

LONDON CITY AIRPORT

Noise action plan

A close-up photograph of a jet engine's front cowling. The cowling is a polished metal surface reflecting the sky. Overlaid on the center of the cowling is a large, stylized logo. The letters 'L', 'O', and 'N' are stacked vertically in a bold, sans-serif font. The 'O' contains a white heart shape. To the right of the letters, the words 'CITY AIRPORT' are written in a smaller, white, sans-serif font.

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1.0 Introduction

London City Airport (LCY) has comprehensive and effective noise mitigation measures in place, developed over the last few decades through engagement and consultation with the London City Airport Consultative Committee, local communities, airlines, and other stakeholders and business partners.

LCY continuously looks at new ways to mitigate the impact of aircraft noise and recognises that this is especially important as the airport is growing. Through listening and consulting, LCY hopes to continue to find the right balance between the social, economic, and environmental realities of the airport's operations.

The Environmental Noise (England) Regulations 2006 (as amended) (ENR) were introduced to implement the European Directive 2002/49/EC Assessment and Management of Environmental Noise, commonly known as the Environmental Noise Directive (END). The regulations define the airport operator London City Airport Ltd. as the competent authority for preparing the airport's Noise Action Plan (NAP).

In 2018 LCY published a NAP, in accordance with the ENR, outlining LCY's extensive commitments to monitor and mitigate the impacts of aircraft noise from 2018 - 2023, which was formally adopted by the Secretary of State for Environment, Food and Rural Affairs (DEFRA) on 23rd November 2018. It is a requirement of the ENR that the NAP will be reviewed at least every 5 years or revised as necessary. This NAP is the outcome of such a review, superseding and providing an update on the performance of the NAP (2018 – 2023) and covering the 5 year period from when it is formally adopted by the Secretary of State, in accordance with the ENR.

This draft of the future NAP has been produced for consultation. The consultation will run for 10 weeks from 5th June to the 11th August 2023 and gives the public an opportunity to provide feedback on the draft NAP. The NAP will be reviewed, taking into account feedback received from consultation, before being submitted to DEFRA for approval by the Secretary of State.

The main purpose of the NAP is to establish whether the current noise management measures are sufficient to protect the local community adequately, particularly those worst affected. In order to demonstrate this, LCY's noise impact has been evaluated by qualified independent consultants, further details are given in Appendix A.

As prescribed by the END and ENR, this draft NAP covers the following:

- Details about the airport and its operation;
- Information about relevant legislation and current standards concerning NAPs;
- Any updated and relevant national and local policies which may affect the NAP;
- The results of the recent Strategic Noise Maps produced by DEFRA based on 2021 data;
- The progress made against the actions described in the NAP (2018 – 2023);
- Ongoing actions and proposed new actions introduced as part of the new NAP.

This draft NAP includes the results from the latest round of Strategic Noise Mapping, shown in Appendix A and the resulting Strategic Noise Maps, shown in Appendix B. The Strategic Noise Maps produced by DEFRA are based on aircraft activity in 2021 as required by the regulations. Activity in 2021 was significantly affected by the COVID pandemic. Therefore, results for 2019 have also been presented in Appendix A and Appendix B, as 2019 is considered more representative of a typical operational year. Details of the stakeholder engagement and consultation on the draft NAP is included at Appendix C¹.

¹ Appendix C will be updated in the NAP following the consultation exercise with details of the comments received along with responses from the airport where necessary.

2.0 The Airport

LCY is a city centre airport located in the Royal Docks between the Royal Albert Dock and King George V Dock. It is six miles east of the City of London, Europe's major financial district, and two miles east of Canary Wharf, London's business centre located in the Docklands. The airport is half a mile from ExCel London, the exhibition and conference centre.

LCY is one of the UK's most reliable airports² and is favoured by travellers for its convenient location and unrivalled quick and efficient passenger experience – from the front door to departure lounge in 20 minutes or less. In 2019 10 airlines operated 45 routes from the airport, however activity at the airport significantly reduced due to the COVID-19 pandemic. The airport has begun to recover and at the time of writing there are now 8 airlines serving 35 domestic and European routes. This is expected to continue to grow in 2023 and beyond. A dedicated Jet Centre also operates private and business aviation flights.

In 2020 the airport published its master plan, which sets out the airport's plans for recovery post COVID-19 and its long term vision for how the airport can grow in a responsible and sustainable way. Potential future development at the airport is discussed further in Section 3.

The airport plays an integral part in contributing to the prosperity of the UK's capital city, through an annual economic contribution of more than £900m³. This is forecast to increase further in the future as the airport continues to respond to increasing passenger demand.

The airport is a responsible neighbour and invests in numerous environmental programmes to mitigate its impact on the surrounding areas, and by ongoing community engagement activities such as:

- Significant employment opportunities and skills development training for local residents. The airport works closely with employment partners such as Our Newham Work and job centres to promote opportunities to local residents. 39% of recently recruited LCY employees lived within the London Borough of Newham and 83% lived in the local area;

- Throughout 2022 the airport supported education programmes working closely with local schools, colleges and universities, including UEL and IASTI, the local aviation-based college. The airport's bespoke STEM in aviation event, with partners in East London, resumed in November 2022. This education programme showcases STEM within the aviation industry and was attended by 14 East London schools, with 400 students meeting businesses within the aviation and STEM field, including Boeing, GKN Aerospace, Arcadis, Accenture and UEL. Working with IASTI, the airport was able to provide insight, share knowledge and give more practical understanding of the airport to the students and the opportunity to have a special airside tour of the airport to bring the theory to life. In addition, LCY re-launched its Women in Aviation Programme after the pause during the pandemic. This is a 3-month programme where up to 300 local East London young women from 10 schools participated, to learn about the aviation and STEM industry. The 3-part programme allowed the young women to learn about roles at the airport, skills required, gain communication and presentation skills as well as meet industry stakeholders and role models;

- Support of local businesses through supply chain opportunities and in particular through the annual Meet the Buyer event. In 2022 the East London Meet the Buyer event saw 22 buyers and 101 SME's attend to network, gain contacts and connections, which led to £5.1million worth of business won by local suppliers. In addition, the airport also spent approximately £7.3 million with businesses in the Local Area, with almost £800,000 spent within Newham;

² Civil Aviation Authority

³ York Aviation research (2019)

- Engaging and supporting local community partners such as community centres and charities, including operating a Community Fund that has contributed over £364k to over 100 local charities and not-for-profit organisations to date. During the pandemic and the current cost of living crisis extra funding has been awarded to fund local food banks to support the local community. The airport's Sponsorships Programme gave over £68,000 in donations and sponsorship in 2022 to local community initiatives and events, including Christmas dinners for the elderly, Eid celebrations, business awards, jubilee events and youth parade;
- LCY's 'London City Helpers' volunteering runs throughout the year, along with 12 days of giving in December and a Volunteering fortnight in July, which supports and encourages the airport's employees to actively help out in the community through a variety of skills based and practical activities, including supporting local foodbanks,

homeless shelters, elderly homes as well as education programmes. In 2022 87 staff volunteered 425 hours of their time in the local community. In addition, a new Volunteering Policy seeks to encourage this further by giving all LCY staff 8 hours to volunteer in the year which will go up to 16 hours in the following year;

- Regularly communicating with local people and partners so they are aware of changes to operations as well as opportunities at the airport.

3.0 Long Term Development

In July 2016 LCY's planning application The City Airport Development Plan (CADP) was granted planning permission. CADP provides the necessary infrastructure to enable a new generation of quieter aircraft to use the airport.

Construction of CADP commenced in 2017. Many of the elements of the CADP infrastructure have been built, including new aircraft stands and an improved taxiway. The new aircraft stands that are in use include a noise barrier to help protect the local community from the noise from aircraft on the ground.

The construction programme was paused in 2020 due to the impacts of the pandemic. Construction of the remaining elements of CADP, including the new passenger terminal, is expected to resume once passenger demand has recovered sufficiently.

In December 2020 the airport published its master plan⁴. The master plan is a non-statutory document that presents a long-term vision for how the airport can grow in a responsible and

sustainable way and support the recovery of London from COVID-19.

Any future detailed proposals at the airport would be subject to full consultation with stakeholders and the local community ahead of any application being submitted to the relevant authorities.

In December 2022 the airport submitted a planning application to the London Borough of Newham (LBN) to amend the CADP application (LBN ref: 22/03045/VAR) to allow for:

- An increase in the permitted number of passengers from 6.5 million to 9 million per year, but with no increase in the permitted number of flights;
- Additional flexibility to operate flights on Saturday afternoons until 6.30pm⁵ as well as three additional flights within the existing early morning period (6.30am to 6.59am) but with a commitment that only cleaner, quieter, new generation aircraft can operate these flights.

⁴ <https://www.londoncityairport.com/corporate/master-plan>

⁵ With an additional hour for no more than 12 arrivals only during the summer.

A small number of new generation aircraft have been operating at the airport since 2016, but some airlines have yet to commence refleetting due to the operational constraints and limitations at LCY. While it is expected that airlines will eventually move towards quieter aircraft as they replace their existing fleets, the proposals will provide additional operational flexibility which will incentivise a much quicker process of refleetting to cleaner, quieter new generation aircraft than would otherwise be the case.

3.1 New Generation Aircraft

New generation aircraft are substantially quieter than their current generation equivalents, particularly on departure. Measurements from the airport's noise monitors show that the new generation aircraft are up to 3.2 dB⁶ quieter on arrival and up to 5.4 dB⁶ quieter on departure, resulting in the new generation aircraft having a noise departure footprint that is less than 40% of the size of that for much of the current fleet operating at the airport as shown in Figure 1.

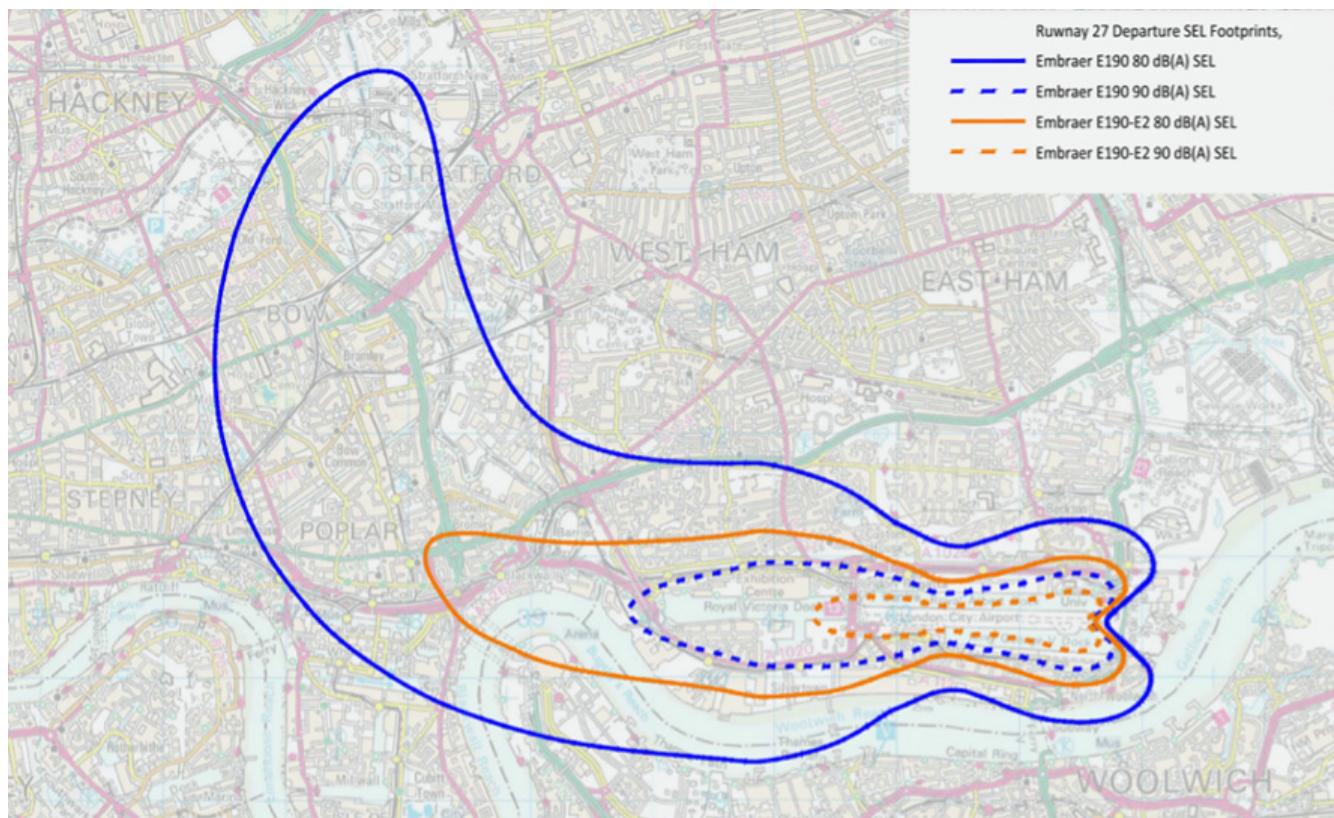


Figure 1: Embraer E190-E2 Runway 27 Departure SEL Footprints

If permission is granted for the proposals, the overall amount of noise from the airport is forecast to be less than pre-pandemic levels and 20% lower than what the airport currently has permission for by 2031. At the time of writing the draft NAP, the airport's application has yet to be determined by LBN. The application is a separate process from this consultation exercise on the draft NAP.

⁶dB(A) SEL

3.2 Airspace Strategy

The UK's airspace is an essential part of our national transport infrastructure, however it is currently outdated and struggling to keep pace with growing demand; resulting in delays, unnecessary carbon emissions and flight paths that are not optimised to minimise noise. The government has therefore committed to airspace modernisation, with the objective to deliver quicker, quieter, and cleaner journeys with more capacity for the benefit of both passengers and communities. LCY is one of 15 airports in the South of England that are part the airspace modernisation programme called 'One sky, one plan'.

This is a government-led initiative being coordinated by the Airspace Change Organising Group (ACOG), and as the aviation regulator, the Civil Aviation Authority (CAA) is the primary decision-maker, responsible for administering the airspace change process and defining the requirements and timescales for delivery. NATS have responsibility for redesigning airspace above 7,000ft and airports in the UK will be redesigning departure and arrival routes below 7,000 ft. LCY is participating in this programme to ensure that arrival and departure routes at the airport are integrated with the wider network changes, and to ensure that benefits can be maximised across the UK.

LCY shares London's airspace with several other airports. At times this restricts aircraft departing LCY from climbing above a certain altitude or requires aircraft approaching LCY to be at a lower altitude than would otherwise be necessary. LCY will constantly review future opportunities to lift altitude restrictions as part of the modernisation of UK airspace and will work with other London airports to understand and minimise our combined impacts.

In 2019 the airport engaged with key stakeholders on design principles, then in 2021-22 the airport engaged again on design options. Key stakeholders include local councils, MPs, community and business groups, airlines and other affected groups who may be impacted by aircraft below 7,000 ft.

During stage 3 of the process defined by the CAA the airport will be holding a full public consultation on proposals. This is anticipated to be in 2024, however it is heavily dependent on the UK-wide airspace programme timelines due to all airports being required to coordinate and collaborate fully to achieve the optimum outcome. The airspace change process is also a separate exercise than this NAP and is not part of the summer 2023 NAP consultation.

4.0 Airport Operations

In 2022 the airport handled approximately 3 million passengers, which is below the 5.1 million annual passengers handled pre-pandemic in 2019. The airport expects to return to pre-pandemic levels of activity by around 2025. LCY operates with an approximately equal mix of business and leisure passengers and serves domestic and European routes.

Since the previous NAP was published the total number of aircraft movements at the airport has decreased from 79,849 in 2017 to 46,697 in 2022, due to the impacts of the pandemic. The mix of aircraft using the airport is also gradually changing, with fewer flights by older propeller aircraft and a greater proportion of flights by more modern jet aircraft, which can fit more

passengers per flight. LCY has a limit of 111,000 aircraft movements, more information on this can be found in Section 6 and Appendix F.

For further information please visit London City Airport's website:

<https://www.londoncityairport.com/corporate/Corporate-information/passenger-statistics>.

5.0 Legislative and Policy Requirements

This section outlines the relevant EU, national and local legislative and policy requirements which have informed the preparation of this document and in doing so ensuring it meets their requirements. A more detailed review of relevant noise legislation can be found in Appendix D.

5.1 The Environmental Noise Directive (2002/49/EC)

NAPs are a legal requirement under Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise. This Directive is commonly referred to as the Environmental Noise Directive or END. The requirements of END, detailed in Appendix E, are transposed in the Environmental Noise (England) Regulations 2006, as amended.

5.2 Environmental Noise (England) Regulations 2006, as amended.

The Environmental Noise (England) Regulations 2006, as amended requires operators of civil airports in England to produce (Noise) Action Plans to manage noise issues and effects arising from aircraft departing from and arriving at their airport, including noise reduction as necessary. This NAP meets the respective requirements contained within this legislation.

5.3 National Planning Policy Framework (March 2012 and subsequent updates)

The National Planning Policy Framework (NPPF) sets out the government's planning policies for England and how these are expected to be applied. It contains policies to protect the environment and to promote sustainable growth.

5.4 Noise Policy Statement for England (NPSE) 2010

The Noise Policy Statement for England (NPSE) provides the framework for noise management decisions to be made that ensure noise levels do not place an unacceptable burden on society.

Government is committed to sustainable development and managing noise is a key requirement to achieve this.

The NPSE notes that DEFRA has the overall responsibility of managing noise in England.

The NPSE applies to all types of noise including environmental, neighbour and neighbourhood noise. LCY addresses the NPSE through this and previous NAPs.

5.5 The Aviation Policy Framework (2013) APF

The Aviation Policy Framework (APF) was published in March 2013 by the Department for Transport (DfT). The APF defines the government's objectives and policies on the impacts of aviation in the UK.

On managing aviation's environmental impacts, and specifically noise, it states in paragraph 3.12 that: "The Government's overall policy on aviation noise is to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction with industry".

Paragraph 3.11 in the APF (2013) relates directly to NAPs noting that they should be produced at least in line with the 5 yearly reviews stipulated and that NAPs, and any other noise measures agreed locally should be proportionate to actual noise impacts.

5.6 Airports National Policy Statement (ANPS) (June 2018)

In 2018 the government has published the Airports National Policy Statement (ANPS), both as the framework for the decision on a new runway at Heathrow Airport and of relevance to future applications for new runways and other infrastructure at UK airports, particularly in London and the South East of England.

5.7 Aviation 2050: The Future of UK Aviation (December 2018)

Aviation 2050 outlines proposals for a new aviation strategy and addresses a wide range of associated issues. The Strategy sets out that the government intends to put in place a stronger and clearer framework in order to ensure the sector is sufficiently incentivised to reduce noise, or to put mitigation measures in place where reductions are not possible.

Aviation 2050 also set out in paragraph 3.122 that the government proposes the noise insulation measures including:

- “To extend the noise insulation policy threshold beyond the current 63 dB LAeq,16h contour to 60 dB LAeq,16h”.
- “To require all airports to review the effectiveness of existing schemes. This should include how effective the insulation is and whether other factors (such as ventilation) need to be considered, and also whether levels of contributions are affecting take-up”;
- “The Government or the Independent Commission on Civil Aviation Noise (ICCAN) to issue new guidance to airports on best practice for noise insulation schemes, to improve consistency”.

Regarding the first measure, LCY already operate a scheme that goes beyond this, with a threshold of 57 dB L_{Aeq,16h}. LCY also considered the effectiveness of the existing schemes when mitigation was being considered as part of the recent application and proposed enhancements.

5.8 Flightpath to the Future (FttF) (May 2022)

In May 2022 the government published Flightpath to the Future (FttF). FttF is a strategic framework for the aviation sector that sets out the government's ambitions and commitments for aviation over the next 10 years.

FttF advised that:

“given the unprecedented challenges that the aviation sector has faced as a result of the coronavirus (COVID-19) pandemic, we have decided we will not publish a further formal response to the remaining parts of this consultation.

Instead, in May 2022, the government published Flightpath to the future, a strategic framework that builds upon the consultation responses received. It establishes our ambitions and commitments for aviation over the next 10 years.”

FttF contains a ten point plan for the future of UK aviation. Point 4 includes that the government will “continue to work with the sector to reduce the localised impacts of aviation from noise and air pollution”.

FttF also details how the CAA has assumed most of the functions previously performed by ICCAN and that the government will work closely with the CAA on these issues. “This will include collaboration on the CAA’s plans to create a new Sustainability Panel, designed to provide independent expert advice on a range of environmental issues including carbon, noise and air quality.”

It is also stated that:

“the Government set out new policy proposals to tackle these localised impacts through the Aviation 2050 consultation (2018). These included a clearer noise policy framework alongside measures to incentivise best operational practice to reduce noise and measures to improve airport noise insulation schemes. As the sector recovers, and air travel volumes increase again, these aims remain very relevant and we will set out next steps in 2022/23”.

5.9 Overarching Aviation Noise Policy (March 2023)

In March 2023 the government published their revised overarching aviation noise policy statement with the intention to "provide clarity for airports and their stakeholders preparing or responding to noise action plan consultations". The revised overarching aviation noise policy statement is:

"The government's overall policy on aviation noise is to balance the economic and consumer benefits of aviation against their social and health implications in line with the International Civil Aviation Organisation's Balanced Approach to Aircraft Noise Management. This should take into account the local and national context of both passenger and freight operations, and recognise the additional health impacts of night flights.

The impact of aviation noise must be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise."

5.10 The London Plan (March 2021)

The Mayor of London's policy on noise, D14, is given in The London Plan 2021. This sets out how residential and other non-aviation development proposals should manage noise in order to reduce, manage and mitigate noise to improve health and quality of life. While strictly not in relation to airport developments, it is noted that these include "promoting new technologies and improved practices to reduce noise at source".

8.2.37 Policy T8 Aviation sets out the Mayor's approach to aviation related development. The policy contains nine parts, which include:

"A - The Mayor supports the role of the airports serving London in enhancing the city's spatial growth, particularly within Opportunity Areas well connected to the airports by public transport and which can accommodate significant numbers of new homes and jobs. This should be reflected in relevant Development Plans and other area-based strategies;

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

5.11 London Borough of Newham's (LBN's) Local Plan 2018

The Newham Local Plan 2018 sets out a vision and framework for development in the borough.

Noise is referred to in policy SP2 Healthy Neighbourhoods. This advises that development proposals which address the strategic principles and spatial strategy, and technical criteria will be supported. These include:

"The need to improve employment levels and reduce poverty, whilst attending to the environmental impacts of economic development including community/ public safety, noise, vibrations and odour and the legacy of contaminated land as per SP8 and SC1."

Policy SP8 Ensuring Neighbourly Development advises that proposals which address the strategic principles, spatial strategy and design, management and technical criteria will be supported. These include the need to:

"Avoid unacceptable exposure to light (including light spillage), odour, dust, noise, disturbance, vibration, radiation and other amenity or health impacting pollutants in accordance with policy SP2".

LBN are in the process of reviewing their Local Plan, they consulted on the first draft of a new Local Plan between the 9th January and the 20th February 2023.

5.12 Sustainable Aviation's Noise Road Map

LCY is an active member within Sustainable Aviation which has a long term strategy setting out the collective approach of UK aviation to tackle the challenge of ensuring a sustainable future for our industry. As a result, Sustainable Aviation is committed to a range of goals. One of these goals is to limit and, where possible, reduce the impact of aircraft noise. Through the publication of Sustainable Aviation's Noise Road Map, Sustainable Aviation are working to ensure the identified opportunities and industry commitments are realised⁷.

6.0 Noise Management

LCY has an extremely comprehensive set of well-established noise mitigation measures in place, including some measures introduced as part of the CADP planning permission in 2016. These include:

- A limit on the area of the 57 dB summer daytime noise contour;
- Annual and daily aircraft movement limits;
- Restricted operating hours;
- Noise abatement departure and arrival procedures;
- A 5.5° approach glide slope, which keeps arriving aircraft higher for longer;
- Operating a noise and flight track monitoring system;
- Incentives and Penalties Scheme;
- Control of ground noise;
- Minimising use of reverse thrust;
- A sound Insulation Scheme, to mitigate impacts on local residents and public buildings;

- Aircraft noise barriers to reduce impacts from the noise from aircraft on the ground;
- Aircraft Noise Categorisation Scheme to limit the aircraft types that can operate and to limit the amount of noise that be produced.

Details of these measures are given in Appendix F. LCY is committed to minimising, where possible, the noise impact of its operations on the local area. LCY, in consultation with LBN, regularly review the airport's existing noise management measures.

Most of the airport's noise mitigation measures benefit everyone who experiences noise from LCY, both those within and those outside of the noise contours. The various ground noise monitoring and mitigation measures primarily benefit those closest to the airport; particularly in the Camel Road area, as this is the area most exposed to ground noise from LCY. The airport's sound insulation scheme benefits those within the relevant noise contours, as detailed in Appendix F.

⁷ <http://www.sustainableaviation.co.uk/>

6.1 APR

LCY are required to submit an Annual Performance Report (APR) to LBN on 1st June each year documenting the airport's performance under the Planning Agreement during the previous calendar year (January – December). Included within the APR are updates associated with the existing noise management and mitigation measures. LCY's performance against all legal limits, including any breach of planning limits will be reported in the APR. The most recent APR (2021) confirmed that there were no issues of non-compliance with the operational requirements of the CADP permission for the fifth consecutive year. The airport's 2022 APR will be published on 30th June 2023. The latest and previous APRs can be accessed at:

<https://www.londoncityairport.com/corporate/Environment/Annual-Performance-report>

6.2 LCACC

The London City Airport Consultative Committee (LCACC) is an independent committee whose role is to provide a forum for discussion on all matters concerning the development or operation of the airport, which have an impact on the users of the airport and on people living and working in the surrounding area. The main committee meetings are open to the public.

Members of the committee include representatives from 8 neighbouring London boroughs, as well as community representatives and other relevant stakeholders. LCACC has two sub-committees. The airspace and environment committee considers noise among other issues. The number of complaints is reported to LCACC on a quarterly basis. Further details can be found at: <http://lcacc.org/>

6.3 Actions from the Previous NAP (2018-2023)

The previous NAP (2018-2023) described the noise measures that were being operated at the airport, as well as those planned to be introduced. The table below summarises these actions and the airport's performance against them in the previous NAP period (2018-2023). Further details of these actions and the associated schemes and strategies are given in Appendix F.

Ref.	Action	Outcome
1	Limit the area of the 57 dB $L_{Aeq,16h}$ summer daytime contour to no more than 9.1 km ²	The area of the contour remained within the limit in each year.
2	Produce a Noise Contour Strategy detailing how the airport will reduce the area of the noise contours by 2030 and beyond	The noise contour strategy was submitted to and approved by LBN in 2023. The strategy is shown in Appendix G.
3	Report on compliance with movement limits	Reports detailing the number of movements were issued for all but one quarter. All of these showed compliance with the limits. For the remaining quarter LBN gave the airport permission to pause some of their reporting as the airport was closed due to the pandemic.
4	Provide required reports to LBN, LCACC and issue Annual Performance Reports (APR)	All required reports were issued each year. As above some reporting requirements were paused for part of 2020 with the agreement of LBN when the airport was closed due to the pandemic. The airport published an APR each year.

Ref.	Action	Outcome
5	Engage with CAA and NATS on the airspace modernisation programme	The airport has continued to engage with the CAA and NATS as well as working with the other airports that share London's airspace. In 2019 the airport engaged with key stakeholders on design principles, then in 2021-22 the airport engaged again on design options.
6	Consider the outcome of the CAA's post implementation review of Phase 1 of LAMP when available	The CAA published their post implementation review of Phase 1 of LAMP in October 2018. The airport continues to engage with the CAA and NATS on the ongoing airspace modernisation programme.
7	Review the Noise Management and Mitigation Strategy (NOMMS) every three years	NOMMS was reviewed in consultation with LBN in 2019 and 2022.
8	Operate an Incentives and Penalties scheme (IPS)	The airport has operated the IPS scheme. The money from penalties has been added to the community fund.
9	Publish mobile noise monitoring reports	Reports from mobile noise monitoring and noise surveys have been published on the airport's website ⁸ .
10	Limit average engine ground running noise to not more than 60 dB L _{Aeq,12h} in the worst month of the year	The airport report annually on this to LBN. The limit was complied with each year.
11	Report unusual or excessive use of reverse thrust	Data from NMT7 is used to identify unusual reverse thrust use. Airlines are contacted to understand the reasons when this occurs and each instance was reported in the APR and the quarterly reports sent to LBN.
12	Conduct a ground noise study at least every three years	Ground noise studies were submitted to and approved by LBN in 2018 and 2021.

⁸<https://www.londoncityairport.com/corporate/noise-and-track-keeping-system/noise-action-plan>

Ref.	Action	Outcome
13	Replace all diesel generators with electrical ground power	The use of diesel ground power units has been banned since the end of 2020. All stands now have either Fixed or Mobile Electrical Ground Power.
14	Operate aircraft noise sound insulation scheme	The airport operates a sound insulation scheme for eligible dwellings and community buildings within the eligibility contours as set out in Appendix F. Up to and including 2019 the airport contacted newly eligible dwellings and community buildings and arranged for works to be carried out where agreed. Due to the COVID pandemic causing a significant decrease in the number of aircraft movements, no dwellings or community buildings have become newly eligible since 2019. As the airport continues to recover and grow, newly eligible dwellings will be contacted and offered treatment if and when they become eligible.
15	Operate construction sound insulation scheme	The airport operated a sound insulation scheme for properties close to the airport to mitigate the noise impacts from CADP construction activities. This scheme provided high acoustic performance double glazing and acoustic ventilation. Take-up of the scheme was very high at over 90%. The scheme was paused when the construction works were stopped in 2020 due to the pandemic.
16	Report compliance with the Quota Count (QC) annual limit of 22,000 and weekly limit 742.5	The airport has regularly reported on, and remained within, the annual and weekly QC limits. The limits are regularly reviewed with LBN.
17	Install a noise barrier prior to the use of new CADP aircraft stands	A noise barrier was installed covering the new operational stands.
18	Comply with all planning conditions and Section 106 obligations	All conditions and obligations have been complied with.

Table 1: Actions from previous NAP (2018-2023)

6.4 Management of Environmental Complaints

LCY has an Environmental Complaint Management System by which anyone can contact LCY to register a complaint or request information about airport operations. Complaints can be made via the LCY website at the following link:

<https://www.londoncityairport.com/corporate/Environment/Environmental-Complaints-Enquiry>

Each complaint or enquiry is registered by the airport, investigated, responded to, and resolved where practicable. All environmental complaints and enquiries are reported to LBN within 15 days, a summary of these are provided quarterly to the London City Airport Consultative Committee (LCACC) and reported annually in the APR.

Table 2 presents the number of environmental complaints received by LCY since 2018. These are categorised as following:

- Aircraft noise – including all airborne aviation issues such as traffic frequency, flight paths, aborted approaches etc.;
- Ground noise – including aircraft and non-aircraft sources of noise such as engine runs, plant, generators, construction, road noise, maintenance, and bird-scaring activities;
- Flight Paths – complaints regarding aircraft flight paths or altitudes.
- Other – non-noise related complaints such as air quality or alleged TV signal interference;

As shown in Table 2, there are a large and increasing number of complaints from a very small number of individuals. In 2022, 953 complaints were from just 2 regular complainants. Excluding these regular complainants, the number of complaints in 2022 has remained broadly similar to 2018. As would be expected complaints were lowest during the pandemic, when activity at the airport was much lower.

Category	Number of Complaints				
	2018	2019	2020	2021	2022
Air Noise	311	553	438	521	776
Ground Noise	3	5	1	0	0
Flight Paths	56	101	94	168	367
Other	35	63	31	7	72
Total	405	722	564	696	1,215
Regular Complainants	110	389	503	629	953
Total exc. Regular Complainants	295	333	61	67	262

Table 2: Number of Complaints (2018-2022)

7.0 Evaluating the Noise Action Plan

It is important to recognise that the NAP's primary purpose is to determine if the various mitigation techniques employed by the airport are protecting the local community by mitigating resulting noise impacts from the airport's operation, particularly for those worst affected.

The airport has achieved all of the actions from the previous NAP. Many of these actions are ongoing and will continue to mitigate adverse noise impacts for the local community. Excluding the effect of regular complainants, the number of complaints received by the airport in 2022 has remained broadly similar to that in 2018.

An assessment of LCY's noise impact has been carried out by independent consultants based on:

- Relevant guidance and legislation;
- The current noise impact of operations at LCY shown by the results of the END Strategic Noise Maps produced in 2021 as required by the regulations and supplemented by noise data from 2019;
- The noise measures in place at LCY as described in Section 6 and Appendix F.

The assessment has found that the environmental noise impact of existing operations at the airport are acceptable, subject to the actions set out below in Table 3 for this 5 year NAP period. Many of these actions are continued from the previous NAP period. Further details of the assessment are given in Appendix A.

Ref.	Action	Timescale
1	Limit the area of the 57 dB L _{Aeq,16h} summer daytime contour to no more than 9.1 km ²	Annually
2	Review and updated the approved Noise Contour Strategy detailing how the airport will reduce the area of the noise contours by 2030 and beyond	2027
3	Introduce an enhanced flight monitoring system, which will allow the community to review flight tracks and aircraft noise as measured by the airport's NMTs and review real-time and historical data	Early 2024
4	Report on compliance with movement limits	Quarterly and annually
5	Provide required reports to LBN, LCACC and issue Annual Performance Reports (APR)	Quarterly and annually
6	Review the Noise Management and Mitigation Strategy (NOMMS) in consultation with LBN	2027
7	Operate an Incentives and Penalties scheme (IPS) and contribute the money from penalties to the airport's community fund	Annually

Ref.	Action	Timescale
8	Publish mobile noise monitoring reports on the airport's website	When noise monitoring surveys are undertaken
9	Limit average engine ground running noise to not more than 60 dB L _{Aeq,12h} in the worst month of the year	Annually
10	Report unusual or excessive use of reverse thrust	Quarterly and annually
11	Conduct a ground noise study at least every three years	2024 and 2027
12	Operate aircraft noise sound insulation scheme	Annually
13	Operate construction sound insulation scheme if there are any eligible dwellings affected by noise from the construction of the remaining elements of CADP	Once construction of the remaining elements of CADP recommences
14	Report compliance with the Quota Count (QC) annual limit of 22,000 and weekly limit 742.5	Quarterly (Weekly limit) and Annually (Annual limit)
15	Install a noise barrier prior to the use of new CADP aircraft stands	Eight CADP stands are in use and protected with noise barriers. Prior to the remaining four becoming operational, the noise barrier will be extended to protect the new stands too
16	Comply with all planning conditions and Section 106 obligations and report compliance in the APR	Annually

Table 3: Actions for the 5 Year NAP Period

8.0 Summary

The previous Noise Action Plan (NAP) 2018-2023, set out the noise control measures which continue to protect the local community from the effects of aircraft noise. This NAP builds upon the previous NAP by describing the recent developments at the airport, including the effects of the COVID-19 pandemic.

The main purpose of the NAP is to establish the noise impact of the airport in order to consider whether the current noise management measures are sufficient to adequately protect the local community.

An assessment of LCY's noise impact has been carried out by independent consultants, which has concluded that the environmental noise impact of existing operations at the airport is acceptable, subject to a set of 16 actions for the 5 year NAP period.

In line with the Environmental Noise (England) Regulations 2006 (as amended) the NAP will be reviewed every 5 years or if a significant change to policy, regulation or a change in operation demands, an updated NAP will be produced before this time.

The airport will continue to listen and engage with the local community, work with our airlines to accelerate the transition to quieter new generation aircraft, and with the support of LCACC we will seek to continue to improve our noise performance, whilst maximising the positive social and economic benefits of a successful airport.

This is a draft NAP that has been produced for public consultation. Following the 10 week consultation, the NAP will be updated taking into account comments received from local communities and key stakeholders. The updated NAP will then be submitted to DEFRA for approval.

Glossary of Terms & Abbreviations

AIP

Aeronautical Information Publication – publication updated every 28 days, containing information of a lasting character essential to air navigation

Aircraft movement

Any arrival or departure operation to or from the airport excluding flights for the purpose of training, positioning and/or evaluation flights

Altitude

Height above sea level

ANCS

Aircraft Noise Categorisation Scheme

ANIS

Aircraft Noise Index Study

ANPS

Airports National Policy Statement

APF

Aviation Policy Framework

APU

Auxiliary Power Unit – a power unit located on the aircraft to provide power to essential systems whilst on the ground

APR

Annual Performance Report – annual report London City Airport publicly produces which details progress made of the actions contained in the airports Noise Action Plan.

ATC

Air Traffic Control

A-weighted

The human ear is not equally sensitive to sound at all frequencies, being less sensitive to sound at low and very high frequencies. When measuring sound it is often useful to 'weight' each frequency appropriately so that the measurement correlates better with the sound that a person would actually hear

CAA

Civil Aviation Authority

CADP

City Airport Development Plan

dB(A)

A unit of sound pressure level, adjusted in accordance with the A weighting scale, which takes into account the increased sensitivity of the human ear at some frequencies

Decibel (dB)

The unit used to describe the magnitude of sound is the decibel (dB) and the quantity measured is the sound pressure level

DEFRA

Department for Environment, Food and Rural Affairs

DfT

Department for Transport

END

European Directive 2002/49/EC generally known as the Environmental Noise Directive (END)

ENR

Environmental Noise (England) Regulations 2006 (as amended)

EU

European Union

FEGP

Fixed Electrical Ground Power – a method to provide power to an aircraft whilst it is on stand

Frequency

Frequency is analogous to musical pitch. It depends upon the rate of vibration of the air molecules which transmit the sound and is measured as the number of cycles per second or Hertz (Hz). The human ear is sensitive to sound in the range 20 Hz to 20,000 Hz (20 kHz).

GPU

Ground Power Unit

Ground noise

Noise as a result of airport operations other than that associated with arriving and departing aircraft

ICAO

International Civil Aviation Organization

ILS

Instrument Landing System

L_{Aeq}

The A-weighted equivalent continuous sound pressure level which is a notional continuous level that, at a given position and over the defined time period contains the same sound energy as the actual fluctuating sound that occurred at the given position over the same time period

L_{Aeq,16h}

The LAeq over the period 0700 – 2300, local time (for strategic noise mapping this is an annual average)

L_{day}

The LAeq over the period 0700 – 1900, local time (for strategic noise mapping this is an annual average)

L_{den}

The LAeq over the period 0000 – 2400, but with the evening values (1900 – 2300) weighted by the addition of 5 dB(A), and the night values (2300 – 0700) weighted by the addition of 10 dB(A) (for strategic noise mapping this is an annual average)

L_{evening}

The LAeq over the period 1900 – 2300, local time (for strategic noise mapping this is an annual average)

L_{night}

The LAeq over the period 2300 – 0700, local time (for strategic noise mapping this is an annual average)

LBN

London Borough of Newham

LCACC

London City Airport Consultative Committee

LCY

London City Airport

NAP

Noise Action Plan

NATS

Formerly known as National Air Traffic Services Ltd. NATS is licensed to provide en-route air traffic control for the UK and the Eastern part of the North Atlantic, and also provides air traffic control services at fourteen UK airports

NFTMS

Noise and Flight Track Monitoring system

Noise Contour

Map contour line indicating noise exposure in dB for the area that it encloses

NOMMS

Noise Monitoring and Mitigation Strategy

NPPF

Noise Planning Policy Framework

NPR

Noise Preferential Route – departure flight ground tracks to be followed by aircraft to minimise noise disturbance on the surrounding population

NPSE

Noise Policy Statement for England

PNdB

Perceived Noise Level. Its measurement involves the analysis of the frequency spectra of noise events as well as the maximum level

QC

Quota Count – the basis of the Night Restrictions regime at London's airports

S73

A planning application made under Section 73 of the Town and County Planning Act (1990)

Sound

A physical vibration of air molecules, propagating away from a source, whether heard or not

Sound Transmission

In the open air, most sources of sound can be characterised as a single point in space. The sound energy radiated is proportional to the surface area of a sphere centred on the point. In decibel terms, every time the distance from a point source is doubled, the sound pressure level is reduced by 6 dB

SID

Standard Instrument Departure Route

SoNA

Survey of Noise Attitudes

SOR

Start Of Roll – the position on the runway where aircraft commence their take-off runs

STAR

Standard Arrival Route

Strategic Noise Maps

Noise maps required by Defra to be produced every 5 years for the UK's main sources of environmental noise

UDP

Unitary Development Plan

Appendix A

End Noise Maps and Evaluation

END Noise Maps

LCY has prepared Noise Maps under the Environmental Noise (England) Regulations 2006 (as amended). This formed part of a requirement for the Strategic Noise Maps under the Environmental Noise Directive (END).

Noise Maps were updated and based on actual aircraft movements during the calendar year of 2021 as required by the END. Activity at LCY in 2021 was heavily affected by the COVID-19 pandemic. Therefore, supplementary noise maps have also been prepared based on aircraft activity in 2019, which is considered more representative of a typical operational year.

The noise maps were prepared using the Aviation Environmental Design Tool (AEDT) software version 3d. The maps were presented as noise contours, and were assessed for a number of noise parameters relating to the average noise level in decibels over specific periods of time.

While LCY's operational hours are between 06.30 and 22.30, the assessment criteria within the END dictated that the following parameters were used:

Parameter	Time Period (hh:mm)	Number of Hours
L_{den}	00:00 – 00:00	24
L_{day}	07:00 – 19:00	12
$L_{evening}$	19:00 – 23:00	4
$L_{Aeq,16h}$	07:00 – 23:00	16
L_{night}	23:00 – 07:00	8

Table 4: END assessment parameters

Effects of Noise Exposure

In the UK the effects of aircraft noise on a community area are normally assessed in terms of the $L_{Aeq,16h}$ parameter, calculated using the number of aircraft movements over an average summer day (summer typically being noisier than winter).

The END dictated that LCY's Strategic Noise Maps include noise contours for the $L_{Aeq,16h}$ parameter calculated from the number of aircraft movements on an average annual day rather than a summer day. While this is not the standard period in the UK, it does not affect the shape or size of the contours to a significant degree given the annual distribution of operations at the airport. Similar to the $L_{Aeq,16h}$ parameter is the L_{den} parameter. The key difference however is that the L_{den} parameter gives more significance to noise events that occur during the evening (19.00 – 23.00) and night-time (23.00 – 07.00) periods.

It should be noted that LCY only operates until 22:30 during the evening period, and between 06.30 and 07.00 during the night-time period defined by these parameters.

Current government guidance regarding the assessment of exposure to aircraft noise is generally based on published research relating to the onset of community annoyance from aircraft noise levels.

Research has shown that over time people's sensitivity to noise has been increasing. The CAA's 2014 Survey of Noise Attitudes (SoNA) found that the proportion of people in the 54 dB $L_{Aeq,16h}$ contour who are highly annoyed by aircraft noise is now similar to the proportion who were highly annoyed in the 57 dB contour in the 1984 Aircraft Noise Index Study (ANIS).

While the government recognises that the relationship between the level of noise and the resulting annoyance is not exact and varies according to individual people and locations, Appendix A4 of the Airports National Policy Statement (ANPS) includes a table of Aviation Policy Framework Threshold Noise Levels, which states that:

- 54 dB $L_{Aeq,16h}$ signifies a level at which significant community annoyance starts to occur;
- 63 dB $L_{Aeq,16h}$ is the lowest level at which the government expects airport operators to offer acoustic insulation to noise-sensitive buildings such as schools and hospitals and residential dwellings;
- 69 dB $L_{Aeq,16h}$ is the lowest level at which the government expects airport operators to offer household assistance with the costs of moving or full insulation where home owners do not want to move.

The estimated total number of people and dwellings exposed above various noise levels in 2019 and 2021 have been derived from the mapping of noise from aircraft using LCY. These population and dwelling counts are given for each of the indices L_{den} , L_{day} , $L_{evening}$, $L_{Aeq,16h}$ and L_{night} in Table 5 to Table 9 respectively.

Population and dwelling counts have been rounded as follows: The number of dwellings has been rounded to the nearest 50, except when the number of dwellings is greater than zero but less than 50, in which case the total has been shown as "< 50". The associated population has been rounded to the nearest 100, except when the associated population is greater than zero but less than 100, in which case the total has been shown as "< 100".

Noise Level (dB L _{den})	2019		2021	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
≥ 55	37,450	93,500	2,400	5,700
≥ 60	8,200	20,300	<50	<100
≥ 65	550	1,600	0	0
≥ 70	0	0	0	0
≥ 75	0	0	0	0

Table 5: Estimated total number of people and dwellings above various noise levels, L_{den}

Noise Level (dB L _{day})	2019		2021	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
≥ 54	46,100	117,300	3,550	5,700
≥ 57	21,750	52,800	600	1,200
≥ 60	8,150	20,100	<50	<100
≥ 63	2,300	6,100	0	0
≥ 66	300	1,100	0	0
≥ 69	0	0	0	0

Table 6: Estimated total number of people and dwellings above various noise levels, L_{day}

Noise Level (dB L _{evening})	2019		2021	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
≥ 54	36,500	91,000	1,050	2,400
≥ 57	15,250	37,800	<50	<100
≥ 60	6,600	16,100	0	0
≥ 63	850	2,600	0	0
≥ 66	250	800	0	0
≥ 69	0	0	0	0

Table 7: Estimated total number of people and dwellings above various noise levels, L_{evening}

Noise Level (dB L _{Aeq,16h})	2019		2021	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
≥ 54	44,000	111,500	3,200	7,700
≥ 57	20,050	48,300	350	700
≥ 60	7,550	18,500	<50	<100
≥ 63	1,850	5,100	0	0
≥ 66	300	900	0	0
≥ 69	0	0	0	0

Table 8: Estimated total number of people and dwellings above various noise levels, L_{Aeq,16h}

Noise Level (dB L _{night})	2019		2021	
	Number of Dwellings	Number of People	Number of Dwellings	Number of People
≥ 48	2,350	6,300	<50	<100
≥ 51	350	1,100	0	0
≥ 54	0	0	0	0
≥ 57	0	0	0	0
≥ 60	0	0	0	0
≥ 63	0	0	0	0
≥ 66	0	0	0	0

Table 9: Estimated total number of people and dwellings above various noise levels, L_{night}

Guidance on how to determine the acceptability of noise levels has been provided to airport operators by DEFRA. The government has not yet published any guidance on how to interpret noise contours created in terms of L_{den}. The assessment of aviation noise impact is normally expressed in terms of dB L_{Aeq,16h}.

There are no dwellings and no noise sensitive buildings exposed to 69 dB L_{Aeq,16h} or greater as was the case in 2016.

The eligible dwellings within the 57 dB L_{Aeq,16h} noise contour have been treated under the airport's sound insulation (SI) scheme. Recently built dwellings within the 57 dB L_{Aeq,16h} noise contour should have been built in accordance with the Local Authority planning conditions to ensure adequate sound insulation against aircraft noise.

There is the potential for some people who live within the 54 dB L_{Aeq,16h} but outside of the 57 dB L_{Aeq,16h} SI scheme boundary to experience annoyance related to aircraft noise, however these residents will benefit from all of the other noise mitigation measures described in Section 6 and Appendix F, which limit the number and size of the aircraft and ensure that aircraft are operated as quietly as possible.

The night noise contours remain very small at LCY since only a handful of operations take place during the period from 06.30 to 07.00 hours. No dwellings are exposed to 55 dB L_{night} or above, a level corresponding to significant observed adverse effects.

LCY has some of the strictest operating restrictions of any airport in the UK and its sound insulation scheme extends down to lower noise levels than that expected by the government as set out in the ANPS.

There are no designated quiet areas impacted by the noise from LCY

While there is the potential for some community annoyance, particularly for those residents in the 54-57 dB L_{Aeq,16h} noise band, this level of noise exposure is within that found to be acceptable in the granting of planning permission for CADP, subject to implementation of the mitigation measures described in this NAP. This assessment therefore has found that the environmental noise impact of existing operations at the airport are acceptable, subject to the implementation of the actions described in Section 7 of the Noise Action Plan and the existing noise management and mitigation measures described in Section 6 and Appendix F.

In addition to these contours, LCY produces summer noise contours from 54 to 69 dB L_{Aeq,16h} as part of its Annual Performance Report (APR). LCY's Annual Performance report can be found at:

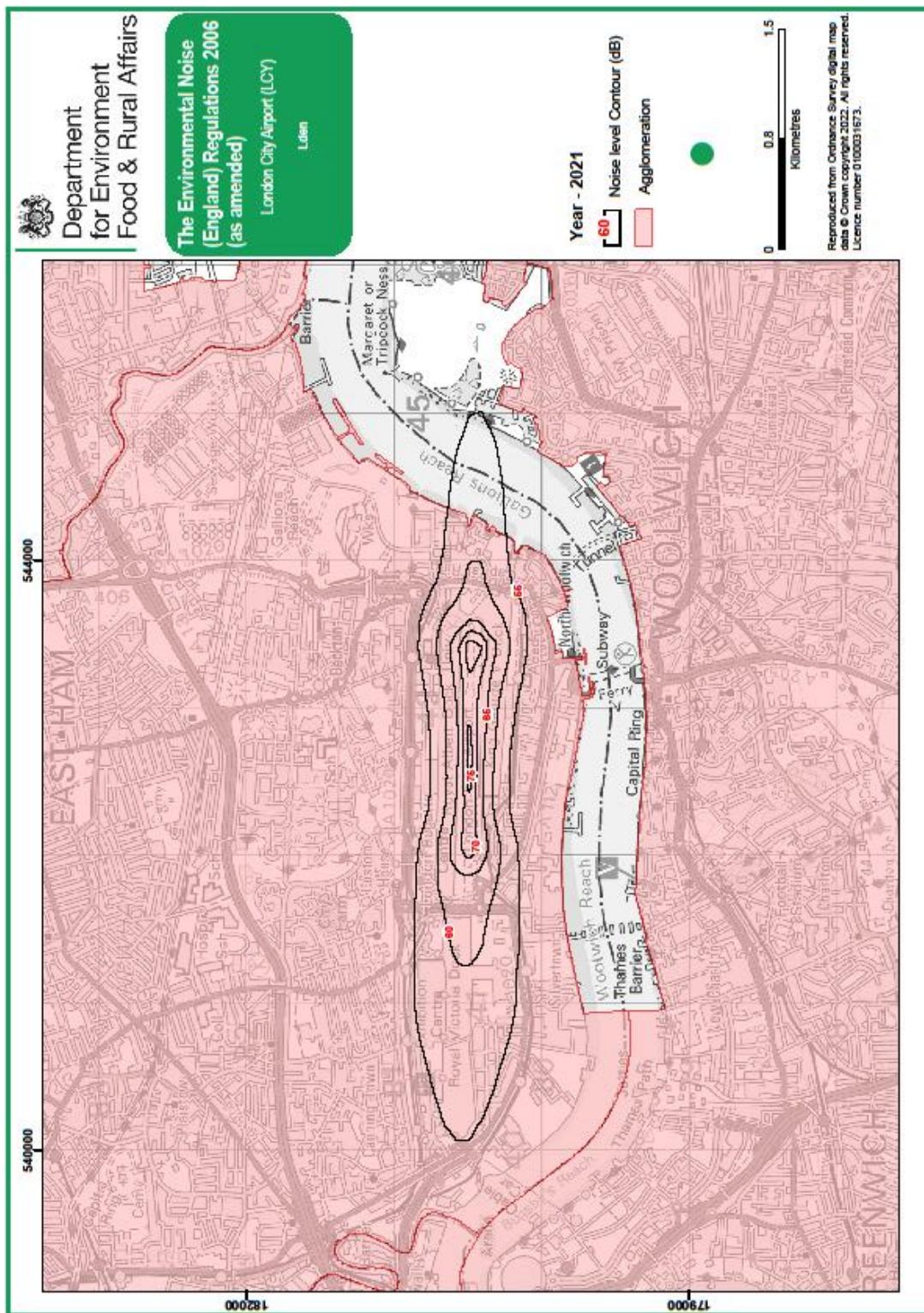
<https://www.londoncityairport.com/corporate/Environment/Annual-Performance-report>

Appendix B

London City Airport Noise Maps

DEFRA 2021 Strategic Noise Maps

Lden

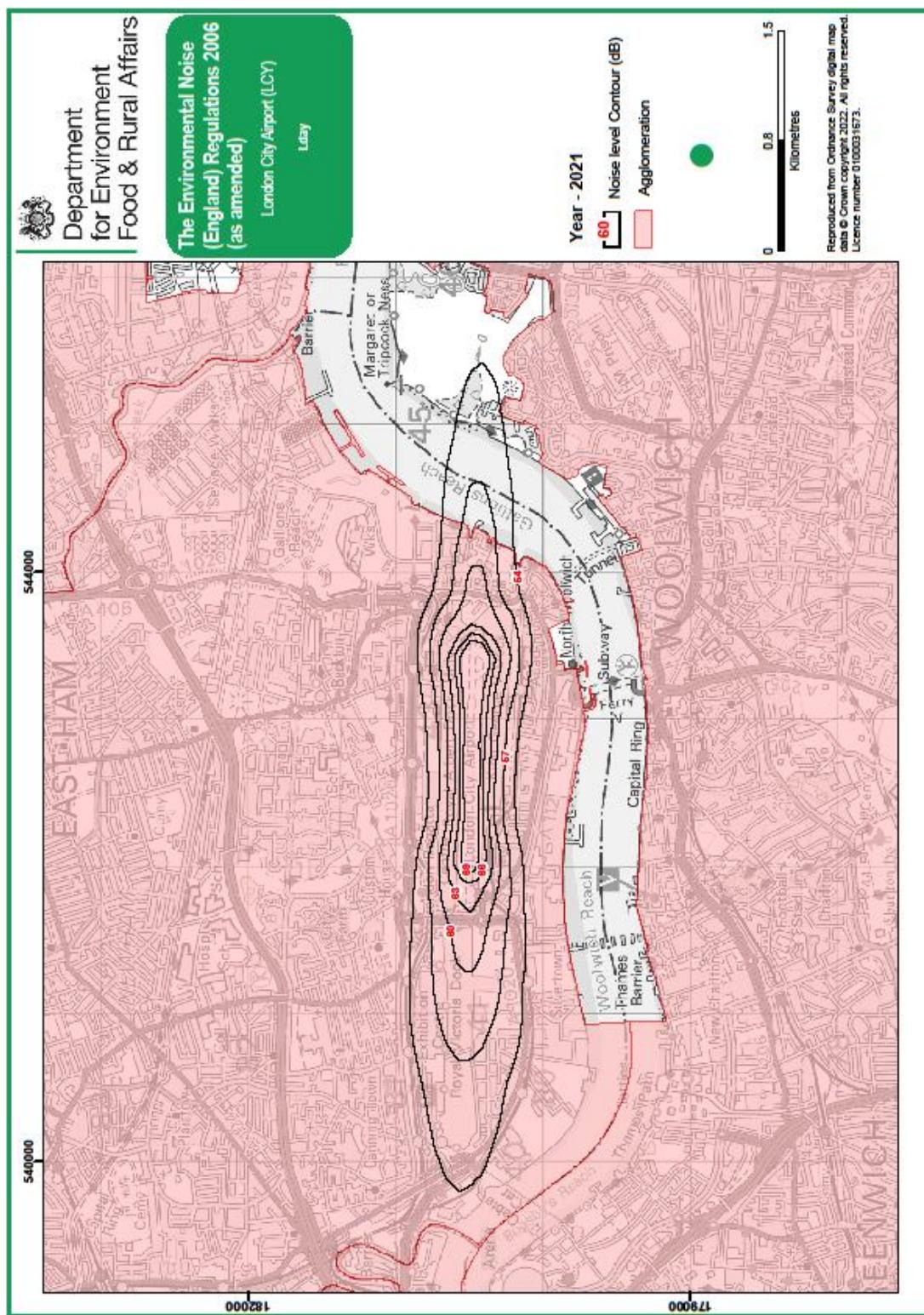


Appendix B

London City Airport Noise Maps

DEFRA 2021 Strategic Noise Maps

L_{day}

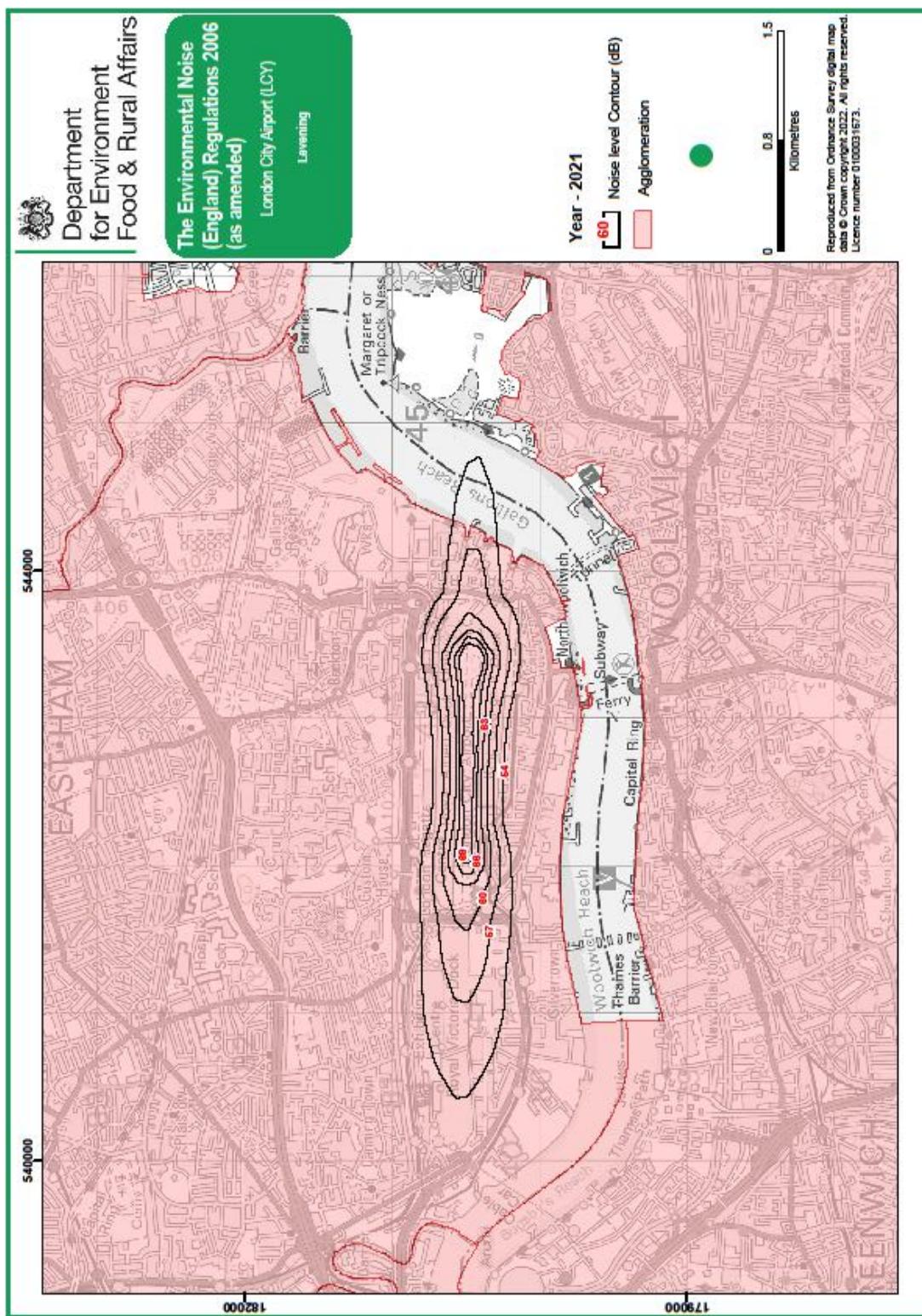


Appendix B

London City Airport Noise Maps

DEFRA 2021 Strategic Noise Maps

L_{evening}

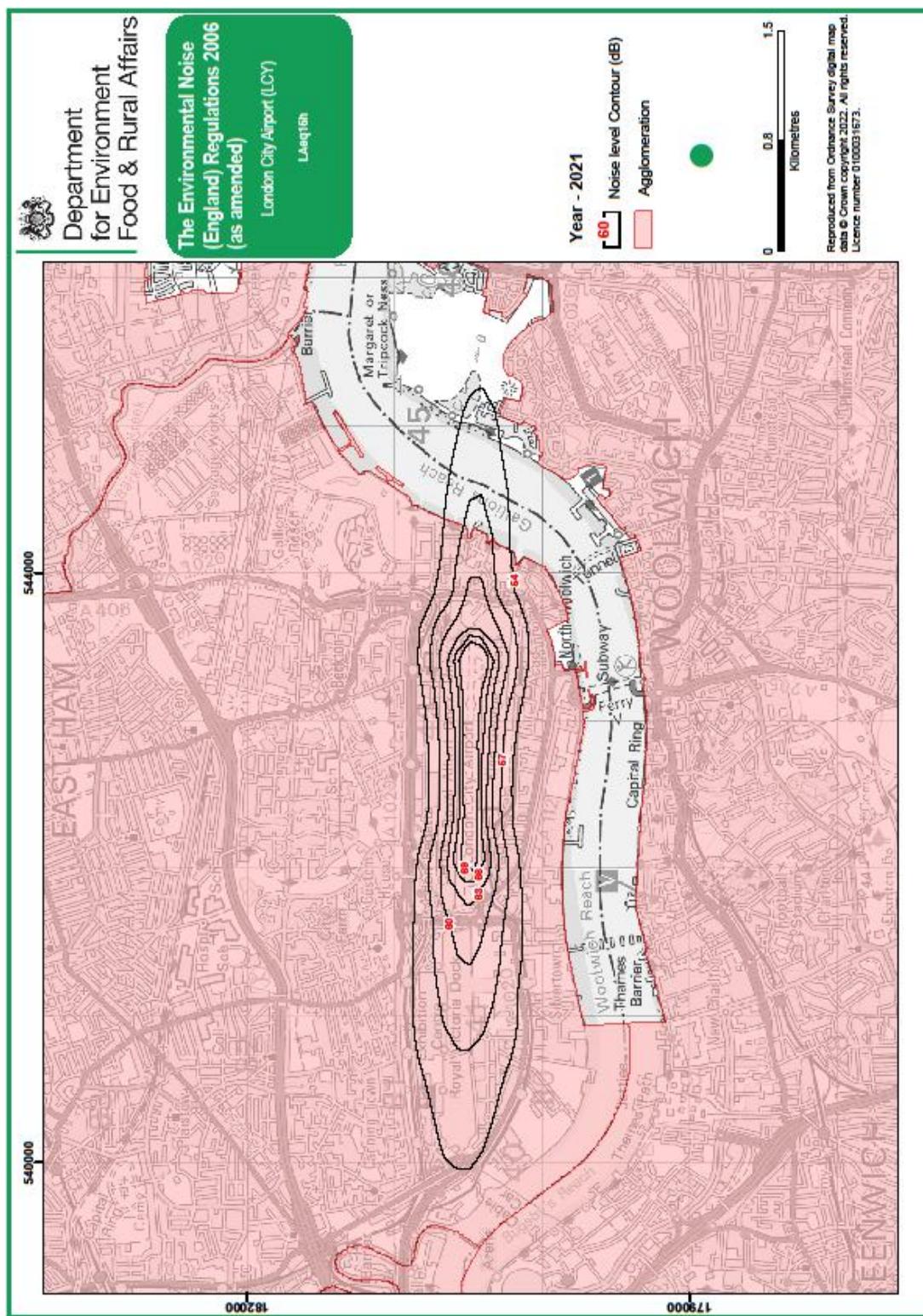


Appendix B

London City Airport Noise Maps

DEFRA 2021 Strategic Noise Maps

$L_{Aeq,16h}$

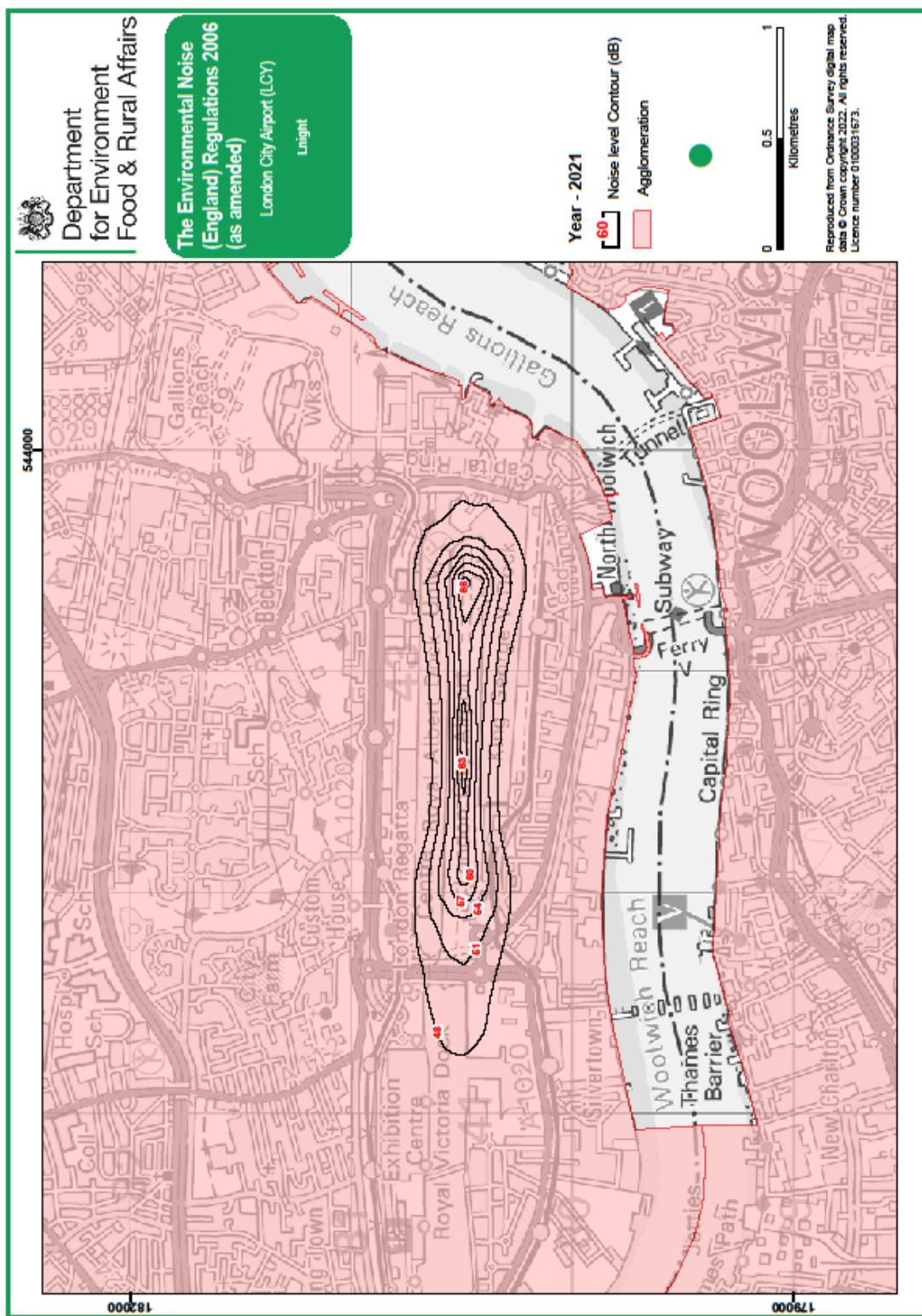


Appendix B

London City Airport Noise Maps

DEFRA 2021 Strategic Noise Maps

Lnight

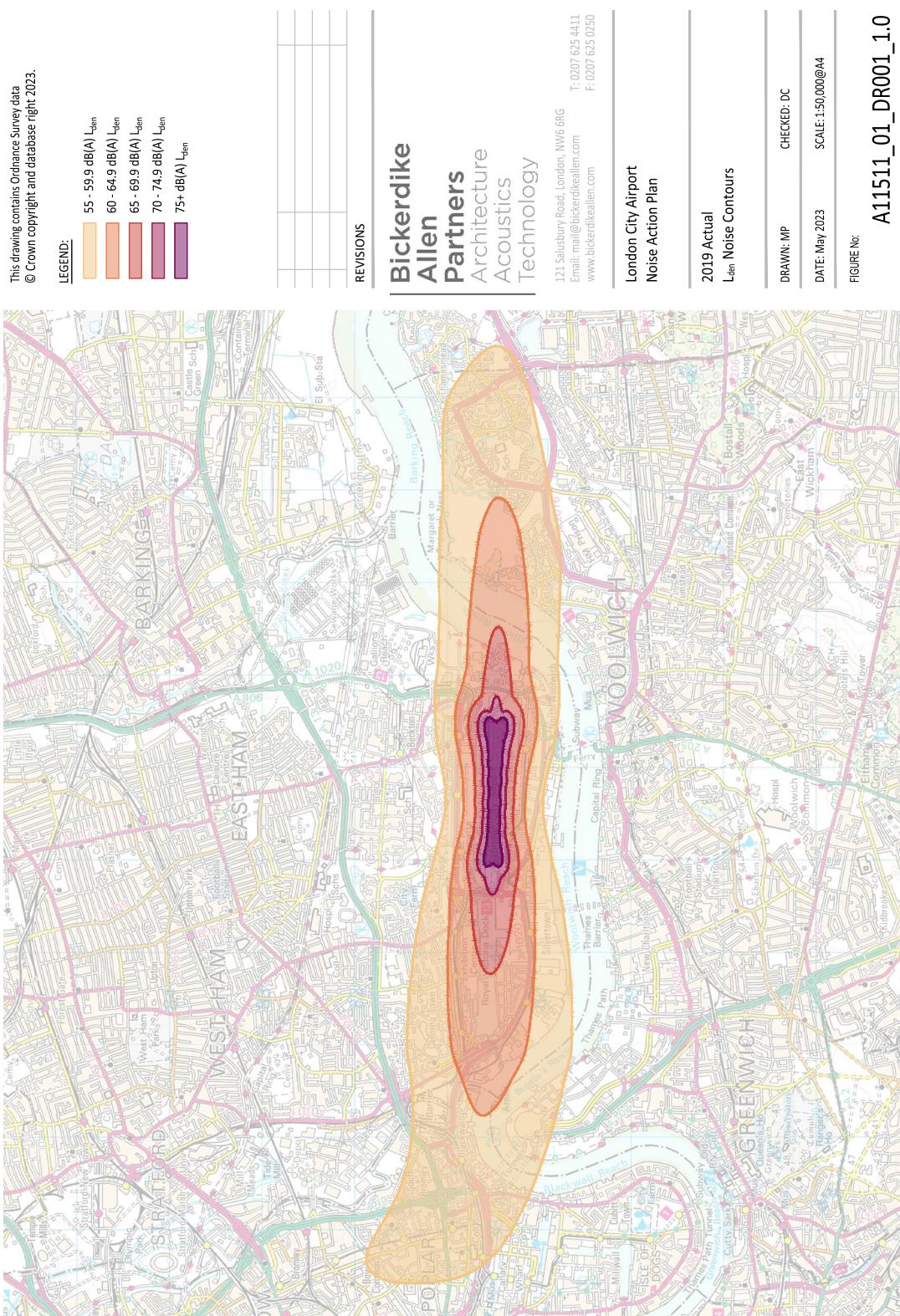


Appendix B

London City Airport Noise Maps

2019 Supplementary Noise Maps

L_{den}



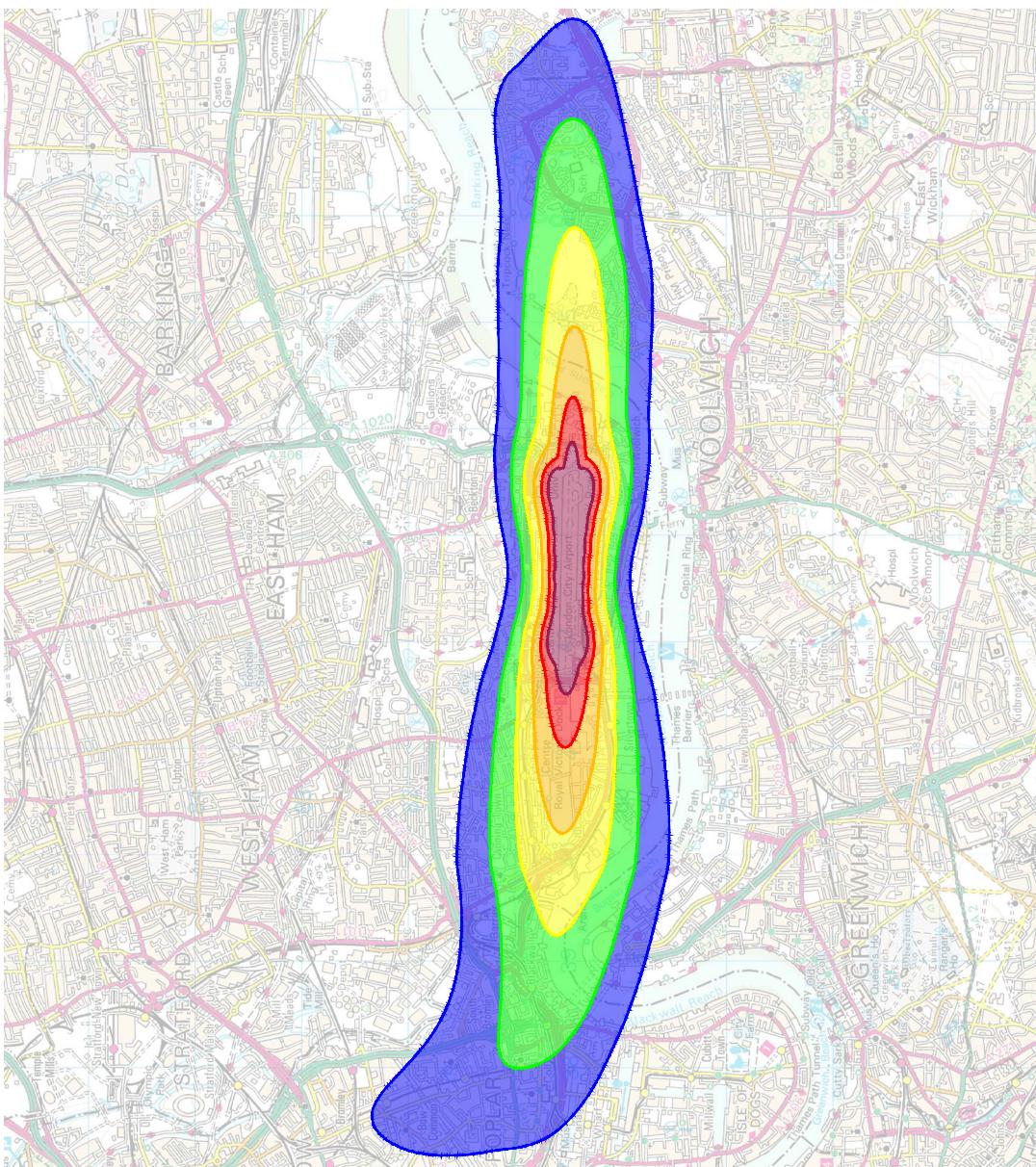
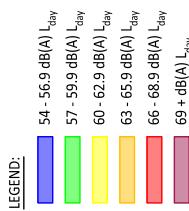
Appendix B

London City Airport Noise Maps

2019 Supplementary Noise Maps

L_{day}

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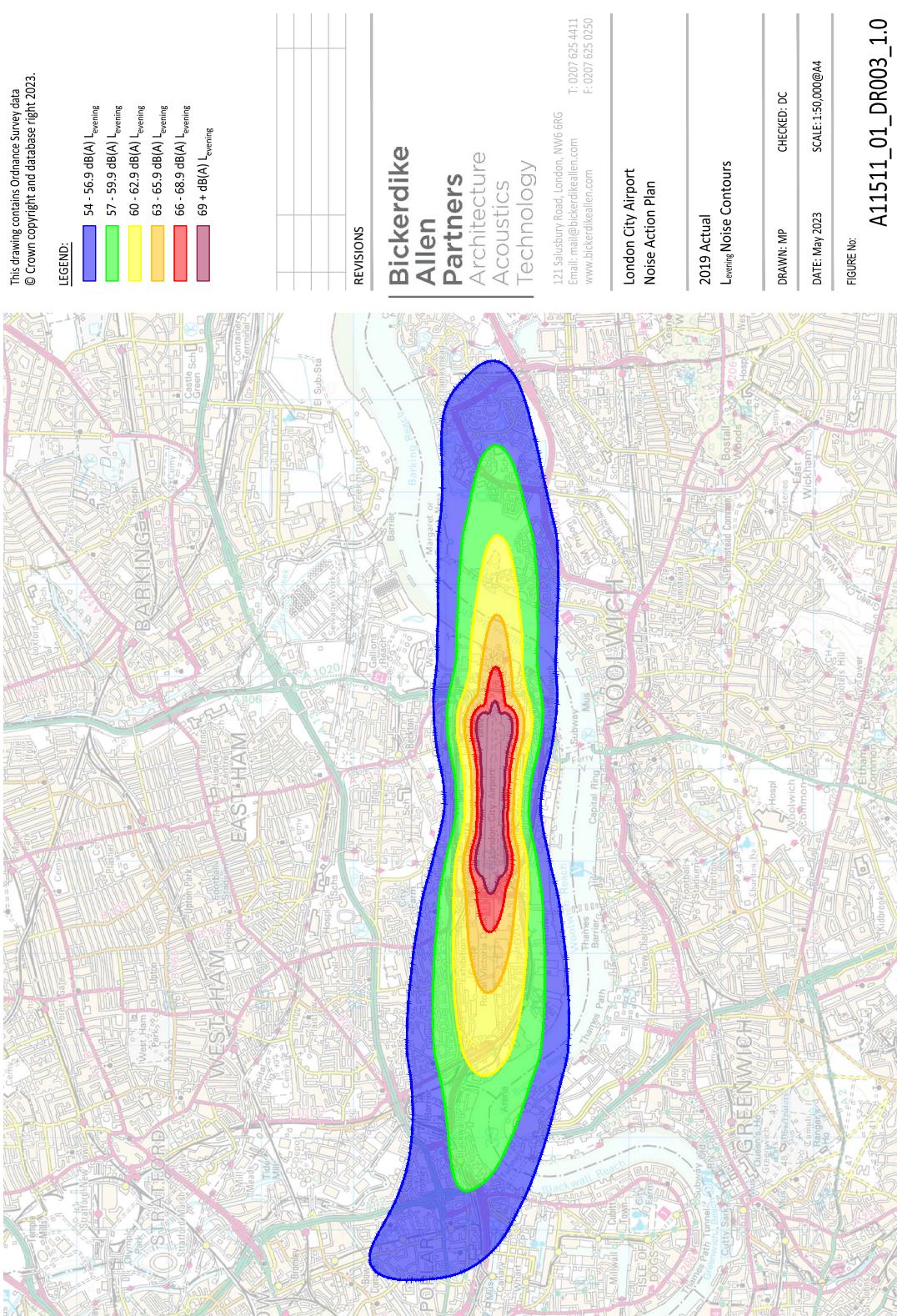


Appendix B

London City Airport Noise Maps

2019 Supplementary Noise Maps

L_{evening}

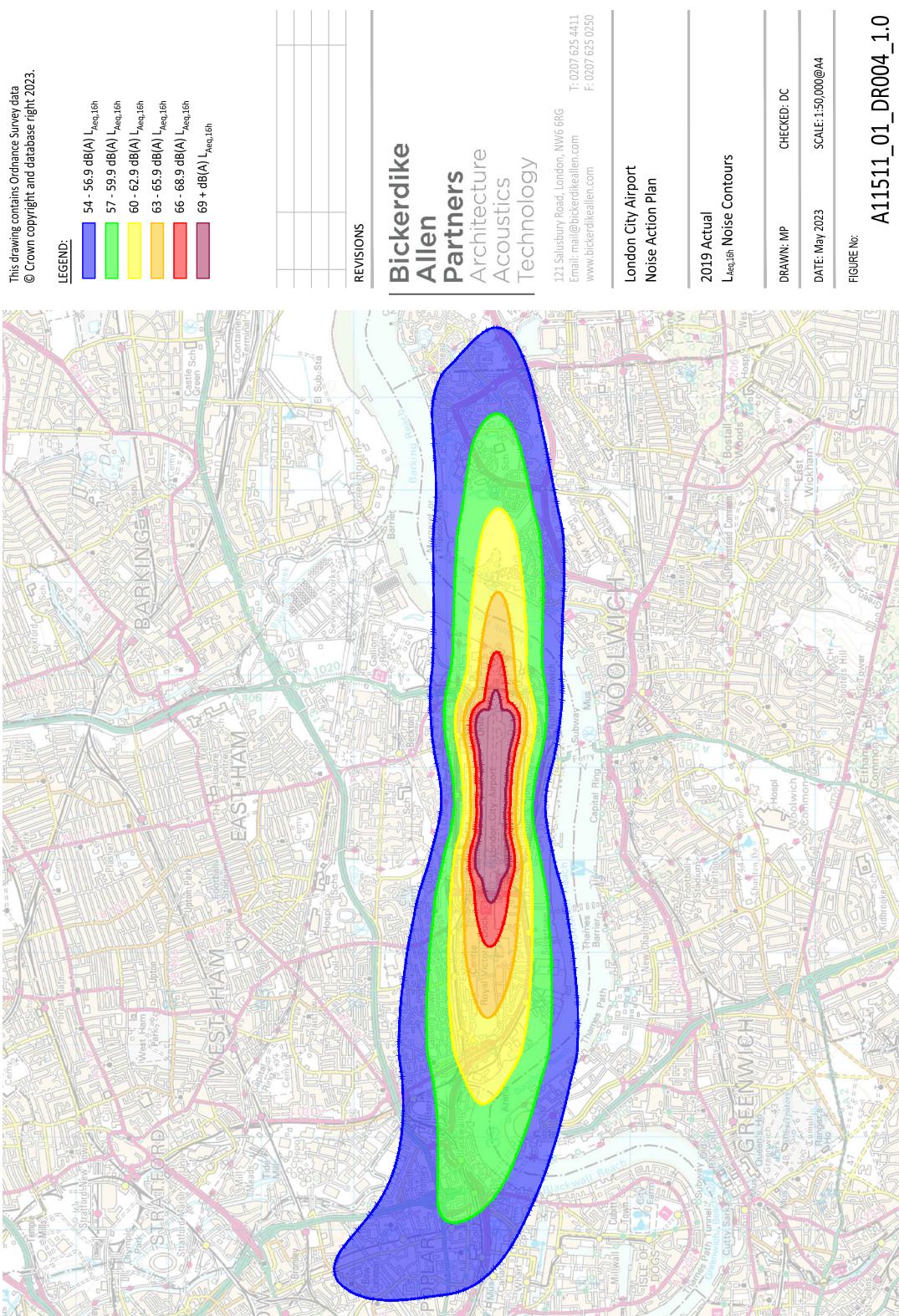


Appendix B

London City Airport Noise Maps

2019 Supplementary Noise Maps

$L_{Aeq,16h}$

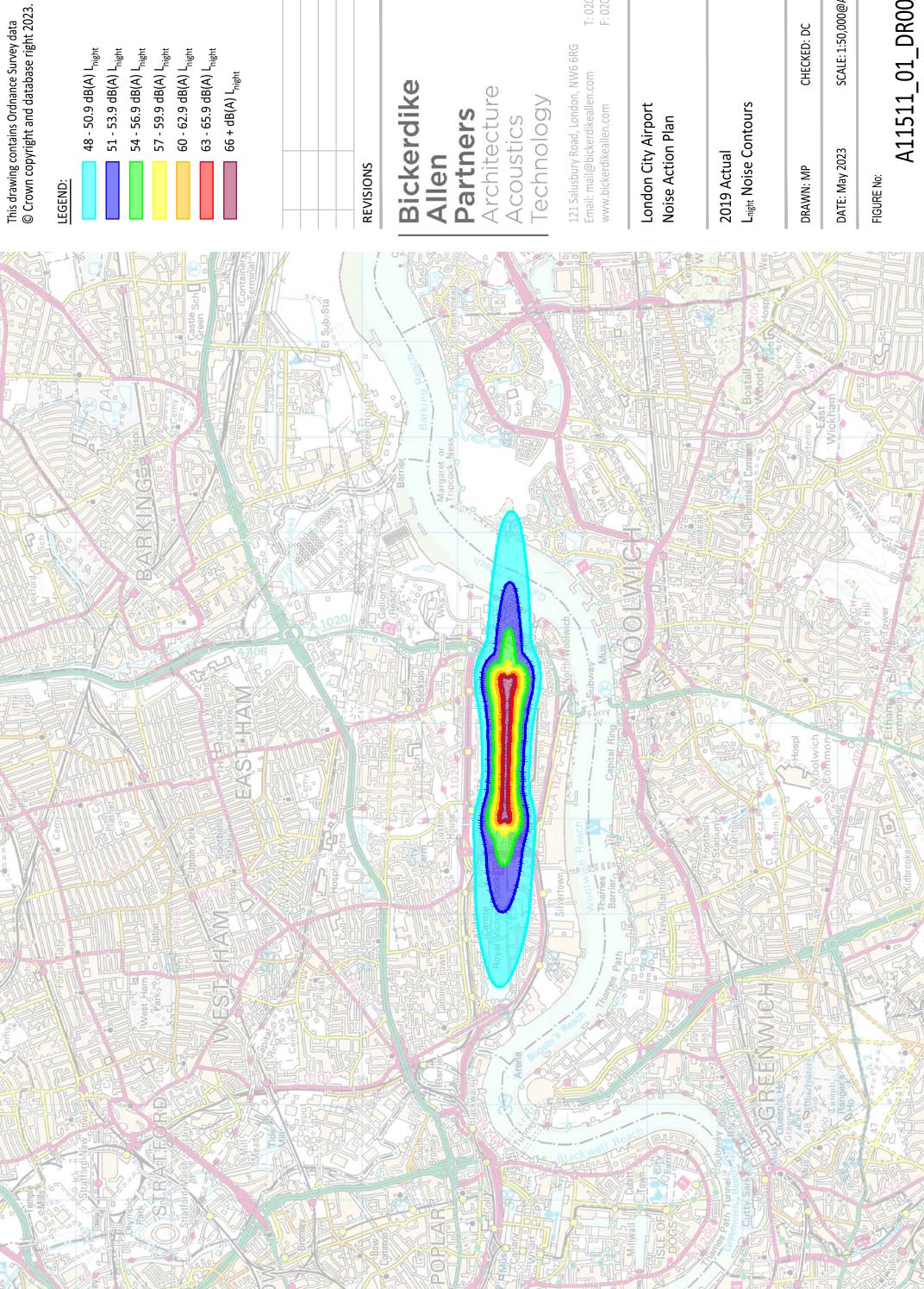


Appendix B

London City Airport Noise Maps

2019 Supplementary Noise Maps

L_{night}



Appendix C

Stakeholder Engagement and Consultation

The consultation will run for 10 weeks from 5th June to the 11th August 2023 and gives the public an opportunity to provide feedback on the draft NAP. The airport will be hosting three drop-in events:

- 20th June 2023 16:00-19:30 at Walthamstow Library, High Street, E17 7JN
- 24th June 2023 10:30-13:30 at Beckton Globe Library, 1 Kingsford Way, E6 5JQ
- 28th June 2023 10:30-13:30 at Sydenham Centre, 44A Sydenham Road, SE26 5QX

Feedback on the NAP can also be given online at the following link:

<https://www.londoncityairport.com/corporate/noise-and-track-keeping-system/draft-noise-action-plan>

This appendix will be updated following the consultation exercise, detailing the comments received along with responses from the airport where necessary.

Appendix D

Legislative Structure for Noise Management

International Regulation

The International Civil Aviation Organisation (ICAO) is the inter-governmental body that oversees the worldwide civil aviation industry. The ICAO has adopted a set of principles and guidance, constituting the "balanced approach" to aircraft noise management, which encourages ICAO member states to address the following points.

- Mitigate aviation noise through selection at a local level the optimum combination of four key measures:
 - Reducing noise at source (from use of quieter aircraft);
 - Making best use of land (plan and manage the land surrounding airports);
 - Introducing operational noise abatement procedures (by using specific runways, routes, or procedures);
 - Imposing noise-related operating restrictions (such as a night time operating ban or phasing out of noisier aircraft).

- Select the most cost-effective range of measures;
- Not introduce noise-related operating restrictions unless the authority is in a position, on the basis of studies and consultations, to determine whether a noise problem exists and having determined that an operating restriction is a cost-effective way of dealing with the problem;
- The ICAO has also set a number of standards for aircraft noise certification which are contained in Volume 1 of Annex 16 to the Convention on Civil Aviation. This document sets maximum acceptable noise levels for different aircraft during take-off and landing, categorised as Chapter 2, 3, 4 and 14;
- Chapter 2 aircraft have been prevented from operating within the EU since 2002, unless they are granted specific exemption, and therefore the vast majority of aircraft fall within Chapter 3, 4 and 14 parameters. These aircraft are quieter than Chapter 2 aircraft;

- Chapter 4 standards have applied to all new aircraft manufactured since 2006. These aircraft must meet a standard of being 10 dB quieter than Chapter 3 aircraft;
- Chapter 14 was adopted by the ICAO in 2014. This represents an increase in stringency of 7 dB compared with Chapter 4 and applies to new aircraft submitted for certification after 31st December 2017.

European Regulation

EU Member States must comply with published regulations and directives, where those significant to this Noise Action Plan are as follows.

Directive 2006/93/EC replaced Directive 92/14/EEC and banned the use of Chapter 2 aircraft in the EU from 1st April 2002.

Regulation 598/2014 repealed Directive 2002/30/EC in 2014 and establishes rules and procedures for the introduction of noise-related operating restrictions. It maintains previous requirements such as the adoption of the ICAO balanced approach.

Directive 2002/49/EC, the Environmental Noise Directive, requires noise maps to be produced for the purposes of producing action plans, which are further explained within the Environmental Noise (England) Regulations 2006 (as amended).

National Regulation

Aeroplane Noise Regulations 1999

The Aeroplane Noise Regulations 1999 require that all civil propeller and jet aeroplanes registered in the UK shall have a noise certificate. A similar requirement applies to any foreign registered aeroplane which cannot land or take off in the UK without a noise certificate granted by the competent authority in the state where it is registered.

Civil Aviation Act 2006

The Civil Aviation Act 2006 included a number of measures aimed at strengthening the powers available to control noise. These included provision for airport operators to fix charges in respect of an aircraft or a class of aircraft based on the noise caused by the aircraft or the amount of emissions it produces.

The Act also gave airport operators statutory powers to introduce noise control schemes for the purpose of avoiding, limiting or mitigating the effect of noise connected with the taking off or landing of aircraft.

These could include penalties for straying from agreed flight paths that minimise the number of people affected by noise, fines for aircraft that breach noise controls and restrictions on aircraft of specified descriptions. Any income from penalty schemes would have to be put towards projects that benefit the local community.

Civil Aviation Act 2012

The Civil Aviation Act 2012 placed a new duty on the Civil Aviation Authority (CAA) to make information about the environmental performance of the aviation sector available to the general public and measures taken to limit adverse environmental effects. The CAA consulted on its proposed Statement of Policy for the use of its information powers in 2013.

The Environmental Noise (England) Regulations 2006 (as amended)

These regulations transpose the European Environmental Noise Directive (Directive 2002/49/EC) into English law. They require operators of non-designated major civil airports to make and submit strategic noise maps to the Secretary of State every five years starting in 2007 which reflect the noise situation in the preceding calendar year.

A major airport is defined as a civil airport that has more than 50,000 movements per year (a movement being a take-off or a landing). Regulation 18 places a duty on the operators of major airports, as the competent authority, to draw up a Noise Action Plan for places near the airport and submit this to the Secretary of State. There is then a continuing obligation on airport operators to review (and revise, if necessary) the Noise Action Plan every five years or sooner where a major development occurs.

The Regulations require the Secretary of State to identify a number of noise sources for the strategic noise mapping and Action Plans. The Environmental Noise (Identification of Noise Sources) (England) Regulations 2007 identified LCY as a major airport.

Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) sets out the long term vision of government noise policy to promote good health and a good quality of life through the effective management of noise within the government policy on sustainable development. The stated aims of the NPSE are to:

- Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of government policy on sustainable development;
- Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of government policy on sustainable development; and where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of government policy on sustainable development.

The NPSE introduces the concepts of NOEL (No Observed Effect Level), LOAEL (Lowest Observed Adverse Effect Level) and SOAEL (Significant Observed Adverse Effect level).

National Planning Policy Framework

The National Planning Policy Framework (NPPF), published in March 2012 and updated in July 2018, sets out the government's planning policies for England and how these are expected to be applied. It replaced 44 Planning Policy Statements, Guidance, Circulars and letters to Chief Planning Officers including Planning Policy Guidance 24 (PPG24) on Planning and Noise. With respect to noise the NPPF advises that planning policies and decisions should aim to:

- Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of ... noise pollution.
- Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

Further guidance on how planning authorities should take account of the acoustic environment and the mitigation strategies which should be applied is provided in the National Planning Practice Guidance 2014.

Aviation Policy Framework (APF)

The Aviation Policy Framework (APF) was published in March 2013 by the Department for Transport (DfT). The APF defines the government's objectives and policies on the impacts of aviation in the UK.

On managing aviation's environmental impacts, and specifically noise, it states in paragraph 3.12 that: "The Government's overall policy on aviation noise is to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction with industry".

It goes on in paragraph 3.13 to state that: "This is consistent with the Government's Noise Policy, as set out in the Noise Policy Statement for England (NPSE) which aims to avoid significant adverse impact on health and quality of life."

Guidance is provided on the noise metric used to rate airborne noise in paragraph 3.13 where it states: "To provide historic continuity, the Government will continue to ensure that noise exposure maps are produced for the noise-designated airports on an annual basis providing results down to a level of 57 dB L_{Aeq,16hour}".

The noise index is described in a footnote as: "the A-weighted average sound level over the 16 hour period of 07:00-23:00. This is based on an average summer day when producing noise contour maps at the designated airports."

In paragraph 3.17 the interpretation of the contour is given as: "We will continue to treat the 57 dB L_{Aeq,16h} contour as an average level of day time aircraft noise marking the approximate onset of significant community annoyance. However, this does not mean that all people within this contour will experience significant adverse effects from aircraft noise. Nor does it mean that no-one outside of this contour will consider themselves annoyed by aircraft noise."

Under the heading "Noise insulation and compensation" the APF states in paragraphs 3.36 and 3.37 that: "The Government continues to expect airport operators to offer households exposed to levels of noise of 69 dB L_{Aeq,16h} or more, assistance with the cost of moving.

The Government also expects airport operators to offer acoustic insulation to noise sensitive buildings, such as schools and hospitals, exposed to levels of noise of 63 dB L_{Aeq,16h} or more. Where acoustic insulation cannot provide an appropriate or cost-effective solution, alternative mitigation measures should be offered."

With regard to airport development, it continues in paragraph 3.39: "Where airport operators are considering developments which result in an increase in noise, they should review their compensation schemes to ensure that they offer appropriate compensation to those potentially affected. As a minimum, the Government would expect airport operators to offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3dB or more which leaves them exposed to levels of noise of 63 dB L_{Aeq,16h} or more."

Survey of Noise Attitudes 2014: Aircraft (SoNA)

The Civil Aviation Authority Survey of Noise Attitudes 2014: Aircraft (SoNA) includes the results of a survey to noise attitudes to civil aircraft. SoNA largely replaces Attitudes to noise from aviation sources in England (ANASE), the last large scale survey on attitudes to aircraft noise published in 2007.

Aviation 2050: The Future of UK Aviation

In December 2018, the government published Aviation 2050: The Future of UK Aviation (Aviation 2050) which outlines proposals for a new aviation strategy and addresses a wide range of associated issues. The Green Paper set out (among other things) a robust policy framework and package of measures to reduce the harmful effects of aviation on the environment including in respect of noise. In the Green Paper, the government recognises that there has been uncertainty on how current policy (to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise) should be interpreted, measured, and enforced. The Strategy sets out that the government intends to put in place a stronger and clearer framework in order to ensure the sector is sufficiently incentivised to reduce noise, or to put mitigation measures in place where reductions are not possible.

Flightpath to the Future (FttF)

Flightpath to the Future (FttF) advised that:

"given the unprecedented challenges that the aviation sector has faced as a result of the coronavirus (COVID-19) pandemic, we have decided we will not publish a further formal response to the remaining parts of this consultation.

Instead, in May 2022, the government published Flightpath to the future, a strategic framework that builds upon the consultation responses received. It establishes our ambitions and commitments for aviation over the next 10 years."

FttF contains a ten point plan for the future of UK aviation. Point 4 includes that the government will "continue to work with the sector to reduce the localised impacts of aviation from noise and air pollution".

FttF also details how the CAA has assumed most of the functions previously performed by ICCAN and that the government will work closely with the CAA on these issues. "This will include collaboration on the CAA's plans to create a new Sustainability Panel, designed to provide independent expert advice on a range of environmental issues including carbon, noise and air quality."

Overarching Aviation Noise Policy (March 2023)

In March 2023 the government published the revised overarching aviation noise policy statement with the intention to "provide clarity for airports and their stakeholders preparing or responding to noise action plan consultations". The revised overarching aviation noise policy statement is:

"The government's overall policy on aviation noise is to balance the economic and consumer benefits of aviation against their social and health implications in line with the International Civil Aviation Organisation's Balanced Approach to Aircraft Noise Management. This should take into account the local and national context of both passenger and freight operations, and recognise the additional health impacts of night flights.

The impact of aviation noise must be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise."

Regional Policies

The London Plan (2021)

The Mayor of London's policy on noise, D14, is given in The London Plan 2021. This sets out how residential and other non-aviation development proposals should manage noise in order to reduce, manage and mitigate noise to improve health and quality of life. While strictly not in relation to airport developments, it is noted that these include "promoting new technologies and improved practices to reduce noise at source".

Policy T8 Aviation sets out the Mayor's approach to aviation related development. The policy contains nine parts, which include:

"A - The Mayor supports the role of the airports serving London in enhancing the city's spatial growth, particularly within Opportunity Areas well connected to the airports by public transport and which can accommodate significant numbers of new homes and jobs. This should be reflected in relevant Development Plans and other area-based strategies;

B - The environmental and health impacts of aviation must be fully acknowledged and aviation-related development proposals should include mitigation measures that fully meet their external and environmental costs, particularly in respect of noise, air quality and climate change. Any airport expansion scheme must be appropriately assessed and if required demonstrate that there is an overriding public interest or no suitable alternative solution with fewer environmental impacts;

E - Development proposals that would lead to changes in airport operations or air traffic movements must take full account of their environmental impacts and the views of affected communities. Any changes to London's airspace must treat London's major airports equitably when airspace is allocated; and

F - Development proposals should make better use of existing airport capacity, underpinned by upgraded passenger and freight facilities and improved surface access links, in particular rail."

Local Policies

LCY is located within Newham. Thamesmead in Greenwich, and part of Tower Hamlets, lying close to the airport, are overflowed at low altitude by arriving and departing aircraft. Relevant noise policies for each Borough are therefore discussed below.

London Borough of Newham Local Plan (2018)

The Newham Local Plan 2018 sets out a vision and framework for development in the borough. It is the starting point for considering whether planning applications can be approved. Along with the London Plan, the Local Plan forms the Development Plan against which individual proposals are assessed.

Noise is referred to in policy SP2 Healthy Neighbourhoods. This advises that development proposals which address the strategic principles and spatial strategy, and technical criteria will be supported. These include:

"The need to improve employment levels and reduce poverty, whilst attending to the environmental impacts of economic development including community/ public safety, noise, vibrations and odour and the legacy of contaminated land as per SP8 and SC1."

Policy SP8 Ensuring Neighbourly Development advises that proposals which address the strategic principles, spatial strategy and design, management and technical criteria will be supported. These include the need to:

"Avoid unacceptable exposure to light (including light spillage), odour, dust, noise, disturbance, vibration, radiation and other amenity or health impacting pollutants in accordance with policy SP2".

Greenwich Council Noise and Transportation Policies

The Borough is mainly residential and is considered sensitive to overflying by all types of air traffic, including Heathrow operations. London Borough of Greenwich's Core Strategy which forms part of The Local Plan and was adopted on 30th July 2014 includes a policy IM(d) - London City Airport, which has provision for new applications to take account of both safeguarding and noise issues associated with the airport.

Tower Hamlets Local Plan 2031

The Tower Hamlets Local Plan 2031 was adopted by Tower Hamlets Council on 15th January 2020. The Local Plan includes no specific policies relating to noise from LCY or aircraft noise in general.

Industry Policies

Sustainable Aviation's Noise Road Map

LCY is a member of Sustainable Aviation which is a long term strategy which sets out the collective approach of UK aviation to tackling the challenge of ensuring a sustainable future for our industry. As a result Sustainable Aviation is committed to a range of goals. One of these goals is specifically about noise, to limit and, where possible, reduce the impact of aircraft noise. Through the publication of Sustainable Aviation's Noise Road Map, it is working to ensure the identified opportunities and industry commitments are realised.

Appendix E Requirements of End

Noise Action Plan – Requirements of End

Below are the minimum requirements as given in Annex V of the END: An Action Plan must at least include the following elements:

- A description of the airport and any other noise sources taken into account;
- The authority responsible;
- The legal context;
- Any limit values in place;
- A summary of the results of the noise mapping;
- Identification of problems and situations that need to be improved;
- A record of the public consultations organised in accordance with Article 8(7);
- Any noise reduction measures already in force and any projects in preparation;

- Long term strategy;
- Actions which the airport operator intends to take in the next five years, including measures to preserve quiet areas;
- Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment;
- Provisions envisaged for evaluating the implementation and the results of the Action Plan;
- Estimates in terms of the reduction of the number of people affected (annoyed, sleep-disturbed, or other).

Appendix F

Details Of Noise Management Schemes

Aircraft Movement Limits

There are strict limits on the number aircraft movements. These include:

- 111,000 movements per year;
- 45 scheduled movements per hour;
- 100 movements per day on Saturdays, 200 per day on Sundays, but no more than 280 on any consecutive Saturday and Sunday;
- 592 movements per weekday, except for Public or Bank Holidays, specifically:
 - 132 on 1st January;
 - 164 on Good Friday;
 - 198 on Easter Monday;
 - 248 on May Day;
 - 230 on late May Bank Holiday;
 - 230 on late August Bank Holiday;
 - Airport is closed 25th December;
 - 100 on 26th December.

There are also limits on the number of aircraft movements which occur during specific operational periods:

- 400 aircraft movements per calendar year or 150 in any consecutive 3 months between 22.00 and 22.30 hours, or 12.30 and 13.00 hours on a Saturday;
- 6 aircraft movements between 06.30 and 06.59 hours on Mondays to Saturdays with no more than 2 in the first fifteen minutes.

Airport Operating Hours

Aircraft are permitted to take-off and land at the airport between the following hours:

- 06.30 and 22.30 on weekdays;
- 06.30 and 13.00 on Saturdays;
- 12.30 and 22.30 on Sundays;
- 09.00 and 22.30 on Public or Bank Holidays;
- Full closure on 25th December.

The final 30 minutes of operation on every day of the week is solely for flights scheduled earlier which have been unavoidably delayed.

Departure and Arrival Procedures

The routes flown to and from any major UK airport are prescribed by Standard Instrument Departures (SIDs) and Standard Terminal Arrival Routes (STARs). These departure and arrival routes are established by the Civil Aviation Authority. The UK Aeronautical Information Publication (AIP) for LCY outlines the restrictions on aircraft operators and aircraft movements to control noise⁹. These include:

- Standard noise abatement procedures for aircraft departing the airport following the Standard Instrument Departure (SID) instructions;
- Minimum requirements for aircraft departing LCY to climb straight to a minimum of 1000 feet above airport level before turning on track unless otherwise instructed by Air Traffic Control (ATC);
- Aircraft approaching LCY to follow a descent path which will result in the aircraft not being lower at any point than the altitude prescribed by the Instrument Landing System (ILS);
- A minimum altitude of 1,500 feet for aircraft carrying out visual approaches (where the airport is clearly in the pilot's sight) until established on the final approach (within approximately four miles of the airport);
- Instructions for following holding patterns over the airfield.

In addition to the above, aircraft approaching LCY follow a steep approach angle of 5.5 degrees on final approach (compared to 3 degrees in place at other airports) which helps keep aircraft higher for longer, reducing the noise impact on local communities.

⁹<https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/>

Noise Management and Mitigation Scheme (NOMMS)

As required by planning condition, LCY produced NOMMS, which is a framework to provide a robust system of noise monitoring and mitigation. NOMMS covers a wide range of measures and procedures to monitor and manage the noise impact of LCY operations. These include:

- Combined Noise and Track Monitoring System;
- Quiet Operating Procedures;
- Incentives and Penalties Scheme;
- Control of Ground Noise;
- Production of Annual Noise Contours;
- Minimise use of Reverse Thrust;
- Sound Insulation Scheme.

Further information on the various components of the NOMMS is set out in the following paragraphs.

The NOMMS is subject to regular review to keep it up to date. Since the previous NAP was published there have been two revisions, the first in 2019 and the most recent version of NOMMS was submitted to and approved by LBN in 2022. The 2022 version replaces previous versions. The next NOMMS review is due in 2027 and will include a review of all of the elements described in the sections below.

Combined Noise and Track Monitoring System

For many years LCY operated a system of four noise monitors (NMTs 1-4) which are positioned close to the airport, see Appendix H, as part of the Noise and Flight Track Monitoring System (NFTMS). The NFTMS was enhanced in 2016 and 2017 with the acquisition of two new fixed noise monitors (NMTs 5&6) which are located under the arrival and departure paths from each runway end and a seventh mobile noise monitor (NMT7), which is used to monitor aircraft related ground noise and reverse thrust usage.

The noise data from the NFTMS is used to validate the noise contours produced for the Sound Insulation Scheme and to monitor compliance with the noise contour area limit. The noise contour validation was most recently reviewed in 2022 taking into account the most recent three years of noise and flight track data (2019-2021) and was approved by LBN.

The Annual Performance Reports (APR) presents results from the NFTMS including:

- Average departure and arrival noise levels by aircraft type and airline (including sideline, flyover, and approach noise levels);
- Data on reverse thrust by aircraft type and airline;
- Data on flight track keeping performance by aircraft type and airline relative to corridors associated with departure standard instrument departure routes.

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 centre. Aircraft flight tracks are correlated with flight information and noise events. Using this information, LCY operate a web-based system (known as TraVis2) to share data from the flight track monitoring system with the public.

One of the actions for this NAP period is for the airport to introduce an enhanced flight monitoring system, which will allow the community to review flight tracks and aircraft noise as measured by the airport's NMTs and review real-time and historical data.

Quiet Operating Procedures

LCY requires that every operator of aircraft adopt procedures which will produce the least noise disturbance. Where aircraft manufacturers have established special procedures for the purposes of reducing noise, these are required to be applied to operations at the airport, subject to the safe operation of aircraft.

Quiet operating procedures at LCY also include the following:

- Minimum use of reverse thrust;
- Use of fixed electrical ground power or mobile electrical ground power units and minimum use of auxiliary power units;
- Operation of a steep glide slope (5.5 degrees);
- An Electronic Flight Progress Strips System (EFPS), which provides the ability to monitor the time that aircraft operate engines on the ground.

Incentives and Penalties Scheme

LCY operates a scheme of incentives and penalties based on departure noise levels as measured by the NFTMS. The penalty limits are the most stringent of any UK airport for daytime operations.

The scheme encourages airlines to operate aircraft more quietly, rewarding those airlines with credits. The airline with the most credits each year co-partners with the airport to deliver the Community Projects Fund each year.

Under the penalties part of the scheme a fixed penalty for exceeding upper noise limits is charged at a rate of £600 per dB of exceedance. The money from any penalties accrued is added to the Community Projects Fund.

The credit award thresholds and upper noise limits are reviewed annually with LBN to ensure they remain at appropriate levels.

Control of Ground Noise

Aircraft maintenance and repair work and ground running of aeroplane engines is restricted to certain hours set out below except in exceptional circumstances.

- 06.30 and 22.00 on weekdays;
- 06.30 and 12.30 on Saturdays;
- 12.30 and 22.00 on Sundays;
- 09.00 and 22.00 on Public or Bank Holidays.

The time of any engine ground running on the apron for maintenance is monitored. There is a ground running noise limit of 60 dB LAeq,12h which is calculated based on the average daily noise level during the worst (noisiest) month of the year. If the ground running noise level approaches within 1 dB of the limit, LCY will take action as necessary to ensure the limit is not exceeded. Any excessive or unnecessary operation of aircraft engines is investigated by the airport.

An Electronic Flight Progress Strips (EFPS) system has been installed at LCY which provides the ability to monitor the time that aircraft operate engines on the ground, from engine start-up until the time of departure from stand and following the time of landing until engine shutdown. Where engine running time from start-up to departure from the stand is found to regularly exceed 7.5 minutes this will be investigated by the airport and measures will be identified to reduce the engine running time as far as possible.

The use of Fixed or Mobile Electrical Ground Power on stands at LCY reduces the impact of noise. The use of diesel ground power units has been banned since the end of 2020. All stands now have either Fixed or Mobile Electrical Ground Power.

At LCY the use of auxiliary power units is limited to a maximum of 10 minutes before departure from the stand and 10 minutes after arrival except under exceptional circumstances.

Ground Noise Studies

LCY has been required to conduct a Ground Noise Study at least every three years since 2010, during this NAP period there has been two reviews with the most recent one submitted to LBN in 2022 and approved 2021. This was based on measurements taken in 2020. Noise measurements at locations where ground noise is the dominant noise source were broadly in line with those predicted under CADP.

The studies have all been reviewed by LBN with no additional noise mitigation measures required.

Annual Noise Contours

Air noise contours are produced annually, based on the actual summer (16th June – 15th September inclusive) movements in the previous year and the forecast summer movements in the following year. The noise contours are regularly validated using results from the NFTMS.

There is a limit on the area of the 57 dB L_{Aeq,16h} contour of 9.1 km² and LCY are required to produce a Noise Contour Strategy that seeks to reduce the area of the noise contours by 2030 and beyond. This Noise Contour Strategy was submitted to and approved by LBN in 2023 and will be reviewed again in 2028. The Noise Contour Strategy sets out the airport's plans to work with the airlines to transition to quieter new generation aircraft, which will result in reductions in the area of the noise contour. The noise contours are also used for determining eligibility under the Sound Insulation Scheme.

Reverse Thrust

The use of reverse thrust is required to be kept to the minimum required for the necessary deceleration of the aircraft and within the limits of the airline's standard operating procedures. Any instance of unusual or excessive use of thrust reversers is investigated and reported by way of reference to noise data collected at NMT7.

Sound Insulation Schemes

Residential

The Airport operates a three tier residential sound insulation scheme, offering treatment to eligible properties within the 57 dB L_{Aeq,16h} (Low Tier), 63 dB L_{Aeq,16h} (Middle Tier) and 66 dB L_{Aeq,16h} (High Tier) noise contours. The sound insulation works involve the treatment of habitable rooms (defined as bedrooms, dining rooms, living rooms and kitchen diners within eligible dwellings) to upgrade eligible external windows and doors. The scheme also provides the option of acoustic ventilation in accordance with the sound insulation standards given in the Noise Insulation Regulations. Previously treated properties are inspected every 10 years.

Properties within the 57 dB L_{Aeq,16h} contour (Tier 1) are eligible for works to achieve an average sound reduction of not less than 25 dB. Properties with double glazed windows will already meet this acoustic standard. Properties with single glazing are offered 100% of the costs of secondary glazing or 100% of the costs of thermal double glazing.

The eligibility daytime noise contour level of 57 dB L_{Aeq,16h} is the joint lowest of any UK airport.

Some local homes are not eligible for Tier 1 works as they were built inside the airport's noise contours after particular dates when the growth of the airport and its noise impact would have been known by developers. Partly as a result of a higher standard of glazing required under Building Regulations and partly as a result of planning conditions attached to the relevant planning permissions, those developers were required to install adequate sound insulation during construction of the property.

Eligible properties within the 63 dB L_{Aeq,16h} noise contour (Middle Tier) are offered acoustic vents and either secondary glazing or a grant of £4,219¹⁰ towards high acoustic performance double glazing.

Eligible properties within the 66 dB L_{Aeq,16h} noise contour (High Tier) are offered 100% of the cost of high acoustic performance double glazing and acoustic vents.

Due to the impacts of the COVID pandemic and the resulting decrease in aircraft movements, no dwellings have become newly eligible in recent

years. As the airport continues to recover and grow newly eligible dwellings will be contacted by the airport. A detailed list of the residential properties newly eligible for works under the scheme can be found in the APR each year. The APR is published on the LCY website:

<https://www.londoncityairport.com/corporate/Environment/Annual-Performance-report>

Due to the nature of sound insulation works the beneficiaries of the airports sound insulation schemes are those within the eligibility contours. In 2019 there were around 51,500 people within the 57 dB contour, around 5,750 people within the 63 dB contour and around 950 people within the 66 dB contour.

Purchase Offer

Any eligible property within the 69 dB LAeq,16h 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. To date no eligible properties have been identified as being within the 69 dB contour.

Public Buildings

Eligible community buildings such as schools and community centres are also offered improvement works under the scheme on a similar basis to the Residential Sound Insulation Scheme. Sound insulation works are assessed on a case-by-case basis and agreed with the local authority. Around 30 public buildings have been treated, including the University of East London, local schools, and community centres.

Aircraft Noise Categorisation Scheme (ANCS)

LCY operate an Aircraft Noise Categorisation Scheme (ANCS) based on a noise quota count (QC) system. Under the ANCS each aircraft type is assigned a separate quota count (QC) for arrivals and for departures, based on their certification noise levels and categorised into 1 dB bands. The noise level bands that correspond to each QC score are shown in Table 1. The quota count system is similar to that operated at many UK airports at night.

¹⁰ The grant is index linked, the grant was initially £3,000 per property.

Noise Level Band, EPNdB	QC Score
94 - 94.9	2
93 - 93.9	1.6
92 - 92.9	1.25
91 - 91.9	1
90 - 90.9	0.8
89 - 89.9	0.63
88 - 88.9	0.5
87 - 87.9	0.4
86 - 86.9	0.315
85 - 85.9	0.25
84 - 84.9	0.2
83 - 83.9	0.16
82 - 82.9	0.125
81 - 81.9	0.1
80 - 80.9	0.08
79 - 79.9	0.063
78 - 78.9	0.05
77 - 77.9	0.04
76 - 76.9	0.0315
75 - 75.9	0.025
74 - 74.9	0.02
73 - 73.9	0.016
72 - 72.9	0.0125
71 - 71.9	0.01
70 - 70.9	0.008
69 - 69.9	0.0063
68 - 68.9	0.005

Certification noise levels are measured in EPNdB and are assessed according to a standardised procedure set out by the International Civil Aviation Organisation (ICAO). The certification noise levels are measured at three points known as approach, sideline and flyover as shown in Figure 3. As the certification noise levels are assessed with an approach angle of 3°, an adjustment is made to the arrival certification noise levels to allow for the 5.5° approach used at LCY.

Table 10: QC Scores

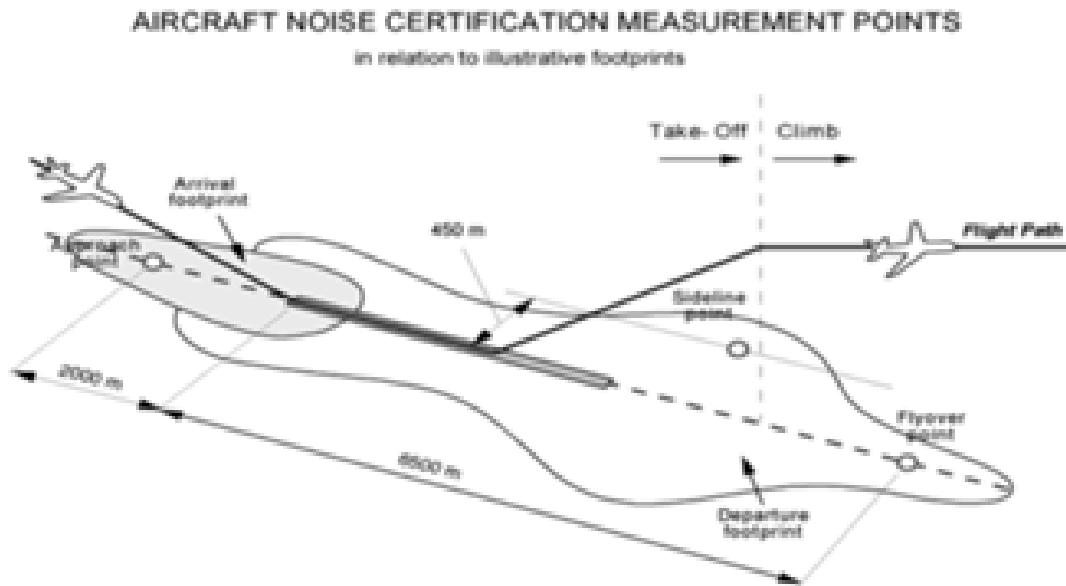


Figure 3 Certification Measurement Points¹¹

By allowing for arrival and flyover noise the ANCS takes into account communities further to the east and west of the airport under the flight paths, in addition to those closest to the airport.

The ANCS QC system has an annual limit, which is currently 22,000 per calendar year, with a maximum of 742.5 in any single week. These limits are reviewed regularly with LBN.

Under the ANCS all aircraft that operate at LCY must comply with the noise requirements of ICAO Chapter 4¹². In addition the following noise level limits will be applied:

- Flyover: 88.0 EPNdB;
- Sideline: 93.5 EPNdB;
- Approach 98.0 EPNdB.¹³

The sum of the certification noise levels at each of the three positions must also be less than 271 EPNdB.

Eastern Apron Extension Noise Barrier

As part of the CADP permission a new noise barrier has been installed to protect local residents from noise from the new CADP aircraft stands. This noise barrier covers the additional operational stands built as part of CADP. The space on the extended dock allows for a further four stands, which are not yet in use. The noise barrier will be extended further to cover these stands prior to their use.

¹¹ Reproduced from ERCD Report 0205 Quota Count Validation Study: Noise Measurements and Analysis, Civil Aviation Authority

¹² Chapter 4 of Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume 1, Aircraft Noise

¹³ This relates to the specific noise certification level on approach given in the aircraft's noise certificate (which relates to an approach at 3 degrees) rather than the Arrival Level used for determining QC scores as described above (which relates to an approach at 5.5 degrees.)

Appendix G

Noise Contour Strategy

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 33 of the CADP1 permission is as follows:

The area enclosed by the 57dB LAeq 16hr Contour shall not exceed 9.1 km² when calculated by the Federal Aviation Authority Integrated Noise Model Version 7 or later version.

Within five years of the Commencement of Development a Noise Contour strategy shall be submitted to the local planning authority for approval in writing which defines the methods to be used by the Airport operator to reduce the area of the Noise Contour by 2030.

Thereafter the Airport shall be operated in accordance with the approved Noise Contour strategy. The approved Noise Contour strategy shall be reviewed not later than the 5th year after approval and every 5th year thereafter in order to seek further reductions in the size of the Noise Contour by 2030 and beyond. The reviews shall be submitted to the local planning authority for approval in writing within 3 months of such review dates and implemented as approved.

This report responds to above by detailing a Noise Contour Strategy (NCS). It also details the existing noise management measures at the airport and how these fit into the proposed NCS, including a discussion of the key factors that control the area of a noise contour. The report concludes with the expected outcome of the strategy.

For clarity, this strategy is based on the existing consents for the airport.

A glossary of acoustic terminology is included in Appendix 1.

2.0 EXISTING NOISE MANAGEMENT

The current noise management at LCA is summarised in Appendix 2 which reproduces Section 6 from the airport's current (2018-2023) Noise Action Plan¹ (NAP).

Those elements that specifically relate to the Noise Contour are given below.

- 6.1 Aircraft Movement Limits
- 6.4 Departure and Arrival Procedures
- 6.5 Noise Management and Mitigation Scheme (NOMMS)
 - 6.5.1 Combined Noise and Track Monitoring System
 - 6.5.2 Quiet Operating Procedures
 - 6.5.3 Incentives and Penalties Scheme
 - 6.5.6 Annual Noise Contours
 - 6.5.7 Reverse Thrust
- 6.7 Aircraft Noise Categorisation Scheme (ANCS)

Two of these, the NOMMS and ANCS, are regularly reviewed with LBN.

The UK Aeronautical Information Package (AIP) for LCA outlines the restrictions on aircraft operators and on aircraft movements to aid in controlling noise emissions. These procedures have been in place for a number of years. The current restrictions are reproduced in Appendix 2.

¹ [https://assets.ctfassets.net/ggi4kbqgcch2/5OvmkWei5kwQopprH5T90P/995d6f59b252e1df2c92318e656c69bf/LCY Noise Action Plan 2018-2023.pdf](https://assets.ctfassets.net/ggi4kbqgcch2/5OvmkWei5kwQopprH5T90P/995d6f59b252e1df2c92318e656c69bf/LCY%20Noise%20Action%20Plan%202018-2023.pdf)

3.0 NOISE CONTOUR REDUCTION METHODS

The purpose of the Noise Contour Strategy (NCS) is to define the methods to be used by the airport operator to reduce the area of the Noise Contour² by 2030. The key factors that control the area of a noise contour are discussed below.

3.1 Amount of Activity

The number of aircraft movements affects the size of noise contours. The current aircraft movement numbers are already controlled by planning conditions. Compliance with these conditions is continually monitored by LCA with quarterly and annual reports provided to LBN.

3.2 Aircraft Types

Which aircraft types undertake the movements also has an effect on the size of noise contours. These are already limited by both physical restrictions, such as relatively short runway and the required steep approach, and Condition 18 which has resulted in an Aircraft Noise Categorisation Scheme (ANCS). This is applied by LCA with regular reports provided to LBN.

In addition, one of the purposes of the CADP1 application was to enable a new generation of quieter aircraft to use the airport. These quieter new generation aircraft have been in operation at LCA since 2017 and the airport is working with its airlines to encourage increased use of these quieter aircraft types. Increasing the use of these aircraft types will contribute to future reductions in the area of the Noise Contour.

One method of incentivising airlines to use quieter aircraft types is via landing fees. These are subject to commercial negotiations and are therefore confidential and bespoke to each airline, however LCA's desire to incentivise the use of next generation aircraft is a significant factor when agreeing these charges.

3.3 Operation Procedures

How the aircraft are operated also effects the size of noise contours. The existing planning conditions require the operation of a Noise Management and Mitigation Strategy (NOMMS). This shall include quiet operating procedures. LCA developed a NOMMS which was submitted to the local planning authority and formal approval received. The airport has subsequently applied the strategy and will apply any revised NOMMS agreed with LBN.

² The 57 dB LAeq 16hr Contour for the summer period.

The airport also operates an incentives and penalties scheme. This scheme monitors noise levels from individual departing aircraft. The scheme encourages airlines to operate aircraft more quietly, rewarding those airlines with credits towards co-partnering LCA delivering a Community Projects Fund each year. Under the penalties part of the scheme a fixed penalty for exceeding upper noise limits is charged. The credit award thresholds and upper noise limits are regularly reviewed to ensure they remain at appropriate levels.

For some airports the details of the local airspace influence the operational procedures such that they affect the size of their noise contours. However, the extent of the 57 dB $L_{Aeq,16h}$ contour for LCA is relatively limited, so any airspace changes are not expected to significantly affect the area of the contour.

3.4 Noise Contours

Air noise contours are produced annually, based on the actual summer (16th June – 15th September inclusive) movements in the previous year and the forecast summer movements for the upcoming year. The noise contours are regularly validated using results from the Noise and Flight Track Monitoring System (NFTMS). These noise contours are reported to LBN and are used to check compliance with the Condition 33 contour area limit. The contours can also be used to check progress towards expected future reductions in the area of the Noise Contour.

4.0 NOISE CONTOUR STRATEGY

The Noise Contour Strategy (NCS) includes several of the noise management measures that are in place at the airport. The airport is also working with the airlines to encourage the modernising of their fleets, and has facilitated the change through the provision of the airside elements of the CADP1 permission. This provides the required stands for them to operate from. Between them the NCS measures:

- control the number of aircraft operating at the airport
- control the aircraft types that can operate at the airport
- facilitate and encourage the use of quieter new generation aircraft
- require the use of quiet operating procedures
- monitor the noise from individual movements, both in the air and on the ground
- offer incentives and penalties to the airlines based on the noise of their flights
- monitor the development of the annual contours

5.0 EXPECTED OUTCOME

The Noise Contour Strategy (NCS) is to define the methods to be used by the airport operator to reduce the area of the Noise Contour by 2030. To assess the expected outcome of the NCS, noise contours have been computed for various years based on forecasts of the anticipated activity taking into account the measures outlined above.

The noise contours have been produced using the methodology within the approved Air Noise Contour Validation 2022 Assessment³. This uses the Aviation Environmental Design Tool (AEDT) software developed by the US Federal Aviation Administration (FAA) which replaced their Integrated Noise Model Version 7. The AEDT software has been used to produce the contours for LCA since 2019.

The resulting forecast area of the 57 dB $L_{Aeq,16h}$ Noise Contour is less than 9.1 km² for all of the assessed scenarios, and therefore no further measures are expected to be required. The progression of the noise contour area will be monitored until the next review of the strategy, due in 2027.

Duncan Rogers
for Bickerdike Allen Partners LLP

David Charles
Partner

³ Report reference: A11327_10_RP030_2.0 dated 21 April 2022.
LBN approval reference 22/02356/S106 dated 19 October 2022.

Appendix H

Location Of Noise Monitoring Terminals, (NMTS)

