London Southend Airport Round 4 Noise Action Plan

Report

London Southend Airport

10 June 2024

Document Control

Client:	London Southend Airport
Principal Contact:	Jo Marchetti
Project Number:	14410A-20
Prepared By:	Malvina Gjura, Will Martin
Document No.	14410A-20-R01-05-F
Date:	10 June 2024
Reviewed by:	James Trow (Director)

Registered Office: 23 Coldharbour Road, Bristol BS6 7JT Tel: 0117 974 1086

24 Greville Street, Farringdon, London, EC1N 8SS Tel: 020 3873 4780

Patten House, Moulders Lane, Warrington, WA1 2BA Tel: 01925 937 195

Contents

Foreword

John Upton – CEO London Southend Airport

Every day, we work tirelessly to serve our passengers and airline partners at London Southend. At the same time, we also strive to be a "growth enabler" for our local communities in terms of jobs, opportunities and through our contribution to local activities and organisations.

We are currently on our way back to beating our 2019 performance (2m+ passengers) and expect to grow beyond those levels in the coming years. This growth will inevitably lead to further prosperity for our region and more opportunities for people living within our local communities.

We have ambitious plans for passenger growth and are ideally placed to serve not just Eastern England but also the fast-growing London east population which, along with our quick rail access into London, will underpin future demand for the airport. More than 8m people live within one hour. Capacity constraints within London's other airports will also act as a driver for growth at London Southend Airport.

Growth at London Southend will create more jobs – both directly and indirectly – and bring more people to the area, support local businesses and ultimately, lead to an increase in local economic contribution and growth.

We are proud to be a significant employer in our local communities, with around 80% of our staff living within a Southend City postcode area. The jobs that we have and create are varied, from entry level jobs for school leavers through to high value operational jobs. We already provide significant training as well, with significant opportunities for career development across our various teams, from fire fighters to Air Traffic Control.

We are committed to growing sustainably and responsibly, including our impact on the environment, both locally and more widely. We have made a positive start on our journey to Net Zero with 25% of our terminal's energy usage already being met by renewable sources, generated onsite from our solar farm. We expect 100% of the energy we consume at the airport to come from renewable sources by 2024.

As an airport, we recognise that our operations and associated noise can have an impact on our closest neighbours, with whom we regularly consult through our various forums and channels to listen, learn and enable transparent two-way communication. We have a dedicated Noise Manager in our team.

Our Noise Action Plan will continue to evolve through our engagement with the community. We regularly meet with local councils, MPs, and community groups to understand local concerns about aircraft noise and to seek ways in which we can work to minimise disturbance. We meet with our Airport Consultative Committee (ACC) every three months.

In addition to the above, we are also one of only four UK airports to have established an Independent Community Noise Forum. The Forum was set up in 2021 and was established to create and maintain an impartial pathway for local communities to engage with the airport, and to increase trust, transparency and clarity on noise issues associated with London Southend Airport.

The LSACNF is led by an independent Chair and meets throughout the year. Forum members consist of residents from SS postcode areas (local to the airport and flight paths), local community resident groups, local authority representatives, department of Transport (DfT), Envirosuite (WebTrak provider), Anderson Acoustics and key members of the airport management team.

From our engagement to date, we have introduced a number of proactive measures to reduce the impact of noise, including by way of example optimising aircraft movements over less densely populated areas and utilising quieter electric ground power units at night time.

Purpose and Scope

Purpose

The purpose of this Noise Action Plan (NAP) is to set out our plan to limit and where possible reduce the number of people significantly affected by aircraft noise and comply with the requirements of The Environment Noise (England) Regulations 2006 (herein referred to as 'the Regulations').

These Regulations, originally transposed from the European Union (EU) Environment Noise Directive (2002/49/EC), make the preparation of a Noise Action Plan for a number of different noise sources, including specific airports, a legal requirement.

The airport operator is defined in the Regulations as the competent authority for preparing the airport Noise Action Plan. For London Southend Airport the operator is London Southend Airport Company Ltd.

The Department for the Environment, Food and Rural Affairs (Defra) is responsible for overseeing the delivery of the strategic noise maps and NAPs. Defra have issued guidance[1] in September 2022 to airport operators with competence to produce their NAPs along with 'data packs' setting out the results of the strategic noise maps[2]. The guidance summarises the timeline, legal context and the required contents for the NAPs, which is described by the Regulations themselves.

The guidance states that the noise action plan process is designed to manage noise issues and effects arising from aircraft departing from and arriving at the airport, including noise reduction if necessary. The guidance advises that no other noise sources will have been considered in the noise mapping, but it does not preclude the Noise Action Plan covering other airport related noise sources, such as ground noise. In respect of revisions to an existing plan the guidance advises that the NAP should be reviewed and revised to include the following:

- updated details about the airport and its operation;
- the results of the noise mapping from 2021 supplemented with any data considered more relevant to noise action planning given that air traffic movements in 2021 are likely to have been affected by pandemic travel restrictions;
- the progress made against the actions described in the current Noise Action Plan;
- updated information about relevant legislation and standards;
- consideration of updated relevant national and local policies;

[1] Airport Noise Action Plans - Guidance for Airport Operators on how to revise Noise Action Plans under the Environmental Noise (England) Regulations 2006 (as amended) - September 2022

[2] Strategic noise contours maps for 2021 and supplementary noise contours are provided in Appendix B

- information about on-going actions;
- information about any new actions; and
- estimates in terms of the reduction of the number of people affected as a result of new or revised actions.

At London Southend we recognise that aircraft noise can be an important issue for our local communities. Although the aircraft noise cannot be eliminated completely, it can be managed responsibly through the Noise Action Plan. This document sets out how we plan to limit and where possible reduce, the impact of aircraft noise at and around the airport.

This Noise Action Plan is an update to the 2018-2023 Noise Action Plan and covers the period from 2024-2028.

Scope

In accordance with the Regulations, noise-contour maps are produced every five years. The latest round is the fourth round of the Regulations which required airports to produce strategic noise maps in 2022 based on operations occurring during the calendar year of 2021.

Strategic noise mapping for London Southend was produced by Bickerdike Allen Partners LLP, the formal results of which were in a data pack from Defra. The noise contour maps in this Noise Action Plan show noise contours based on an annual average day between January and December 2021, as required by the Regulations.

Due to COVID travel restrictions, the noise contours for 2021 show a highly anomalous situation for most airports, including London Southend.

The Defra Guidance states*: "It is in the interests of airports and communities for Noise Action Plans to draw on information which best reflects the situation for the Round 4 Noise Action Plan period as appropriate. As a result, airports may supplement the 2021 data with information from a more representative period when drawing up Noise Action Plans".*

Following the above guidance, the 92-day summer noise contours for 2018 have also been considered to provide more context in informing the current Noise Action Plan. These are the most recent pre-pandemic noise contours and are considered representative of recent activity at the Airport.

Strategic Noise Maps for 2021 and supplementary noise contours are provided in **Appendix B – Noise Maps**.

Consultation

In support of the Regulations, Defra have provided guidance on both noise mapping and noise action planning which advises: "*Where Noise Action Plans already exist, it is expected that once the plan has been revised for Round 4, it will be presented, and opportunities for participation given, to the Airport's Consultative Committee as a minimum*".

The first consultation on this draft Plan took place with LSA's Airport Consultative Committee (ACC) in July 2023. The ACC comprises the following members.

- Essex County Council
- Castle Point Borough Council
- Maldon District Council
- Rochford District Council
- Southend City Council
- Rochford Hundred Association of Local Councils
- Leigh Town Council
- Southend Flying Clubs
- Residents Assoc (to include West Leigh)
- Rochford Board of Trade
- Essex Chambers of Commerce
- UK Border Force
- Independent Representatives

As part of the consultation process a meeting was held with the LSA Community Nosie Forum (LSACNF) and additional comments and themes noted. The LSA CNF is led by an independent Chair and comprises the following members.

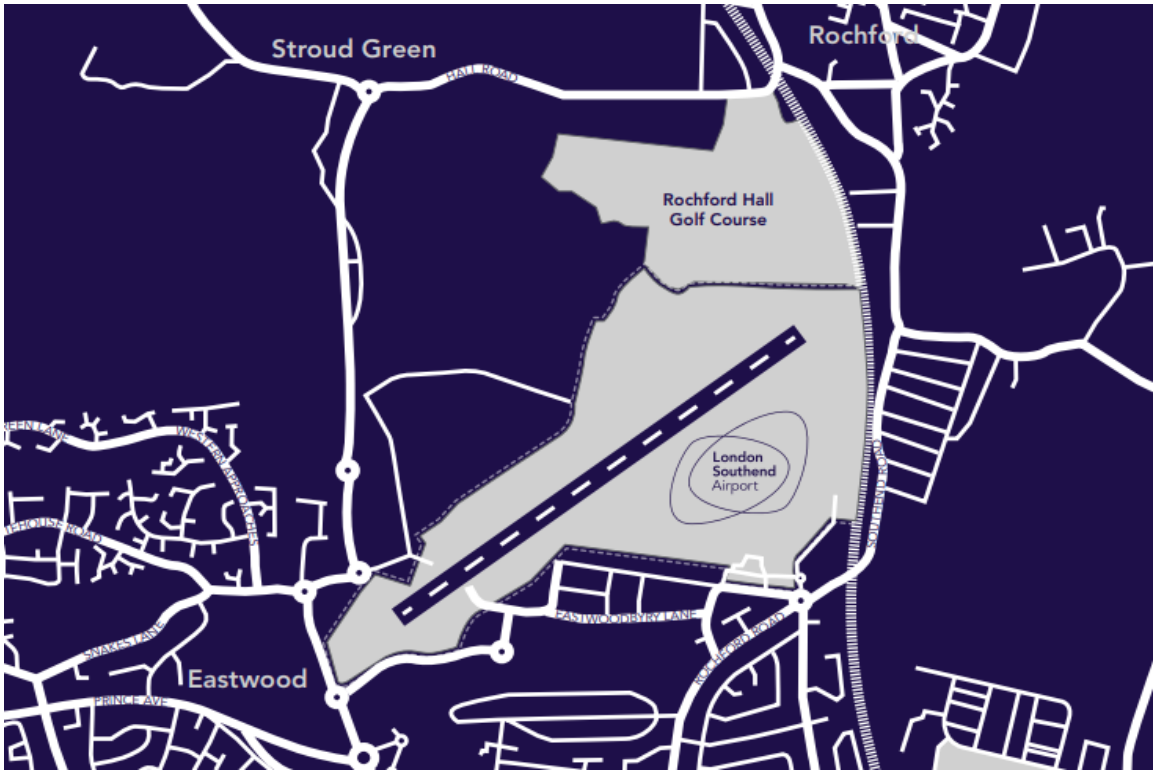
- Residents from SS postcode areas (local to the airport and flight paths)
- local community resident groups
- local authority representatives
- Department of Transport (DfT)
- Envirosuite (WebTrak provider)
- Anderson Acoustics (acoustic consultants)
- Key members of the airport management team

The draft Noise Action Plan was issued to the committee on 23rd August 2023 and committee members were invited to respond. A record of consultation responses is summarised in **Appendix D – Stakeholder Feedback** which sets out how responses have been taken account of.

Description of the Airport

London Southend is situated 35 miles (56 km) northeast of London and located between Southend-on-Sea and Rochford town. Rayleigh lies to the west of the airport. The Thames estuary lies on the other side of Southend-on-Sea to the south of the airport site. The runway is aligned southwest–northeast.

FIGURE 1. LONDON SOUTHEND AIRPORT BOUNDARY



In 2011, all terminal, aprons, cargo buildings and airside facilities were situated on the southeast side of the airport, with the exception of the maintenance area which is situated on land to the northwest of the runway. As a result of the investment in the airport that has occurred since 2011 the main passenger terminal and aircraft stands are now located to the east of the runway in close proximity to the new railway station on the Southend Victoria to Liverpool Street mainline railway.

The runway, with compass bearings of 050° and 230° (Runways 05 and 23) was extended to the southwest in 2012 and is now 1,799 m long. A northwest-southeast taxiway crosses the runway and serves all airside facilities.

Details of aircraft operations, including traffic distribution by aircraft type, flight tracks, dispersion, flight profiles and traffic distribution by route are provided in the Strategic Noise Mapping Report[3].

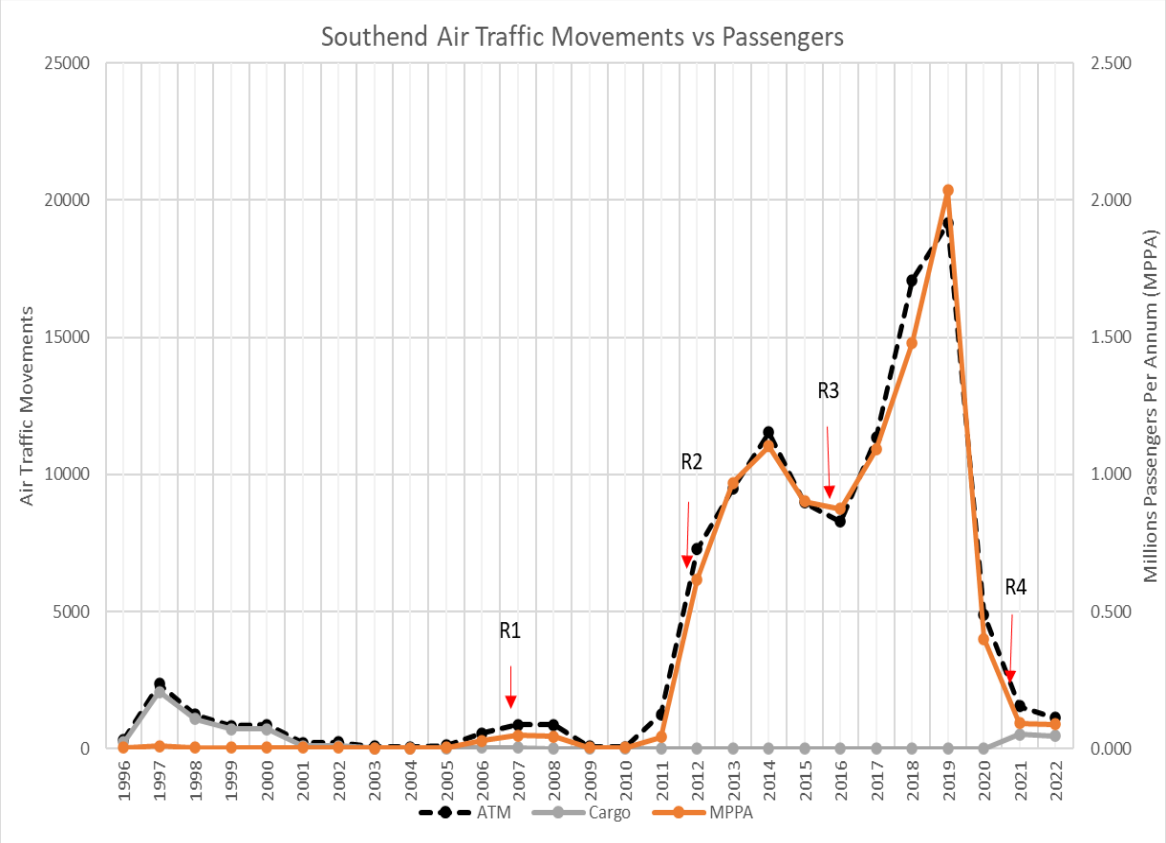
Actual numbers of passengers and aircraft movements for all four rounds are shown Table 1.

TABLE 1: AIRPORT ACTIVITY

Type	2006	2011	2016	2021
Passenger number	30,000	42,000	874,000	94,000
ATMs	38,858	25,470	23,449	34,114

Figure 2 shows the trends of the passengers and aircraft movements in the last 25 years.

FIGURE 2: SOUTHEND AIR TRAFFIC MOVEMENTS AND PASSENGERS.



[3] London Southend Airport Strategic Noise Mapping Report 2021 – Bickerdike Allen Partners (July 2022)

It can be observed from the above figure that due to COVID travel restrictions, London Southend has seen a significant reduction in passengers and aircraft movements since 2019. This pattern was observed throughout all UK airports with many showing a pronounced recovery in 2022.

In 2023, London Southend announced a multi-year partnership with easyJet and the London Southend team remain confident that the airport will enter into further airline relationships to meet the continued passenger demand and, in turn, accelerate the trajectory of LSA on its journey back to 2M+ passengers (2019 level) in the near term. Looking ahead, London Southend can operate up to 53,300 ATMs per annum.

This NAP is based on the noise management measures and anticipated further actions that are proposed to be taken irrespective of any further growth.

Civil Aviation Authority Airspace Modernisation Strategy

London Southend is a stakeholder in the development of the wider UK Airspace Modernisation Strategy (AMS)[4] that is sponsored by the Department for Transport and has been developed by the Civil Aviation Authority (CAA). Modernisation of the airspace will optimise modern aircraft technologies, increase capacity, reduce delays, and ultimately reduce environmental impacts to make air travel 'quicker, quieter and cleaner. In addition, it presents an opportunity to address some of the wider impacts of aviation, such as noise and emissions.

Airspace changes are regulated by the CAA with airspace change sponsors required to follow the process set out in CAA publication CAP1616 *'Airspace change: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information'*.

The process ensures that the CAA decides whether or not to approve a proposal to change UK airspace in an impartial, consistent and evidence-based way that takes proper account of the needs and interests of all affected stakeholders.

CAP1616 was most recently updated in March 2021, and it sets out the seven-stage process that the CAA requires airports to complete to carry out modernisation of their airspace. There are 'gateways' at four points in the process, where CAA will assess if the change sponsor has followed the process correctly before it can move to the next stage in the process.

London Southend Airport Airspace Modernisation Programme

In March 2017, London Southend submitted an Airspace Change Proposal (ACP) to introduce two new areas of airspace, which lie to the northeast and southeast of the airport. Permission was granted for the airspace to the northeast, subject to yearly traffic levels reaching 2018 levels within three

[4] Airspace Modernisation Strategy 2023–2040. CAP 1711. January 2023

years of 27 October 2020, and there being no changes to the wider context which would have a material impact on the validity of the decision.

The January – December 2021 movement figures exceeded those of 2018, therefore in accordance with the conditions, the additional airspace was implemented in September 2022. A Post Implementation Review (PIR) will be conducted in September 2023.

In December 2018, London Southend filed an ACP with the CAA along with 16 other airports in the southeast of the UK. This was then delayed due to the COVID-19 pandemic. In 2021 the airport reactivated the ACP and recommended the project. The airport is currently working on the Stage 2A and 2B documentation following feedback from the CAA. It is expected that the documentation will be re-submitted by autumn 2023. This project is expected to be complete in 2030.

The airspace change status can be reviewed in the following link: https://airspacechange.caa.co.uk/

London Southend is also a stakeholder in the development of the wider UK Airspace Modernisation Strategy that is being sponsored by the Department for Transport and developed by the CAA. This will provide a rare opportunity to modernise airspace, in particular in the South East region of the UK, that has not had any significant changes for the last 50 years. London Southend has filed an Airspace Change Proposal (FASI-South) to support this strategy.

London Southend has also started the process to introduce RNAV (Area Navigation) Approach Procedures. Proposed procedures do not replace any existing procedures but provide an alternative option for aircraft operating into the airport and also provide a backup should the Instrument Landing System not be available. For this option the airport has sought to replicate the existing approach tracks. The procedure designs and ACP have been submitted to the CAA and are awaiting approval.

Aviation Noise

Introduction to aircraft noise

Aircraft noise can be categorised in two parts: air noise and ground noise.

Air Noise

The primary source of air noise is the engine noise. Engine noise is created by the sound from the moving parts of the engine, and also by the air being expelled at high speed once it has passed through the engine. Most of the engine noise comes from the exhaust or jet behind the engine as it mixes with the air around it.

The secondary source is the aerodynamic noise, which occurs when air passes over the plane's body (the fuselage) and its wings. This causes friction and turbulence, which generates noise. The main sources are the discontinuities of the aircraft structure, such as high-lift devices (flaps and slats), landing gear wheels (when extended), trailing edges where there is a speed shearing (aircraft speed versus still air). The amount of airframe noise produced by an aircraft depends on its type, along with its speed and how it is configured in flight, and it is predominant during approaching operations to airports.

The noise emitted by a departing or approaching aircraft changes spatially and temporally mainly depending on thrust setting, climbing/descending angle, and speed.

Ground Noise

Ground noise is any noise produced by aircraft whilst on the ground and is often related to the following activities:

- aircraft travelling (taxiing) between the runway and stands, including holding;
- aircraft at their stands with their auxiliary power units (APU) running; and
- Testing (ground running) of aircraft engines.

Aircraft Noise Metrics

Not all aircraft noise events are the same. They can vary depending upon aircraft type being flown and the procedures being followed in that flight. Furthermore, the locations that surround airports may not always be affected by aircraft noise in the same way.

Metrics are required to describe how much noise may be experienced at a location, considering the magnitude of the individual noise events, their duration and occurrence, and the time of day.

The most common metric used to describe noise exposure from environmental sources is the equivalent continuous sound level (L_{eq}). This metric has been used extensively since the mid-1970s and uses the sound exposure level (SEL) of individual aircraft events along with the number of events to provide an overall equivalent continuous sound level ($L_{eq,T}$) for the period (T) which represents the duration over which the averaging occurs.

In the UK, daytime aircraft noise is typically characterised by considering the average noise level in decibels (dB) over 16 hours (07:00-23:00) and 8 hours (23:00 – 07:00) based on the 92-day summer period.

Under the Regulations, the key noise metrics used are the L_{den} and L_{night}. Like L_{eq}, the noise metric L_{den} is also a time-averaged noise metric, however it split the 24 hour day into three periods; Day (0700 – 1900 hrs), evening (19:00-23:00 hrs) and night (23:00-07:00 hrs). The L_{den} metric then applies penalty weightings for noise in the evening and at night.

Effects of Aircraft Noise

There has been extensive research and studies into the effects of environmental noise exposure. In respect of aviation noise historically research focussed on annoyance and sleep disturbance but has seen an increased emphasis on other health effects in recent years.

Defra Guidance for Airport Operators on how to revise Noise Action Plans under the Environmental Noise (England) Regulations 2006, July 2017 has summarised the effect of noise as shown in the table below.

TABLE 2. RESPONSES TO AN INDIVIDUAL'S EXPERIENCE OF AIRCRAFT NOISE

Individuals experience of the aircraft noise
Annoyance/Complaints
Sleep disturbance
Speech interference
Disruption of work/mental activity
Detection/Distraction
Stress
Health effects

Additionally, in the UK the CAA regularly reconsider the evidence base and report their findings, including the following key documents:

- Sleep disturbance
    - CAP 2370 - Aircraft Noise and Sleep Disturbance: An update (2014-2022) - 2022
    - CAP 2161 - Survey of Noise Attitudes 2014: Aircraft Noise and Sleep Disturbance - 2021
    - CAP 1164 - Aircraft noise, sleep disturbance and health effects - 2014
    - ERCD report 1208 - Aircraft Noise, Sleep Disturbance and Health Effects: A Review – 2013

- Annoyance
    - CAP 1588 – Aircraft Annoyance: Recent Findings – 2018
    - CAP 1506 - Survey of Noise Attitudes 2014: Aircraft Noise and Annoyance - 2014,
- Cardiovascular disease and daytime health effects
    - CAP 1278 - Aircraft noise and health effects: Recent findings
    - ERCD report 0907 - Environmental Noise and Health: A Review - 2010
- Cognitive development in children
    - ERCD Report 0908 – Aircraft Noise and Children's Learning - 2010

Since 2019 the CAA have provided regular updates on recent work and findings in the field of aircraft noise and health effects to provide a succinct overview of emerging work in the field of aviation noise and health. The most recent update is published in May 2023.

The World Health Organization (WHO) in its publication 'Environmental Noise Guidelines for the European Region 2018'[5] and 'Night Noise Guidelines for Europe 2009'[6] has also presented several key health outcomes including:

- Noise annoyance
- Sleep disturbance
- Cardiovascular health
- Mental health, wellbeing, and quality of life
- Children's learning

The Environmental Noise Guidelines for the European Region provides recommendations for protecting human health from exposure to environmental noise originating from various sources including road traffic, railway and aircraft noise.

The recommendations include guideline values for aircraft noise, road traffic noise and railway noise using L_{den} and L_{night} metrics in terms of the onset of health effects.

These guidelines strongly recommend for average noise exposure reducing noise levels produced by aircraft below 45 dB L_{den}, as aircraft noise above this level is associated with adverse health effects.

For night noise exposure, the guideline strongly recommends reducing noise levels produced by aircraft during night-time below 40 dB L_{night}, as night-time aircraft noise above this level is associated with adverse effects on sleep.

[5] Environmental Noise Guidelines for the European Region, World Health Organization, 2018

[6] Night Noise Guidelines for Europe, World Health Organization, 2009

However, no single noise metric best correlates with all adverse health outcomes associated with environmental noise effects. The following table sets out the noise metrics which are generally considered to best correlate with the different health effects.

TABLE 3. NOISE METRICS AND THE HEALTH EFFECTS ASSOCIATED.

Noise Metric	Health Effects
L_{den}	Cardiovascular disease, Cognitive impairment, and Annoyance.
L_{dn}	Annoyance
L_{Aeq}	Cognitive impairment
$L_{Aeq,16hr}$	Cardiovascular disease and Wellbeing
$L_{Aeq,8hr}$	Sleep disturbance and Wellbeing
$L_{Aeq,24hr}$	Cardiovascular disease and Annoyance
L_{night}	Sleep disturbance and Wellbeing
L_{max} and SEL	Sleep disturbance and Cognitive impairment

Aviation Policy and Regulator Overview

There are three main tiers of regulation which govern aircraft noise in the UK: international, national and local regulation.

International regulation

International Civil Aviation Organization

The International Civil Aviation Organization (ICAO) is a specialised division of the United Nations created to promote the safe and orderly development of international civil aviation throughout the world. It aims to develop the principles and techniques of international civil air navigation and foster the planning and development of international air transport. ICAO establishes International Standards, Recommended Practices and Procedures regarding the technical areas of aviation, including aircraft noise. After a standard is adopted, it is put into effect by each ICAO member state in its own country.

In relation to the management of aircraft noise, ICAO is responsible for:

- Aircraft noise certification standards; and
- The ICAO Balanced Approach to Aircraft Noise Management

ICAO Certification Standard

ICAO is responsible for the setting of aircraft noise standards through a process of certification. The primary purpose of noise certification is to ensure that the latest available noise reduction technology is incorporated into aircraft design and that this is demonstrated by procedures that are relevant to day-to-day operations. This aims to ensure that noise reductions offered by technology are reflected in reductions around airports.

Notably the quota count (QC) system, referred to in this document, is based on the certificated noise levels for individual aircraft and is classified separately for arrivals and departures. The QC classification is intended to indicate the relative contributions from individual aircraft to the total noise exposure experienced by communities near airports.

Since their introduction, ICAO has set progressively tighter noise certification standards for civil aircraft. Aircraft which operate in ICAO member states must conform to these certification standards, which are specified into one of four categories, known as ‘Chapters’. The Chapters set maximum acceptable noise levels for different aircraft at three specific points during landing and take-off.

The first aircraft noise standard, Chapter 2, was introduced in 1973 and Chapter 2 aircraft have been banned from operating within the EU since 2002, unless they are granted specific exemptions.

Chapter 4 standards have applied to all new aircraft manufactured since April 2006. These aircraft must meet a standard of being cumulatively 10 dB quieter than Chapter 3 aircraft, based on three measurements.

Chapter 14, which was agreed in 2013, represents a cumulative increase in stringency of 7 dB compared with Chapter 4 and applies to large civil aircraft certified after 31 December 2017 and smaller aircraft from 2020.

ICAO Balanced Approach

The Balanced Approach is a policy adopted by ICAO, which helps its Member States to identify the noise problem at an airport and considering the measures available to reduce noise through the appropriate considerations of the following elements.

1. The reduction of noise at source i.e., quieter aircraft
2. Noise abatement operational procedures i.e., optimising how aircraft are flown and the routes they follow to limit the noise impacts;
3. Land-use planning and management.
4. Operating restrictions, only after consideration of the other measures above. This may include air traffic movement caps or preventing certain nosier types of aircraft operating at certain / any time.

National Legislation

The EU regulations and directives of most relevance to the Noise Action Plan are:

- European Union Directive 2002/49/EC transposed to the Environmental Noise (England) Regulations 2006 (as amended) (Statutory Instrument 2238) and
- Regulation EU 598/2014 transposed to The Airports (Noise-related Operating Restrictions) (England and Wales) Regulations 2018 (Statutory Instrument 785)

Since the UK's withdrawal from the European Union on the 31 January 2020 (EU Exit), the transposed regulations have been retained in English law subject to some amendments.

Environmental Noise (England) Regulations 2006 (as amended)

These regulations transpose the requirements of EC Directive 2002/49/EC (Environment Noise Directive – see above) into UK law. They place a duty on the Secretary of State to produce strategic noise maps and, under regulation 18, airport operators are obliged to produce noise action plans based on the strategic noise maps.

The Airports (Noise-related Operating Restrictions) (England and Wales) Regulations 2018

These Regulations provide the general rules on aircraft noise management by ensuring that the ICAO Balanced Approach is adopted. It also sets out the definition of marginally compliant aircraft and the process to be followed in the implementation of an operating restriction which might restrict access to the airport. It requires that noise-related operating restrictions cannot be introduced as a first resort as a range of other mitigation measures must be considered first. If a noise-related operating restriction is considered necessary, it can only be imposed after the 'cost effectiveness' of the restriction has been considered.

These Regulations give effect to Regulation (EU) 598/2014 in England and Wales. They require airport operators to provide the competent authority with any information that they may require to carry out their functions under Regulation (EU) No598/2014.

Act of parliament and regulations

The UK Government also enacts Acts of Parliament and regulations which deal with aircraft noise. The relevant legislation is detailed below:

Civil Aviation Acts 1982, 2006, 2012

These Acts grant the Government powers to introduce noise control measures to limit or mitigate the effect of noise and vibration connected with taking off or landing aircraft at 'designated airports' i.e., Heathrow, Gatwick, and Stansted. Importantly, London Southend is not a designated airport.

These powers were widened by the Civil Aviation Act 2006. The Act permits an airport authority to charge aircraft operators for use of the airport based on noise and emissions. Airport operators can thereby introduce differential charges to incentivise the use of quieter and cleaner aircraft.

The 2012 Act was designed to modernise key elements of the regulatory framework for civil aviation in the UK and it offers a package of reforms to make regulation, and the sanctions which support it, more flexible, proportionate, targeted and effective.

Airport Act 1986

This Act gives power to the Secretary of State to make orders if it appears to them that the existing runway capacity of the airport is not fully utilised for a substantial proportion of the time during which it is available. It includes powers to limit the number of occasions on which aircraft may land or take off at an airport and schemes to allocate airport capacity.

Aeroplane Noise Regulations 1999

These regulations set out the noise certificate requirements for both propeller and jet aeroplanes registered in the UK. They ensure that no aircraft can land or take off in the UK without a valid noise certificate issued by its competent authority. The regulations make reference to noise certification standards and noise limits issued by ICAO and also provides a list of aircraft that are exempt from the ICAO noise certification.

National Policies

Overarching Aviation Noise Policy 2023

In March 2023 the government updated its overall policy on noise ahead of the anticipated publication of a noise policy paper in late 2023:

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

In relation to aviation noise, the policy statement recognises that:

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

The policy builds upon the Aviation 2050 Green Paper, the 2020 consultation on night flight restrictions, and the Air Navigation Guidance 2017 and advises that:

> *"We consider that 'limit, and where possible reduce' remains appropriate wording. An overall reduction in total adverse effects is desirable, but in the context of sustainable growth an increase in total adverse effects may be offset by an increase in economic and consumer benefits. In circumstances where there is an increase in total adverse effects, 'limit' would mean to mitigate and minimise adverse effects, in line with the Noise Policy Statement for England."*

The policy also notes the Government's view that "*there is clear evidence of additional health impacts of night flights, it is also right that this should be recognised within overarching noise policy."*

Aviation 2050 – The Future of UK Aviation 2018

Aviation 2050 is a draft strategy document prepared by the Government for consultation in 2018. The document sets out Government thinking on the interaction between its noise policy and its wider airspace modernisation policies and proposals. The document emphasised the need for a clearer noise policy framework alongside measures to incentivise best operational practice to reduce noise and measures to improve airport noise insulation schemes. The document proposed the following new measures:

- *"Setting a new objective to limit, and where possible, reduce total negative effects on health and quality of life from aviation noise. This brings national aviation policy in line with airspace policy updated in 2017*
- *Developing a new national indicator to track the long-term performance of the sector in reducing noise. This could be defined either as a noise quota or a total contour area based on the largest airports*
- *Routinely setting noise caps as part of planning approvals (for increase in passengers or flights). The aim is to balance noise and growth and to provide future certainty over noise levels to communities. It is important that caps are subject to periodic review to ensure they remain relevant and continue to strike a fair balance by taking account of actual growth and the introduction of new aircraft technology. It is equally important that there are appropriate compliance mechanisms in case such caps are breached and the government wants to explore mechanisms by which airports could 'pay for' additional growth by means of local compensation as an alternative to the current sanctions available*
- *Requiring all major airports to set out a plan which commits to future noise reduction, and to review this periodically. This would only apply to airports which do not have a noise cap approved through the planning system and would provide similar certainty to communities on*

future noise levels. The government wants to see better noise monitoring and a mechanism to enforce these targets as for noise caps. The noise action planning process could potentially be developed to provide the basis for such reviews, backed up by additional powers as necessary for either central or local government or the CAA".

The document also recognised the development of evidence in relation to the effects of aviation noise in stating that:

"The government is considering the recent new environmental noise guidelines for the European region published by the World Health Organization (WHO). It agrees with the ambition to reduce noise and to minimise negative health effects, but it wants policy to be underpinned by the most robust evidence on these effects, including the total cost of action and recent UK specific evidence which the WHO report did not assess."

Flightpath to the Future: a strategic framework for the aviation sector 2022

'Flightpath to the future' is a DfT policy document building on the responses to the Aviation 2050 consultation (2018) and setting out a strategic framework for the aviation industry over the next 10 years.

The executive summary advises that:

"The Government recognises that, whilst many of the issues considered through the Aviation 2050 consultation (2018) remain very relevant today, it is important that we have a clear action plan for the sector. This must take into account contextual changes, including the impact of the pandemic and the opportunities presented by our exit from the European Union (EU)".

The document includes a ten-point plan for the future of aviation and the establishment of a new Aviation Council to deliver the plan. Noise is considered under point 4 in relation to "tackling the localised impacts of aviation".

The document does not update any of the polices but makes reference to Aviation 2050.

Airports National Policy Statement 2018

The APF strongly supported making best use of existing airport capacity as part of a strategy to promote a vibrant aviation sector. This policy has been re-affirmed in the Airports National Policy Statement[7] published in June 2018, where Government states that it is supportive of all airports who wish to make best use of their existing runways. Beyond the horizon – The future of UK aviation –

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/858533/airports-nps-new-runway-capacity-and-infrastructure-at-airports-in-the-south-east-of-england-web-version.pdf

Making best use of existing runways[8], also published in June 2018, advised that "the government is supportive of airports beyond Heathrow making best use of their existing runways."

Airspace Policy Framework 2017

In 2017 the UK Government published, and consulted on, its Airspace Policy (AP)[9] framework. The Government's consultation response provided an update to the some of the policies on aviation noise outlined in the APF and continues to be viewed as informing Government policy.

The consultation response advised that, "The government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction between industry and communities in support of sustainable development. Consistent with the Noise Policy Statement for England…".

Importantly the Noise Policy Statement for England makes a distinction between those significant adversely affected, and those adversely affected, and requires the focus of noise control to be on those people significantly adversely affected because those are the people most at risk of health impacts.

Aviation Policy Framework 2013

The Aviation Policy Framework (APF) was published in March 2013 and contains a section on noise which includes reference to Noise Action Plans.

It sets out the Government's overall objective on aviation noise: "to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise".

The APF focuses on the benefits of aviation and its environmental impacts and frames national policy to strike a balance between the two. The APF seeks to integrate aviation noise policy contextually with other Government policies for land use planning in the National Planning Policy Framework (NPPF) and the promotion of good health and good quality of life through the management of noise in the Noise Policy Statement for England (NPSE).

The APF supports making best use of existing airport capacity as part of a strategy to promote a vibrant aviation sector (para. 1.24, para1.60 and other references).

In seeking to minimise the impact of aircraft noise, airports are bound by the Government's regulatory framework, which follows the agreed principles set out by the International Civil Aviation Organization (ICAO), known as the 'balanced approach'.

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf

[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918784/consultation-response-on-uk-airspace-policy-web.pdf

The National Planning Policy Framework 2012 (as amended)

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied.

The NPPF provides Government's policies to promote sustainable development and sets out that the purpose of the planning system is to contribute to the achievement of sustainable development. Sustainable development includes three dimensions: economic, social and environmental, and thus, when planning decisions are made to increase capacity, the process requires weighing the relative balance of these three factors.

The NPPF does not contain specific policies for nationally significant infrastructure projects for which particular considerations apply. These are determined in accordance with the decision-making framework set out in the Planning Act 2008 and relevant national policy statements for major infrastructure, as well as any other matters that are considered both important and relevant (which may include the National Planning Policy Framework). National policy statements form part of the overall framework of national planning policy, and may be a material consideration in decisions on planning applications.

The Noise Policy Statement for England 2010

The Noise Policy Statement for England (NPSE) of March 2010 states the long-term vision of Government noise policy is to "promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development".

The long-term vision is supported by the following aims; through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life;
- Where possible, contribute to the improvement of health and quality of life.

The intention is that the NPSE should apply to all types of noise apart from noise in the workplace (occupational noise). For the purposes of the NPSE, "noise" includes:

- "Environmental noise" which includes noise from transportation sources;
- "Neighbour noise" which includes noise from inside and outside people's homes; and
- "Neighbourhood noise" which includes noise arising from within the community such as industrial and entertainment premises, trade and business premises, construction sites and noise in the street.

The NPSE introduced the concepts of the Significant Observable Adverse Effect Level (SOAEL) and the Lowest Observable Adverse Effect Level (LOAEL) to draw the distinction between those noise levels that should be avoided (above SOAEL) and those that should be minimised (above LOAEL), all in the context of Government policy on sustainable development.

The NPSE does not stipulate the values of the LOAEL and SOAEL, which can vary depending on noise source, receptor and time of day. This allows flexibility for different policy areas such as annoyance as opposed to impact on health indicators, and the ability to adapt policy in line with recent research.

Local Policy and Agreements

Joint Area Action Plan (JAAP)

The local policy framework for development of the London Southend is set out in the development plans of Southend-on-Sea Borough Council and Rochford district Council.

In December 2014 the two councils adopted London Southend Airport & Environs Joint Area Action Plan (JAAP).

This was prepared in response to the challenges and opportunities offered by London Southend and includes plans for an airport related employment development to the north of the airport.

The Plan is intended to integrate land use, transport, environmental and regeneration proposals with clear mechanisms for delivery.

The JAAP provides the basis for coordinating the actions of a range of partners with an interest in the airport and the surrounding environs, and establishes planning policies up to 2031 and beyond.

The JAAP contains a number of policies for the airport including:

- supporting the growth of the airport to a capacity of 53,300 air traffic movements (Policy LS1)
- Support proposals for further development at the airport provided the proposals address issues such as noise (Policy LS2)
- Supporting expansion of the passenger terminal (Policy TF1)
- Supporting application for Aircraft Maintenance Repair and Overhaul proposals within identified areas of the airport (Policies MRO1, 2 and 3)

The JAAP includes a summary of the environmental controls schedule based on those contained in the S.106 Agreement.

Planning Conditions and S.106 Agreement

In 2012, when permission was granted for the runway extension (application number 09/01960/FULM) a Section 106 agreement was entered into with Southend-on-Sea Borough Council, Rochford District Council and Essex County Councils. This put in place a comprehensive set of measures and controls on various aspects of the airport operations, including to control and limit noise from aircraft operations.

This includes a limit on the number of aircraft movements of 53,300 per year, including a cargo movement limit of 5,330 per year. There is also a limit on the number of night flights (in the hours 2300 to 0630) of 120 per month and limits on the types of operations permitted at night.

Planning conditions also apply to other developments that have taken place at the airport, such as the new terminal, but these do not impose noise constraints.

Other

The Lease

London Southend is held on a 150 year lease from Southend-on-Sea Borough Council from 1994. The lease was amended in 2012 to include the land containing the runway extension.

UK Aeronautical Information Publication (AIP)

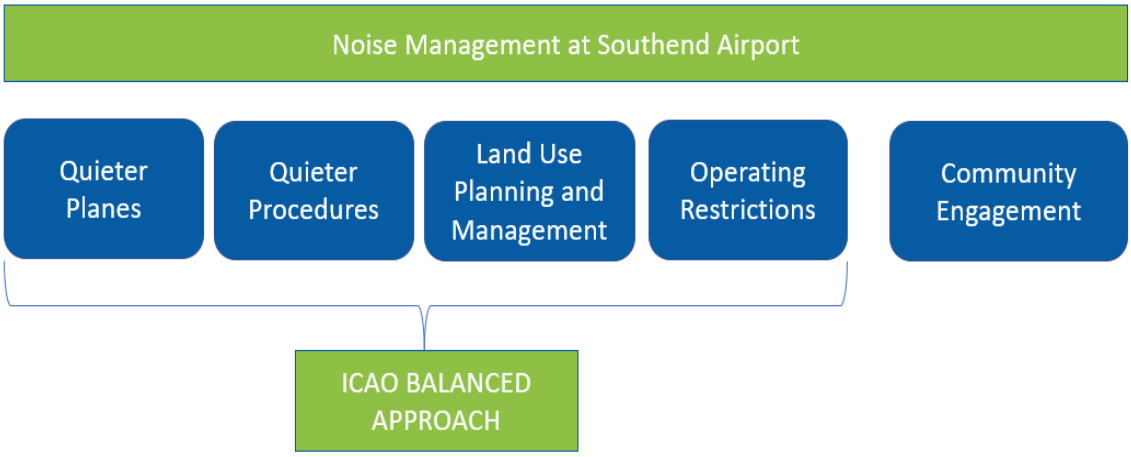
The UK AIP is designed to be an operations manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the UK. It covers aspects such as noise abatement procedures, which for Southend Airport can be found at eAIS Package United Kingdom (nats.co.uk).

Noise Management at the Airport

London Southend is committed to managing noise at and around the airport. Although noise cannot be eliminated completely, our goal is to manage it responsibly. London Southend has developed over a number of years a noise management strategy to limit and where possible reduce noise from aircraft operations.

This strategy is supported by a number of existing requirements and actions which are best considered in terms of five pillars, shown in Figure 3.

FIGURE 3.NOISE MANAGEMENT AT LONDON SOUTHEND



The first four of these reflect the four principal elements of ICAO's Balanced Approach to Aircraft Noise Management

Whilst not specifically mentioned by the ICAO balance approach, many airports operate a so called 'fifth pillar' recognising the importance of community engagement and collaboration in identifying and understanding issues and working towards improvements.

Reduction of noise at source

Modern aircraft are now significantly quieter than the first generation of aircraft, and the ICAO is setting progressively tighter noise certification standards for new aircraft.

In Table 4 are presented the reduction of noise at source measures, which are currently in place at London Southend.

TABLE 4. REDUCTION OF NOISE AT SOURCE MEASURES IN PLACE AT LONDON SOUTHEND

Measure	Description
Noise-related fees and charge	Through engagement with its airlines, the airport has introduced a new tariff incentivising the use of quieter and cleaner aircraft since October 2021. The new noise surcharges, that include significantly higher fees relating to night-time operations, will help encourage the use of quieter planes and daytime operations.

Operating Procedures

A range of quieter procedures measures are already in place at London Southend as evidenced in the AIP. The operating procedures measures in place at London Southend are presented in Table 5.

TABLE 5. OPERATING PROCEDURES MEASURES IN PLACE AT LONDON SOUTHEND

Measure	Description
Preferred runway scheme	A preferred runway scheme is in operation during day and night period, when the weather and safety conditions allows. London Southend is committed to operating all aircraft movements from and to the northeast (over Rochford) as this is a much less densely populated area than to the southwest. The airport agreed to ensure that more than 50% of aircraft operations occur to and from the northeast of the airfield over Rochford during daytime.
Noise preferential routes	Noise preferential routes are also in operation to minimise the number of local residents being overflown by departing aircraft
Light aircraft procedures	The airport operates specific arrival and departure procedures for light aircraft in order to minimise the number of local residents being affected by light aircraft operations. These procedures are described in full in the AIP.

Measure	Description
Airspace Change Proposal	The airport is also separately developing, in consultation with local communities and stakeholders, our Airspace Change Proposal which will allow aircraft to utilise Performance Based Navigation (PBN), allowing aircraft to fly more accurately along departure routes and therefore provide an opportunity to minimise the number of people affected by aircraft noise.
Ground Noise - Taxiing	Aircraft taxiing is minimised where possible. Following discussions with local residents, the use of the Charlie taxiway (situated close to Wells Avenue) is restricted between 23:00 – 06:30 (unless alternative taxiways are closed for maintenance). Larger aircrafts are expected to use the technique of single engine taxiing for arrivals.
Ground Noise - Ground Power Units	Ground Power Units (GPUs) are used to power cargo aircraft whilst loading/unloading and are typically diesel powered. In February 2023 the airport hired quieter electric Ground Power Units (eGPUs) to further reduce aircraft ground noise from the night-time cargo operations.
Ground Noise - APU reduction	To minimise impact an Aerodrome Directors Notice has been issued to all airlines to reduce APU use from 30 to 15 minutes for passenger aircraft.
Ground Noise - Engine testing	London Southend restricts when engine test runs can be carried out (they are not permitted during night-time hours, 20:00 – 08:00), The location of test runs is also controlled, and specific locations have been identified to minimise noise effects.

London Southend will continue to review its aircraft operations to seek further ways to mitigate ground noise, especially during the night-time period. Importantly the 'quiet ground operations scheme' is currently under review.

Land Use Planning and Management

The land use planning measures in place at London Southend are presented in Table 6.

TABLE 6. LAND USE PLANNING AND MANAGEMENT MEASURES IN PLACE AT LONDON SOUTHEND

Measure	Description
Property Purchase Scheme	London Southend has introduced a Property Purchase Scheme, providing, offering to purchase properties affected by high levels of noise (69dBLAeq over the period 0700-2300hrs or more). However, at the present time there are no properties within this noise contour.
Sound and Thermal Insulation Grant Scheme	London Southend also offers Sound and Thermal Insulation Grant Scheme for properties that fall within the 63dB $L_{Aeq\ 16\ hr}$ noise contour.

Operating Restrictions

The following operating restrictions in place at London Southend are presented in Table 7.

TABLE 7. OPERATING RESTRICTIONS MEASURES IN PLACE AT LONDON SOUTHEND

Measure	Description
Air Transport Movement Cap	There is an annual ATM cap of 53,300 movements per year, which was set out in Section 106 agreement. There is a further limit on dedicated cargo aircraft movements of 5,330 per annum, or 10% of the total number of aircraft movements. Total aircraft movements by Boeing 737-300 aircraft shall not exceed 2,150 per annum.
Night flight restrictions **(2300hrs – 0630hrs)**	The number of night-time operations is capped at 120 per month. No aircraft with Quota Count ("QC") of more than 1.0 (EPNdB 92.9) or any helicopters allowed to take off or land in the night period. No Passenger Flights to take off or land between 2300 and 0630 unless they are Delayed or Diverted, provided that up to 90 Passenger Flights per month may be scheduled to land during the shoulder period of 2300 and 2330hrs. If the number of ATMs at night exceed 120 there are provisions for compensatory adjustments in the Night Flight Quota for the following Quota Month.

Measure	Description
Daytime restrictions (0630hrs - 2300hrs)	No aircraft with QC of more than 2.0 (EPNdB 95.9) allowed to take off or land, provided that up to 60 daytime movements of aircraft with a QC between 2 and 4.0 (EPNdB 95.9 - 98.9) undergoing maintenance are allowed in each Quota Year. If the number of ATMs of aircraft of between QC2 and QC4 exceed 60 in a Quota Year, there are provisions for compensatory adjustments in the Quota for the following Quota Year.

Community Engagement

London Southend is engaged with local councils, MPs, and community groups to understand local concerns about aircraft noise and to seek ways in which it can work to minimise disturbance.

It primarily achieves by way of the longstanding Airport Consultative Committee (ACC) and the Independent Community Noise Forum (CNF) which are discussed in more detail below.

Noise Complaints Handling Service

London Southend has a dedicated Noise Manager that manages the airport's noise complaints system and deals with and responds to any complaints regarding noise.

Since august 2020, the airport has provided an online self-service complaint system, provided via "WebTrak". WebTrak can be used to view all aircraft movements in the vicinity of the airport and gain further information about a specific flight e.g., aircraft details, location, height and whether it was operating compliantly. It also provides quick and easy access to a noise form to register a complaint if necessary.

Complaints regarding noise at the airport should be made in the first instance via WebTrak, but can also be made in writing to: The Noise Manager, London Southend Airport, Southend-on-Sea, Essex SS2 6YF. The airport maintains a record of all complaints received and aims to respond to all complaints within 10 working days (providing that the necessary contact details are provided).

The Airport collates monthly noise complaint data which it reports to the ACC, local authorities and the Community Noise Forum. In addition, a summary of all noise complaints is included in the Airport's Annual Report, which is published on the website and includes data on the number of people and complaints received, along with the geographic locations of where the complaints have come from.

Noise monitoring

The airport has operated a noise and track keeping system since March 2012, which takes radar data from air traffic control (ATC) and combines it with flight information such as a call sign, tail number, type and destination. Data is captured from two fixed noise monitors which are located approximately one mile from each end of the single runway.

£114,000 has been invested in noise and track monitoring equipment with an ongoing annual maintenance cost of £18,000.

Since 2020, the system has been upgraded to include "WebTrak", which had an initial cost of approximately £28,000 with annual ongoing costs approximately £8,000.

London Southend Airport Community Noise Forum

The London Southend Airport Community Noise Forum (LSACNF) was set up as an independent body in 2021 and was established to create and maintain an impartial pathway for local communities to engage with the airport, and to increase trust, transparency and clarity on noise issues associated with London Southend.

London Southend is one of only four UK airports to have established an independent community noise forum.

The LSACNF is led by an independent Chair and forum members consist of residents from Southend-on Sea postcode areas (local to the airport and flight paths), local community resident groups, local authority representatives, Department of Transport (DfT), Envirosuite (WebTrak provider), acoustic consultants and key members of the airport management team.

Results of the 2021 Strategic Noise Mapping

2021 Strategic Noise Mapping

The Regulations require the creation of strategic noise maps for the main sources of environmental noise, i.e., major roads, major railways, major airports and agglomerations every five years. The following noise contours are required for a calendar year with the metrics L_{den}, L_{day}, $L_{evening}$, and L_{night}.

The 2021 Strategic Noise Maps for London Southend were produced by Bickerdike Allen Partners LLP and submitted to Defra. The population count data was provided in the Defra data pack. The strategic noise maps are reproduced at **Appendix B – Noise Maps.**

The estimated total number of dwellings and people exposed above various noise levels in 2021, derived from the strategic mapping of noise are shown in Table 8 to Table 12 below.

- L_{den} (24 hour) – Table 8
- L_{day} (07:00-19:00hrs) – Table 9
- $L_{evening}$ (19:00-23:00hrs) – Table 10
- L_{night} (23:00-19:00hrs) – Table 11
- L_{Aeq16h} (07:00-23:00hrs) – Table 12

For comparison purposes, data from the previous rounds are shown in the tables.

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".

TABLE 8: DWELLINGS AND PEOPLE IN NOISE CONTOUR AREAS – L_{DEN} (24H PERIOD): 2006, 2011, 2016 AND 2021

Contour Level (dBL_{den})	Number of dwellings				Number of People			
	2006	2011	2016	**2021**	2006	2011	2016	**2021**
≥55	2,100	400	1,000	**1,650**	4,800	1,000	2,200	**3,700**
≥60	200	<100	50	**100**	400	100	100	**200**
≥65	<50	<100	<50	**0**	<100	<100	<100	**0**
≥70	0	0	0	**0**	0	0	0	**0**

TABLE 9: DWELLINGS AND PEOPLE IN NOISE CONTOUR AREAS – L_{DAY} (07:00 – 19:00HRS): 2006, 2011, 2016 AND 2021

Contour Level (dBL_{day})	Number of dwellings				Number of People			
	2006	2011	2016	**2021**	2006	2011	2016	**2021**
≥54	2,500	1,000	1,500	**750**	5,700	2,200	3,400	**1,700**
≥57	950	200	400	**100**	2,200	500	900	**200**
≥60	150	<100	50	**<50**	300	200	100	**<100**
≥63	<50	<100	<50	**0**	<100	<100	<100	**0**
≥66	<50	<100	<50	**0**	<100	<100	<100	**0**
≥69	0	0	0	**0**	0	0	0	**0**

TABLE 10: DWELLINGS AND PEOPLE IN NOISE CONTOUR AREAS – $L_{EVENING}$ (19:00 – 23:00HRS): 2006, 2011, 2016 AND 2021

Contour Level ($dBL_{evening}$)	Number of dwellings				Number of People			
	2006	2011	2016	**2021**	2006	2011	2016	**2021**
≥54	350	<100	300	**0**	800	100	700	**0**
≥57	50	<100	<50	**0**	100	<100	<100	**0**
≥60	50	<100	<50	**0**	<100	<100	<100	**0**
≥63	0	0	0	**0**	0	0	0	**0**
≥66	0	0	0	**0**	0	0	0	**0**
≥69	0	0	0	**0**	0	0	0	**0**

TABLE 11: DWELLINGS AND PEOPLE IN NOISE CONTOUR AREAS – L_{NIGHT} (23:00 – 07:00HRS): 2006, 2011, 2016 AND 2021

Contour Level (dBL_{night})	Number of dwellings				Number of People			
	2006	2011	2016	**2021**	2006	2011	2016	**2021**
≥48	950	<100	150	**2,000**	2,200	<100	300	**4,400**
≥51	150	<100	50	**350**	300	<100	100	**800**
≥54	<50	<100	<50	**100**	<100	<100	<100	**200**
≥57	<50	0	0	**<50**	<100	0	0	**<100**
≥60	0	0	0	**0**	0	0	0	**0**
≥63	0	0	0	**0**	0	0	0	**0**
≥66	0	0	0	**0**	0	0	0	**0**

TABLE 12: DWELLINGS AND PEOPLE IN NOISE CONTOUR AREAS – $L_{AEQ,16H}$ (07:00 – 23:00HRS): 2006, 2011, 2016 AND 2021

Contour Level ($dBL_{Aeq,16h}$)	Number of dwellings				Number of People			
	2006	2011	2016	**2021**	2006	2011	2016	**2021**
≥54	1,950	700	1,100	**450**	4,400	1,500	2,500	**1,000**
≥57	650	200	250	**50**	1,400	300	600	**100**
≥60	100	<100	50	**<50**	200	100	100	**<100**
≥63	<50	<100	<50	**0**	<100	<100	<100	**0**
≥66	<50	<100	0	**0**	<100	<100	0	**0**
≥69	0	0	0	**0**	0	0	0	**0**

The above Table 8 identifies that the population within the 55dB L_{den} contour has increased since Round 3 (2016), from 2,200 to 3,700 people. Importantly L_{den} is a metric which significantly penalises noise during the night-time.

The population within the 54dB L_{day} contour shows a decrease from 3,400 to 1,700 people. The population within the 54dB $L_{evening}$ contour shows a decrease from 700 to 0 people. Both metrics demonstrate a reduction in noise exposure commensurate with a reduction in the numbers of aircraft movements during the day and evening.

The population within the 48dB L_{night} contour shows an increase from 300 to 4,400 people. The increase is due to the number of cargo movements at night, which has increased significantly in 2021 even though overall movements decreased due to COVID-19. Importantly these night-time movements were in accordance with night flight restrictions imposed by the Airports Section 106 agreement.

In summary, no reduction of the number of people affected as a result of retained, revised or new actions has been estimated. This is due to uncertainty in evaluating the trend in noise exposure as a result of previous noise action plans. This uncertainty is due to the highly anomalous situation at the Airport in 2021 due to COVID travel restrictions and the ongoing variability in operations since, as the airport continues its journey back to 2 million plus passengers.

By the year 2028 the airport is aiming to return to pre-COVID levels of activity, which will entail an increase in noise exposure from existing. Noting the general trend in decreasing aircraft noise emissions due to noise reduction technology, the airport will continue to incentivise the use of quieter and cleaner aircraft in addition to the range of noise management measures in the NAP.

On the basis of the airport continuing to focus on developing passenger flights, which predominantly operate during the daytime, the airport estimates the number of people within the L_{den} 55dB(A) noise exposure contour in 2026 will be no greater than the 3,700 estimated for 2021.

2018 Bi-annual S106 contours

For the purposes of this Noise Action Plan, it is recognised that comparisons cannot easily be made, and conclusions drawn based on noise data from 2021 alone. Therefore, in accordance with Defra guidance, pre-pandemic supplementary noise contours have also been considered to provide more context in informing the current Noise Action Plan.

As part of LSA's Section 106 agreement noise contours are required to be produced every two years. These contours have been produced for the 16-hour daytime period, 07:00 to 23:00, based on the actual 92-day summer period in 2018.

Table 13 below provides a comparison of 2016, 2018 and 2022 noise contour areas.

TABLE 13: COMPARISON OF 2016, 2018 AND 2022 NOISE CONTOUR AREAS

Contour Level ($dBL_{Aeq,16h}$)	Area of Daytime Air Noise Contours (km^2)		
	2016	2018	2022
≥54	3.2	5.2	2.4
≥57	1.7	2.7	1.3
≥60	0.9	1.4	0.8
≥63	0.5	0.8	0.5

≥66	0.3	0.5	0.3
≥69	0.2	0.3	0.2

Table 13 shows that the 2018 contour areas are around 60% larger than those generated for 2016 and 2022. The increase in the 2018 contour area compared to 2016 is considered to be largely due to the increase in movements. The table also demonstrates that even the year 2022 is not representative, because movements remain subdued post-pandemic.

Identification of Problems and Situations that Need to be Improved

The Defra guidance recommends that airports should consider whether any action is required based on a number of considerations, including as a first priority action to be taken where residential properties are exposed to noise levels above 69 dB $L_{Aeq,16h}$.

Strategic Noise Mapping results

It can be seen from the results of the strategic noise mapping above, there have not been any people within the 69 dB L_{Aeq16h} contour over the four rounds. Furthermore, no people were identified within the 66 dB L_{Aeq16h} contour for rounds 3 and 4, with less than 100 identified in the previous two rounds. In respect of the 63 dB L_{Aeq16h} contour no people were identified for round 4 but less than 100 were identified for rounds 1 to 3.

Bi-annual S106 Noise Mapping results

It can be seen from the results of the Bi-annual S106 noise mapping above, there have not been any people within the 69 and 66 dB L_{Aeq16h} contour over the four rounds.

Based on the results of the 2018 noise assessment 18 new properties were identified within the 63 dB L_{Aeq} noise contour and therefore qualified for inclusion within the Sound and Thermal Insulation Grant Scheme.

Defra guidance also advises that consideration should also be given to any wider considerations from the numbers exposed to noise at different times of the day and night, noise complaints and issues raised by consultative committees.

In this respect London Southend acknowledges the increase in the population within the 55 dB L_{den} contour, which was driven by an increase in cargo movements at night which was quite pronounced in 2021. Importantly these movements were in accordance with night flight restrictions imposed by the Airports Section 106 agreement. Current night flight levels are below 2021 levels but would expect these to increase as the cargo business builds back over the coming years.

Noise Complaints Information and Stakeholder Feedback

The Airport collates monthly noise complaints data, a summary of which is included in the Airport's Annual Reports, which are published on the website at the following link - Annual reports. Extracts from the latest annual report, covering the period 2022 to 2023 are presented in **Appendix E – Noise Complaints Information**.

The data shows that 79% of all complaints were about night-time operations, 66% of which related to cargo operations. Importantly as discussed above, the current number of night flight are well below 2021 levels but numbers might be expected to increase over the coming years.

Additionally, the data suggests that the majority of complaints were received from communities to the southwest of the airport, commensurate with a higher density of population. Importantly the airport operates a preferred runway scheme which seeks to avoid overflights to the southwest at night and aims to keep the percentage of movements over the southwest to below 50% during the day.

Some complaints were also received in respect of light aircraft performing training circuits, which was also picked up through stakeholder feedback.

Additionally, based on stakeholder feedback ground noise can be a particular concern for residents immediately adjacent to the airfield, particularly in relation to aircraft on hold position C1 on taxiway Charlie. A comprehensive, independent noise study was undertaken to quantify the noise exposure and determine appropriate physical and operational mitigation. Various solutions have been explored but have so far proven impractical. Other measures, such as limiting the holding time and avoiding the use of the Charlie taxiway have been implemented and Air Traffic Control seek to tactically avoid the use of taxiway Charlie when traffic mix and therefore safety margins allow. Further noise mitigation measures will continue to be explored in line with the longer term aspiration to develop and re-configure the airport as it grows in the coming years.

The Defra guidance advises that "*no other noise sources (such as 'ground noise' from airport activities or helicopter activity) will have been taken into account in the noise mapping. However, that does not preclude the Noise Action Plan covering other airport related noise sources.*"

Whilst the results of the mapping do not include ground noise sources, it is recognised that this can impact on properties close the airport.

Ground noise is the subject of controls and restrictions set as part of the airport's Section 106 legal agreement. These controls ensure that ground noise is managed in a way which balanced operations with local impacts.

Current Noise Action Plan

The airport has a full and comprehensive range of noise management measures in place. These measures, many of which derive from the Section 106 agreement, provides limits on the numbers and types of aircraft, operational procedures, mitigation and compensation schemes and monitoring and reporting.

The revised Round 4 noise action plan for 2024-2028 is presented in the following sections. It builds upon the Section 106 agreement, formalising some existing voluntary activities and goes further by introducing new voluntary actions.

Importantly this noise action plan has introduced a new action to conduct an annual audit of the noise actions to evaluate and share progress. It is intended that through this process that, where reasonably practicable, actions are further developed to include SMART (specific, measurable, achievable, realistic, time bound) targets.

Reduction of noise at source

Table 14 presents the proposed actions under the reduction of noise at source pillar.

TABLE 14. NOISE ACTION PLAN – REDUCTION OF NOISE AT SOURCE

Short Title	Action Affected	Target and timescales	People affected
Noise-related fees and charges	The airport will continue to work with the airlines through our airline consultation process to review the noise surcharges to incentivise the use of quieter aircraft	Annual review	All communities affected by arrivals and departures
Chapter limits and charges	The airport will continue to maintain noise surcharges to incentivise the use of quieter aircraft	Annual review	All communities affected by arrivals and departures

Noise abatement operational procedures

Table 15 presents the proposed actions under the noise abatement operational procedures pillar.

TABLE 15. NOISE ACTION PLAN – NOISE ABATEMENT OPERATIONAL PROCEDURES

Short Title	Action Affected	Target and timescales	People affected
AIP noise compliance	The airport will continue to follow the climb restriction described in the AIP[10]	Continuous	All communities affected by departures
Preferred runway scheme	The airport is, during the night period, committed to operating all aircraft movements from and to the northeast (over Rochford) as this is a much less densely populated area than that to the southwest of the airport During the daytime the airport strives to ensure that more than 50% of aircraft operations occur to and from the northeast of the airfield over Rochford	Continuous	All communities affected by arrivals and departures
Departure Noise Preferential Routes	The airport will continue to minimise the number of local residents being overflown by departing aircraft through the use of noise preferential routes	Continuous	All communities affected by departures
Light aircraft procedures	The airport will continue to follow the light aircraft procedures described in the AIP	Continuous	All communities affected by arrivals and departures

[10] Defined in AIP

Short Title	Action Affected	Target and timescales	People affected
Reducing the use of reverse thrust at night	The airport will continue to investigate the use of reverse thrust and other activities at night and work with airlines to reduce noise disturbance during the night-time period	Continuous	All communities affected by arrivals
Taxiing	The airport commits to minimising aircraft taxiing where possible. Following discussions with local residents, the use of the Charlie taxiway has been restricted between 23:00 – 06:30 (unless alternative taxiways are closed for maintenance)	Continuous	All communities adjacent to the airfield
APU usage	The airport commits to enforcing compliance with APU usage restrictions described in the AIP	Continuous	All communities adjacent to the airfield
Engine testing	The airport will continue to ensure that all engine testing is carried out in accordance with our Engine Testing Best Practice Plan which stipulates the location of the testing site and the permitted testing times	Continuous	All communities adjacent to the airfield
Benchmarking operational procedures	The airport aims to benchmark operating procedure at other airports e.g., departure procedures to support continual improvements in operations towards the objective of using best practicable means to minimise aircraft noise impacts	We will continually benchmark operational procedures, with one formal review within the life of this Noise Action Plan.	All communities affected by arrivals and departures

Short Title	Action Affected	Target and timescales	People affected
Noise fines	The airport will continue to operate a scheme to fine airlines which continue to breach noise abatement controls	Continuous	All communities affected by arrivals and departures

Land Use Planning and Management

Table 16 presents the proposed actions under the land use planning and management pillar.

TABLE 16. NOISE ACTION PLAN – LAND USE PLANNING AND MANAGEMENT

Short Title	Action Affected	Target and timescales	People affected
Property Acquisition Scheme	The airport will continue to provide the Property Acquisition – for properties that fall within the 69dB $L_{Aeq\ 16\ hr}$ noise contour	Continuous	All communities within the 69dB $L_{Aeq\ 16\ hr}$ noise contour
Sound and Thermal Insulation Grant Scheme	The airport will continue to provide the Sound and Thermal Insulation Grant Scheme – for properties that fall within the 63 dB $L_{Aeq\ 16hr}$ noise contour	Continuous	All communities within the 63dB $L_{Aeq\ 16\ hr}$ noise contour
Benchmark on Noise Insulation Schemes	The airport commits to regularly benchmarking on noise mitigation and compensation measures with other comparable airports to understand if other noise mitigation schemes have been more successful and understand if they are applicable to the airport	We will continually keep under review the schemes, with one formal review within the life of this Noise Action Plan	Those communities most affected by arrivals and departures

Operating Restrictions

Table 17 presents the proposed actions under the operating restrictions pillar.

TABLE 17. NOISE ACTION PLAN – OPERATING RESTRICTIONS

Short Title	Action Affected	Target and timescales	People affected
Total movements cap	The airport will comply with Planning conditions dictating a cap of 53,300 movements per annum and limits on cargo aircraft	Continuous	All communities affected by arrivals and departures
Limits on movements by noisier aircraft types	The airport will comply with Planning conditions dictating limits on movements by noisier aircraft type in terms of a cap of 2,150 per annum of Boeing 737-300s	Continuous	All communities affected by arrivals and departures
Night flight restrictions	The airport will comply with planning condition dictating limits on night-time operations in terms of a cap of 120 aircraft movements per month during the defined night-time period (2300-0630hrs local time)	Continuous	All communities affected by arrivals and departures
Night flight restrictions	The airport will comply with planning condition dictating limits on night-time that only aircraft classified with a Quota Count of one (QC) or less are permitted to take-off or land	Continuous	All communities affected by arrivals and departures

Community Engagement

Table 18 presents the proposed actions under community engagement pillar.

TABLE 18. NOISE ACTION PLAN – COMMUNITY ENGAGEMENT

Short Title	Action Affected	Target and timescales	People affected
Noise and Track Keeping (NTK) Monitoring System	The airport will continue to operate a noise and track keeping monitoring system to monitor noise of arriving, departing and overflight movements and of routes flown by aircraft in compliance with nose preferential routes	Continuous	All communities affected by arrivals and departures
Community Noise Monitoring	In order to respond to community concerns about aircraft noise, London Southend Airport has a mobile noise monitor (NMT). We work with the airport consultative committee to agree on where the NMT is deployed in response to community concerns.	Continuous	All communities affected by arrivals and departures
Noise Complaints System	The airport will continue to maintain a record of all complaints, investigate all complaints relating to aircraft operations, and publish statistics in line with the agreed complaints handling policy	Continuous	All communities affected by arrivals and departures
Local authority engagement	The airport will continue to engage with local planning authorities to understand local concerns about aircraft noise and to seek ways in which it can work to minimise disturbance	Continuous	All communities affected by arrivals and departures

Short Title	Action Affected	Target and timescales	People affected
Noise Contour Reporting	The airport will produce noise contours for the following metrics: • 92 day 8-hour night $L_{Aeq,8h}$ • 92day 16-hour day N65 • 92day 8-hour night N60 To facilitate a deeper understanding of noise exposure for stakeholdersThe airport will continue to produce noise contours every two years for the summer period	Continuous from 2024	N/A
Noise Manager	The airport commits to maintaining a designated noise manager to monitor and review performance against the above measures and prepare the required reports	Continuous	N/A
Annual audit of the noise actions	The airport proposes to start auditing the noise actions each year to evaluate and share progress	Continuous from 2024	N/A
Annual Reporting	The airport will continue to present an annual report to ACC on the progress of the above measures	Continuous	N/A

Evaluating The Noise Action Plan

The airport publishes an annual progress report ("Annual Report") setting out progress on all aspects of the airport's development and operation, various initiatives being progressed, and detailing the performance of the airport against planning conditions and Section 106 obligations. Annual Reports are sent to local councils. MP's and other key stakeholders and publicly available, including via the airport's website.

A range of the other reports are also presented to the regular meetings of the Airport Consultative Committee.

The latest Annual Report 2022-23, which was presented to the Consultative Committee in May, includes a number of sections on noise including track keeping performance and infringements, noise complaints statistics and trends, updates on the uptake of noise insulation grants and latest noise contours.

For financial information, please refer **Appendix C – Financial Information**, which contains indicative expenses by London Southend on noise management activities.

Appendix A - Glossary of Terms

Glossary of terms	
ACC	Airport Consultative Committee
ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication
AMS	Airspace Modernisation Strategy
APF	Aviation Policy Framework
APU	Auxiliary Power Unit. A power unit located on the aircraft.
ATC	Air Traffic Control
ATMs	Air Traffic Movements
CAA	Civil Aviation Authority
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 decibel (dB) is a logarithmic unit of measurement that expresses the magnitude of a physical quantity relative to a specified or implied reference level. Its logarithmic nature allows very large or very small ratios to be represented by a convenient number. Being a ratio, it is a dimensionless unit. Decibels are used for a wide variety of measurements including acoustics, and for audible sound A-weighted decibels (dB (A)) are commonly used.
DEFRA	Department for Environment Food and Rural Affairs (UK Government)
DfT	Department for Transport (UK Government)
END	Environmental Noise Directive
EPNdB	Effective Perceived Noise Decibels (EPNdB). It refers to the metric 'EPNL' (Effective Perceived Noise Level) which is used for noise certification and takes account of tones and duration
ERCD	Environmental Research and Consultancy Department
EU	European Union
FASI-S	Future Airspace Strategy Implementation - South
GPU	Ground Power Unit
ICAO	International Civil Aviation Organization
JAAP	Joint Area Action Plan
$L_{Aeq,\ 16h}$	The A-weighted average sound level over the 16 hour period of 07:00 – 23:00
$L_{Aeq,T}$	The notional A-weighted equivalent continuous sound level which, if it occurred over the same time period, would give the same noise level as the actual varying sound level. The T denotes the time period over which the average is taken, for example $L_{Aeq,8h}$ is the equivalent continuous noise level over an 8 hour period.
L_{day}	The A-weighted average sound level over the 12 hour day period of 07:00 - 19:00

L_{den}	The day, evening, night level, L_{den} is a logarithmic composite of the L_{day}, $L_{evening}$, and L_{night} levels but with 5 dB(A) being added to the $L_{evening}$ value and 10 dB(A) being added to the L_{night} value.
L_{eq}	Equivalent sound level of aircraft noise in dB(A), often called equivalent continuous sound level. For conventional historical contours this is based on the daily average movements that take place in the 16 hour period (07:00 - 23:00 LT) during the 92 day period 16 June to 15 September inclusive.
$L_{evening}$	The A-weighted average sound level over the 4 hour evening period of 19:00 - 23:00
L_{max}	The maximum A-weighted sound level (in dBA) measured during an aircraft fly-by
L_{night}	The A-weighted average sound level over the 8 hour night period of 23:00 – 07:00
LOAEL	Lowest Observable Adverse Effect Level
LSA	London Southend Airport
LSACNF	London Southend Airport Community Noise Forum
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 under contract at several major UK airports.
Noise Contour	Map contour line indicating noise exposure in dB for the area that it encloses.
NPPF	National Planning Policy Framework
NPSE	Noise Policy Statement for England
NTK	Noise and Track Keeping monitoring system. The system associates radar data from air traffic control radar with related data from noise monitors at prescribed positions on the ground.
PBN	Performance Based Navigation
PIR	Post Implementation Review
QC	Quota Count - the basis of the London airports Night Restrictions regime.
RNAV	Area Navigation is a method of instrument flight rules (IFR) navigation that allows an aircraft to choose any course within a network of navigation beacons, rather than navigate directly to and from the beacons.
S.106	Section 106 (S106) Agreements are legal agreements between Local Authorities and developers; these are linked to planning permissions and can also be known as planning obligations.
SEL	Sound Exposure Level - metric that represents all the acoustic energy (sound pressure) of an individual noise event as if that event had occurred within a one-second time period.
SOAEL	Significant Observed Adverse Effect Level - this is the level above which significant adverse effects on health and quality of life occur.
WHO	World Health Organization

Appendix B – Noise Maps

Strategic Noise Contours 2021

FIGURE B1. 1. STRATEGIC NOISE MAPPING - L_{DEN} NOISE CONTOURS

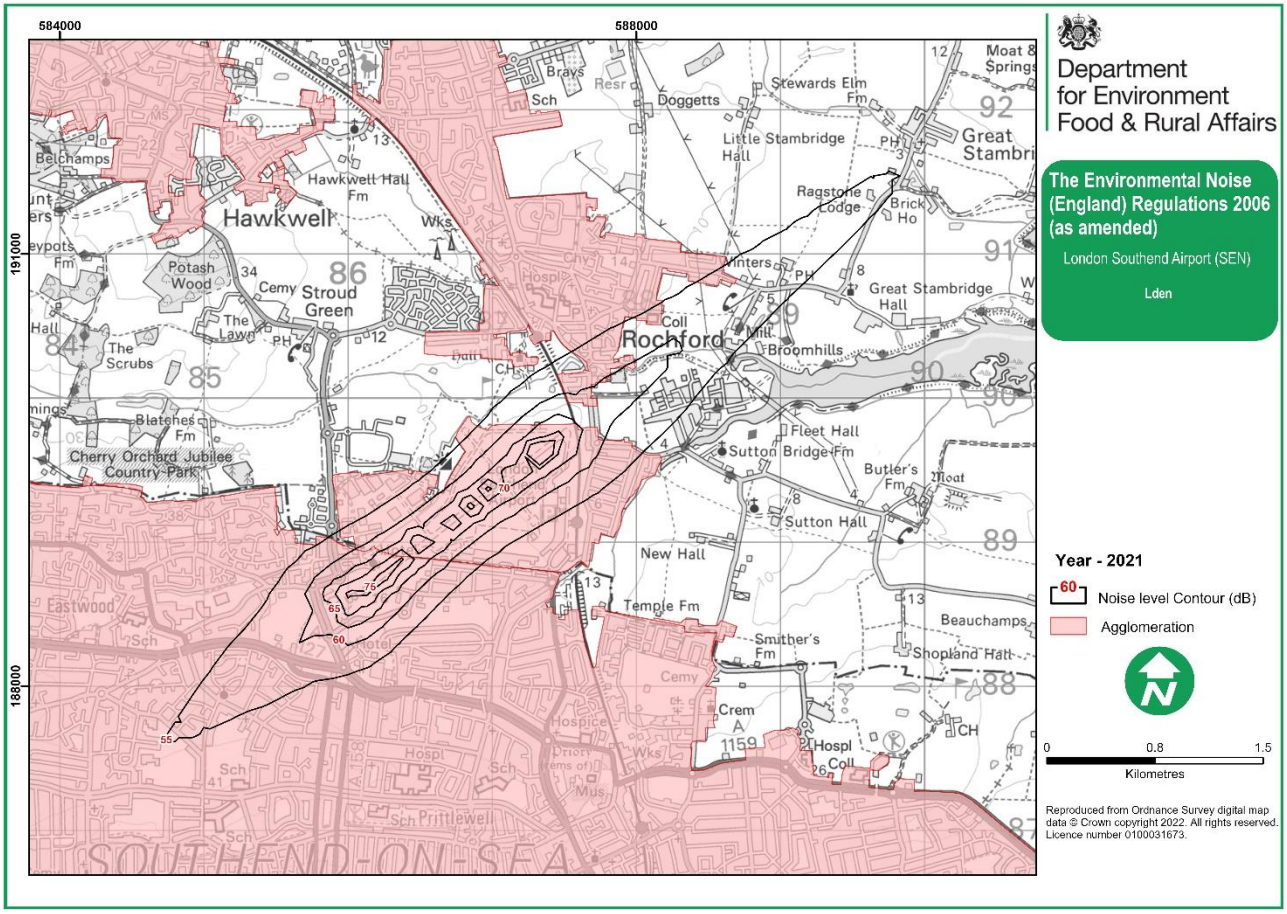


FIGURE B1. 2. STRATEGIC NOISE MAPPING - L_{DAY} NOISE CONTOURS

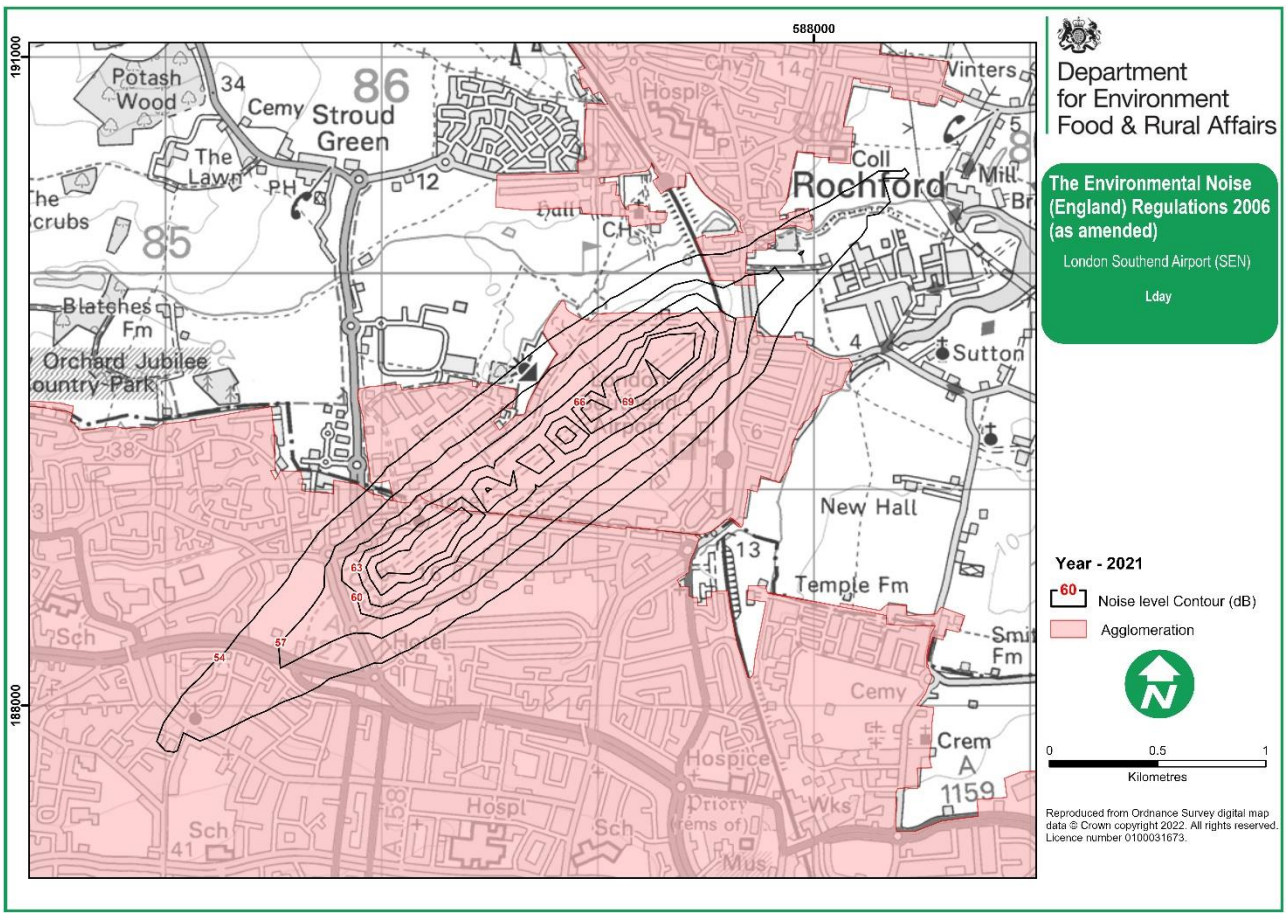


FIGURE B1. 3. STRATEGIC NOISE MAPPING - – $L_{EVENING}$ NOISE CONTOURS

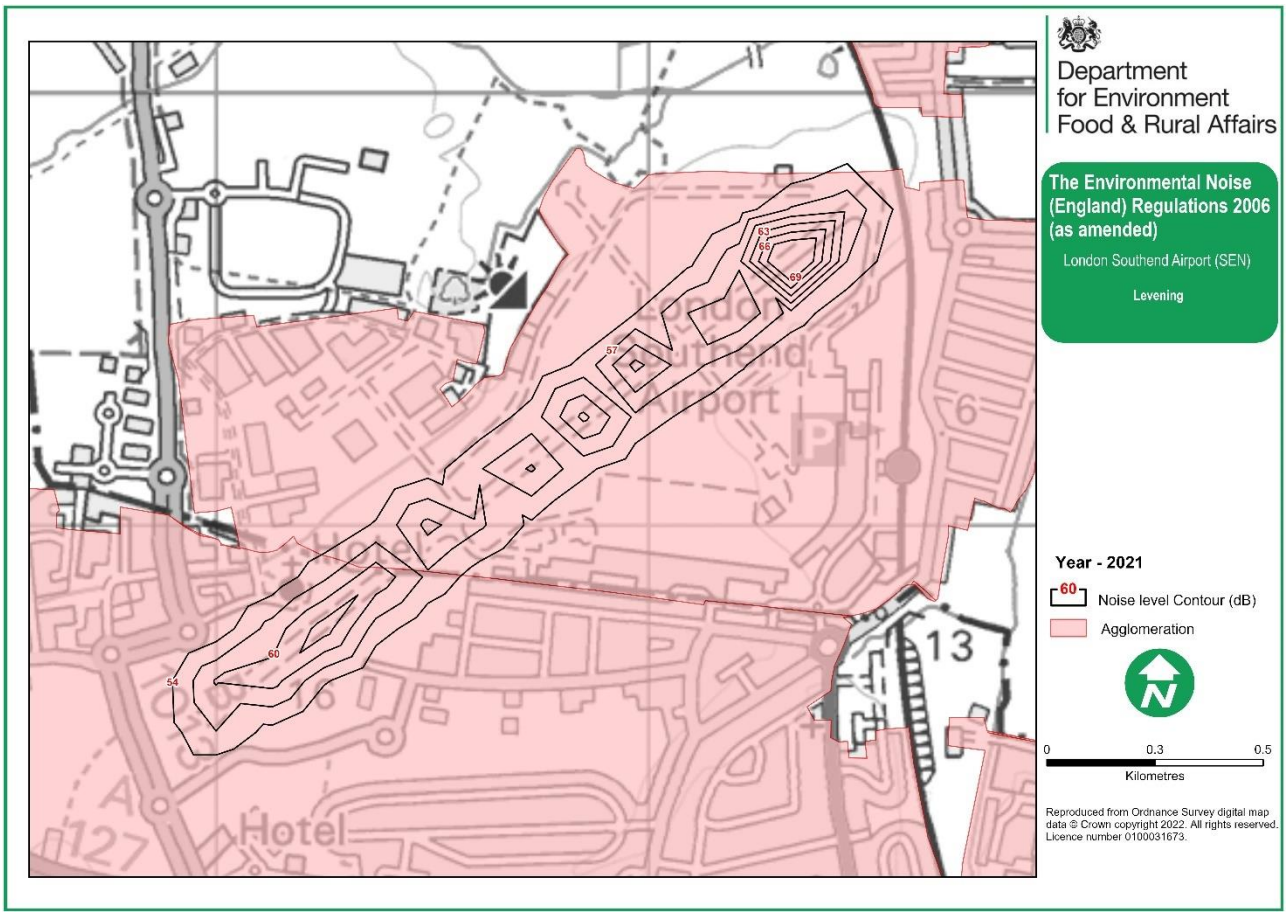


FIGURE B1. 4. STRATEGIC NOISE MAPPING - – L_{NIGHT} NOISE CONTOURS

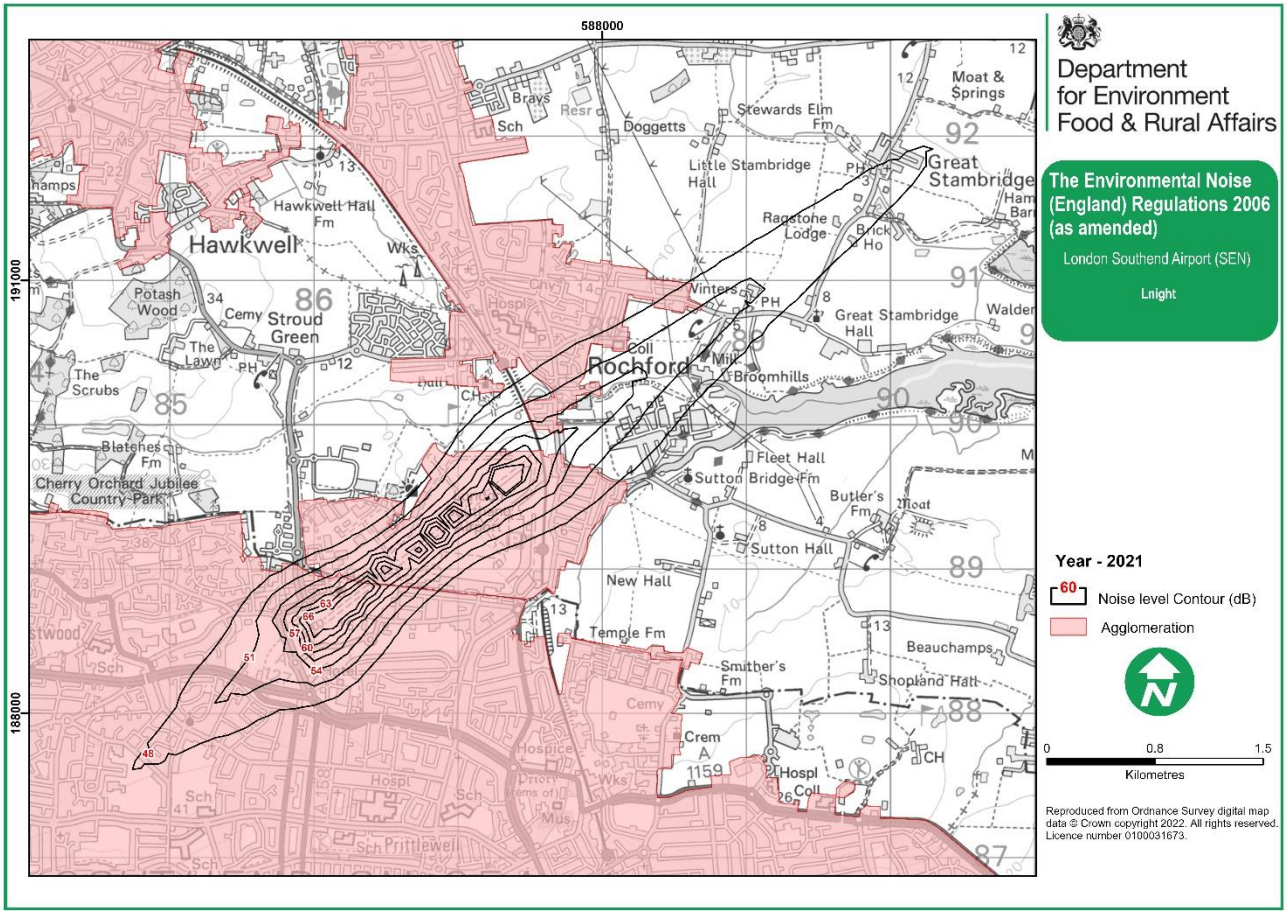
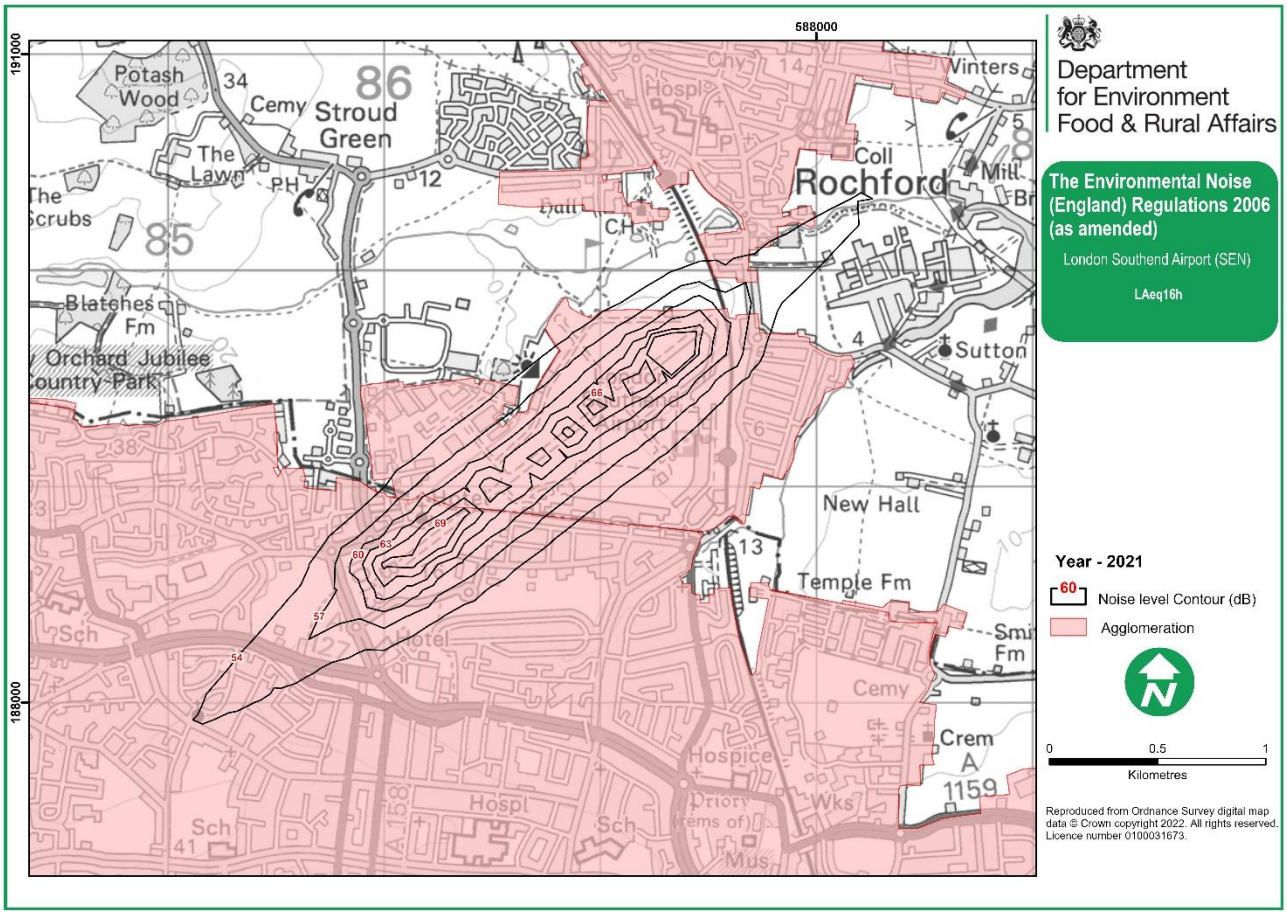


FIGURE B1. 5. STRATEGIC NOISE MAPPING - – $L_{AEQ,16HR}$ NOISE CONTOURS



Annual Contours 2018

FIGURE B1. 6. 2018 SUMMER NOISE CONTOURS - $L_{AEQ,16HR}$

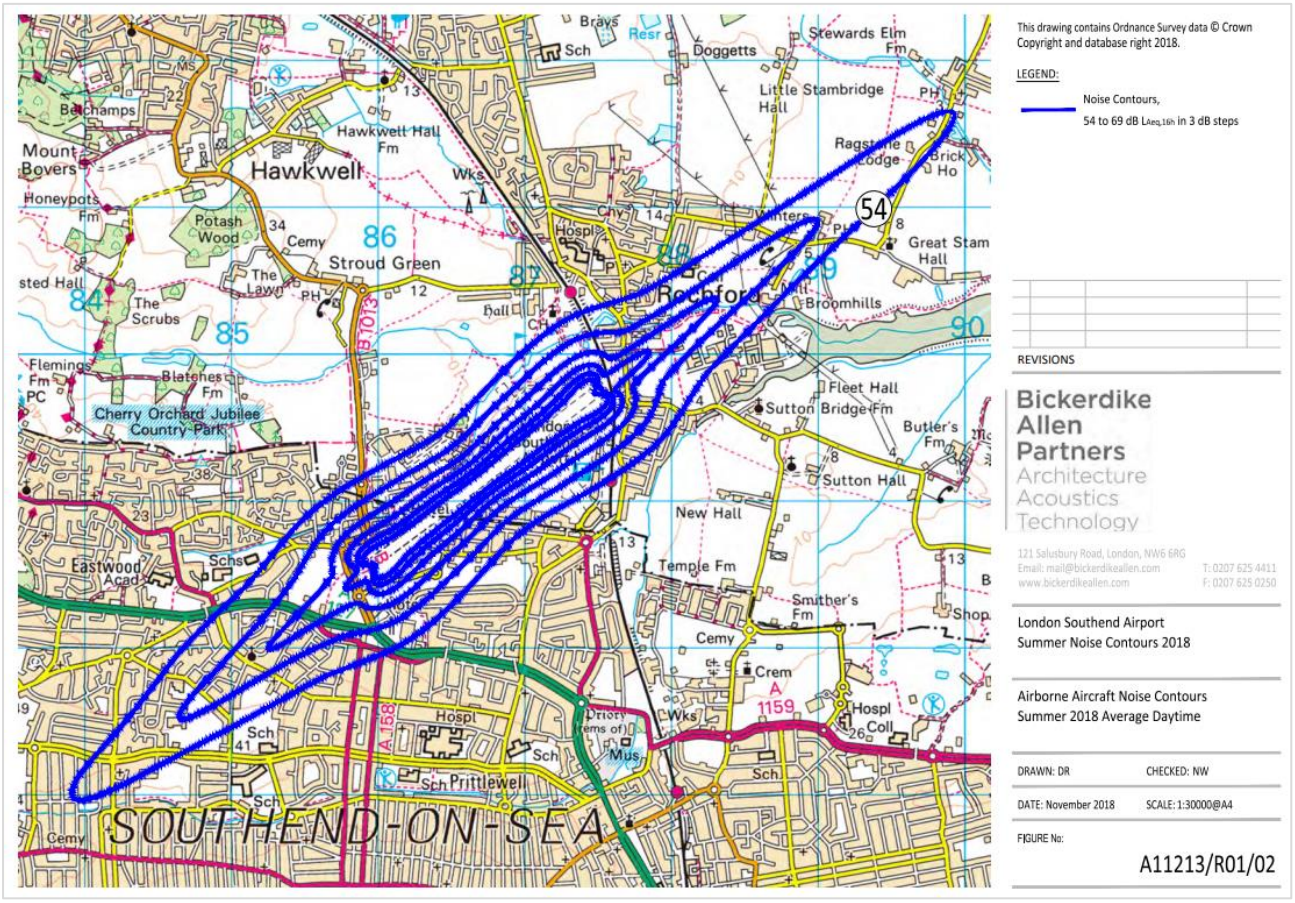
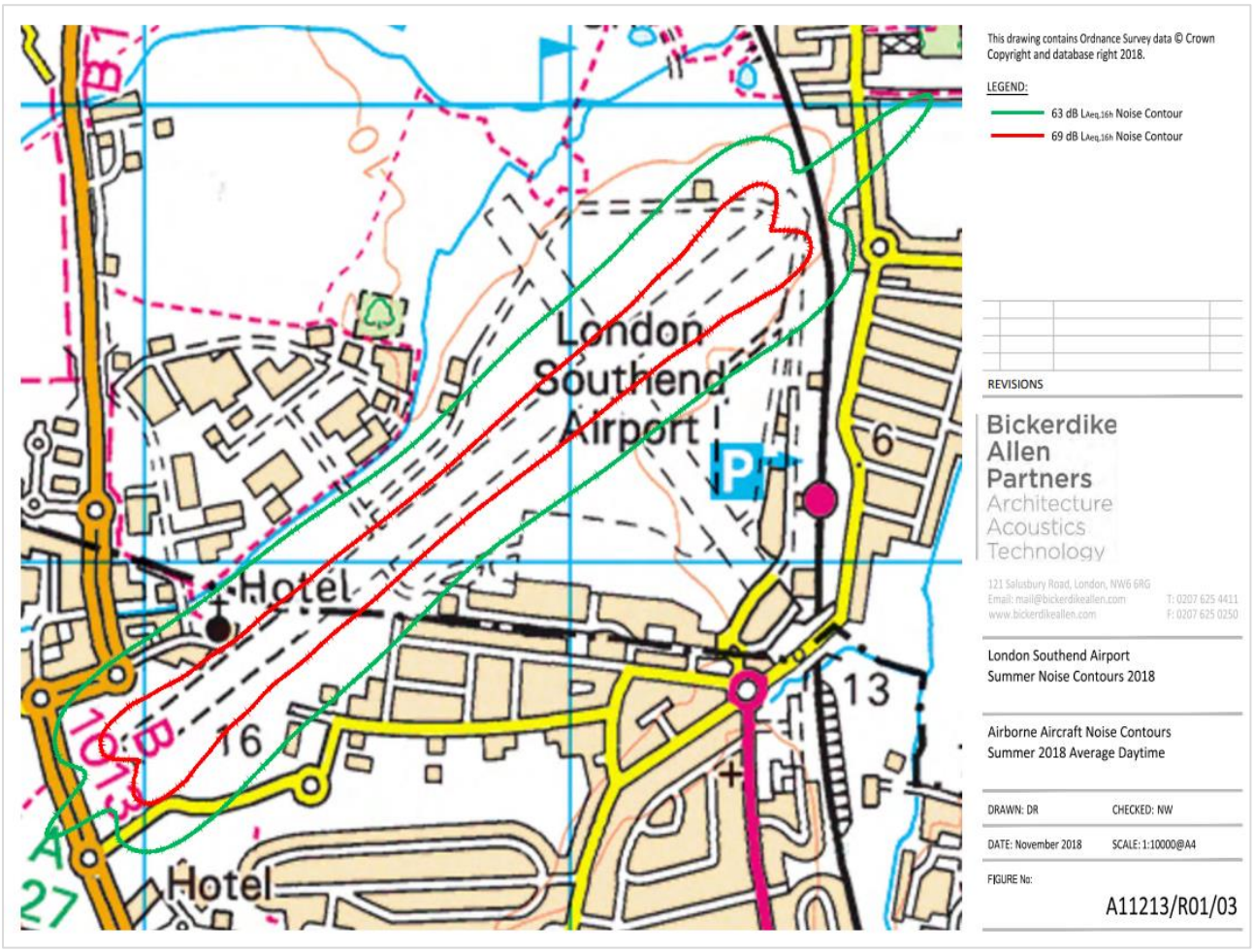


FIGURE B1. 7. 2018 SUMMER NOISE CONTOURS - 63 AND 69 DB $L_{AEQ,16HR}$



Appendix C – Financial Information

Financial Information

Over £200 million has been invested in London Southend since 2008. This has included:

- £114,000 has been invested in noise and track monitoring equipment with an ongoing annual maintenance cost of £18,000
- £5,571 of noise insulation grants to date

The cost of ongoing implementation and management of the noise measures by the airport has not been calculated, but will be met, on a continuing, by the airport.

Appendix D – Stakeholder Feedback

List of Stakeholder Meetings

Table D1.1 sets out the key stakeholders' meetings that have been attended, in support of the development of the Round 4 Noise Action Plan. These meetings were intended to provide a briefing on work to date and opportunities for stakeholder feedback.

TABLE D1.1. KEY STAKEHOLDER MEETINGS

Date	Stakeholder Group	Purpose of Meeting
17 July 2023	Airport Consultative Committee (ACC)	Meeting related to the Round 4 NAP. A benchmarking study of Noise Actions at other Airports was presented. In addition, analysis of key changes during Round 3, pertinent to the NAP, was presented, for the purposes determining the current baseline situation. Building upon the above, outline proposals for the revision of the NAP were discussed including proposed new actions, consolidation of existing actions and removal of obsolete / completed actions. Opportunity for feedback to inform the draft Round 4 actions.
15 August 2023	London Southend Airport Community Noise Forum (LSACNF)	Meeting related to the Round 4 NAP. A benchmarking study of Noise Actions at other Airports was presented. In addition, analysis of key changes during Round 3, pertinent to the NAP, was presented, for the purposes determining the current baseline situation. Building upon the above, outline proposals for the revision of the NAP were discussed including proposed new actions, consolidation of existing actions and removal of obsolete / completed actions. Opportunity for feedback to inform the draft Round 4 actions.
23rd– 29th August 2023	ACC and LSACNF (deliverables)	Final draft NAP circulated to for final comment.

Key Consultation Themes

Table D1.2 sets out the key themes identified by stakeholders for consideration in the Round 4 NAP.

TABLE D1.2. KEY CONSULTATION THEMES AND LONDON SOUTHEND RESPONSE

Key Theme	Summary of Comments Received	Southend Response
The balanced approach	How is the airport considering the balanced approach in Round 4 NAP?	In Round 4 Noise Action Plan the Airport has assembled a fully integrated noise management framework bringing together all the elements of the ICAO balanced approach into one place. Whilst not specifically mentioned by the ICAO balance approach, London Southend operates a so called 'fifth pillar' recognising the importance of community engagement and collaboration in identifying and understanding issues and working towards improvements.
Cargo night-flights	How will the Airport deal with the cargo night-flights, which usually use an older aircraft? This worries residents more than commercial airlines such as Ryanair and easyJet (which don't fly so much at night either)	The airport is approaching airlines to encourage them to upgrade fleet but due to the financial impact of COVID it might take longer than expected.
Noise contours of Night-time period	The issue about noise at night-time are the individual events (L_{Amax} / SEL). These events are difficult to measure through night noise contours and Noise Action Plan. Is it something that can be alluded to?	Noted. London Southend have committed to producing N60 and N65 contours every two years to facilitate a deeper understanding of noise exposure for stakeholders. Notably, the number above contours indicate the number of times per day that the maximum level from an event exceeds a defined threshold.
Light Aircraft procedures	Light aircraft are an issue at London Southend. How will the airport deal with these operations?	London Southend currently has procedures in place that address the departure and arrival of the light aircraft. The Airport receives only a few complaints about light aircraft which demonstrates the efficacy of the current procedures.
Short-term anomalous airport activity	Does the post pandemic 'quiet period' at the Airport, especially in respect of night-flights, have any influence on the Round 4 Noise Action Plan submission.	The Round 4 Noise Action Plan has been developed in line with Defra guidance which states that "It is in the interests of airports and communities for Noise Action Plans

Key Theme	Summary of Comments Received	Southend Response
		to draw on information which best reflects the situation for the Round 4 Noise Action Plan period as appropriate. As a result, airports may supplement the 2021 data with information from a more representative period when drawing up Noise Action Plans". Consideration has been given to the 2016 strategic noise contours and bi-annual contours for 2016, 2018 and 2022.
Forecasting	The NAP doesn't articulate what activity and noise exposure at the airport might look like over the 5-year life of the plan.	The 'Foreword' sets out anticipated growth in passenger numbers in the medium term as does the section entitled 'Description of the Airport'. Forecast noise exposure data is not required by the Defra guidance.
Estimating the benefits of actions	Some stakeholders are keen to see estimates of the benefits of the actions and quantified improvements being targeted.	In general, it is not practicable to disaggregate the benefit of individual actions, however it is recommended that for some actions, that case studies are developed during the life of the Round 4 action plan, to quantify resultant benefits more clearly. Where appropriate to do so individual actions have been developed to include a target and timescales for implementation to enable better monitoring and scrutiny.
Description of current noise issues	Round 4 Noise Action Plan requires more description of what the current noise issues are, having regards to complaints data.	The section entitled 'Identification of Problems and Situations that Need to be Improved', considers specific noise issues in more detail. A subsection entitled 'Noise Complaints Information and Stakeholder Feedback' has been added to this section. Appendix E has also been added to the Round 4 Noise Action Plan to provide a snapshot of recent noise complaints information.

Appendix E – Noise Complaints Information

Noise Complaints Statistics

Noise complaint reporting

Data relating to noise complaints help the airport to better understand which aircraft operations cause the most disturbance and ensure that the best available noise mitigation measures are in place.

Noise complaints for the reporting period March 2022 – February 2023 fell by 72% from the previous year. A total of 2,894 noise complaints were received and investigated. Of those, 2,852 related to aircraft operating in or out of London Southend Airport.

Of 28,819 aircraft movements, 851 (3%) generated noise complaints.

There were 83 complainants from 75 households. 2,655 (92%) of all complaints derived from 20 addresses, and over 1,305 complaints (46%) were from just three individuals.

77 individuals submitted five or less complaints in the 12-month reporting period, (28 people submitted just a single complaint).

42 of the complaints submitted specified times when no aircraft were operating within 30 minutes earlier or later than the time provided.

The most noise complaints (66%) were in relation to night-time cargo flights.

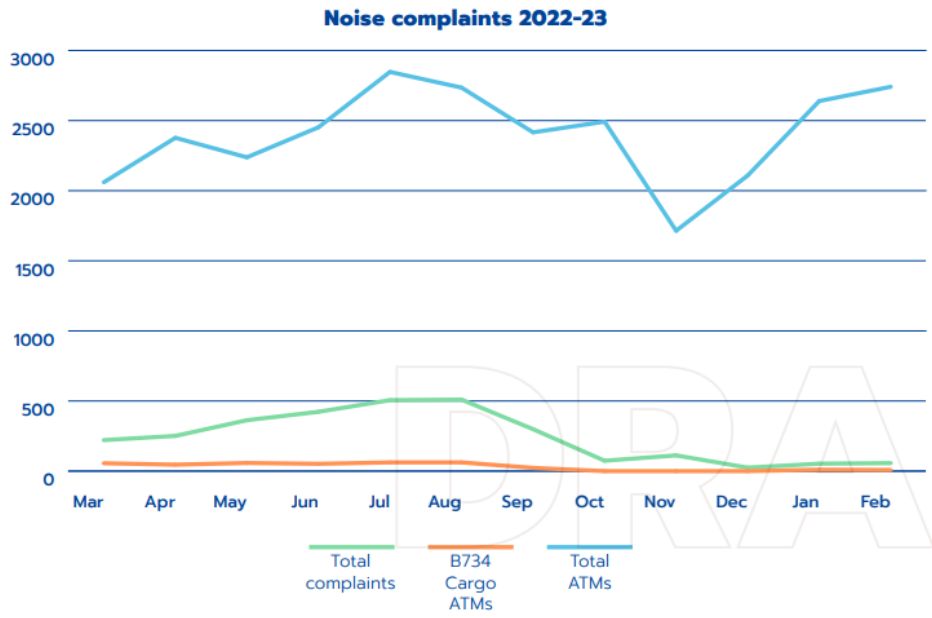
Against a generally quiet background during the daytime, complaints about light aircraft training have increased. A total of 278 complaints were recorded in relation to light aircraft (below 5700kg) performing training circuits.

There were 20 non-compliant aircraft movements in the reporting year, that breached noise abatement controls by initiating an early turn before reaching the required 2.5-mile straight departure when taking off towards Leigh-on-Sea. There were just three noise complaints received in relation to these flights. Full details of all non-compliant departures can be found on page 49.

57% reduction in the number of households complaining.

72% reduction in noise complaints.

99.9% of complaints relate to aircraft operating within the airport's agreed controls.



- 79% of all complaints were about night-time operations (between 23:00 – 06:30)
- 66% of all night-time complaints were about cargo operations
- 209 night-time complaints were received about aircraft operated by HM Coastguard and the police
- 31% of all flights operated to/from the south west, over Leigh-on-Sea, however
- 59% of all complainants live in the Leigh-on-Sea area (SS9 postcode)

79% of all complaints were about night-time operations.

66% of all night-time complaints were about cargo operations.

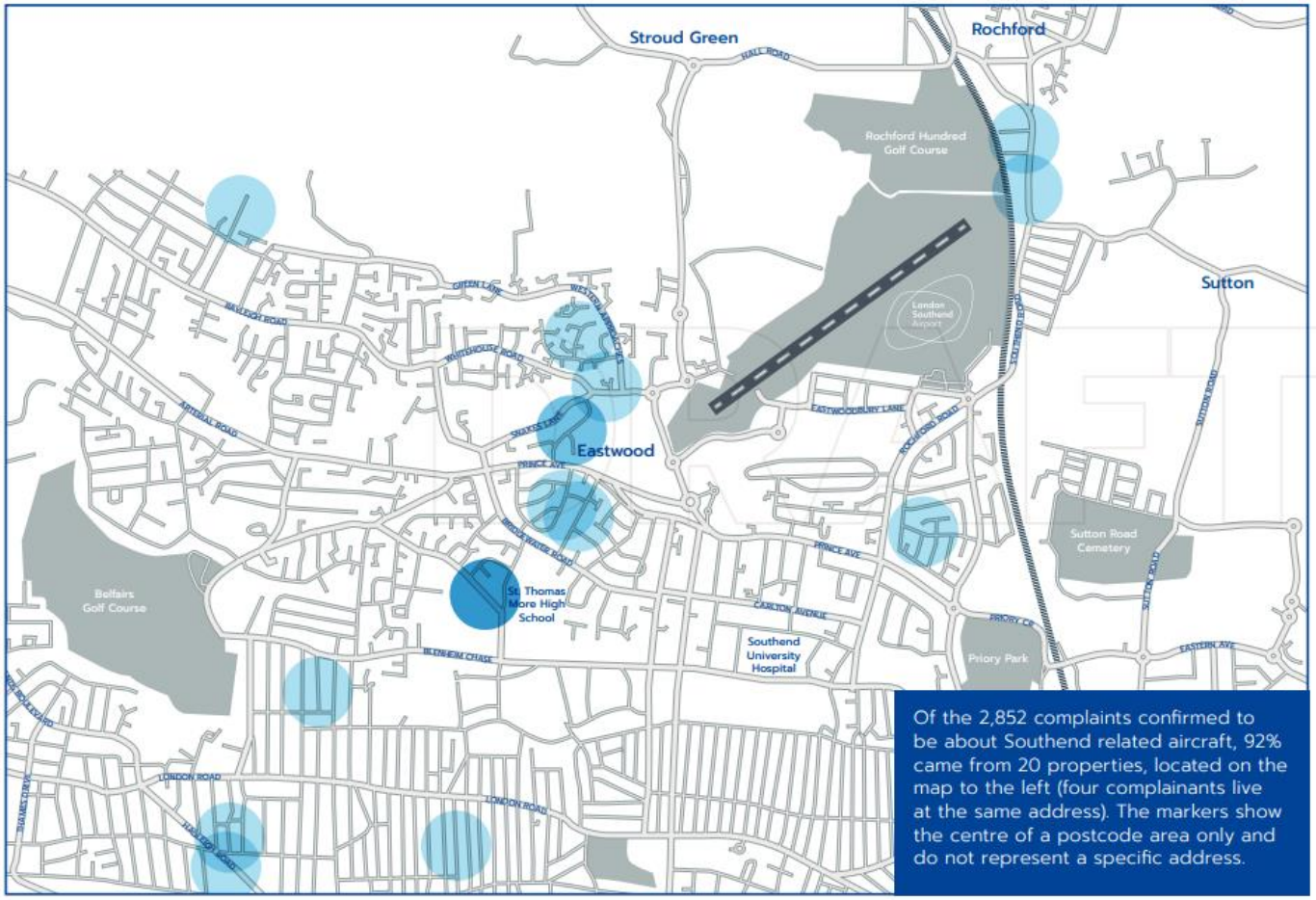
Postcode areas for noise complaints

2022–23	SS0	SS1	SS2	SS3	SS4	SS5	SS6	SS7	SS8	SS9	CM
Complaints	642	1	398	0	629	33	0	4	0	1178	9
Complainants	6	1	5	0	6	2	0	2	0	57	4

The table below shows the number of individuals complaining and volume of complaints received and investigated by the airport over the past five years to February 2023.

	2018–19	2019–20	2020–21	2021-22	2022-23
Complaints	1505	6711	15373	10547	2894
Complainants	213	708	431	197	83

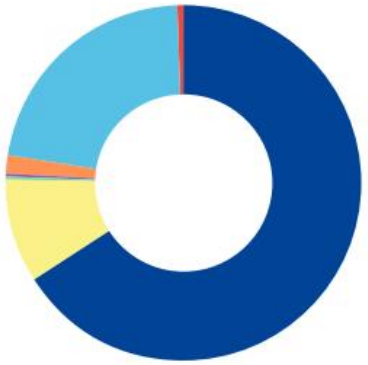
Complaints Mapping



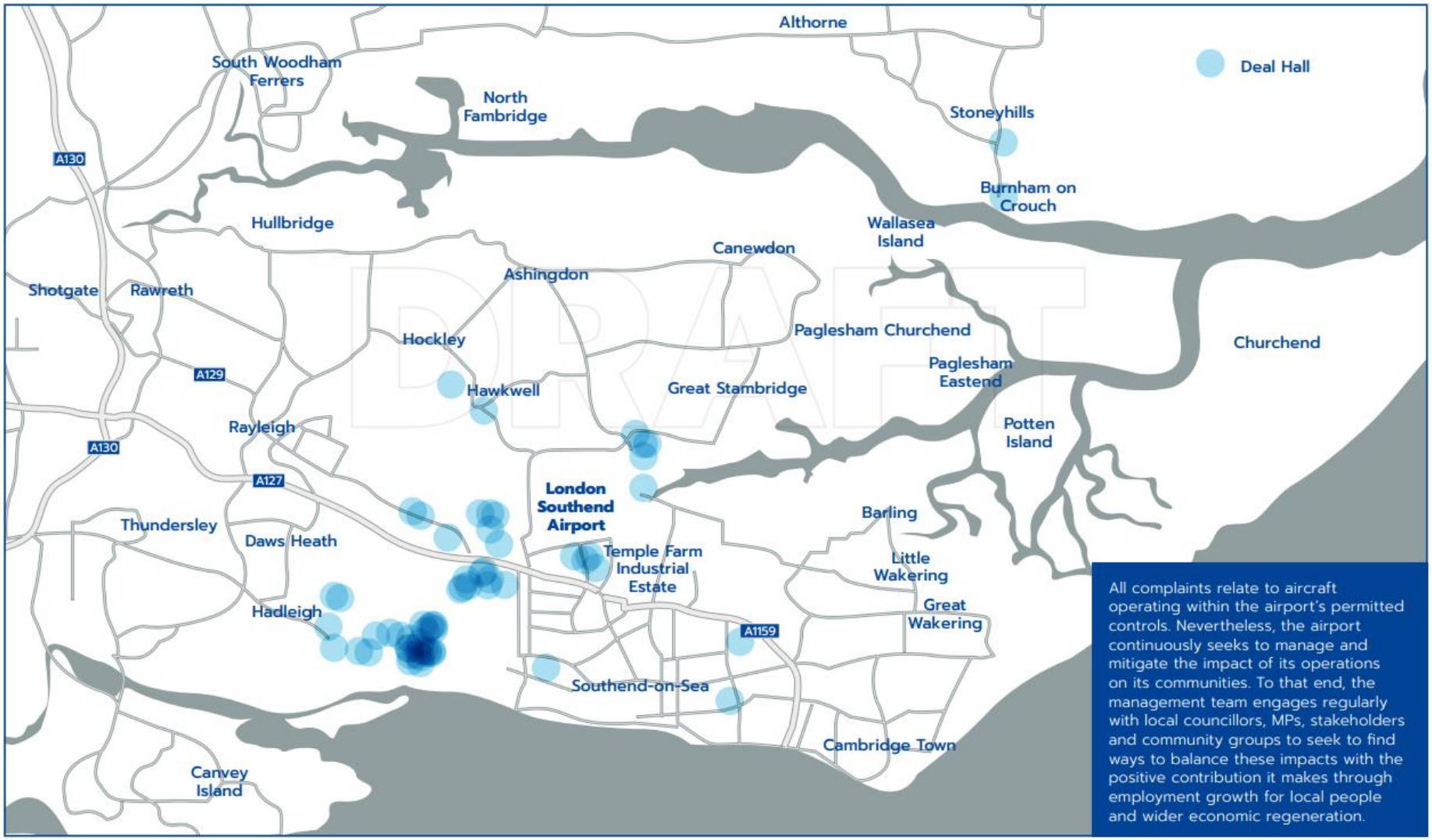
Night-time noise complaints

A total of 452 aircraft movements operated within the agreed night-time period 23:00 – 06:30 (this includes passenger arrivals scheduled between 23:00 – 23:30 and delayed, diverted and exempt aircraft). Of the 2,852 noise complaints identified, 2,262 (79%) related to night-time operations.

Breakdown of night-time complaints



- **ASL Cargo** (1495)
- **HM Coastguard** (209)
- **Passenger** (6)
- **Medical** (6)
- **Police** (1)
- **Ground** (2)
- **Calibration** (37)
- **Business Jets** (495)
- **RAF/Military** (12)


Althorne
South Woodham Ferrers
North Fambridge
Deal Hall
Stoneyhills
A130
Burnham on Crouch
Hullbridge
Wallasea Island
Canewdon
Ashingdon
Shotgate
Rawreth
Paglesham Churchend
Churchend
Hockley
Paglesham Eastend
A129
Hawkwell
Great Stambridge
Rayleigh
Potten Island
A130
A127
London Southend Airport
Barling
Thundersley
Daws Heath
Temple Farm Industrial Estate
Little Wakering
Great Wakering
Hadleigh
A1159
Southend-on-Sea
Cambridge Town
Canvey Island
DRAFT
All complaints relate to aircraft operating within the airport's permitted controls. Nevertheless, the airport continuously seeks to manage and mitigate the impact of its operations on its communities. To that end, the management team engages regularly with local councillors, MPs, stakeholders and community groups to seek to find ways to balance these impacts with the positive contribution it makes through employment growth for local people and wider economic regeneration.

Appendix F – Summary of the Round 4 Noise Action Plan

The purpose of this Noise Action Plan (NAP) is to set out London Southend Airport's plan to limit and where possible reduce the number of people significantly affected by aircraft noise and comply with the requirements of The Environment Noise (England) Regulations 2006 (as amended). The Regulations require certain airports in England to produce strategic noise maps and NAPs every five years; the latest round being the fourth round. As set out in the Regulations, London Southend Airport Company Ltd is the competent authority for the preparation of the NAP.

The NAP has been developed cognisant of the strategic noise maps (contours) prepared in respect of the calendar year of 2021 as required by the Regulations. Additionally, due to COVID travel restrictions, resulting in a highly anomalous situation for the Airport, supplementary data for the years 2016, 2018 and 2022 have been relied upon.

The Department for the Environment, Food and Rural Affairs (Defra) has regulatory oversight in respect of the Regulations, with the strategic noise maps and associated NAPs signed off by the Secretary of State. To fulfil the requirements of the Regulations, the NAP has been developed in accordance with Defra guidance[11], which summarises the timeline, legal context and the required contents for the NAPs.

As required by the Guidance the Airport Consultative Committee (ACC) and have been consulted on the proposed contents of the NAP, in addition to London Southend Airport Community Noise Forum (LSACNF). A record of consultation responses is summarised in the NAP in terms of key themes and commentary is provided upon the Airport's response.

The Airport is situated 35 miles (56 km) northeast of London and located between Southend-on-Sea and Rochford town. The airfield comprises a single runway with compass bearings of 050° and 230° (05/23); the runway was extended to the southwest in 2012.

As part of the planning application for the runway extension, the Airport is subject to a Section 106 agreement which imposes an annual cap of 53,000 air traffic movements (ATMs). There is a further annual limit on dedicated cargo movements of 5,330 per annum, or 10% of the total number of ATMs and a limit upon Boeing 737-300 aircraft of 2,150 per annum.

During the day (0630-2300 hrs) no aircraft with a Quota Count (QC) of more than 2.0 are allowed to take off or land, subject to an annual limit of 60 movements of aircraft with a QC between 2.0 and 4.0 undergoing maintenance.

[11] Airport Noise Action Plans - Guidance for Airport Operators on how to revise Noise Action Plans under the Environmental Noise (England) Regulations 2006 (as amended) - September 2022

The number of ATMs during the quota night period (2300 – 0630hrs) is capped at 1,440 per annum and, with the exception of delayed, diverted, or exempt aircraft, no aircraft with a Quota Count (QC) of more than 1.0 are allowed to take off or land during this period. Passenger aircraft are not permitted to take off or land between 2330 and 0630hrs, but 90 arrivals per month are permitted during the shoulder period of 2300 and 2330hrs.

Since the opening of the runway extension and new passenger terminal in 2012, passenger numbers increased significantly from a modest base to achieve over 2 million in 2019. The total aircraft movements in that year were in excess of 36,000 of which 20,000 were 'air transport' movements (i.e. engaged in the transport of passengers, cargo, or mail on commercial terms). Due to COVID travel restrictions, like many airports, the Airport saw a significant reduction in passenger numbers in 2020 and 2021, however passenger numbers have remined subdued compared to 2019, achieving 146,000 in 2023. Notably in 2023, the Airport announced a multi-year partnership with easyJet and it expects more partnerships to follow as part of the Airport's journey back to 2 million plus passengers in the near term.

In respect of future plans, there are no Masterplan proposals which would materially alter the character of the airport and its potential noise impacts, within the timeframe of the Round 4 NAP. Whilst the Airport is a stakeholder in the development of the wider UK Airspace Modernisation Strategy (AMS) that is sponsored by the Department for Transport and has been developed by the Civil Aviation Authority (CAA), changes will not be fully implemented before the end of Round 4 and have therefore not been considered.

The Airport is committed to managing noise and has developed a noise management strategy over a number of years, to 'limit and where possible reduce' noise from aircraft operations. The measures and policies which are already in force are presented in the NAP and summarised below under the four pillars of the ICAO balanced approach and the so called fifth pillar of community engagement:

- Reduction of noise at source – noise related fees and charges
- Operating procedures
    - preferred runway scheme
    - noise preferential routes (NPRs)
    - light aircraft procedures
    - airspace change proposals
    - taxiing policy
    - ground power unit (GPU) auxiliary power unit (APU) policies
    - engine testing policy
- Land use planning and management
    - property purchase scheme

    - sound and thermal insulation grant scheme
- Operating restrictions
    - Air transport movement cap
    - Night flight restrictions (2300 – 0630hrs)
    - Daytime flight restrictions (0630 – 2300 hrs)
- Community engagement
    - Airport Consultative Committee (ACC)
    - LSA Community Noise Forum (LSACNF)
    - noise complaints handling policy and reporting
    - noise monitoring and publicly available WebTrak viewer

Financial information regarding, one-off and ongoing investment with respect to noise management and mitigation is presented in the NAP.

The results of the strategic noise contours prepared in respect of the calendar year of 2021 identify that the population within the 55dB L_{den} contour has increased since Round 3 (2016), from 2,200 to 3,700 people albeit it is reduced from 4,800 in 2006.

The population within the 54dB L_{day} (0700-190hrs) contour shows a decrease from 3,400 to 1,700 people and the 54dB $L_{evening}$ (1900-2300hrs) contour shows a decrease from 700 to 0 people. Both metrics demonstrate a reduction in noise exposure commensurate with a reduction in the numbers of aircraft movements during the day and evening.

The population within the 48dB L_{night} (2300-0700hrs) contour shows an increase from 300 to 4,400 people. The increase is due to the number of cargo movements at night, which in 2021 were higher than previous rounds of strategic noise mapping.

Despite a significant reduction in noise exposure during the day and evening (L_{day} and $L_{evening}$ contours), the increased exposure at night (L_{night} contours) is driving the increase in population within the L_{den} contour, predominantly because the L_{den} metric significantly penalises noise exposure during the night-time.

In developing the NAP, consideration has been given to the results of the strategic noise contours, noise complaints and issues raised by the ACC and LSACNF. Notably, stakeholder feedback received during the process of developing the NAP, is summarised in the NAP along with the Airport's response.

Overall, in respect of the noise exposure contour data the Airport acknowledges the increase in the population within the 55 dB L_{den} contour, which was driven by an increase in cargo movements at night. The impact of these flights was also reflected in the noise complaints collated by the Airport.

Importantly, these movements were in accordance with restrictions imposed by the Airport's Section 106 agreement and whilst night-time movements are now significantly lower than 2021, increases may be expected as the cargo business builds back over the coming years.

Furthermore, the guidance recommends that airports should consider whether any action is required based on a number of considerations, including, as a first priority, where residential properties are exposed to noise levels above 69 dB $L_{Aeq,16h}$. In this respect, it was observed from the noise contour data that there have not been any properties within the 69 dB $L_{Aeq,16h}$ contour over the four rounds.

Additionally, based on the results of the 2018 noise contours, 18 properties were newly identified within the 63 dB $L_{Aeq,16h}$ noise contour and which consequently qualified for inclusion within the Airport's Sound and Thermal Insulation Grant Scheme.

Through stakeholder consultation, a number of additional concerns have been highlighted relating to light aircraft performing training circuits and ground noise on taxiway Charlie.

In respect training circuits it is understood that the Airport consciously attracted more of this type of activity in 2021, however this is not anticipated to persist at the same intensity in the medium and longer term. Notably the NAP includes an action requiring all light aircraft to follow procedures included in the Aeronautical Information Publication (AIP).

In respect of concerns about ground noise it should be noted that the Regulations do not require its consideration, however the Guidance advises that it does not preclude its inclusion in the Noise Action Plan. Notably, ground noise is the subject to controls and restrictions imposed by the Airports Section 106 agreement, intended to manage it in a way which balances operations with local impacts. Notably the NAP includes two actions relating to taxiing noise and engine testing.

Based on analysis of the results of the strategic noise contours, noise complaints and issues raised by consultative committees, proposed actions have been developed, which the Airport intend to take in the next five years of the Round 4 NAP. The proposed actions, build upon the restrictions imposed by the Section 106 agreement, formalising some existing voluntary activities and goes further by introducing new voluntary actions.

The actions are presented in the NAP and summarised below under the four pillars of the ICAO balanced approach and the so called fifth pillar of community engagement:

- Reduction of noise at source
    - noise related fees and charges
    - chapter limits and charges
- Operating procedures
    - AIP noise compliance
    - preferred runway scheme
    - noise preferential routes (NPRs)

- light aircraft procedures
- reducing the use of reverse thrust at night
- taxiing policy
- engine testing policy
- benchmarking operational procedures
- noise fines
- auxiliary power unit (APU) usage restrictions

- Land use planning and management
  - property purchase scheme
  - sound and thermal insulation grant scheme
  - benchmark on noise insulation schemes
- Operating restrictions
  - Total air transport movement cap
  - limits on movements by noisier aircraft types
  - night flight restrictions (2300 – 0630hrs)
- Community engagement
  - noise and track Keeping (NTK) monitoring system
  - community noise monitoring
  - noise complaints system
  - local authority engagement
  - noise contour reporting
  - noise manager
  - annual audit of the noise actions
  - annual Reporting
  - additional noise exposure metrics

Notably one of the new actions requires an annual audit of the noise actions to evaluate and share progress. It is envisaged that the findings will be presented to the Airport Consultative Committee (ACC) for review and comment, with the outcomes shared with the Community Noise Forum.

A number of actions will be maintained on a continuous basis whereas some commit to annual milestones or within the life of the Round 4 NAP. For those actions where it is not practicable to

disaggregate the benefit of individual actions, it has been recommended that case studies are developed during the life of the Round 4 NAP, to quantify resultant benefits more clearly.

In respect of monitoring noise exposure performance, the airport has an action to continue to produce noise contours every two years and an additional new action to provide night-time $L_{Aeq,8h}$ contours, as well as noise above contours for the day (N65) and night (N60). Another action commits the Airport to maintain a record of all complaints and publish statistics in line with the agreed complaints handling policy. This combined with stakeholder feedback via the ACC and LSACNF is considered to provide further opportunities to evaluate results of the action plan within the life of the Round 4 NAP.