

Submission to the 2024 Senate Inquiry into the Impact and Mitigation of Aircraft Noise

9th April 2024

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Update – Supplementary Information

London City Noise Action Plan

Further to my Senate Inquiry Submission dated the 5th of April 2024, I thought it prudent to offer additional information as follows:

London City Airport is a busy, centrally located airport amongst a heavily built-up residential area. This airport operates profitably and has won awards for its commitment to its surrounding community.

The London City Noise Action Plan which is like a lot of other airports in the UK including Heathrow is a perfect example of what protections and regulatory oversight communities require and need in Australia.

At the last AAB Meeting on the 6th of March 2024. I presented a copy of the London City Airport Noise Action Plan. Mr Curran from Airservices has been requested to look at this Noise Action Plan to see what can be learned and implemented here in Australia. Given that Mr Curran was already familiar with various Noise Action Plans from the UK, I doubt very much anything will progress from this AAB Action Item given the community has already been presented with a sanitised version.

Without Regulatory Oversight, Airservices will not be compelled to change for the better of the community which once again challenges Airservices commitment to abide by the Airservices Act 1995.

Enc 5.0 London City Noise Action Plan

London City Airport 
Get closer.

LONDON CITY AIRPORT

NOISE ACTION PLAN

2018 - 2023





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Section 1 - Our Community Airport

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 will become more important as the airport grows. Through listening and consulting, LCY hopes to continue to find the right balance between the social, economic and environmental realities of our 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 2013 LCY published a NAP, in accordance with the ENR, outlining LCY's extensive commitments to monitor and mitigate the impacts of aircraft noise from 2013 - 2018, which was formally adopted by the Secretary of State for Environment, Food and Rural Affairs (DEFRA) on 4th August 2014. It is a requirement of the ENR that the NAP will be reviewed at least every 5 years or revised as necessary. This document is the outcome of such a review, superseding and providing an update on the performance of the NAP (2013 - 2018) and covering the period from 2018 - 2023, in accordance with the ENR.

The review included a 6 week consultation, to ensure that views of the local community as well as key stakeholders were fully represented and incorporated into the document. This input has been integral and invaluable to the review, ensuring that noise mitigation continues to be enhanced and effective over the next 5 years.

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 protect the local community adequately, particularly those worst affected. In order to demonstrate this LCY's noise impact has been assessed by qualified independent consultants and this assessment is documented in Appendix A.

As prescribed by the END and ENR, this NAP (2018 - 2023) 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 based on 2016 data;
- The progress made against the actions described in the NAP (2013 - 2018);
- On-going actions;
- Proposed new actions introduced as part of the NAP (2018 - 2023).



Section 2 - Introduction

London City Airport (LCY) is the city's most central airport, in London's Royal Docks, an area of rapid regeneration and investment, just five miles from the City of London and close to the dynamic and fast-growing East London.

LCY is the UK's most punctual airport¹ 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. Currently twelve airlines serve 46 domestic, European and U.S. routes. A dedicated Jet Centre also operates private and business aviation flights.

Last year the airport celebrated its 30th anniversary and was named the European Regions Airline Association (ERA) Airport of the Year.

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 £750m².

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. In 2017 66% of LCY staff lived within 5 miles of the airport;
- A variety of STEM focused education programmes such as our annual 'STEM in Aviation Event' to address this UK wide skills issue. The airport's collaboration with NATS, Bechtel and Accenture for this event was presented with a gold award from the Corporate Engagement Awards for the best collaboration for a single event;
- Support of local businesses through supply chain opportunities and in particular through the annual Royal Docks Meet the Buyer event;
- Engaging and supporting local community partners such as community centres and charities;
- Regularly communicating with local people and partners so they are aware of changes to operations as well as opportunities at the airport.

¹ Civil Aviation Authority

² York Aviation research (2015), <https://www.londoncityairport.com/corporate/responsible-growth>



Section 3 - Airport Planning and Long Term Development

In July 2016 LCY's planning application The City Airport Development Plan (CADP) (LBN ref: 13/01228/FUL) was granted planning permission for eight new aeroplane parking stands – to accommodate larger yet quieter next generation aircraft – a parallel taxiway to optimise runway capacity during peak operating hours and a terminal extension to ensure that LCY's convenience and speed-of-transit propositions are maintained.

The need for the enhanced and expanded infrastructure is driven by two factors:

- Continued demand for air travel across the South-East and from our passengers to travel during peak periods which requires more terminal and runway capacity;
- Our ambition to welcome the newest generation of quieter, more fuel efficient aircraft which require larger parking stands.

The expansion of the airport is necessary– not just to satisfy growing demand for business travel, but also to support the ongoing development of the Royal Docks and the east of London. The airport currently employs around 2,200 people, of which 67% are local. CADP has the potential to create as many as 1,600 new jobs and 500 construction jobs, providing additional employment in east London.

In terms of the wider UK economy, the airport already contributes £750m² every year – through business and leisure tourist spend, the operation of businesses on site, productivity savings and air passenger duty – and once CADP is completed it will double to approximately £1.5billion².

The CADP planning permission is accompanied by a detailed and comprehensive Section 106 (S106) Planning Agreement (dated April 2016). These cover a wide range of environmental matters. These include a number of noise monitoring and mitigation measures, of which some are new and some are replicated from the previous 2009 planning permission. These were detailed in the NAP (2013 – 2018). The new measures include (but are not limited to):

- Aircraft movement limits;
- A new fixed contour area limit;
- An improved Noise and Flight Track Monitoring System;
- A new Incentives and Penalties Scheme;
- Measures to control and reduce noise from aircraft on the ground;
- An enhanced Sound Insulation Scheme;
- A new Aircraft Noise Categorisation Scheme.

As well as an enhanced sound insulation scheme to mitigate aircraft noise, LCY are also providing advanced sound insulation for properties close to the airport to mitigate the noise impacts from construction activities. Nearly 600 properties have been offered treatment under this scheme, providing high performance double glazing and acoustic ventilation.

These measures are described in further detail in Section 6 of this document.

The Planning Agreement requires LCY to submit an Annual Performance Report³ (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 various actions detailed in this NAP.

Construction of CADP commenced on 25th October 2017 and will take approximately 4 years to deliver. This is the largest infrastructure development programme ever undertaken at the airport. Beyond CADP the airport's existing published Master Plan 2006 envisages further growth, and the airport is reviewing its next steps.

³ <https://www.londoncityairport.com/corporate/Environment/Annual-Performance-report>



Section 4 - Airport Operations

In 2017 the airport handled approximately 4.5 million passengers, representing an increase of 50% since 2012. LCY operates with around a 50/50 split between business and leisure passengers and serves domestic and European routes as well as a daily service to New York, JFK. Passenger growth has been strong in 2018 and the airport predicts passenger numbers of between 4.7 and 4.8 million by the end of the year.

The total number of aircraft movements at the airport increased from 73,642 in 2013 to 80,299 in 2017. This is an increase of 9%.

LCY has a limit of 111,000 actual aircraft movements and 120,000 noise factored movements per annum (more information on this can be found in Section 6 Noise Management). For 2017, LCY had a total of 80,299 actual aircraft movements and 88,425 noise factored movements.

For further information please visit London City Airport's Consultative Committee (LCACC) website:

<http://www.lcacc.org/statistics/index.html>.

Section 5 - 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 F, 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.

The NPPF consolidates nearly all policy statements⁴, circulars and guidance documents into a single, simpler framework and replaces the planning guidance documents, such as PPG 24, Planning and Noise (1994).

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

Airport NAPs support the Government's main policy objective concerning noise – as set out in The APF (2013) – to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise. 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.

⁴ There are some exceptions, for example Planning Policy Statement 10 (PPS10).

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

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

Appendix A-4 of the Appraisal of Sustainability (AoS), carried out for and based on the contents of the ANPS, confirms 54 dB $L_{Aeq,16h}$ as the onset of significant community annoyance.

5.7 The London Plan (March 2016)

The London Plan sets out the Mayor of London's strategic approach to development in the capital and is the upper tier of the Development Plan. Policy 6.6 is the main policy covering aviation and it requires airport proposals to take full account of environmental impacts particularly noise.

A draft of a new London Plan is currently being developed.

5.8 London Borough of Newham's (LBN's) Core Strategy (adopted January 2012)

LBN's Core Strategy forms the lower tier of the Development Plan. Policy INF1 is directly related to the airport and supports its optimisation subject to ensuring careful consideration is given to the consequential impacts on the Royal Docks.

In addition, SP2 Healthy Neighbourhoods under policy point 3 recognises the need to improve employment levels and reduce poverty whilst attending to the environmental impacts of economic development which includes noise.

The Core Strategy superseded most saved policies in the 2001 Newham Unitary Development Plan (UDP). However the Core Strategy confirms that Policies EQ45, EQ47 and EQ48 remain in place until further work is complete. These policies resist development where unacceptable environmental impacts arise and require the submission of noise assessments for proposals likely to considerably increase noise.

LBN are in the process of reviewing their Local Plan, and the review was submitted to the Planning Inspectorate on 28th Feb 2018.

5.9 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 realised⁵.

⁵ <http://www.sustainableaviation.co.uk/>





Section 6 - Noise Management

As noted in Section 4, LCY has a number of existing noise mitigation measures already in place. As part of the CADP permission many new schemes designed to mitigate the noise impact of aircraft operations have been introduced or are being introduced, these are a requirement of the CADP planning permission. These, together with the short runway length and steep approach angle, limit the types of aircraft which can use the airport.

LCY is committed to minimising, where possible, the noise impact of its operations on the local area.

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 discussed in section 6.5.8.

6.1 Aircraft Movement Limits

As part of the planning permission granted by LBN in July 2009 LBN introduced strict limits to the number of daily aircraft movements, these have been retained within the CADP permission. These include:

- 100 per day on Saturdays, 200 per day on Sundays, but no more than 280 on any consecutive Saturday and Sunday;
- 592 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;
 - ◊ 100 on 26th December.

Also retained in the CADP permission are the previous limits for 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.

In addition as part of the CADP permission a new limit of 45 scheduled movements per hour has been introduced and the annual movement limit of 120,000 movements per year has reduced to 111,000 per year.

6.2 Airport Operating Hours

The airport’s approved operating hours are unchanged under CADP. The airport is permitted to operate flights 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.

There is a 24 hour period of closure from Saturday lunchtime to Sunday lunchtime. The final 30 minutes of operation on every day of the week is solely for flights scheduled earlier which have been unavoidably delayed.

6.3 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. Communication can be either by telephone, post, email or via the LCY website.

Each complaint or enquiry is registered by the airport, investigated, responded to and resolved where practical. 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 they are reported annually in the APR.

Figures 1 and 2 present the number of environmental complaints received by LCY since 2013 in absolute terms and per 1,000 aircraft movements respectively. 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;
- Other – non-noise related complaints such as air quality or alleged TV signal interference;
- Non-LCY – complaints regarding air traffic not associated with this airport.

As displayed in Figures 1 and 2 the number of noise complaints remained broadly constant until 2016. The increase in 2016 has been attributed to the introduction of RNAV routes, which concentrate flights along the existing flight paths, thereby reducing the total area overflown, but also leading to an increased number of overflights for those directly below the flight paths.

The number of complaints remains low, with less than 5 complaints per 1,000 aircraft movements.

Complaints can be made via the LCY website at:

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

Environmental complaints received by London City Airport

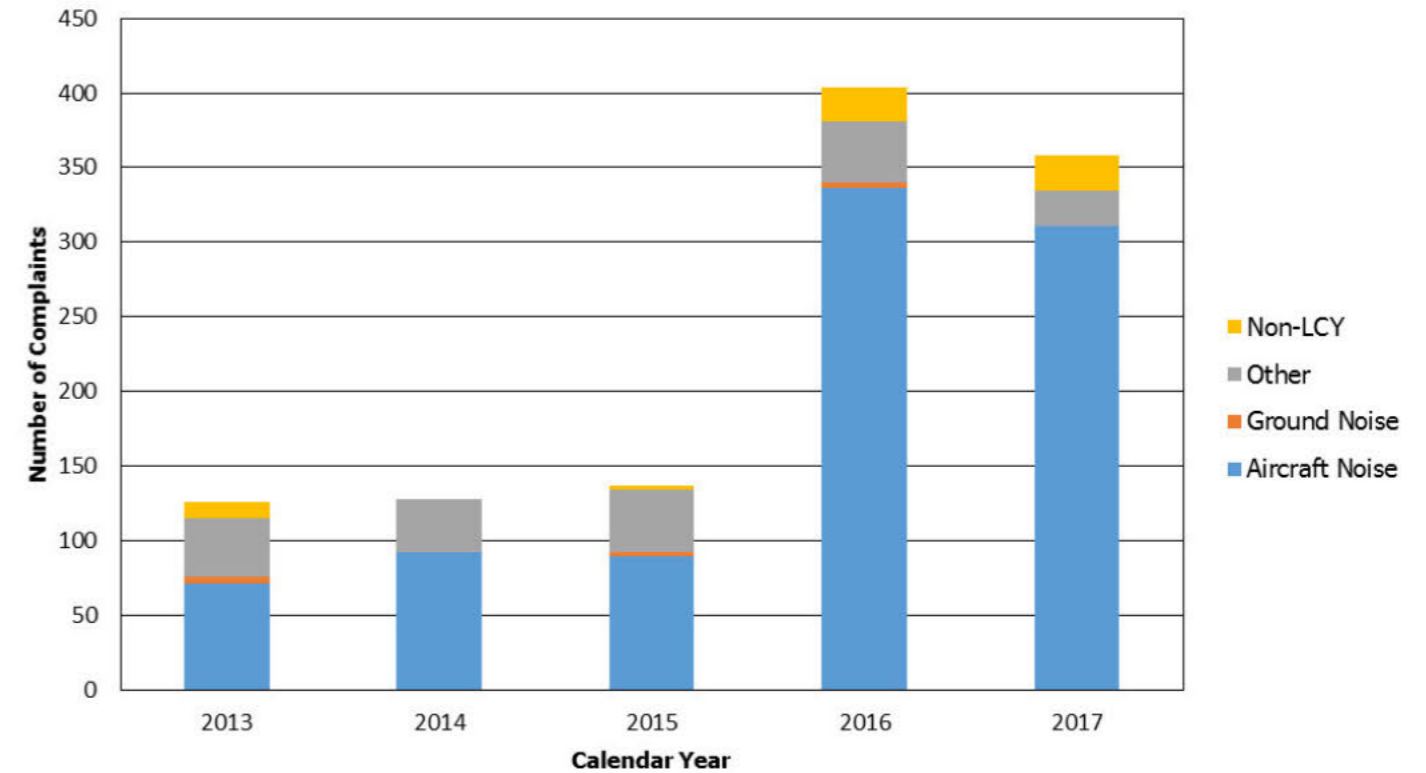


Figure 1 Total Environment complaints received by London City Airport (2013–2017)

Environmental complaints received by London City Airport

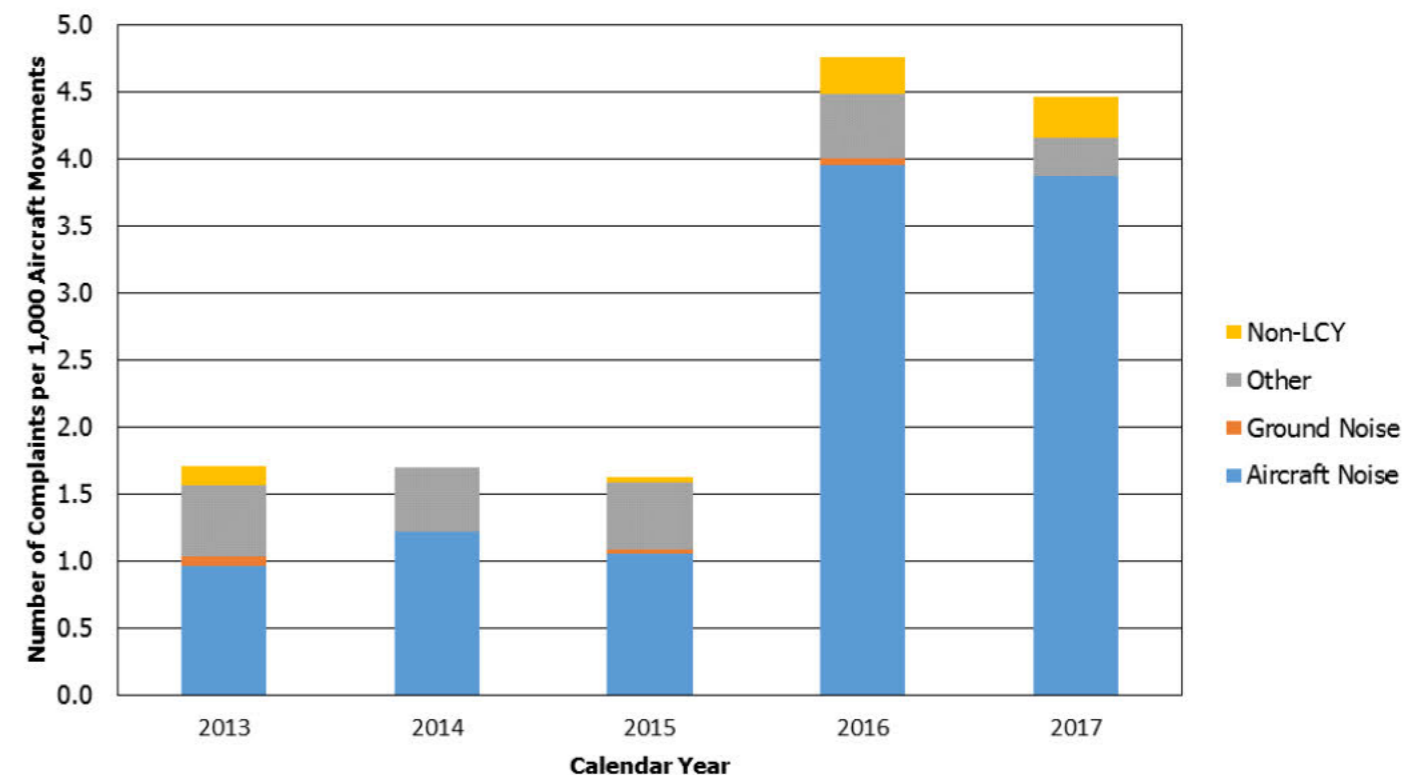


Figure 2 Environmental Complaints received by London City Airport (2013–2017) per 1,000 Aircraft Movements

6.4 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 noise⁶. 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 (aal) 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.

⁶ http://www.nats-uk.ead-it.com/public/index.php%3Foption=com_content&task=blogcategory&id=92&Itemid=141.html

6.4.1 Airspace Strategy

LCY recently underwent an airspace change to introduce RNAV1 along its flightpaths. This was a requirement under Phase 1 of the London Airspace Management Programme (LAMP) to modernise airspace, and was therefore mandatory. The change had the effect of concentrating aircraft along narrower flightpaths.

The CAA is currently completing a post-implementation review of the airspace change, and LCY will consider the outcome of the review when it is made available.

LCY will also continue to work with NATS and local communities to consider and consult on any further changes that will be necessary as the London airspace continues to be modernised to ensure LCY is aligned with emerging policy.

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 than would otherwise necessary.

LCY will constantly review future opportunities to lift altitude restrictions as part of the modernisation of London airspace and will work with other London airports to understand and minimise their combined impacts.



6.5 Noise Management and Mitigation Scheme (NOMMS) (approved May 2017)

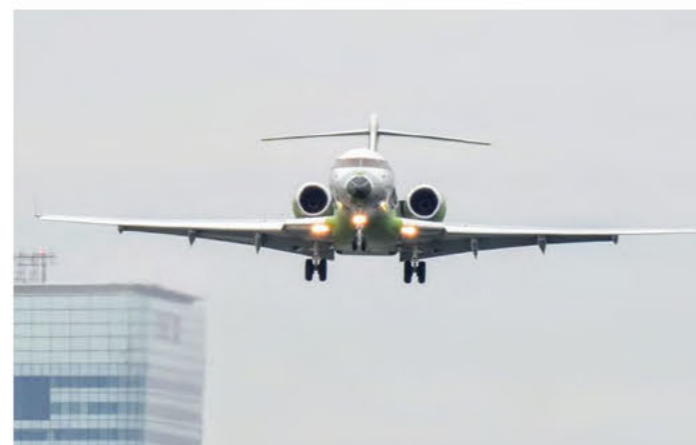
As required by planning condition, LCY have produced NOMMS which is a framework to provide a robust system of noise monitoring and mitigation. This includes the measurement and monitoring of a range of different airport operations that generate noise, such as aircraft arriving and departing and APU usage.

NOMMS has been expanded under CADP to cover 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.

Once approved by LBN in May 2017 NOMMS replaced the previous Noise Management Scheme and Temporary Noise Monitoring Strategy.



6.5.1 Combined Noise and Track Monitoring System

For many years the airport has operated a system of four noise monitors (NMTs 1-4) which are positioned close to the airport and primarily measure sideline noise as part of the Noise and Flight Track Monitoring System (NFTMS). The NFTMS has been enhanced with the addition of two further noise monitors (NMTs 5&6) which are located under the arrival and departure paths from each runway end (for a map indicating the locations of these monitors see Appendix E).

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 contour area limit introduced as part of the CADP permission. It is also used for determining credit awards and penalties as part of the Incentives and Penalties Scheme and for categorisation purposes following the introduction of the Aircraft Noise Categorisation Scheme.

A seventh mobile noise monitor (NMT7) has been added to the scheme, which is used to monitor aircraft related ground noise and also reverse thrust usage. It has been initially located close to the LBN offices in Building 1000 adjacent to the runway, but will be relocated as required.

The flight track monitoring component of the system is permanently linked to the airport's radar feed, which is provided by the local Air Traffic Control centre. Aircraft flight tracks are correlated with flight information and noise events. Based around this information, the airport have introduced a web-based system (known as TraVis2) to share data from the flight track monitoring system with the public.

In addition to the seven permanent noise monitors, the airport has mobile noise monitoring equipment. This equipment is used to monitor noise levels further from the airport, and the reports from this monitoring will be made available on LCY's website.

The Annual Performance Report (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.

6.5.2 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 LCY, 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 where possible 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.

6.5.3 Incentives and Penalties Scheme

A scheme of incentives and penalties based on departure noise levels as measured by the NFTMS has been introduced following approval by LBN in May 2017. The penalty limits are the most stringent of any UK airport for daytime operations.

LCY are setting up and funding an annual Community Projects Fund which will be used to deliver specific project(s) in the local community. It is subject to an annual minimum of £75,000. Community projects and charities from the Local Area⁷ can apply for funding for a specific project.

The scheme encourages airlines to operate aircraft more quietly, rewarding those airlines with credits towards co-partnering LCY delivering a 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 will be reviewed annually with LBN to ensure they remain at appropriate levels.

6.5.4 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.

⁷The "Local Area" Boroughs includes the 11 East London Boroughs of Newham, Tower Hamlets, Greenwich, Bexley, Lewisham, Southwark, Barking & Dagenham, Havering, Redbridge, Waltham Forest and Hackney, as well as Epping Forest District Council.

- 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 $L_{Aeq,12h}$ 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 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 Electrical Ground Power (FEGP) on stands at LCY reduces the impact of noise with the reduction of the use of mobile Ground Power Units (GPUs) which run on diesel. The use of mobile GPUs will be banned from the end of 2020, until then their use is restricted to the airport's operational hours and 30 minutes before and after. FEGP is already installed at Stands 1-10 and 15 and as part of the CADP permission is required to be installed on any new or altered stands prior to their use and on Stands 12-14 within one year of delivering any new or altered stands.

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.

6.5.5 Ground Noise Studies

LCY are required to conduct a Ground Noise Study every three years. Three such studies have been undertaken to date in 2010, 2013 and 2016.

The 2010 Ground Noise Study was reviewed by LBN with no additional noise mitigation measures required. Noise measurements made in 2013 and 2016 were not significantly different to those measured in 2010.

6.5.6 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.

The CADP planning permission has introduced 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. The noise contours are also used for determining eligibility under the Sound Insulation Scheme.

6.5.7 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.

6.5.8 Sound Insulation Schemes

Residential

As part of the CADP permission, the Airport has upgraded its two tier scheme to an improved three tier scheme, offering sound insulation treatment to eligible residential properties within the 57 dB $L_{Aeq,16h}$ (Tier1) and 66 dB $L_{Aeq,16h}$ (Tier 2) and adding a third tier for properties within the 63 dB $L_{Aeq,16h}$ (Tier 3) noise contour. 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 more stringent than that used at other UK airports.

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 66 dB $L_{Aeq,16h}$ noise contour (Tier 2) are offered a higher standard of noise reduction and, following CADP, the scheme has now been enhanced to provide 100% of the cost of high performance double glazing.

As part of the CADP permission, an additional intermediate tier (Tier 3) has been introduced for properties within the 63 dB $L_{Aeq,16h}$ noise contour. This provides acoustic vents and either secondary glazing or a grant of £3,000 towards high performance double glazing.

A detailed list of the latest residential properties eligible for works under the scheme can be found on the LCY Consultative Committee website:

<http://lcacc.org/meeting-papers-key-documents/airport-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 2017 there were around 32,500 people within the 57 dB contour, around 2,400 people within the 63 dB contour and around 700 people within the 66 dB contour.

Purchase Offer

Any eligible property within the 69 dB $L_{Aeq,16h}$ 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.

Construction Noise Sound Insulation Scheme

As part of the CADP permission, as well as an enhanced sound insulation scheme to mitigate aircraft noise, LCY are also providing advanced sound insulation for properties close to the airport to mitigate the noise impacts from construction activities. Nearly 600 properties have been offered treatment under this scheme, providing high performance double glazing and acoustic ventilation.

Noise Insulation Payment Scheme (NIPS)

The airport is committed to a scheme where any new residential developments within the 57 dB or 66 dB $L_{Aeq,16h}$ noise contours which received planning permission but had not been built as of 9th July 2009 will benefit from a noise insulation payment scheme that funds during construction any additional works anticipated as a result of the airport's 2009 planning approval, over and above any pre-agreed planning conditions (or Building Regulations standards) with regard to external sound insulation.

As part of the CADP permission the NIPS has now been extended to developments within the 57 dB, 63 dB or 66 dB $L_{Aeq,16h}$ CADP contours, but outside the corresponding 2009 planning contours, if the development was granted planning permission prior to the CADP planning permission in July 2016.

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.

6.6 Noise Factored Movements (NFM)

All aircraft operating at LCY are required to demonstrate their ability to operate within one of five departure Noise Categories, as shown in Table 1.

The Noise Reference Level is the departure noise level as measured at NMTs 1-4. It is expressed in PNdB and calculated using an established procedure described in the CADP permission.

| Category of Aircraft | Noise Reference Level | Noise Factor |
|----------------------|-----------------------|--------------|
| A | 91.6–94.5 | 1.26 |
| B | 88.6–91.5 | 0.63 |
| C | 85.6–88.5 | 0.31 |
| D | 82.6–85.5 | 0.16 |
| E | Less than 82.6 | 0.08 |

Table 1: Aircraft Noise Categories

As this table demonstrates, LCY has an upper noise limit of 94.5 PNdB based on an annual average of departure noise levels for a given aircraft type and therefore only those aircraft categorised as Category A or less are permitted to operate at LCY.

Each category is also assigned a noise factor as shown in Table 1 above and there is currently a limit of 120,000 noise factored movements per year. In addition noise factored movements are restricted to 125% of the weekly movements limit.

6.7 Aircraft Noise Categorisation Scheme (ANCS)

A new Aircraft Noise Categorisation Scheme (ANCS) has been introduced at the airport based on a noise quota count (QC) system. The scheme has been running alongside the existing noise factored system since January 2018. After one year of operating simultaneously the NFM system is due to be replaced by the ANCS.

Under the ANCS each aircraft type will be assigned a separate quota count (QC) for arrivals and for departures, based on their certification noise levels and categorised into 1 dB bands, rather than the 3 dB bands used in the existing NFM system. The noise level bands that correspond to each QC score are shown in Table 2 (right). The quota count system is similar to that operated at many UK airports at night.

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.

| 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 |

Table 2: QC Scores

By allowing for arrival and flyover noise the ANCS takes into account communities to the east and west of the airport, in addition to those to the north and south who were already taken into account under the NFM system.

The ANCS QC system has an annual limit designed to be equivalent to the NFM limit of 120,000 noise factored movements. The annual QC limit has initially been set at 22,000 per calendar year, with a maximum of 742.5 in any single week. These limits will be reviewed after the first year of operation and periodically after that.

Under the ANCS all aircraft that operate at LCY must comply with the noise requirements of ICAO Chapter 4⁹.

In addition no aircraft louder than those permitted to operate at LCY under the NFM system will be allowed to operate under the ANCS and the following noise level limits will be applied:

- Flyover: 88.0 EPNdB;
- Sideline: 93.5 EPNdB;
- Approach 98.0 EPNdB.¹⁰

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

6.8 Permanent Eastern Apron Extension Noise Barrier

As part of the CADP permission a new noise barrier is being installed prior to the use of the new aircraft stands on the eastern apron.

⁹ Chapter 4 of Annex 16 to the Convention on International Civil Aviation, Environmental Protection, Volume 1, Aircraft Noise

¹⁰ 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.)

6.9 London City Airport Consultative Committee (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/>

6.10 Mitigation measures and residual Noise Impact Assessment

LCY’s performance against all legal limits, including any breach of planning limits will be reported in the APR. The most recent APR (2017) confirmed that there were no issues of non-compliance with the operational requirements of the CADP permission.

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 operation. This is assessed in Appendix A and indeed forms part of the overall conclusion of the performance of the NAP in Section 7.

AIRCRAFT NOISE CERTIFICATION MEASUREMENT POINTS in relation to illustrative footprints

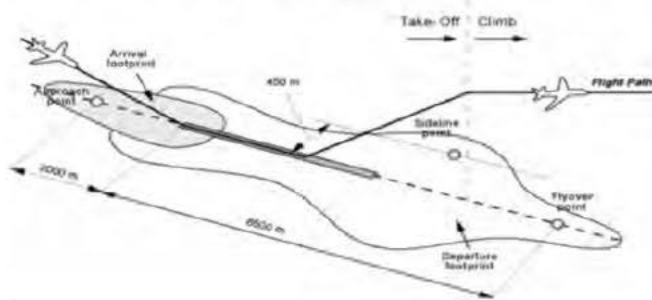


Figure 3 Certification Measurement Points⁸

⁸ Reproduced from ERCD Report 0205 Quota Count Validation Study: Noise Measurements and Analysis, Civil Aviation Authority



Section 7 - Conclusions

This Noise Action Plan or NAP (2018 – 2023) builds upon the previous NAP by describing the development of key noise control measures introduced as part of CADP to supplement the mitigation methods previously introduced which continue to protect the local community from the effects of aircraft noise.

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, particularly those worst affected.

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 2016;
- The noise measures already in place at LCY and those which have been or soon will be introduced as part of the CADP permission.

The assessment has found that the environmental noise impact of existing operations at the airport, based on both the 2016 noise contours and the measures described in Sections 5 & 6 of the Noise Action Plan are acceptable. This assessment is detailed in Appendix A.

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.

This review is and will continue to be part of the airport's Annual Performance Report (APR). The APR is a requirement through the airport's S106 Planning Obligations. The APR can be found at:

<https://www.londoncityairport.com/corporate/Action-Plans-and-Reports/Annual-Performance-report>



Glossary of Terms & Abbreviations

aal

above aerodrome level

Agglomeration

An area having a population in excess of 100,000 persons, and a population density equal to or greater than 500 people per km² and which is considered to be urbanised

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

AOS

Appraisal of Sustainability

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 publically produces which details progress made of the actions contain 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

INM

Integrated Noise Model

 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 L_{Aeq} over the period 0700 – 2300, local time (for strategic noise mapping this is an annual average)

 L_{day}

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

 L_{den}

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

 L_{night}

The L_{Aeq} 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

NIPS

Noise Insulation Payment Scheme

Noise Contour

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

Noise Factor

A numerical factor applied to a noise source, dependent on the time, type or level of noise produced.

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

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 & 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 2016 and used the Integrated Noise Model (INM) software version 7.0d. 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, with a 24 hour period of closure at weekends, the assessment criteria within the END dictated that the following parameters were used:

| Parameter | Time Period (hh:mm) | Number of hours |
|---------------|---------------------|-----------------|
| L_{den} | 07.00 – 07.00 | 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 3: END assessment parameters

Effects of Noise Exposure

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 more noisy 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, it does not affect the shape or size of the contours to any significant degree. 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.

Note 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.

Population and Dwelling Statistic tables

The estimated total number of people and dwellings exposed above various noise levels in 2016 have been derived from the strategic 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 Tables 4 to 8 respectively.

Guidance on how to determine the acceptability of noise levels has been provided to airport operators by Defra¹¹. 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 $L_{Aeq,16h}$ as this is the level which Government legislation marks as the point at which there is onset of significant community annoyance.

There are no dwellings and no noise sensitive buildings exposed to 69 dB $L_{Aeq,16h}$ or greater as was the case in 2011.

The eligible dwellings within the 57 dB $L_{Aeq,16h}$ noise contour have been, or soon will be treated under the airport's sound insulation (SI) scheme (see Section 6.5.7). 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, which limit the number and size of the aircraft and ensure that aircraft are operated as quietly as possible.

¹¹Guidance for Airport Operators to produce noise action plans under the terms of the Environmental Noise (England) Regulations 2006 (as amended), date July 2017, Department for Environment Food & Rural Affairs.

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 which is given as an Interim Target in the World Health Organisation Guidelines.¹²

LCY has some of the strictest operating restrictions of any airport in the UK and its sound insulation scheme covers a far greater area 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 measures described in Section 6 of the Noise Action Plan.

In addition to this 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/Action-Plans-and-Reports/Annual-Performance-report>

¹² Night Noise Guidelines for Europe, World Health Organisation, 2009

| Noise Level (dB L_{den}) | Number of Dwellings | Number of People |
|-----------------------------|---------------------|------------------|
| ≥ 55 | 28,450 | 75,200 |
| ≥ 60 | 6,450 | 15,900 |
| ≥ 65 | 1,050 | 2,100 |
| ≥ 70 | 0 | 0 |
| ≥ 75 | 0 | 0 |

Table 4: Estimated total number of people and dwellings above various noise levels, L_{den}

| Noise Level (dB L_{day}) | Number of Dwellings | Number of People |
|-----------------------------|---------------------|------------------|
| ≥ 54 | 34,550 | 92,200 |
| ≥ 57 | 17,300 | 43,500 |
| ≥ 60 | 6,550 | 16,200 |
| ≥ 63 | 1,650 | 3,400 |
| ≥ 66 | 800 | 1,500 |
| ≥ 69 | <50 | <100 |

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

| Noise Level (dB $L_{evening}$) | Number of Dwellings | Number of People |
|---------------------------------|---------------------|------------------|
| ≥ 54 | 27,150 | 71,200 |
| ≥ 57 | 10,950 | 27,400 |
| ≥ 60 | 4,350 | 10,800 |
| ≥ 63 | 1,200 | 2,400 |
| ≥ 66 | 400 | 600 |
| ≥ 69 | 0 | 0 |

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

| Noise Level (dB $L_{Aeq,16h}$) | Number of Dwellings | Number of People |
|---------------------------------|---------------------|------------------|
| ≥ 54 | 33,150 | 88,300 |
| ≥ 57 | 16,000 | 40,100 |
| ≥ 60 | 6,050 | 14,800 |
| ≥ 63 | 1,550 | 3,200 |
| ≥ 66 | 650 | 1,100 |
| ≥ 69 | <50 | <100 |

Table 7: Estimated total number of people and dwellings above various noise levels, $L_{Aeq,16h}$

| Noise Level (dB L_{night}) | Number of Dwellings | Number of People |
|-------------------------------|---------------------|------------------|
| ≥ 48 | 2,250 | 5,200 |
| ≥ 51 | 1,050 | 2,000 |
| ≥ 54 | 200 | 300 |
| ≥ 57 | 0 | 0 |
| ≥ 60 | 0 | 0 |
| ≥ 63 | 0 | 0 |
| ≥ 66 | 0 | 0 |

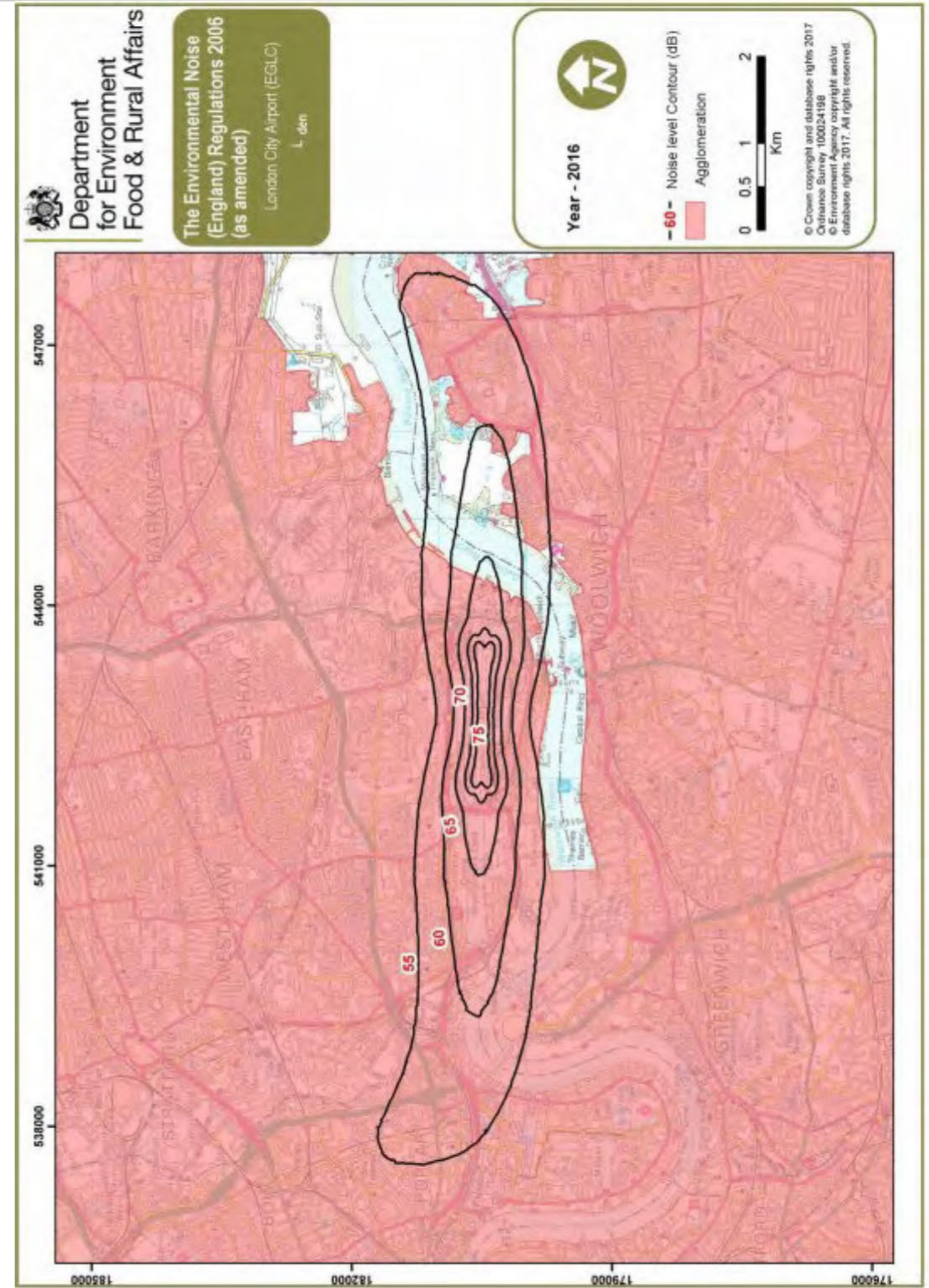
Table 8: Estimated total number of people and dwellings above various noise levels, L_{night}

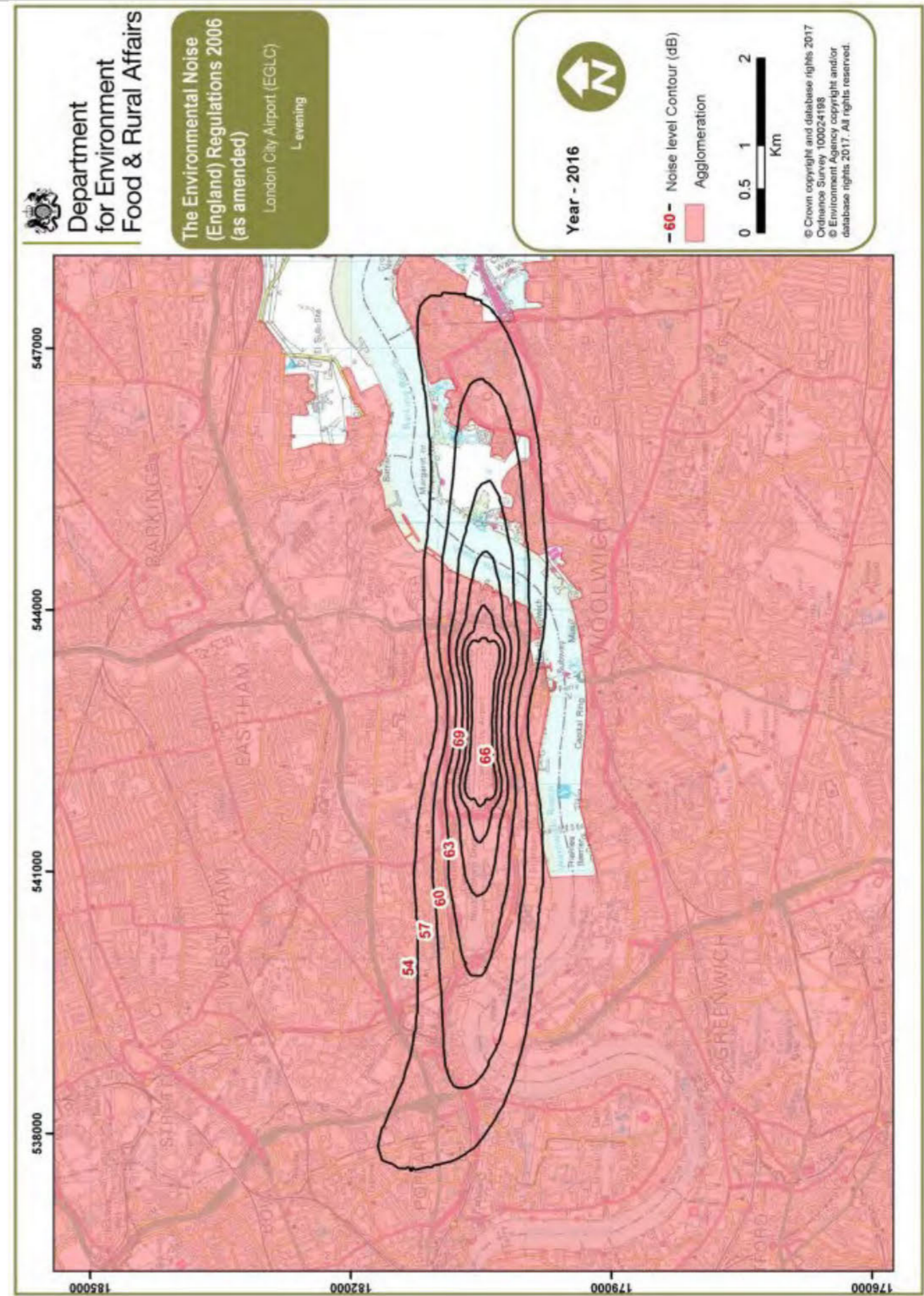
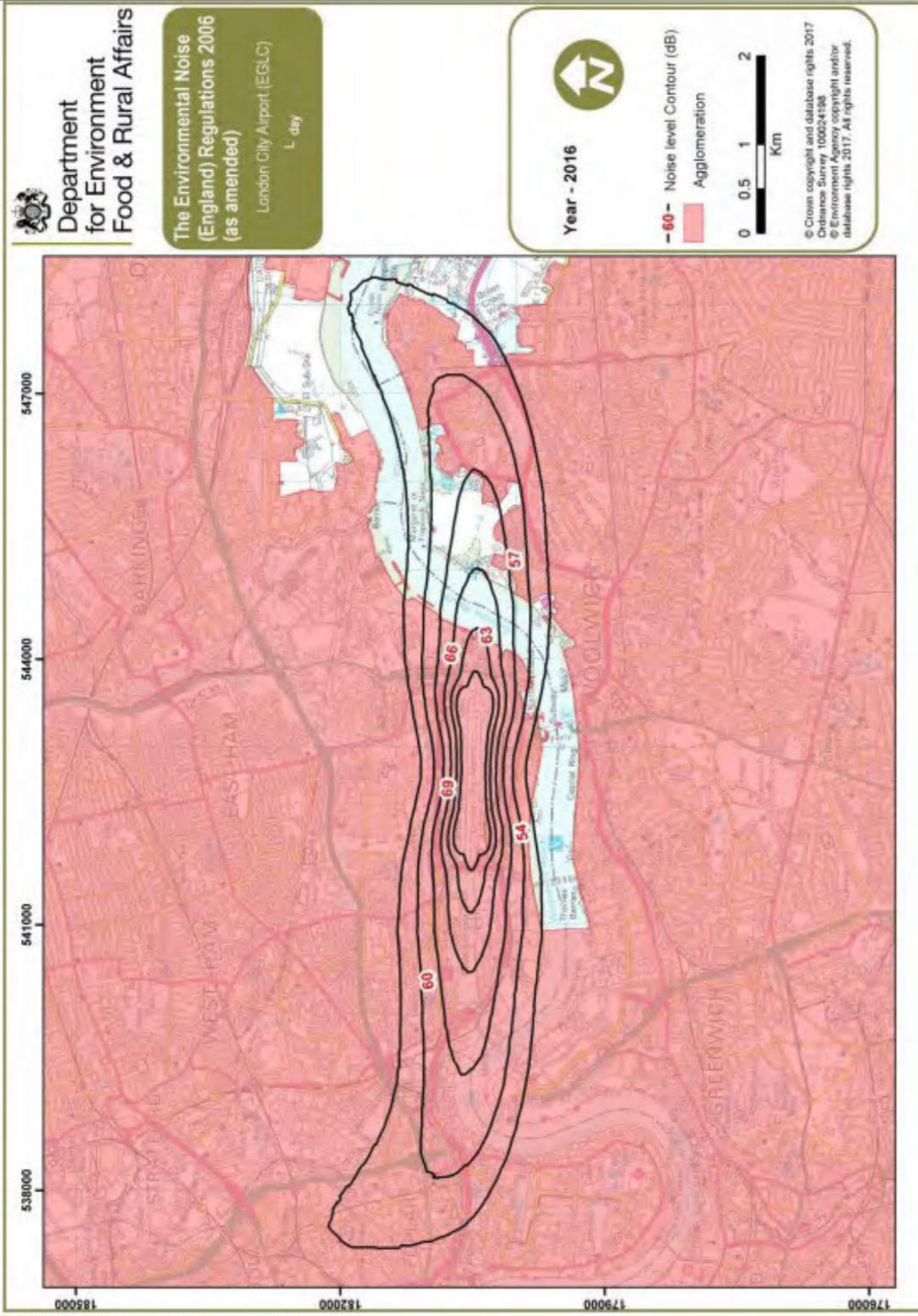
The dwelling counts in the tables include a count of the residential addresses of rooms within multi-occupancy student flats at the University of East London. The counts are therefore greater than would be derived from a consideration of individual dwellings alone.

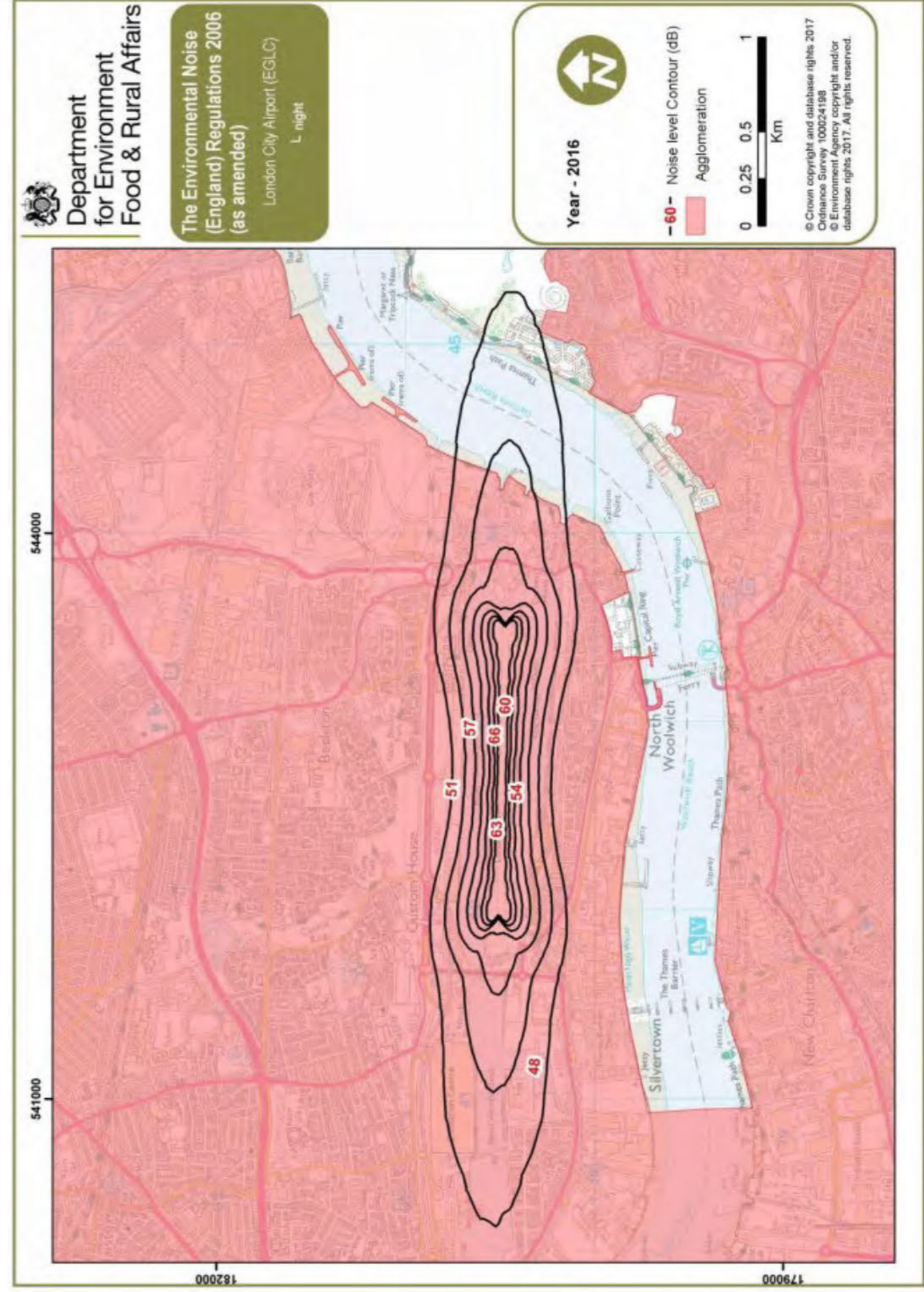
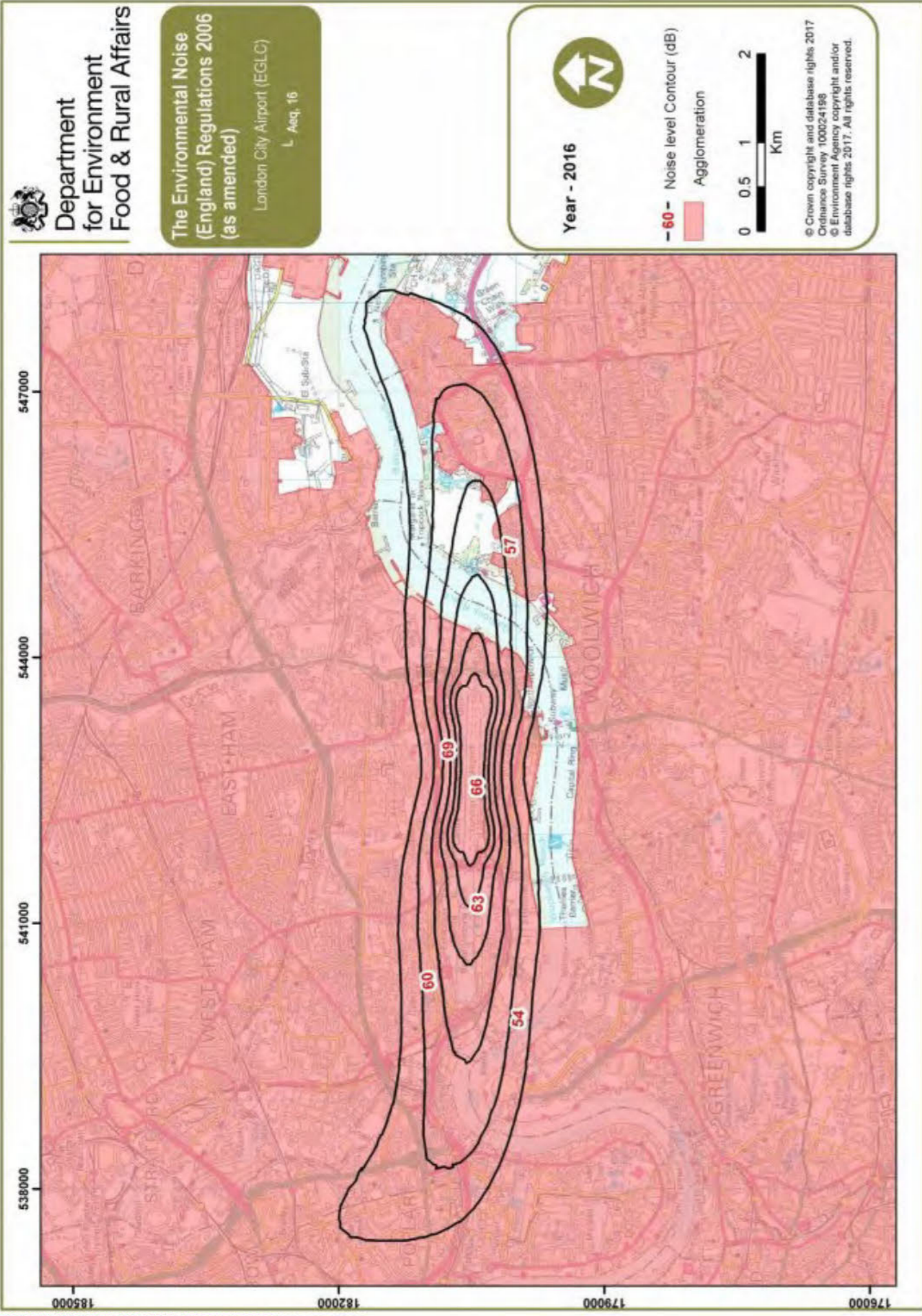
Population and dwelling counts have been rounded as follows: The number of dwellings has been rounded to the nearest 50, except when the number of dwellings is greater than zero but less than 50, in which case the total has been shown as "< 50". The associated population has been rounded to the nearest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



Appendix B - London City Airport Strategic Noise Maps







Appendix C - Consultation Comments and Responses

On 25th July 2018 a draft version of this Noise Action Plan was issued for consultation for a period of six weeks. Below is a summary of the comments received and the corresponding responses and actions where applicable.

The comments have been grouped into five categories based on the topic of the comment. These are Operational, Monitoring, Communication, Reporting and General.

Operational

Comment 1: Spread the burden of noise rather than concentrate planes along narrow flightpaths.

Response: LCY recently underwent an airspace change to introduce RNAV1 along its flightpaths. This was a requirement under Phase 1 of the London Airspace Management Programme (LAMP) to modernise airspace, and was therefore mandatory. The change had the effect of concentrating aircraft along narrower flightpaths, which was in line with the Aviation Policy Framework to reduce the number of people significantly affected by aircraft noise. The CAA is currently completing a post-implementation review of the airspace change, and LCY will consider the outcome of the review when it is made available. LCY will also continue to work with NATS and local communities to consider and consult on any further changes that will be necessary as the London airspace continues to be modernised to ensure LCY is aligned with emerging policy. Details of LCY airspace strategy have been added to Section 6.4.1.

Comment 2: There should be coordination with Heathrow to ensure arrivals don't overfly the same area at the same time.

Response: LCY and Heathrow flights sometimes overfly the same areas at different altitudes when certain operating conditions are in place. LCY operate departures and arrivals to fly into the wind to maximise the safety of operations. Wind direction can vary significantly within a small area, so LCY cannot ensure the direction of operations match Heathrow at any one time. LCY will however work with Heathrow to fully understand this impact and will ensure this assessment is taken into account as the London airspace is modernised and enhanced. This has been added into Section 6.4.1.

Comment 3: Encourage quieter planes and discourage or ban larger, noisy ones.

Response: The Incentives and Penalties Scheme detailed in Section 6.5.3 is in place to encourage quiet operating procedures, and the ANCS detailed in Section 6.7 also bans the use of aircraft that operate above a certain noise level whilst encouraging the use of quieter aircraft. These two schemes are reviewed regularly to ensure they remain effective, and this has been clarified in Section 6.

Comment 4: The Incentives and Penalties Scheme should look at approach noise as well as departure noise.

Response: Approach noise is controlled through the aircraft noise categorisation scheme. It is not considered appropriate to issue incentives and penalties for noise on approach because there is very little that airlines can do to affect this. This is also in line with other airports.

Comment 5: There should be steeper angles for take-off and landing to reduce those affected by noise.

Response: LCY currently operates a 5.5° approach angle compared to 3° at other UK airports. Departures also climb as quickly as possible within the constraints of aircraft capability and altitude restrictions due to overflights. As set out in LCY's airspace strategy, which has been added to Section 6, this will be constantly reviewed in the future to ensure that if opportunities arise to lift altitude restrictions as part of the modernisation of London airspace these are utilised.

Comment 6: Planes should be higher, particularly on easterly arrivals as they cross south east London.

Response: LCY arrivals are constrained in altitude in this area by Heathrow arrivals above. London airspace is currently being modernised, and LCY will ensure they are fully engaged in the process to ensure these issues are considered and altitude restrictions lifted wherever possible.

Comment 7: The benefits of the 5.5° approach angle are not felt along the full length of the approach routes.

Response: The 5.5° approach angle applies to aircraft as they join the final approach. This has benefits for communities under the final approach, however further away the approach routes are constrained in altitude by Heathrow flights above. This has been clarified in Section 6.4.1.

Comment 8: Engine run-times from start-up to departure regularly exceed the 7.5 minutes stated in the document.

Response: Section 6.5.4 has been amended to make clear it is 7.5 minutes from engine start-up to departure *from stand*.

Comment 9: Compensation schemes such as insulation should be provided to schools and residential buildings in affected areas.

Response: This is already in place. Please see details in Section 6.5.8.

Comment 10: Please can the noise action plan look to address the rise in complaints.

Response: LCY saw an increase in complaints in 2016 as a result of the mandatory airspace change required by LAMP. Complaint numbers have since been decreasing, and the suite of mitigation measures detailed in Section 6 of the NAP have been implemented with the intention of bringing the impact of aircraft operations down further. Ongoing monitoring of complaints will be reported to the London City Airport Consultative Committee and also in the Annual Performance Report which is publically available on the LCY website (as detailed in Section 6.3).

Comment 11: The current cap on the number of flights to and from the airport should remain for the duration of the NAP, along with the current ban on night flights.

Response: Any future changes would require a planning application and would be subject to public consultation.

Comment 12: Mitigation measures currently on offer to residents should be extended to the 54 decibel contour.

Response: LCY currently offers one of the most extensive and generous airport sound insulation schemes in the country, which was further improved as part of the recent CADP permission. This scheme will continue to operate as detailed in the CADP Section 106 agreement.

Comment 13: Please consider reviewing operating hours to start later in the morning.

Response: Condition 17 of the CADP Planning Permission restricts aircraft take-off and landing before 6:30am Monday – Saturday and 12:30pm on Sundays, except in the cases of immediate emergency to an aircraft or persons on board. LCY has the narrowest operating window of any London airport, and is not able to restrict this further.

Comment 14: The NAP considers night flights to occur between 11pm-7am, however the noise climate from 7-11pm is also important to prevent sleep disturbance in children.

Response: LCY operates until 10:30pm, and only 06:30 – 07:00 during the night period. The L_{evening} contour covers the period 1900-2300, and so considers the impact during this period. Whilst LCY appreciates this impact, the operating restrictions are already the tightest of any London airport and the noise control measures detailed in Section 6 also provides further mitigation.

Comment 15: Aircraft noise affects people's health and children's developing and learning.

Response: LCY offers a very extensive sound insulation scheme for local residents and community buildings such as schools within the noise contours to mitigate the noise impacts. The finding of this NAP is that the airport's noise impact is acceptable, given the noise reduction and mitigation measures set out in Section 6, including the sound insulation scheme.

Monitoring

Comment 16: LCY should increase the number of noise monitors to monitor noise along the full course of the flight paths rather than just close to the airport, in order to assess the full impacts of aircraft and to validate the noise contours for the sound insulation scheme.

Response: LCY currently operates seven permanent noise monitors which is a high number for an airport of this size. Whilst the fixed noise monitors are positioned within 4 km of the airport, the noise impacts further afield are not ignored. Monitoring equipment has been deployed on a temporary basis in various locations in the last few years to assess the impact of aircraft further afield, and this will continue to happen in the coming years. The results from this will be made more visible on the website. This has been added to Section 6.5.1.

Comment 17: The NAP should work on the basis that the 54 and 51 decibel contours are now regarded by Government as 'the onset of community annoyance', and annual 51 and 54 decibel contours should be produced annually.

Response: The government now considers the 54 dB $L_{\text{Aeq},16\text{h}}$ contour as the level at which significant community annoyance starts to occur. Therefore this is considered to be the lowest level required for assessing the noise effects as part of the NAP Contours down to 54 dB have been presented and assessed in this NAP, and are produced annually in the APR. This has been clarified in Appendix A.

Communication

Comment 18: LCY only engages with residents in Newham and doesn't actively engage with people further away under flight paths. The NAP should detail more robust community engagement.

Response: LCY engages with representatives from all neighbouring borough councils through the LCACC¹³. Further details regarding this have been added in Section 6.9.

Adverts on the recent Aircraft Noise Categorisation Scheme were published in the London Boroughs of Newham, Greenwich and Tower Hamlets, as well as sending letters to the local councils. These boroughs are also engaged in the implementation of the sound insulation scheme. As part of the part of the consultation on the updated draft NAP, LCY wrote to the Environment Health Offices of the following boroughs – Newham, Barking and Dagenham, Greenwich, Tower Hamlets, Redbridge, Waltham Forest and Havering.

Comment 19: The NAP should commit to informing all residents within the 51 and 54 contour areas of the latest airport developments on a regular basis.

Response: The airport sends out quarterly magazines informing residents about the airport operations and the City Airport Development Programme in particular. The airport also informs the residents through the airport website and the community twitter feed @LCYlocal and updates are available on the LCACC website.

Comment 20: Please include details of how noise complaints can be made.

Response: Section 6.3 has been updated to include details of how to make a noise complaint.

Comment 21: Complaints from residents outside Newham should be logged with the relevant local council.

Response: Complaint numbers are reported to LCACC on a quarterly basis as described in Section 6.3, and are also published in the annual performance report. Representatives from neighbouring borough councils are members of this committee. Additional detail has been provided in Section 6.9.

Comment 22: More prominence should be given to TraVis2 on the airport website.

Response: This will be addressed on the website, however no change is proposed in the NAP.

¹³ Including the London Boroughs of Newham, Bexley, Barking and Dagenham, Tower Hamlets, Waltham Forest, Redbridge, Havering and Greenwich.

Reporting

Comment 23: Noise maps do not extend over all areas affected by flight paths. Noise averages should not be used as they are not a true reflection of the impact on residents. The noise metrics are outdated and flawed.

Response: The noise evaluation criteria used in the NAP is defined in the Environmental Noise (England) Regulations 2006. This is to ensure consistency and comparability between airports and other industries. Maximum noise levels are however still recorded by LCY and displayed on TraVis2, which is available on the airport website.

Comment 24: Use noise evaluation criteria that take into account LCY and Heathrow flights. The two airports should work cooperatively to reduce noise pollution.

Response: LCY commits to working together with Heathrow to better understand the combined effects of aircraft in shared airspace. This has been added in Section 6.

Comment 25: LCY should report regularly to residents on noise and air pollution, making reference to legal limits, including breaches in operating restrictions and planning conditions.

Response: Performance against legal limits, including any breach of planning conditions will be noted in the Annual Performance Reports published on our website. The most recent APR (2017) confirmed that there were no issues of non-compliance with the operational requirements of the CADP permission. This has been clarified in Section 6.10. Air quality at London City Airport continues to be good, with concentrations well within the objective levels set in the UK Air Quality Strategy.

General

Comment 26: Section 3 states that the expansion plans are 'essential'. Airport expansion is never essential.

Response: Section 3 has been reworded.

Comment 27: Section 6.3 attributes the rise in noise complaints to RNAV departure routes. What about arrival routes?

Response: Agreed – the RNAV changes applied to both arrivals and departure routes. This has been amended in Section 6.3.

Comment 28: The NAP does not present explicit consideration of whether there exist at LCY exposure levels that can induce harmful effects.

Response: Noise contours provide a measure of the impact of noise at LCY, in line with Government guidance. The data for use in the assessment is provided by Defra and includes noise contours, their areas, and the number of people & dwellings within them. This information is provided in all airport Noise Action Plans to describe the effects of noise around the airport.

Comment 29: The NAP does not state that there are no quiet areas affected as defined in the END.

Response: Appendix A has been amended to state that no quiet areas are impacted by noise from LCY.

Comment 30: The guidance for NAPs states that estimated reductions in the number of people affected should be provided. This is missing from the document.

Response: DEFRA NAP guidance states that: *"The Action Plan should contain an indication of the expected outcome(s) of any measures that will be put in place as a result of having this Action Plan."*

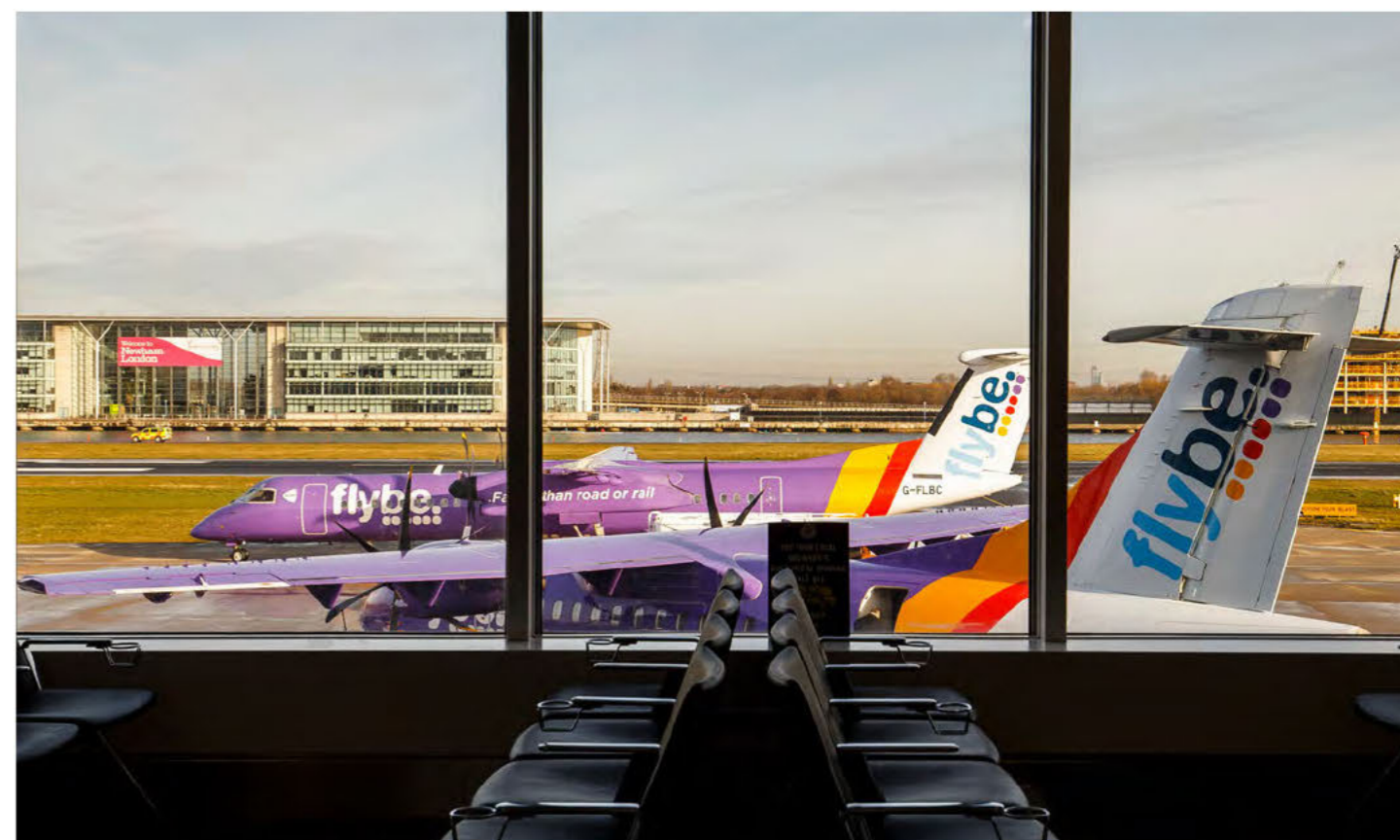
As the conclusion of this NAP is that the current noise impact is acceptable, no additional measures are proposed as a result of this action plan and hence estimates of the reduction in the number of people affected are not required.

Comment 31: The NAP should include identification of problems and situations that need to be improved. Planning breaches over the last 5 years should be included.

Response: The most recent APR (2017) confirmed that there were no issues of non-compliance with the operational requirements of the CADP permission and that the small number of previous of minor non-compliances have been fully resolved. Measures have been put in place to avoid recurrence, therefore no further action is considered necessary for the NAP. If other noise related issues occur in the future relating to planning conditions these will be discussed and resolved with the local authority, and an update made to the NAP if required under the guidance. Performance against planning requirements will continue to be reported annually in the APR

Comment 32: The LBN Local Plan Section in Appendix D is out of date.

Response: Section 5 and Appendix D have been revised to include reference to the current review of the local plan, as well as the draft New London Plan.



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

Current UK Government policy on aviation, including the management of noise, is set out in the Aviation Policy Framework (APF). The APF sets out the Government's high level objectives for the aviation sector and the policies to achieve these objectives. In respect of noise, the APF includes a policy objective to limit and, where possible, reduce the number of people in the UK significantly affected by noise and sets out the Government's expectations for measures to be considered by airports and the aviation industry to reduce and mitigate noise. This includes consideration of noise envelopes, airspace design, information and communication, night noise, noise insulation and compensation and general aviation and helicopters. These requirements have been considered in this Action Plan.

The APF considers the 57 dB $L_{Aeq,16h}$ contour as *"the average level of daytime aircraft noise marking the approximate onset of significant community annoyance"*. However, the government acknowledges that *"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"*. While recognising that average noise contours are a well-established measure of annoyance and are important to show historic trends in total noise around airports, the APF also encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities.

In addition, the APF expects airport operators to:

- Offer households exposed to levels of noise of 69 dB $L_{Aeq,16h}$ or more assistance with the costs of moving;
- 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.

Where airport operators are considering developments which result in an increase in noise, the APF expects, as a minimum, airport operators to:

- Offer financial assistance towards acoustic insulation to residential properties which experience an increase in noise of 3 dB or more which leaves them exposed to levels of noise of 63 dB $L_{Aeq,16h}$ or more.

Although the APF remains the current national aviation policy document, in October 2017 the Department for Transport reported on the outcome of consultations regarding changes to UK airspace (Consultation Response on UK Airspace Policy: A framework for balanced decisions on the design and use of airspace) which included a review of criteria and metrics for assessing aircraft noise. This response states in paragraph 9:

“The Government’s current aviation policy is set out in the Aviation Policy Framework (APF). The policies set out within this document provide an update to some of the policies on aviation noise contained within the APF, and should be viewed as the current government policy. The government also intends to develop aviation noise policy further through the Aviation Strategy consultation process. As part of the Aviation Strategy consultation on sustainable growth planned for 2018 the Government intends to consider the roles, structures and powers that currently exist and what, if any, new ones will be necessary to bring about the network wide, co-ordinated and complex changes needed for airspace modernisation.”

Based on this report, the Government will implement a range of proposals. The key points are:

- The creation of an Independent Commission on Civil Aviation Noise (ICCAN) as an advisory non-departmental public body;
- The removal of the 3dB minimum change requirement for financial assistance towards acoustic insulation to residential properties moved into the 63 dB $L_{Aeq,16h}$ level or above;
- A level of 54 dB $L_{Aeq,16h}$ is now acknowledged to correspond to the onset of significant community annoyance and replaces the 57 dB $L_{Aeq,16h}$ level in the APF; and
- Some adverse effects of annoyance can now be seen to occur down to 51 dB $L_{Aeq,16h}$. LOAEL of 51 dB $L_{Aeq,16h}$ and 45 dB L_{night} , for daytime and night-time noise respectively, are to be used in assessing and comparing noise impacts of airspace changes.

Air Navigation Guidance (October 2017)

The Air Navigation Guidance 2017 provides guidance to the CAA on its environmental objectives when carrying out its air navigation functions, and to the CAA and wider industry on airspace and noise management.

The guidance makes clear the need to ensure a consistent and transparent assessment of the options within and across proposals, and the requirement that a single appraisal methodology should be followed.

The guidance reinforces that a LOAEL of 51 dB $L_{Aeq,16h}$ for daytime noise and 45 dB $L_{Aeq,8h}$ for night time noise should be used when assessing and comparing the noise impacts of airspace changes.

The guidance also emphasises need to use other noise metrics that may be appropriate for allowing communities to understand the noise impacts that could result from the proposed air space change including the use of N65 daytime and N60 night-time contours to assess noise in areas not affected by noise above the LOAEL.

Airports National Policy Statement

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

Appendix A-4 of the Appraisal of Sustainability (AoS), carried out for and based on the contents of the 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.

Regional Policies

The London Plan (March 2016)

The London Plan is the overall strategic plan for London. It sets out a fully integrated economic, environmental, transport and social framework for the development of the capital. London boroughs’ local plans need to be in general conformity with the London Plan, and its policies guide decisions on planning applications by councils and the Mayor.

Policy 7.15 of the London Plan – Reducing noise and Enhancing Soundscapes, states the Mayor’s Policy on Noise is at three levels as follows:

- A. Strategic - The transport, spatial and design policies of this plan will be implemented in order to reduce and manage noise to improve health and quality of life and support the objectives of the Mayor’s Ambient Noise Strategy.

- B. Planning decisions - Development proposals should seek to reduce noise by:
- a) avoiding significant adverse noise impacts on health and quality of life as a result of new development;
 - b) mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens on existing businesses;
 - c) improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity);
 - d) separating new noise sensitive development from major noise sources (such as road, rail, air transport and some types of industrial development) through the use of distance, screening or internal layout – in preference to sole reliance on sound insulation;
 - e) where it is not possible to achieve separation of noise sensitive development and noise sources, without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through the application of good acoustic design principles;
 - f) having particular regard to the impact of aviation noise on noise sensitive development;
 - g) promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver

C. LDF preparation - Boroughs and others with relevant responsibilities should have policies to:

- a) manage the impact of noise through the spatial distribution of noise making and noise sensitive uses;
- b) identify and nominate new Quiet Areas and protect existing Quiet Areas in line with the procedure in Defra's Noise Action Plan for Agglomerations.

In January 2014, the Government published a Noise Action Plan for the London Agglomeration (larger than GLA area) under the Environmental Noise Directive 2002/49/EC and the Environmental Noise (England) Regulations 2006 (as amended).

A draft of a new London Plan is currently being developed.

Local Policies

LCY is located within Newham. Thamesmead in Greenwich, and part of Tower Hamlets, lying close to the airport, are overflown at low altitude by arriving and departing aircraft. Relevant noise policies for each Borough are therefore discussed below, either from the Local Development Framework (LDF) and the Core Policies, or from any relevant saved UDP policies or retained guidance notes.

London Borough of Newham Noise and Transportation Policies (2012)

Newham's new Core Strategy was adopted 26th January 2012. Relevant to LCY and planning and noise, it states in page 54 on Spatial Policies:

"London City Airport is a major employer within the area but the operation of the airport has impacts on the local environment and also could constrain some types of development in the Public Safety Zone to the east and west of the runway. Any proposals for future expansion will need to be carefully considered in light of these impacts, and the objective to attract people to the new neighbourhoods being planned in the Docks (see INF1). The London Plan (Policy 6.6) emphasises the importance of optimising existing airport capacity for example, improving access and other passenger facilities, and the Council supports this in line with the airport's acknowledged economic role."

The Infrastructure INF1 Strategic Transport forms part of the Core Strategy and states:

"London City Airport - The London Plan (Policy 6.6) emphasises the importance of optimising existing airport capacity, for example, improving access and other passenger facilities, and the Council supports this in line with the airport's acknowledged economic role. The LCY Masterplan (2006) sets out development plans through to 2030, proposing that the airport will have 8 million passengers per annum (p.a.) by 2030. This equates to approximately 180,000 air traffic movements p.a. LCY propose this is accommodated by maximising the use of the existing runway, improving flight occupancy and creating better facilities for passengers. Such an increase would also necessitate an enlarged Public Safety Zone, and may impact adversely on the development potential of sites around the Royal Docks. The airport was granted planning permission in July 2009 for an increase in flight movements to 120,000 p.a. from the previously permitted level of 80,000."

As part of this permission, requirements for monitoring air quality and noise impacts have been put in place. Future growth at the airport in line with the Masterplan will need to be carefully considered to ensure the potential impacts on the Royal Docks and its future role and function are taken into account".

The policies and proposals of the LBN relating to open spaces and outdoor recreational areas are set out in saved UDP policies, retained following adoption of the Core Strategy in 2012. Whilst not specifically mentioning the effects of noise on open spaces and recreational areas, policies OS7, OS8 and OS10 state that the objectives of the Borough are to: safeguard existing open space and recreational buildings; to secure the improvement of the quality of these facilities and heavily used public open spaces in town centres, as well as damaged and derelict areas of Metropolitan Open Land in the Roding and Lea valleys; to seek the optimum use of these resources; to secure new open space and recreational facilities that will be valued by local people; and, to improve access to a range of open space and recreational facilities for local people.

LBN are in the process of reviewing their Local Plan, and the review was submitted to the Planning Inspectorate on 28th Feb 2018.

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 Noise and Transportation Policies

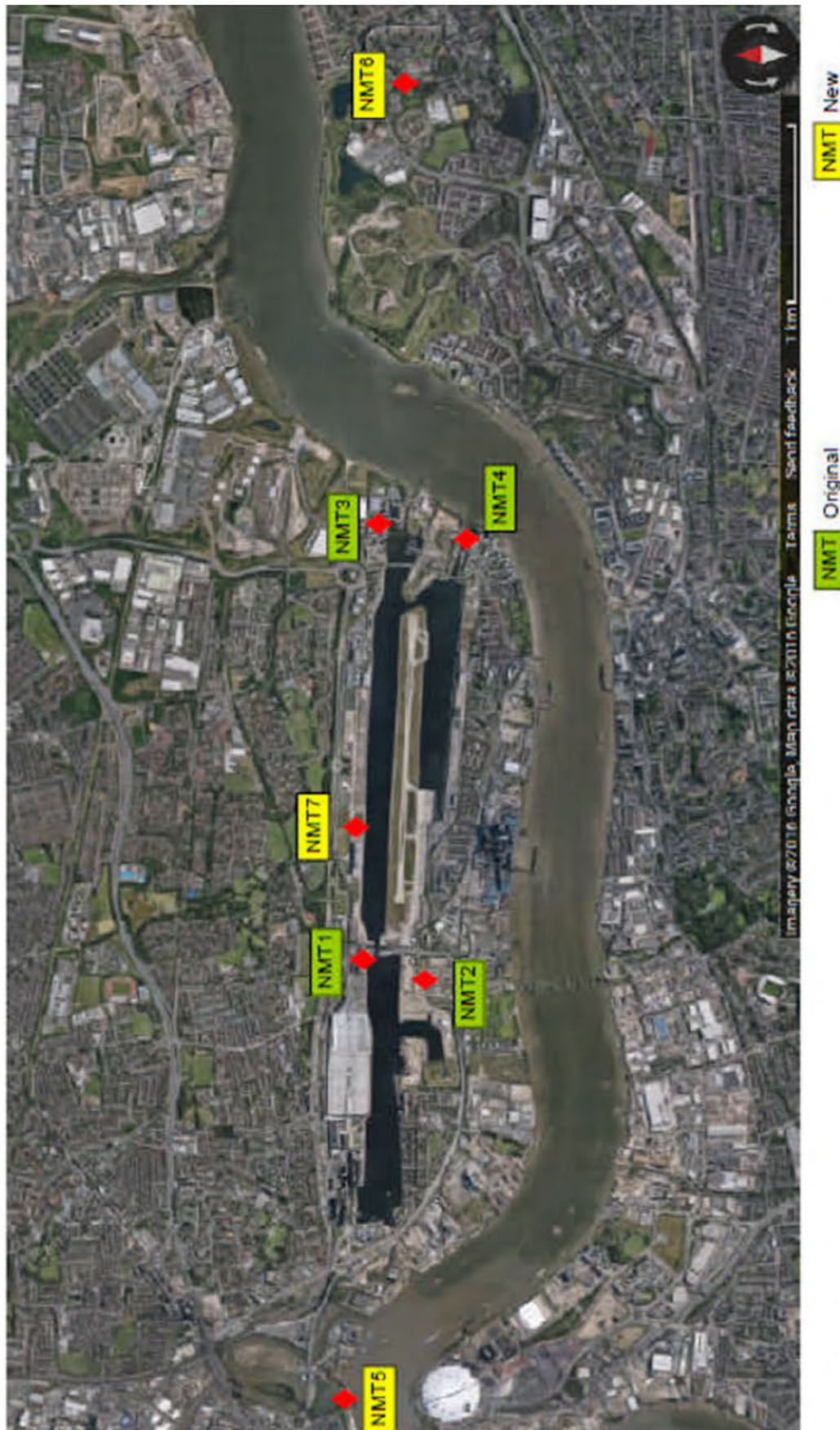
The Core Strategy Development Plan 2025 provides a 15-year plan for the Borough as part of the LDF. It was found sound by the Planning Inspector and adopted by Tower Hamlets Council 15 September 2010. There are no policies within the Core Strategy or the Environmental and Transport sections of the UDP which make reference to overflying aircraft. The Tower Hamlets Local Plan is currently awaiting approval by the government, it 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 - Location of Noise Monitoring Terminals, (NMTs)



Appendix F - 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)





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