision at every month of the year. The precision is consistent with the performance of 20% TEA in water tubes supplied by Gradko International in other co-location studies (Defra, 2021).

Table A4.1: Precision of Triplicate Diffusion Tubes, LCA-CAH

Period	Start Date	End Date	Tube 1	Tube 2	Tube 3	Mean	Standard Deviation	CV	Tube Precision
1	10/01/2020	07/02/2020	39.1	36.3	39.9	38	1.9	5.0	4.7
2	07/02/2020	02/03/2020	30.4	30.3	29.4	30	0.5	1.8	1.3
7	07/07/2020	07/08/2020	20.0	19.2	19.0	19	0.5	2.6	1.2
8	07/08/2020	17/09/2020	23.9	23.5	24.3	24	0.4	1.6	0.9
9	17/09/2020	12/10/2020	28.9	28.1	27.9	28	0.6	2.0	1.4
10	12/10/2020	10/11/2020	35.3	33.2	36.1	35	1.5	4.3	3.7
11	10/11/2020	04/12/2020	31.0	38.4	37.4	36	4.0	11.3	10.0
12	04/12/2020	08/01/2021	32.2	33.1	31.8	32	0.6	2.0	1.6
Average CV								**3.8**	**-**

A4.3 Table A4.2 shows that monitoring at LCA-ND there was 'Good' precision at every month of the year. The precision is consistent with the performance of 20% TEA in water tubes supplied by Gradko International in other co-location studies (Defra, 2021).

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	10/01/2020	07/02/2020	42.0	37.2	40	3.5	8.7	31.0
2	07/02/2020	02/03/2020	26.2	25.7	26	0.3	1.2	2.7
3	02/03/2020	03/04/2020	27.0	27.2	27	0.2	0.6	1.4
4	03/04/2020	30/04/2020	25.3	14.0	20	8.0	40.6	71.7
5	12/05/2020	09/06/2020	17.2	16.8	17	0.3	1.7	2.6
6	09/06/2020	07/07/2020	20.2	18.6	19	1.1	5.6	9.7
7	07/07/2020	07/08/2020	17.7	17.6	18	0.1	0.4	0.6
8	07/08/2020	17/09/2020	22.3	21.7	22	0.4	1.9	3.8
9	17/09/2020	12/10/2020	26.0	24.8	25	0.8	3.3	7.4
10	12/10/2020	10/11/2020	31.8	31.7	32	0.0	0.1	0.3
11	10/11/2020	04/12/2020	35.4	34.5	35	0.6	1.7	5.3
12	04/12/2020	08/01/2021	24.1	29.7	27	3.9	14.6	35.2
Average CV							**6.7**	**-**

A5 Adjustment of Short-Term Data to Annual Mean

A5.1 As a result of the Covid-19 pandemic, a number of diffusion tube sites were not accessible for a number of months. The monitoring sites have been annualised as per Technical Guidance LAQM.TG16 in instances where valid data capture was less than 75% (and at least 25%). The sites which required annualisation were LCA-07, LCA-09, LCA-10, and LCA-12. These sites have been annualised against automatic monitoring sites 'London Bexley', 'London Eltham', 'Newham Wren Close', and 'LCA-CAH', which fulfil the criteria specified by LAQM.TG16 guidance of being long-term continuous monitoring sites with data capture over 85% for 2020.

A5.2 The data have been adjusted to an annual mean equivalent based on the ratio of concentrations during the short-term monitoring period (8 months; January – March 2020 and July 2020 - January 2021) to those over the 2020 monitoring year period at the four automatic sites, where long-term data are available[7]. This follows the guidance set out in Box 7.9 of LAQM.TG16.

A5.3 The annual mean nitrogen dioxide concentrations and the period means for each of the four monitoring sites from which adjustment factors have been calculated are presented in Table A5.1, along with the Overall Factor.

[7] London Bexley and London Eltham are operated as part of the Automatic Urban and Rural Network (AURN) and Wren Close is managed by Air Quality England.

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

2020 Month	Exposure Days	Raw Diffusion Tube Mean NO_2 Conc. ($\mu g/m^3$)				Automatic Mean NO_2 Conc. ($\mu g/m^3$) during Diffusion Tube Monitoring Period			
		LCA-07	LCA-09	LCA-10	LCA-12	London Bexley	London Eltham	Newham Wren Close	LCA-CAH
January	**28.0**	42.4	38.4	38.6	35.8	28.1	19.5	32.8	34.7
February	**24.0**	38.7	30.0	34.2	31.0	13.2	11.0	15.8	17.7
March	**32.0**	-	-	-	-	20.5	12.9	19.6	21.6
April	**27.0**	-	-	-	-	24.1	14.7	19.4	20.5
May	**28.0**	-	-	-	-	13.5	9.1	11.2	13.1
June	**27.0**	-	-	-	-	13.5	9.6	13.3	14.6
July	**32.0**	19.1	19.4	23.5	17.3	12.3	9.0	14.5	13.3
August	**41.0**	20.7	23.9	26.0	18.7	17.5	13.7	17.9	18.5
September	**25.0**	28.7	28.3	33.9	27.3	15.8	12.5	19.5	18.3
October	**29.0**	32.2	34.8	34.2	52.6	22.2	15.4	26.9	26.3
November	**24.0**	35.2	35.6	37.1	28.3	24.7	18.6	28.1	28.0
December	**35.0**	34.4	32.4	34.3	31.2	23.7	17.1	25.2	25.3
PERIOD MEAN		*30.6*	*29.8*	*32.1*	*29.6*	**35.8**	*14.5*	*22.4*	*22.5*
ANNUAL MEAN:						***18.9***	***13.5***	***20.2***	***20.9***
ANNUALISATION FACTOR:						**0.963**	**0.927**	**0.904**	**0.925**
						0.930			

A6 Detailed Trend Analysis

Nitrogen Dioxide

A6.1 Figure A6.1 shows the smooth-trend analyses of 1-hour mean nitrogen dioxide concentrations for LCA-CAH, LCA-ND and six other, nearby monitoring sites (Greenwich Burrage Grove, Greenwich Eltham, Greenwich Woolwich Flyover, Newham Cam Road, Newham Wren Close and Tower Hamlets Blackwall) [8], over the period 2007 to 2020.

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 six monitoring sites (Greenwich Burrage Grove, Greenwich Eltham, Greenwich Woolwich Flyover, Newham Cam Road, Newham Wren Close and Tower Hamlets Blackwall).

Table A6.1: Theil-Sen Analysis, Nitrogen Dioxide Concentrations at City Aviation House, Newham Dockside and Other Monitoring Sites, 2007 to 2020

Monitoring Site	Theil-Sen Analysis [a]	Statistically Significant Trend?
City Aviation House (LCA-CAH)	-0.84 [-1.28, -0.5]	**Yes**
Newham Dockside (LCA-ND) [b]	-1.24 [-1.65, -0.79]	**Yes**
Greenwich Burrage Grove	-2.03 [-2.37, -1.67]	**Yes**
Greenwich Eltham	-0.87 [-1.13, -0.61]	**Yes**
Greenwich Woolwich Flyover	-2.05 [-2.51, -1.63]	**Yes**
Newham Cam Road	-2.16 [-2.59, -1.76]	**Yes**
Newham Wren Close	-1.31 [-1.7, -0.96]	**Yes**
Tower Hamlets Blackwall	-1.93 [-2.31, -1.57]	**Yes**

[a] The first value is the slope. The number in brackets is the upper and lower 95th percentile confidence interval.

[b] Analysis carried out for 2009 to 2020.

[8] The Poplar site at Tower Hamlets was decommissioned in July 2013. As the data for the period 2007 to 2013 was statistically not significant, it has been removed from this analysis. The Greenwich Millennium Village monitoring site was decommissioned at the end of 2016. As the data for the period of 2007 to 2016 was statistically not significant, it has also been removed from this analysis.

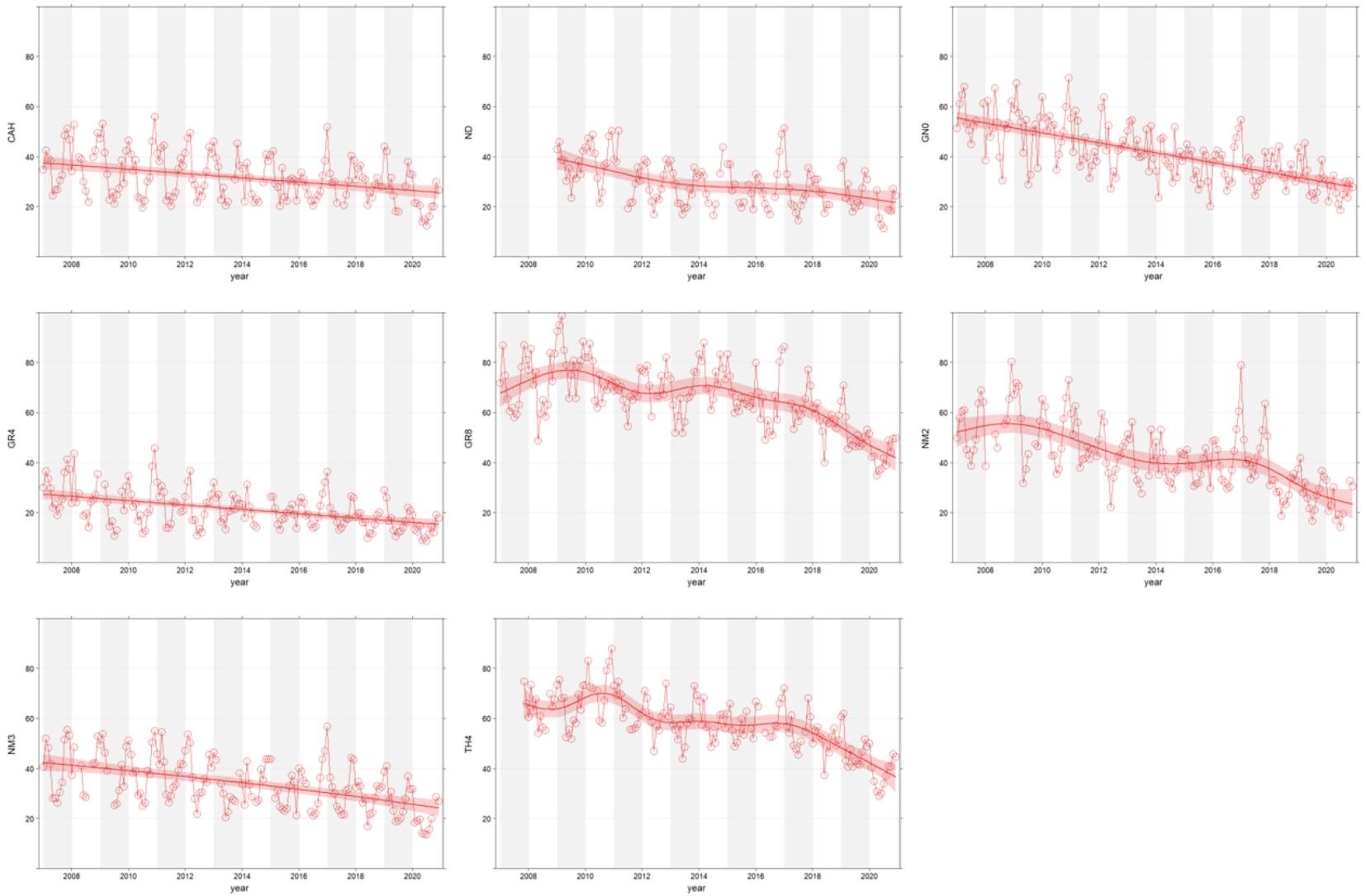

Figure A6.1: Smooth Trend Analysis, Hourly Nitrogen Dioxide Concentrations at City Aviation House, Newham Dockside and Other Monitoring Sites, 2007 – 2020 (Left to Right: City Aviation House, Newham Dockside, Greenwich Burrage Grove, Greenwich Eltham, Greenwich Woolwich Flyover, Newham Cam Road, Newham Wren Close, Tower Hamlets Blackwall)

Nitrogen Oxides (NO_x)

A6.3 Figure A6.2 shows the smooth trend analysis of 1-hour mean NO_x concentrations for LCA-CAH, LCA-ND and other monitoring sites (Greenwich Burrage Grove, Greenwich Eltham, Greenwich Woolwich Flyover, Newham Cam Road, Newham Wren Close, Tower Hamlets Blackwall) for the period 2007 to 2020.

A6.4 The Theil-Sen analysis, shown in Table A6.2, indicates a statistically significant downward trend in NOx concentrations at LCA-CAH, LCA-ND and all six of the monitoring sites (Greenwich Burrage Grove, Greenwich Eltham, Greenwich Woolwich Flyover, Newham Cam Road, Newham Wren Close and Tower Hamlets Blackwall).

Table A6.2: Theil-Sen Analysis, NO_x Concentrations at City Aviation House and Other London Monitoring Sites, 2007 to 2020

Monitoring Site	Theil-Sen Analysis [a]	Statistically Significant Trend?
City Aviation House (LCA-CAH)	-1.52 [-2.32, -0.74]	**Yes**
Newham Dockside (LCA-ND) [b]	-3.83 [-4.97, -2.63]	**Yes**
Greenwich Burrage Grove	-4.81 [-5.73, -3.83]	**Yes**
Greenwich Eltham	-1.21 [-1.75, -0.7]	**Yes**
Greenwich Woolwich Flyover	-7.09 [-9.03, -5.14]	**Yes**
Newham Cam Road	-4.76 [-5.81, -3.73]	**Yes**
Newham Wren Close	-2.13 [-3.12, -1.27]	**Yes**
Tower Hamlets Blackwall	-6.09 [-7.56, -4.78]	**Yes**

[a] The first value is the slope. The value in brackets is the upper and lower 95th percentile confidence interval.

[b] Analysis carried out for 2009 to 2020.

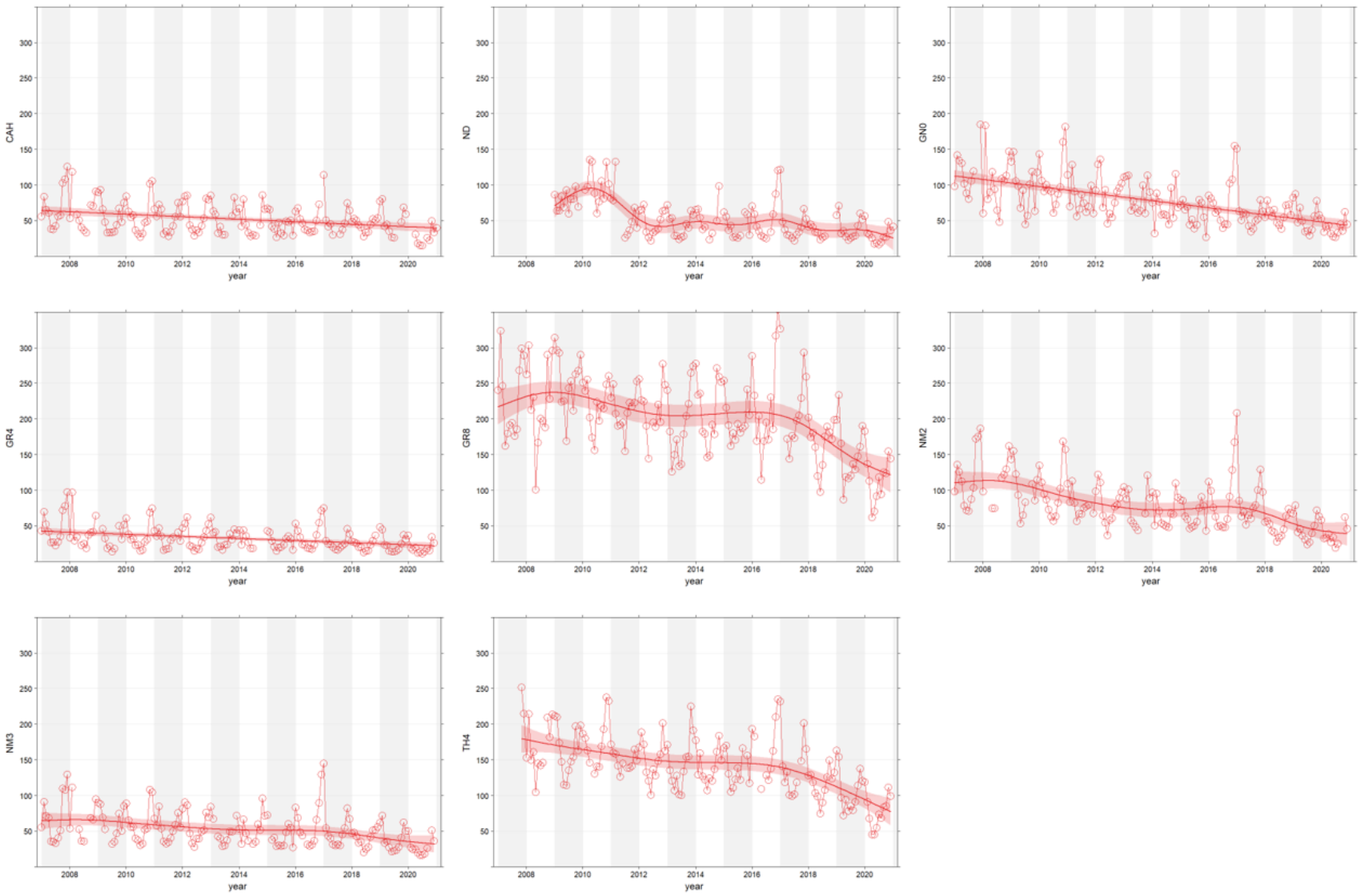

Figure A6.2: Smooth Trend Analysis, Hourly NO_x Concentrations at City Aviation House, Newham Dockside and Other London Monitoring Sites, 2007 – 2020 (Left to Right: Aviation House, Newham Dockside, Greenwich Burrage Grove, Greenwich Eltham, Greenwich Woolwich Flyover, Newham Cam Road, Newham Wren Close, Tower Hamlets Blackwall

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Annex 8
Sustainability and Biodiversity Action Plan Progress Update

Sustainability and Biodiversity Objective		Indicative Timescale	Status update
EMS1	Integrate the Airport's accredited ISO 14001:2004 EMS into an ISO 9001:2015 quality management system which includes Health and Safety and Airfield Operational aspects by the end of 2019.	End of 2019	Many aspects have been integrated, including audits, document management and incident recording. The integrated management system will be continually improved.
EMS2	Update the Airport's current ISO14001 certification to be one of the first UK airports to hold ISO14001:2015 by the end of 2018.	End of 2018	Complete – updated accreditation received Sep 18.
WST1	Implement a site waste management plan and review prior to each phase of CADP.	Prior to each phase of CADP	In place with each contractor prior to works commencing.
WST2	Reduce total waste kg per passenger by 10% (0.05 kg per passenger) from 2013 baseline by the end of December 2018.	End of December 2018	Complete - 0.36 kg per pax in 2013, 0.26kg per pax in 2018 (27% reduction).
WST3	Recycle 70% of total kg of waste by the end of December 2018.	End of December 2018	62% in December 2020. This is not in LCY's direct control, however further measures are in place to increase this rate in the coming years.
WST4	Conduct a feasibility study into using sustainable methods for disposing of food waste including biofuel conversion and anaerobic digestion	End of April 2017	Complete and implemented in 2018.
WST5	To create and implement a furnishing recycling programme to help local charities and reduce office waste	End of July 2017	This has been set up with Reyooz, and has been communicated internally.
EC1	Improve employee awareness on energy reduction through two campaigns and training sessions per year.	Ongoing (evidenced yearly)	A Sharepoint intranet page was launched specifically focused on the company's carbon reduction activities. The company's switch to a renewable electricity contract was also publicised in the Ebulletin in November, and staff were encouraged to consider their home contracts.
EC2	20% reduction in kg of carbon per passenger by the end of December 2020 compared to 2013 baseline.	End of December 2020	The submission of the carbon footprint due in 2020 was postponed by the ACA to 2021 due to the pandemic.
EC3	Implementation of a concession energy efficiency and low carbon fit out guide including policy by the end of December 2018.	End of December 2018	Shared with LBN Dec 2018
EC4	Installation of low energy LED runway lighting	End of January 2017	Completed

Sustainability and Biodiversity Objective		Indicative Timescale	Status update
EC5	Achieve and maintain Level 4 – Neutrality ACI Europe carbon accreditation or equivalent by the end of January 2020.	End of January 2020	Achieved in December 2019
WH1	Implement a state-of-the-art bird deterrent scheme, a quiet and less intrusive method of bird management at the airport	End of December 2017	A laser deterrent scheme has been installed, with pyrotechnics used only in exceptional circumstances.
WH2	Investigate, produce and make publicly available safeguarding guidance for developers, which specifically details safe methods of increasing local biodiversity within developments without compromising aerodrome safety	End of December 2017	Complete and visible on the website.
WH3	Provision of artificial substrate mesh for aquatic colonization and the provision of shelter for fish fry within KGV Dock	Mid 2017	An artificial fish refuge has been installed.
WH4	Continue providing 10,000 per year until 2018 to East Ham Nature Reserve to deliver an educational biodiversity and environmental programme for the local community.	Annually until end of January 2020	Available and offered throughout 2018 and 2019, however due to a change of management for the nature reserve the programme could not be delivered. Discussions are ongoing to ensure this fund is spend appropriately.
WH5	Fund other environmental and biodiversity projects with preference given to areas of nature deficiency. Subject to interest from schools and community groups, options could include (1) funding allotment boxes in SINCs; (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 pro-rata from the commencement of CADP until January 2020, or a sum to be agreed between Newham and LCA.	Annually until end of January 2020	Funds were made available at the start of 2020 but projects were all put on hold due to the pandemic. The funding will be made available when restrictions ease.
W1	Reduction in litres of water use per passenger by 10% (against 2015 baseline) by the end of January 2020.	End of January 2020	Not achieved. A 17% per pax since 2015, despite water efficient measures being implemented in the terminal. Monitoring will be ongoing to determine if this increase was due to construction activities on site.

Sustainability and Biodiversity Objective		Indicative Timescale	Status update
W2	Upgrade and increase the number of meters (from the existing 12) to effectively monitor areas of high water usage	End for December 2017	Survey completed to identify the high areas of use. Additional meters installed at CADP sites and will be installed as new concession spaces open.
W3	Operate within the conditions stipulated in LCA's water discharge permit with regards to BOD (biochemical oxygen demand) and evidence performance.	End of May each year	No breaches were detected throughout 2020.
W4	Achieve a reduction in surface water run-off of at least 63% against the 2013 baseline (as assessed in the UES) in accordance with the CADP Surface Water Drainage Strategy (SWDS) by completion of the CADP works.	By completion of the CADP works	CADP is not yet complete.
W5	Create and implement a Flood Management Plan for the Airport in accordance with Environment Agency guidance	End of December 2017	Completed, and a copy shared with LBN.
N1	Continued operation of The Airspace & Environment Sub-Committee as part of the LCACC to achieve the agreed objectives established at the inaugural meeting in October 2016 until end of December 2020.	On-going until end of December 2020	In place and ongoing
N2	Continue installation of sound insulation measures to high density tower blocks located in Tower Hamlets as part of the airport Sound Insulation Scheme (SIS)	End of August 2017	Completed August 2018 (although additional properties that came forward late have been treated since)
N3	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.	Ongoing, beginning at the commencement of the CADP works	The Construction Noise and Vibration Management and Mitigation Strategy (CNVMMS) was implemented throughout the CADP works completed so far.
SC1	Distribution of a Community leaflet detailing construction activity at least four times a year to the immediate local area for the duration of the CADP works.	On-going throughout the CADP works	Ongoing and issued quarterly throughout 2020.

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Annex 9

List of Employers on Site & Construction Contractors

Airport Partner
ABM - OMNISERVE
Aelia - Lagadere
AeroSpa
Alitalia
ARRIVA
AVIS
BA CITYFLYER
Boots
BP INSTALLAT
Café Nero
Dixons
Dixons Travel
ESP
Europcar
GATWICK C LTD
GSF
HERTZ
JOTA AVIATION
Levertech
London City Airport
LOT POLISH AIRLINES
MENZIES
MENZIES (ASIG)
MITIE
MITIE CARE+CUSTODY
NATS
NAT STATISTICS
NEWREST
ONE ADVANCED
Pret a Manger
Sky Handling Partner - SHP
SSP - Select Service Providers
STOBART AIR
Swiss Airlines
SWISSPORT
Trumans
WHSmith

CADP Main 2020	Postcode
BAM Nuttall	GU15 3XW
Bechtel	
Kier	RH10 9NH
Kilnbridge	E16
8Build	
ACS	
Balfour Beatty	E14 5HU
Dyer & Butler	SG1 2ST
Prater	
J&D Pierce	
CBS	
Dyer & Butler Elec	

CADP	Postcode
Atkins	NW1 3AT
Pascall & Watson	EC4V 6ER
BP Installations	
Pell Frischmann	W1U 3PD
RSK	HP3 9RT
Littlewoods	
Fibre Solutions	EN9 1JH
Wilson James	
Portakabin	
GSF	
Lobster Pictures	BS1 4ND

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Annex 10

Take Off into Work 2020 Statistics

Project total

	Vacancy's	Starts	13 week sustained	26 week Sustained	Still in Employment
LCY Direct	25	6	6	4	2
Concessions	6	0	0	0	0
Onsite Partners	26	7	6	3	2
LCY Website	3	0	0	0	0
Total	**60**	**13**	**12**	**7**	**4**

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Annex 11
LCA Recruitment Policy 2020

1. Applications

1.1.
London City Airport advertise all vacancies on their dedicated career's page on www.londoncityairport.com/careers

1.2.
JThe HR Team manages this careers page 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[1]
- 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).

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.

[1] 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, Having, Bexley, Greenwich, Lewisham, Southwark, Barking and Dagenham, Greenwich, Bexley, Havering and the area of Epping Forest District Council

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).

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.

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