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Southampton Airport **Noise Action Plan 2018 - 2023**

Southampton Airport Noise Action Plan

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Section 1 - Foreword by the Managing Director of Southampton Airport

Southampton Airport is an award winning regional airport owned by AGS Airports Ltd. The airport serves around 40 direct European destinations with great onward connections through major transport hubs like Schiphol, Amsterdam.

Southampton Airport supports the growing commercial, leisure and cultural success of the region and provides air services that are valued for both business and leisure purposes. The airport remains one of the largest employment sites in the area supporting approximately 950 jobs and contributes in excess of £160 million per year to the region.

Southampton Airport is conscious that it needs to reach a balance that allows growth in a sustainable manner whilst also enhancing the economic and social benefits to the region, but ultimately remaining a good neighbour to local residents. It is with this in mind Southampton Airport's Noise Action Plan (NAP) details how it will continue to work proactively and in collaboration with a variety of stakeholders to mitigate noise from our activities.

This new NAP runs from 2018-2023 and describes a range of measures that are in place to manage noise impacts from our activities. The previous NAP was adopted by the Government at the end of 2011, however to align with European legislation and following Government guidance Southampton Airport revised and extended the NAP to cover the period 2013 -2018.

Part of being a responsible neighbour and business means that Southampton Airport accepts it's responsibility to the local community and has put in place a number of practical measures to manage noise over the last few years and into the future. These actions have resulted in a sustained reduction in noise complaints with the airport receiving only 30 complaints in 2017.

Southampton Airport continues to work with our airline business partners to invest in aircraft fleet that are quieter and have improved environmental credentials; replacing older aircraft that have higher emissions and noisier engines. The introduction of precision based navigation will reduce the range of approaches that aircraft could make to the runway and will improve the overall noise profile for approaching aircraft. Positive improvements like this provide clear demonstration of how Southampton Airport is working towards reducing noise impacts for many local areas.

Southampton Airport is confident that this new and updated version of the NAP continues to demonstrate the importance that the airport places on the issue of noise and our aim to minimise the impact of noise from aviation operations wherever practicable.

Southampton Airport
March 2018

Section 2 – Executive Summary

The Environmental Noise Directive requires certain civil airports in England to produce noise maps and Action Plans. The Directive operates in five yearly cycles known as Rounds, with the current round (Round 3) requiring the operators of these airports to produce noise maps in 2017, using data from the 2016 calendar year.

The Southampton Airport Noise Action Plan identified the actions and measures that Southampton Airport is taking to minimise the impact of aircraft noise on local communities both now and in the future. The noise action plan covers the period from 2018 to 2023 and is planned to be adopted by the Secretary of State for Environment, Food and Rural Affairs in January 2019.

In June 2016, the EU referendum took place and the United Kingdom voted to leave the European Union. Until exit negotiations are concluded, the UK remains a full member of the European Union and all the rights and obligations of EU membership remain in force. During this period the Government will continue to negotiate, implement and apply EU legislation.

The revised Noise Action Plan 2018-2023 was issued to the Southampton Airport Consultative Committee and to the wider public at the beginning of April 2018 with a four week consultation ending on 8 May 2018. The committee consists of a broad range of members including public representatives such as councillors, residents associations and interest groups. This process followed the guidance of DEFRA.

This revised Southampton Airport Noise Action Plan details the long term strategy the airport has set to manage noise including the overall objective:

Continuing to work within the framework established by national and local government, the airport will be a responsible neighbour and seek to minimise the impact of aircraft noise on the local community.

Section 3 - Purpose and scope of the Southampton Airport Noise Action Plan

Purpose

The purpose of the Noise Action Plan is to set out our plan to manage and, where practical and possible, reduce the adverse effects of aviation noise. As part of the process to produce this new 2018 – 2023 plan, Southampton Airport has reviewed the 2013 – 2018 Noise Action Plan, and held public consultation with local communities and stakeholders.

During the period of the noise action plan for 2013 – 2018 Southampton Airport have made significant progress with addressing noise issues however we recognise the importance of continuing to manage aircraft noise responsibly with our local communities. Southampton Airport supports the Air Navigation Guidance objective to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise.

Southampton Airport has introduced updates and enhancements to our current actions to build upon the progress it has made over the past five years working with our neighbours and stakeholders.

Southampton Airport Noise Action Plan basis

Southampton Airport has been defined as a major airport for the purposes of the Noise Regulations and as such is required to complete this noise action planning process.

Noise regulation contours are specific types of contour that have a defined methodology under the Noise Directive. These contours are modelled with aircraft movements and noise impacts split into distinct times of the day (day / evening / night). The L_{den} contour is a combined contour covering all three periods. Additional artificial weightings are added to evening and night time movements. These contours are discussed in more detail later in this document and additional detail is available in the technical glossary and abbreviations section in Appendix A.

The noise contour maps have been defined by the European Union (EU) Environmental Noise Directive 2002/49/EU (END) and are intended to:

- Provide a basis for future strategy and policy making to tackle noise issues
- Establish a baseline for 2016 noise levels
- To assist in the development of co-ordinated Noise Action Plans.

The Noise Regulations require noise action plans to be based on the results from the noise regulation contour maps, which were produced in 2017 for 2016. This Noise Action Plan focuses on areas affected by noise from the airport as identified by the updated 2016 noise contours.

However, Southampton Airport recognises that the population affected by aircraft noise extends beyond these noise contours. To address this, the Southampton Airport Noise Action Plan goes beyond the recommended scope of the *Guidance for airport operators for producing noise action plans* by proposing to continue or implement noise actions that aim to provide benefits to areas outside of these contours and the defined agglomeration. Southampton Airport has updated its noise contours on an annual basis since 2011.

Scope of the Noise Action Plan

This Noise Action Plan complies with the European Union (EU) Environmental Noise Directive 2002/49/EU (END) and associated UK government regulations. The airport operator (Southampton Airport Limited) is deemed the competent authority for preparing the Noise Action Plan. Guidance from UK government states that Noise Action Plans should be designed to manage noise issues and effects arising from aircraft departing from and arriving at the airport, including noise reduction if necessary. The scope of the Southampton Airport Noise Action Plan does not include any noise from road and rail traffic associated with the airport.

Noise maps for major road and rail routes in the vicinity of Southampton Airport are produced by other parties. Details of these are available on the following website: <https://www.gov.uk/government/publications/open-data-strategic-noise-mapping>.

Description

Southampton Airport is located in the borough of Eastleigh, just north of the city of Southampton in Hampshire. Over one hundred years ago, in 1910, the first aircraft took off from an area of flat land which has now been developed into Southampton Airport. In 2017 Southampton Airport achieved the milestone of 2 million passengers and it is expected to see steady growth in years to come. Routes from Southampton Airport enable passengers to travel to around 40 destinations throughout mainland Europe, the Channel Islands, and the UK.

Typically the aircraft that fly in and out of Southampton Airport are modern, regional aircraft, such as the Embraer 195 (118 seats) and the Bombardier Dash 8 Q400 (78 seats).

The most popular reasons for using Southampton Airport are business, leisure and visiting friends and relatives as shown in Figure 1.

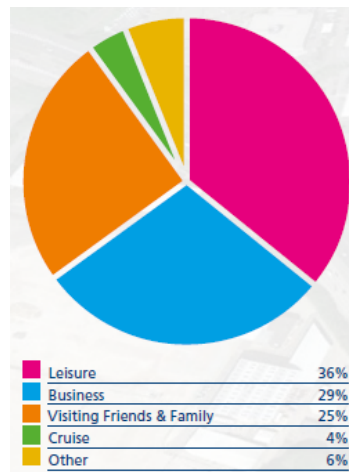


Figure 1: Reasons for using Southampton Airport in 2017

Southampton Airport is bordered directly to the south by the M27 motorway which runs east to west and also connects to the M3. To the east of the airport lies the Itchen Valley Country Park. To the north lies a largely industrial area in Eastleigh, which continues to be used by the rail industry as sidings and maintenance depots. There is also warehousing and other heavy industry located in this area. Directly to the west of the airport lies the dual track rail line which serves both passenger and freight trains, including regular services to London Waterloo. Southampton Airport Parkway station is the main rail station to the airport. The A335 Wide Lane / Southampton Road also runs adjacent to the airport, next to which there are university playing fields. There are also some residential dwellings to the northwest of the airport which have been recently expanded. The airport is geographically situated in a natural gentle depression or “bowl” due to the surrounding topography.

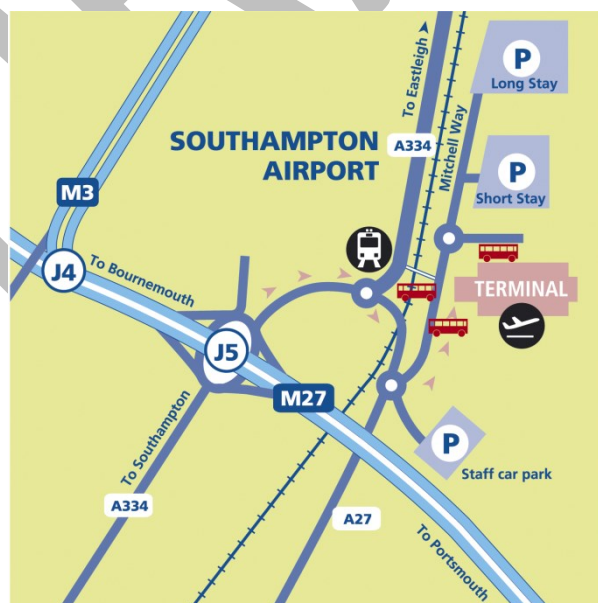


Figure 2: Diagrammatic representation of connectivity for Southampton Airport

Local population in the Eastleigh / Southampton “Agglomeration”

According to the Office of National Statistics and the latest available 2011 Census Data, the Borough of Eastleigh has a population of 125,200 and Southampton has a population of 239,400.

Future Growth

In March 2013, the UK Government published its Aviation Policy Framework. This superseded the 2003 Air Transport White Paper and sets out the long term strategy to enable the UK aviation sector to flourish and support economic growth whilst at the same time addressing environmental issues such as noise and carbon emissions.

Southampton Airport is ideally located to serve central southern England which means that additional ground transport movements to larger London hub airports is reduced. In 2017, 2 million passengers travelled through Southampton Airport and there were 44,418 air transport movements.

Southampton Airport plans to publish its Master Plan in 2018 following public consultation. The Master Plan details the expected future growth and how the airport plans to manage this. For further information about the Master Plan go to: <http://www.southamptonairport.com/about-us/our-vision/>

The DEFRA Guidance for Airport Operators acknowledged that noise is an inevitable consequence of a mature and vibrant society and that people enjoy and benefit from air transport in terms of business, leisure, the movement of goods and employment opportunities.

Consultation

The launch of this draft noise action plan will be followed by a public consultation. The final version of the Noise Action Plan will be published by January 2019 and incorporate a record of consultation responses and how Southampton Airport has taken these into consideration. If you would like to take part in the consultation, you can do so by writing to:

Noise Action Plan Consultation
Noise and Flight Evaluation Unit
Southampton International Airport
Wide Lane
SO18 2NL

Or by email to: noiseactionplan@southamptonairport.com

The public consultation will last a total of four weeks. For details of the consultation, including the dates, please see www.southamptonairport.com/noise

Section 4 – Legislation

The mitigation and management of aircraft noise relies heavily on National and International initiatives and regulation imposed by:

- The International Civil Aviation Organization (ICAO);
- The European Union;
- The UK Government;
- Local authorities; and
- Southampton International Airport itself.

ICAO and the ‘Balanced Approach’

ICAO is a specialised agency of the United Nations, created to promote the safe and orderly development of international civil aviation throughout the world. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. After a Standard is adopted it is put into effect by each ICAO member state in its own territories.

ICAO recognises that aircraft noise is the most significant cause of adverse community reaction related to the operation and expansion of airports and it requires all of its member states to adhere to an approach to managing aircraft noise known as the ‘Balanced Approach’. The Balanced Approach aims to address noise management in an environmentally responsive and economically responsible way, and encompasses four principal elements:

1. Reduction of noise at source;
2. Land-use planning and management;
3. Noise abatement operational procedures; and
4. Operating restrictions on aircraft.

Our Noise Action Plan embraces the Balanced Approach and the plan outlined in Section 11 adopts this format.

ICAO is also responsible for aircraft certification and it has set progressively tighter certification standards for noise emissions from civil aircraft. Aircraft operating in member states must conform to these standards, which are known as ‘Chapters’.

The Chapters set maximum acceptable noise levels for different aircraft under specific test conditions. Chapter 2 aircraft have been banned from the EU since 1 April 2002, unless they are granted specific exemptions. The vast majority of civil aircraft now operating therefore fall within Chapters 3 and 4, i.e. they have a smaller noise footprint than the previous Chapter 2 aircraft. All new aircraft manufactured from 2006 onwards must meet the requirements of Chapter 4.

In 2014 the ICAO Council adopted the new Chapter 14 noise standard for jet and propeller-driven aircraft. This will be the mainstay of ICAO aircraft noise regulations for the coming years. It is applicable to new aircraft types submitted for certification on or after 31 December 2017, and on or after 31 December 2020 for aircraft less than 55 tonnes in weight.

European Union

There are several European Union directives and regulations that apply to the regulation of aircraft noise.

- EC Directive 92/14/EEC banned Chapter 2 aircraft from landing in the EU from 1 April 2002.
- EC Directive 2002/49 (known as the 'Environmental Noise Directive') requires member states to publish noise maps and noise management action plans for major airports (more than 50,000 movements a year) every 5 years.
- EC Directive 2002/49 (known as the 'Environmental Noise Directive') requires strategic noise maps to be produced for the main sources of environmental noise (major roads, major railways, major airports) and for agglomerations in England. (See appendix C)
- Regulation (EU) No.598/2014 of the European Parliament and of the Council of 16 April 2014 on the establishment of rules and procedures with regard to the introduction of noise related operating restrictions at union airports within a Balanced Approach.

UK government

The UK Government plays an important role in setting policy for aviation noise management. The Civil Aviation Acts of 1982 and 2006 granted the UK Government the power to introduce mitigation and noise control measures. The 2013 Aviation Policy Framework (APF) set out the challenges of noise control at airports, and noted the Government's recognition of the Balanced Approach principle of aircraft noise management. More recently, the UK Government has published, and consulted on, its Airspace Policy (AP) framework.

The Government's consultation response on the AP provides an update to some of the policies on aviation noise outlined in the APF and should be viewed as current Government policy.

The Government has also published the Air Navigation Guidance 2017, which provides guidance to the CAA on its environmental objectives when carrying out its air navigation functions, and to the CAA and wider industry on airspace and noise management. Importantly the AP sets out a range of new proposals that the Government will implement that are relevant to the Noise Action Plan:

Changes to aviation noise compensation policy;

The creation of an Independent Commission on Civil Aviation Noise (ICCAN); and

New metrics and appraisal guidance to assess noise impacts and their impacts on health and quality of life.

Local Authorities

Section 106 Planning Obligations

Planning obligations under Section 106 of the Town and Country Planning Act 1990, commonly known as s106 agreements, are operational conditions to which Southampton Airport is bound. They are focused on site specific mitigations of the impact of development and operations. The planning obligation is a formal document issued and monitored by Eastleigh Borough Council.

Changes to aviation noise compensation policy

The Government has proposed a number of changes to aviation noise compensation policy in order to improve fairness and transparency. Southampton Airport supports these proposals and will take them into account in the development of our Noise Insulation Scheme: please refer to section 11 for further information.

The independent commission on civil aviation noise

The Government has proposed the creation of an Independent Commission on Civil Aviation Noise (ICCAN). ICCAN will be responsible for creating, compiling and disseminating best practice to the aviation industry on the management of civil aviation noise and will be responsible for advising government in this area. Southampton Airport supports these proposals and will carefully consider any relevant best practice guidance published by ICCAN.

New metrics and appraisal guidance for assessing noise impacts

Long term exposure to environmental noise such as road, rail and aircraft noise can lead to impacts on health and quality of life. This is recognised and addressed in noise policy which aims to avoid, mitigate and minimise the adverse impacts of noise on health, in the context of sustainable development. Southampton Airport shares these objectives and have adopted them as part of our Noise Action Plan.

Thresholds for noise assessment are defined in current government policy in terms of the Lowest Observable Adverse Effect Level (LOAEL). The LOAEL is the level above which adverse effects on health and quality of life can be detected. Current policy proposes a LOAEL of 51 dB $L_{Aeq, 16hr}$ based on the most recent large-scale research study in the UK on aircraft noise (Survey of Noise Attitudes 2014: Aviation, SoNA).

A night-time LOAEL of 45dB $L_{Aeq, 8hr}$ is also proposed in the policy, based on the Government's current monetisation methodology (known as WebTAG) and the World Health Organisation's methodological guidance for estimating the burden of disease from environmental noise. Southampton Airport supports such proposals to assess noise down to these thresholds and has reflected this in its noise mapping.

Section 5 – Background to aircraft noise and regulation

Air noise is created by aircraft approaching or taking off from airports and by aircraft taxiing/manoeuvring around the airfield.

This noise is caused by two things:

- By air moving over the aircraft's fuselage (body) and wings – known as the airframe
- By the aircraft's engines themselves.

When air moves over the aircraft's body, it causes friction and turbulence, which make noise. The amount of noise created varies according to aircraft size and type as well as the way the aircraft is flown such as speed, the angle of approach and the way in which wing flaps are deployed. This means noise can differ even for identical aircraft. Engine noise is created by the sound of the engine's moving parts and by the sound of the air being expelled at high speed once it has passed through the engine.

Departing aircraft create noise when taking off due to the high degree of thrust required. This creates noise from the aircraft's engines. However, this allows aircraft to climb quickly and therefore reduce their noise impact by flying at a higher altitude. Air moving over the airframe of arriving aircraft generates noise, as the aircraft becomes less aerodynamic in order to slow down. However the thrust and thus engine noise is reduced. Nevertheless landing aircraft are closer to the ground for a longer distance which may increase noise disturbance over a wider area.

Aircraft being manufactured today are considerably quieter than 20 years ago. It is expected that today's aircraft will be replaced by even quieter models in the future. Although aircraft engines are quieter, there are more aircraft flying today. This means that whilst average levels of noise per aircraft movement are lower than before, the frequency of aircraft movements has increased and hence noise "events" have increased. At Southampton Airport, the number of aircraft movements have increased from 40,501 in 2013 to 44,419 in 2017.

Noise is a very subjective issue and each person reacts differently. A noise which one person is affected by may not necessarily affect the next person. The time of the day, location and circumstances of any noise heard can all produce different reactions. Attitudes and reactions to noise are as important as the noise level experienced, but these attitudes are less understood than the technical science of sound-generation and measurement.

Air Quality & CO₂ Interdependencies

There are a number of interdependencies which affect noise management including the emission of local air pollutants and carbon dioxide (CO₂) from aircraft engines. Most of the technological advances in aircraft design in the last 20 years have led to both a reduction in noise and CO₂ emissions. However in some cases, the drive towards quieter aircraft has resulted in an increase in emissions of local air pollutants, such as oxides of nitrogen (NO_x). The challenge for the aviation industry is to manage and balance these three issues simultaneously.

Section 6 - Measuring aircraft noise – noise contours

Noise contours are the common method used in the UK and internationally to measure and assess aircraft noise around airports. Noise contours are produced using sophisticated computer modelling software, based on an array of inputs. These inputs typically include the number of flights at an airport, the type of aircraft operating and performance of that particular aircraft, the routes that the aircraft take and assumptions about how the aircraft are operated at each airport. As noise can be a subjective issue, noise contours are used to quantify and assess noise impacts more quantitatively. There are a number of variables that can affect how noise is heard on the ground including: background noise levels, distance from the noise source, elevation above ground level, the phase of flight an aircraft is in when it passes over and the weather conditions at the time such as wind or cloud cover which affect the way in which sound travels.

Routine noise contours - average summer day 16-hour L_{eq} contours

Every year the airport commissions detailed noise modelling using the CAA Environmental Research and Consultancy Department (ERCD). The output of this modelling is an estimate of the average aircraft related noise experienced by people living around an airport during the busier summer period.

This provides average noise levels for the busiest time in terms of the number of aircraft movements during the 16 hour period 07:00 to 23:00. This includes the busiest three months of the year, from mid-June to mid-September, when the number of aircraft movements peak. These noise contours are the most common international measure of aircraft noise. Southampton Airport provides these noise contours to Eastleigh Borough Council each year and they are presented to the Southampton Airport Consultative Committee to illustrate the noise climate for the previous year of operation.

Noise regulation contours – average annual day dB L_{den} contours

The Environmental Noise (England) Regulations 2006 requires that strategic noise mapping should be conducted at five yearly intervals. Unlike the conventional average summer day 16-hour dB L_{Aeq} routine contours which are used to evaluate noise changes at the airport each year, the regulations require the contours to cover different periods of the day, known as: (L)day, (L)evening, (L)night, and dB (L)den (day, evening & night combined).

Section 8 - Results of the Southampton Airport 2017 noise contour mapping

Southampton airport produces annual noise contours which are modelled by the ERCD in accordance with the Government Noise Regulations. Tables 1 to 5 show the various results of the noise mapping including the area, population and households potentially exposed to noise within each of the prescribed contour bandings. Data from L_{day} , $L_{evening}$, L_{night} , L_{den} and L_{eq} noise contours has been included.

This assessment was carried out utilising a strategic residential population location dataset. The following paragraphs summarise the method used in constructing this dataset.

Residential dwellings and buildings containing residential dwellings were identified through the 2015 (OS) AddressBase Premium and Topography layer respectively. An average population per residential dwelling was calculated for each discrete dwelling utilising population data attained from the mid-year population estimates from the Office of National Statistics (ONS), June 2015.

The total number of residential dwellings and the total associated population were calculated for each residential building polygon (the building's footprint), taking into account building polygons with multiple dwellings. Examples of building polygons containing multiple dwellings located within a single polygon include tower blocks and apartments.

The estimated total number of people and dwellings exposed above various noise levels in 2016 derived from the strategic mapping of noise from aircraft using this airport are shown in the tables below.

Population and dwelling counts have been rounded as follows:

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

Noise Level (dB)	Number of Dwellings	Number of People
≥ 55	2,350	5,600
≥ 60	300	800
≥ 65	0	0
≥ 70	0	0
≥ 75	0	0

Table 1: Estimated total number of people and dwellings above various noise levels, L_{den}

Noise Level (dB)	Number of Dwellings	Number of People
≥ 54	3,850	9,300
≥ 57	1,250	3,000
≥ 60	400	1,000
≥ 63	<50	<100
≥ 66	0	0
≥ 69	0	0

Table 2: Estimated total number of people and dwellings above various noise levels, L_{day}

Noise Level (dB)	Number of Dwellings	Number of People
≥ 54	2,100	4,900
≥ 57	700	1,700
≥ 60	100	300
≥ 63	<50	<100
≥ 66	0	0
≥ 69	0	0

Table 3: Estimated total number of people and dwellings above various noise levels, $L_{evening}$

Noise Level (dB)	Number of Dwellings	Number of People
≥ 54	3,450	8,200
≥ 57	1,100	2,700
≥ 60	350	800
≥ 63	<50	<100
≥ 66	0	0
≥ 69	0	0

Table 4: Estimated total number of people and dwellings above various noise levels, $L_{Aeq, 16h}$

Noise Level (dB)	Number of Dwellings	Number of People
≥ 48	0	0
≥ 51	0	0
≥ 54	0	0
≥ 57	0	0
≥ 60	0	0
≥ 63	0	0
≥ 66	0	0

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

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Section 9 - Southampton Airport noise strategy & objectives

Southampton Airport has set the following long term objective for the management of aircraft noise:

Continuing to work within the framework established by national and local government, the airport will be a responsible neighbour and seek to minimise the impact of aircraft noise on the local community.

Southampton Airport supports the growing commercial, leisure and cultural success of the region and provides air services that are valued for both business and leisure purposes. The airport remains one of the largest employment sites supporting around 950 jobs and contributes in excess of £160 million per year to the region.

As well as the benefits provided by the airport, Southampton Airport recognises that aircraft noise can be an important issue for local communities. Although the noise generated by the airport cannot be eliminated, Southampton Airport is conscious that it is important to reach a balance that allows growth in a sustainable manner whilst also enhancing the economic and social benefits to the region, and ultimately remaining a good neighbour to local residents.

This Noise Action Plan therefore sets out our plan to manage and, where practical, reduce the adverse effects of aircraft related noise. Southampton Airport has introduced updates and enhancements to its current actions to build upon the progress it has made over the past five years working proactively and in collaboration with a variety of stakeholders and neighbours.

Southampton Airport has reviewed the four key strategic themes that were published as part of the 2013 – 2018 Noise Action Plan and intend to keep these existing themes; however we plan to build upon the work already undertaken within these areas as well as ensuring that these are developed within the framework set out in the ICAO Balanced Approach to Aircraft Noise Management.

Below are our five strategic themes for 2018 – 2023 and within Section 11 of this Noise Action Plan there are full details of the actions and proposed new actions set against these themes.

- 1.) Demonstrate our continuing commitment to managing aircraft noise at source.
- 2.) Engaging with our local communities affected by aircraft noise to better understand their concerns and priorities, and responding to these as far as practically possible in noise strategies and communication plans.
- 3.) Influencing planning policy to minimise the number of noise sensitive properties around Southampton Airport.
- 4.) Organising ourselves to manage noise efficiently and effectively, achieving a full understanding of aircraft noise to inform our priorities, strategies and targets.
- 5.) Ensuring Southampton Airport has effective Noise Abatement Operational Procedures.

Section 10 – Noise Management at Southampton Airport

The airport currently has in place a number of mitigation measures to manage and reduce the adverse effects of airport related noise. Alongside this, Southampton Airport has built upon the progress made across the last five years to introduce some significant updates and additions to its current measures in line with the latest developments in policy and research relating to noise.

Section 106 Agreement

Southampton Airport adheres to a strict agreement, which since its inception in 1990 has been designed to minimise the impact of the airport operation on the local community. This agreement forms part of our planning agreement with Eastleigh Borough Council, and is legally binding. It includes:

Night time closure

There are very strict limits on the number of scheduled night flights that Southampton Airport may operate during the night period. The night period is defined from 23:00 to 06:00, or to 07:30 on Sunday mornings. The airport is permitted to operate 10 scheduled night flights per month, but not more than 100 in any 12 month period. However, occasionally flights operate during these times for unexpected reasons such as poor weather or as a result of en-route air traffic control delays. Additionally some ambulance flights carrying patients or transporting donor organs are accepted during night hours, for emergency medical reasons.

Noise preferred routeing of aircraft

Noise preferred routes for departing aircraft and for aircraft arriving 'visually' (in good visibility) were introduced in 2007 following a wide scale consultation with local stakeholders, residents and councils. These routeings aim to divert aircraft away from the most densely populated areas where it is possible to do so. The airport ensures, as far as is reasonably practical, that aircraft using the airport adhere to the preferred routes. There are however occasions when the noise preferred routes cannot be followed by aircraft and examples of this are the avoidance of poor weather or other air traffic in the area. Noise preferred routeings are constantly kept under review following feedback from our local communities.

Strict limits on helicopter movements

The annual number of daytime helicopter movements is restricted, and helicopter movements are banned during night hours, in order to minimise the noise for our neighbours.

Ban on noisier types of aircraft

Noisier aircraft which do not meet strict industry standards, referred to as ICAO 'Chapter 3', are not permitted to visit Southampton Airport. The airport was one of the first in the country to ban aircraft that do not meet this standard.

Strict limits on aircraft training movements

The number of flying training movements is restricted. Although some flying training takes place, this has significantly reduced in recent years.

Engine ground running

There are strict limits on the times, the location and the number of occasions that aircraft engine ground running can take place, which is required for engine testing. No engine ground running is permitted during night hours.

In summary, this agreement is of great significance in minimising the impact of aircraft noise on the local community and provides governance on the way that Southampton Airport operates. Monitoring and reporting against these regulations are undertaken at the Southampton Airport Consultative Committee.

Noise and Flight Evaluation Unit and Communities

Southampton Airport monitor aircraft noise issues, and record and investigate complaints and enquiries received from the local community through our dedicated Noise and Flight Evaluation Unit. The unit is manned during office hours by specially trained staff that can answer any questions and provide information on noise initiatives.

Southampton Airport operates a Noise telephone line (02380 62 7070) and a dedicated email address (sounoisecomplaints@southamptonairport.com) through which complaints are logged onto our system. A key part of our noise strategy is to give out as much information as possible and to provide our neighbours and stakeholders with an insight into airport activities. Southampton Airport report on the number of complaints received as part of the Technical Working Group and Consultative Committee.

Following the introduction of NoiseDesk software in 2018, Southampton Airport now use this system to:

- Track and report on adherence to noise preferred routes
- Monitor NPR deviations and quickly address these with airlines
- Investigate noise complaints and identify specific flights in relation to post code.

Subsequent to the implementation of the new software, the airport is working with airlines to introduce a full Local Operating Procedure to be followed in the event of a deviation from a noise preferred route. More details of this can be found in Section 11.

Noise Insulation and Land-use Planning

Southampton Airport engages directly with the local planning authorities to ensure awareness of aircraft operations is considered in the development of sensitive land use. As part of this the airport contributes to local development plans and seeks to influence policy where appropriate.

The Government's current aviation policy is set out in the Aviation Policy Framework (APF). The Consultation Response on UK Airspace Policy provide a recent update to some of the policies on aviation noise contained within the APF, and is considered to represent the current government policy. The policy now requires financial assistance to be offered towards the noise insulation of residential properties in the 63dB_{Leq}, 16h noise contour or above.

Southampton Airport is proposing to update its noise insulation scheme to reflect these recent changes in aviation policy: see Section 11 for further details.

Aircraft technology

As part of the AGS group (Aberdeen, Glasgow and Southampton Airports), Southampton Airport are represented within Sustainable Aviation, an alliance of UK airlines, airports, aerospace manufacturers and air navigation service providers. The group members regularly attend and contribute to the meetings of Sustainable Aviation and work with our partners to promote research and development of even quieter aircraft.

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

Section 11 - Noise Actions: Southampton Airport Noise Action Plan 2018 - 2023

Action	Timescale	Performance Indicator	No. of People
Actions closed from last NAP			
Southampton Airport will evaluate and install an updated aircraft tracking system to improve the accuracy of the existing track keeping system. This will help to evaluate and assess flights, particularly for aircraft at lower levels and allow enhanced feedback to be given to the community living immediately to the North or South of the runway.	2015-18	System installed and operational	n/a
Southampton Airport will undertake a Stakeholder Consultation for Airspace Change Proposal for changes for GNSS approaches to the south.	2013	Consultation was undertaken between 8 th October 2013 and 31 st January 2014	n/a
Southampton Airport will publish a report on the GNSS consultation findings	2014	The report was published on 30 th April 2014 and GNSS went live on 2 nd April 2018	n/a
Reduction of noise at source			
Southampton Airport will continue to operate a differentiated aircraft charging system to discourage noisier aircraft Classed as Chapter 3 High aircraft	Ongoing	Number of flight movements of Chapter 3 and 4 aircraft.	Communities within close proximity to the airport
Southampton Airport will continue to undertake reviews of the differentiated aircraft charging system on an annual basis to discourage noisier aircraft.	Annual review	Number of affected movements since introduction.	n/a
We will continue to work with our partners in the aerospace sector through Sustainable Aviation to achieve the visionary noise goals of FlightPath 2050 which seek to achieve a 65% reduction in perceived noise, or 15dB, from aircraft by 2050 compared to 2000.	Ongoing	Progress against the EU Flightpath 2050 target of a 65% reduction in perceived noise, or 15dB, from aircraft by 2050 compared to 2000	n/a

Action	Timescale	Performance Indicator	No. of People
Noise Abatement Operational Procedures			
Southampton Airport will continue to restrict aircraft operations during the night time period from 23:00 hrs to 06:00 hrs (Mon-Sat) and 23:00 to 07:30 hrs on Sundays (with permitted exceptions as per the Flying Controls Agreement).	Ongoing	Number of movements reported to Airport Consultative Committee.	Communities within close proximity to the airport
Southampton Airport will continue to prohibit helicopter movements during the night time period from 23:00 hrs to 06:00 hrs and 07:30hrs to 23:00hrs on Sundays.	Ongoing	Number of movements reported to Airport Consultative Committee.	Communities within close proximity to the airport
The number of helicopter movements will continue to be restricted to 7,500 movements a year (during the day). Helicopter training flights will also continue to be limited to air crew familiarisation with the airport.	Ongoing	Number of movements reported to Airport Consultative Committee.	Communities within close proximity to the airport
Southampton Airport will continue to ban noisier Chapter 2 aircraft i.e. aircraft that do not meet the standards of ICAO Annex 16 Chapter 3 or FAA FAR Part 36 Stage 3. Southampton Airport will also adhere to the ICAO Chapter 14 noise standard for jet and propeller-driven aircraft, applicable to new aircraft from 31st December 2017.	Ongoing	Reported to Technical Working Group Annually	Communities within close proximity to the airport
Southampton Airport will continue to apply and monitor the agreed Noise Preferred Routes for aircraft.	Ongoing	Noise preferred route infringements to follow LOP and addressed with airlines	Communities within close proximity to the airport
Southampton Airport will continue to use aircraft track keeping systems to proactively monitor aircraft routing and report off track occurrences to airlines.	Ongoing	Noise preferred route infringements reported to the Technical Working Group.	n/a
Following the implementation of the 'NoiseDesk' system, Southampton Airport will publish a Local Operating Procedure to outline the process of addressing NPR deviations with our airlines including financial penalties.	12 months after adoption of NAP	Review and report within 12 months of implementation	n/a

Action	Timescale	Performance Indicator	No. of People
Working with local communities			
<p>Southampton Airport will continue to operate the Noise and Flight Evaluation Unit. This includes:</p> <ul style="list-style-type: none"> - Logging and responding to all complaints and enquiries received - Investigating and seeking further explanation from ATC and airlines where required. - Providing statistics and reporting these to the Consultative Committee three times a year 	Ongoing	Number of callers and confirmed noise complaints associated with the airport each month.	n/a
<p>Southampton Airport will continue to communicate to stakeholders by publishing information on the airport website and also through communicating through forums around key noise initiatives such as aircraft routing.</p>	Ongoing	Positive feedback from Southampton Airport Community, Stakeholder Conferences and Airport Consultative Committee	n/a
<p>Southampton Airport will continue to present key noise issues to the Southampton Airport Consultative Committee & Technical Working Group as appropriate.</p>	Ongoing	Meeting minutes	n/a
<p>Southampton Airport will provide feedback on our progress against the Noise Action Plan on a regular basis to Airport Consultative Committee.</p>	Annually	Progress of actions reported through Airport Consultative Committee	n/a
<p>Southampton Airport will commission and publish noise regulation (L_{den}) contours annually, to monitor the effectiveness of the measures in this Noise Action Plan.</p>	Bi-annually	Submit contours to Eastleigh Borough Council and publish on Southampton Airport website	n/a
<p>Southampton Airport will undertake a review of the results of the annual noise regulation (L_{den}) contours</p>	Bi-annually	Reviews reported through Airport Consultative Committee	n/a
<p>Southampton Airport will deploy noise monitors at the direction of Technical Working Group to address any specific noise related issues. The data from monitoring will be published on the airport website and presented to Airport Consultative Committee</p>	Upon direction of the TWG	Findings reported to the Technical Working Group	n/a

Action	Timescale	Performance Indicator	No. of People
Influencing planning policy to minimise the number of noise sensitive properties around our airports			
We will continue to engage with the local planning authorities to ensure awareness of aircraft operations is considered in the development of sensitive land use.	Ongoing	Annual review with local planning authority.	n/a
Southampton Airport will continue to commission an independent noise specialist to produce routine 16hr Summer L _{eq} noise contours each year to evaluate the noise climate at the airport.	Annually	Submitted to Eastleigh Borough Council and review through the Airport Consultative Committee.	n/a
We will develop and implement a Noise Insulation Policy to mitigate noise for residents most affected by aircraft noise in line with UK Airspace Policy.		Policy to be finalised and published within 12 months of adoption of this Noise Action Plan.	Residential properties within the 63dB L _{Aeq} , 16h contour
Organising ourselves to manage noise efficiently and effectively, achieving a full understanding of aircraft noise to inform our priorities, strategies and targets.			
Our Noise Action Plan is consistent with the ICAO Balanced Approach. Southampton Airport will continually review the effectiveness of our mitigation measures in the context of the balanced approach to ensure that mitigation is considered in a consistent way with a view to addressing noise impacts in the most cost-effective way.	Ongoing	Tracking of Noise Action Plan and mitigation measures	n/a
The Government has proposed the creation of an Independent Commission on Civil Aviation Noise (ICCAN). ICCAN will be responsible for creating, compiling and disseminating best practice to the aviation industry on the management of civil aviation noise and will be responsible for advising government in this area. Southampton Airport support these proposals and will carefully consider any relevant best practice guidance published by ICCAN	Awaiting formation and guidance from ICCAN	Tracking of Noise Action Plan and mitigation measures	n/a

Section 12 - Provisions for evaluating implementation of the Southampton Airport Noise Action Plan

In order to evaluate the effectiveness and delivery of the Noise Action Plan, Southampton Airport have established performance indicators, timescales and targets which are outlined within Section 11. Southampton Airport are committed to monitoring and reporting on our progress through various avenues:

- Regularly as part of the Technical Working Group
- As part of the noise sections on our website
- Reported to the Airport Consultative Committee as part of a standing agenda item.
- Annually via an externally verified progress report.

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Appendices

Appendix A: Technical glossary and abbreviations

Agglomeration	The Environmental Noise (England) Regulations 2006: An agglomeration is an area having a population in excess of 100,000 persons and a population density equal to or greater than 500 people per square km and identified in Regulations by the Secretary of State. For the first round of mapping to be reported in 2007, the population threshold is 250,000.
ANCON 2.3	Aircraft Noise Contour Model version 2.3. The UK civil aircraft noise contour model produced and maintained by ERCD.
ATC	Air Traffic Control.
CAA	Civil Aviation Authority.
Directorate of Airspace Policy	The Directorate of Airspace Policy (DAP), a Group within the Civil Aviation Authority (CAA), which sits alongside the groups responsible for Safety Regulation, Economic Regulation and Consumer Protection. The Directorate is staffed by civilian and military experts with experience of commercial, business, recreational and military aviation. The Government requires the Directorate of Airspace Policy to secure the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic whilst taking into consideration the requirements of operations and owners of all classes of aircraft. Additionally environmental implications and national security issues must be considered. The Directorate is also required to provide the UK Meteorological Authority and Regulation for Aeronautical Information services.
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 (dBA) are commonly used.
Defra	Department for Environment Food and Rural Affairs (UK Government).
DfT	Department for Transport (UK Government).
ECAC	European Civil Aviation Conference.
ERCD	Environmental Research and Consultancy Department of the Civil Aviation Authority.
FlightPath 2050	https://ec.europa.eu/transport/sites/transport/files/modes/air/doc/flightpath2050.pdf
FLOPC	Flight Operations Committee: Southampton Airport forum including Airline Partners, Aircraft operators and ATC
GNSS	Global Navigation Satellite System - a satellite base global positioning system for aircraft

ICAO	International Civil Aviation Organization.
L_{Aeq,16h}	The A-weighted average sound level over the 16 hour period of 07:00 – 23:00.
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.
L_{eq}	Equivalent sound level of aircraft noise in dBA, often called equivalent continuous sound level.
L_{evening}	The A-weighted average sound level over the 4 hour evening period of 19:00 – 23:00 hours. An artificial 5 dB(A) weighting is added.
L_{night}	The A-weighted average sound level over the 8 hour night period of 23:00 – 07:00 hours. An artificial 10 dB(A) weighting is added.
LOP	Local Operating Procedure
Modal Split	If aircraft land from the north of the airport or depart to the south they are described as using runway 20. If aircraft land from the south or depart to the north, they are described as using runway 02. These runway numbers are clearly marked at both ends of the runway. This is referred to as the runway modal split.
NATS	Formerly known as National Air Traffic Services. NATS is licensed to provide en-route air traffic control for the UK and the Eastern part of the North Atlantic and also provides air traffic control services at several major UK airports.
Noise Regulation contours	These are L _{den} contours which have been prescribed under the noise regulations and form the basis for this Noise Action Plan. They include an L _{day} , L _{evening} , L _{night} , L _{Aeq,16h} and an L _{den} contour, which is a logarithmic composite of the L _{day} , L _{evening} , and L _{night} levels.
Noise Contour	Map contour line indicating noise exposure in dB for the area that it encloses.
Noise Sensitive Properties	These are defined under the Noise Regulations and include housing, hospitals and schools (within the noise regulation contours).
Routine noise contours	These contours are those produced every year for Eastleigh Borough Council. They use daily aircraft movements that take place in the 16 hour period (07:00-23:00) during the 92 day period 16 June to 15 September inclusive. They are produced retrospectively each year for the previous year.
Sustainable Aviation	A UK aviation industry initiative aiming to set out a long term strategy for the industry to address sustainability issues.
NoiseDesk	Aircraft track keeping monitoring system used by Southampton Airport

Appendix B: Financial information: current Southampton Airport cost of noise management

Type	Description	Estimated Cost
Staff	Noise and Flight Evaluation Unit, Environment, communications and Airside Operations team. Director's time.	£80,000
Computer/Software	Noise Track Keeping Software, website development and computer equipment	£25,000
Equipment	Deployment of noise monitors	£18,000
Flight Evaluation Unit Line	Dedicated Telephone line	£150
Research, Events and Subscriptions.	Research on noise and operational performance matters. Stakeholder conferences, venue costs & expenses. Technical Working Group, Consultative Committee, other noise meetings. Subscriptions.	£2,500
Consultancy	Preparation of annual noise contours	£6,000
Publications	Airport noise literature and Southampton Airport Noise Action Plan.	£7,000

Appendix C: Southampton 'agglomeration' as defined by DEFRA

Road, rail and air action plans have to give consideration to areas within the agglomeration and will ultimately form part of an Agglomeration Action Plan produced by the Secretary of State for Transport.

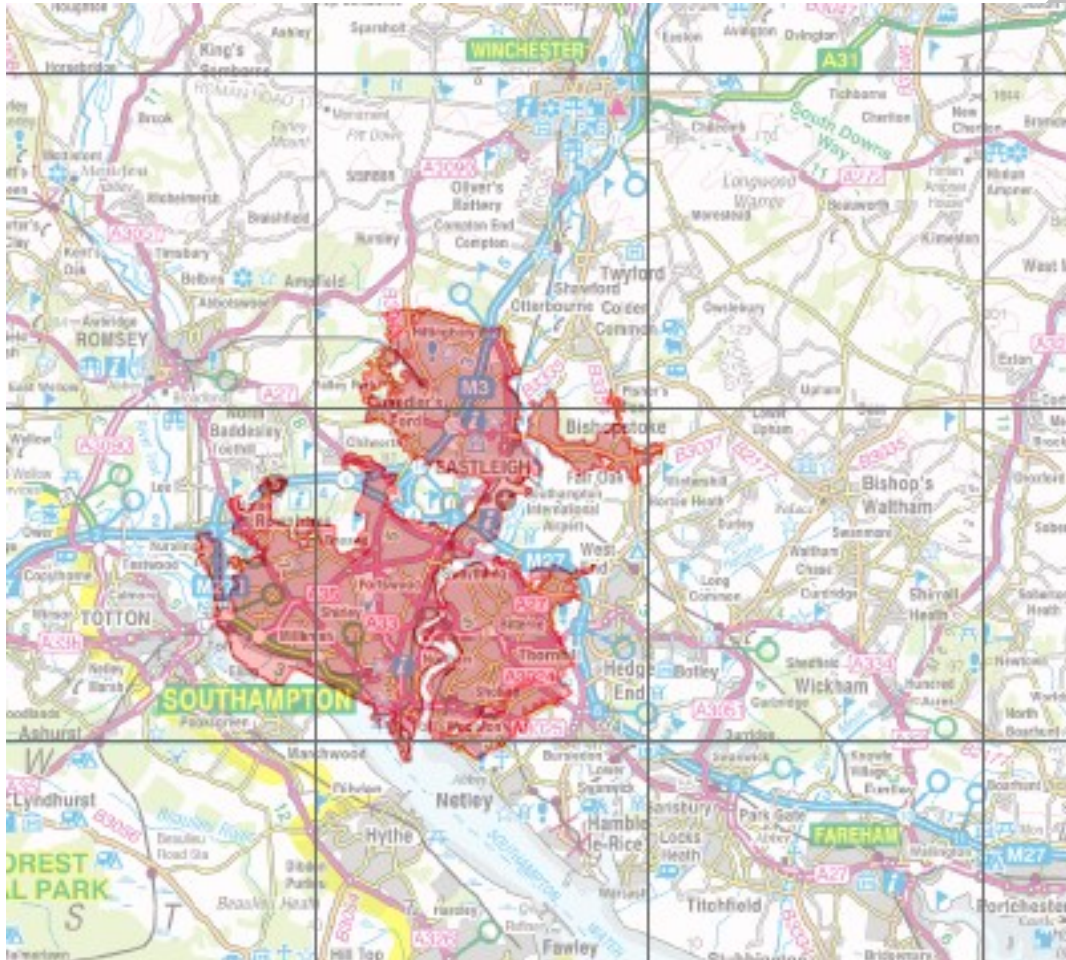


Figure 3: Southampton Agglomeration

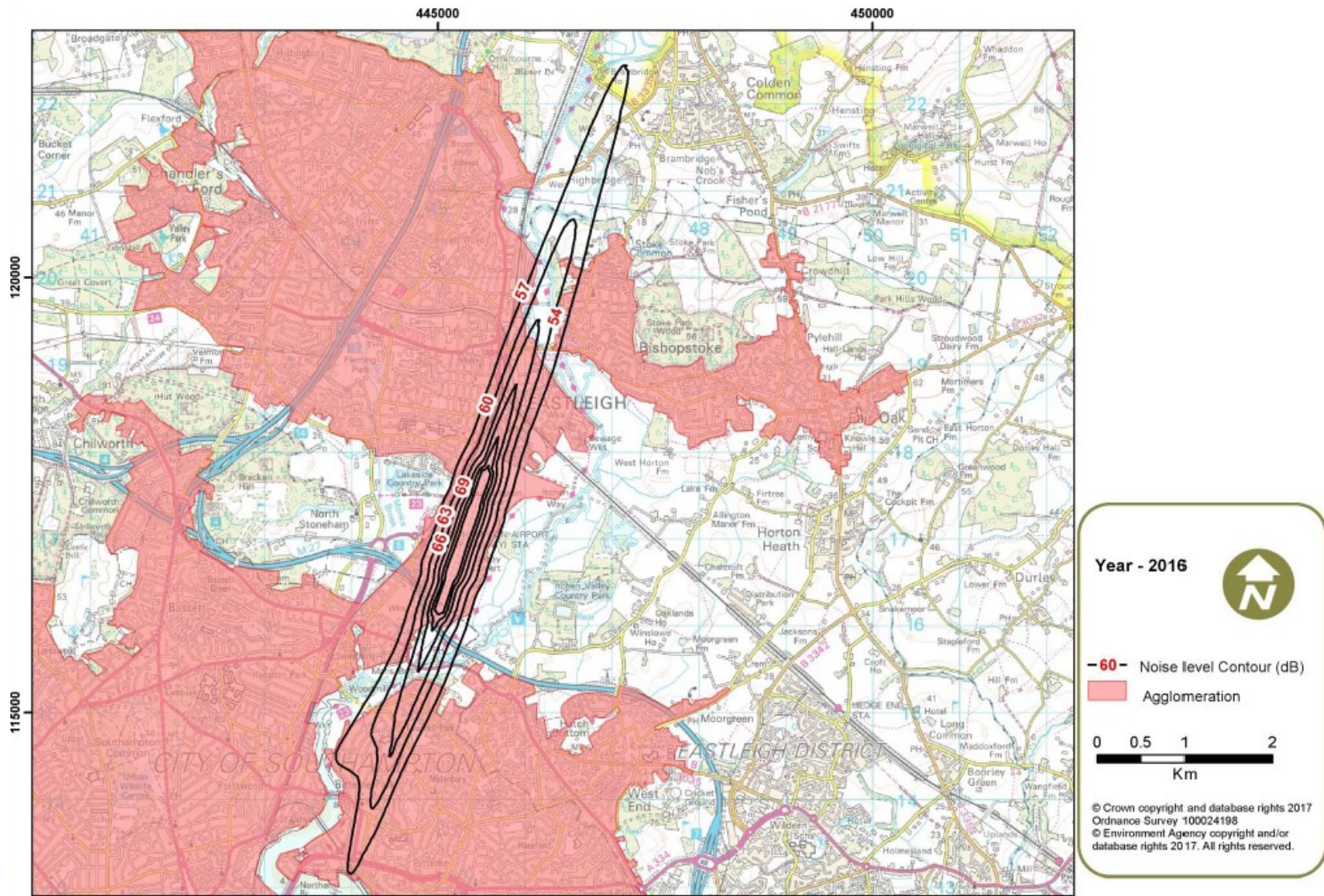


Figure 5: L_{day} noise contours overlapped on the Southampton Agglomeration

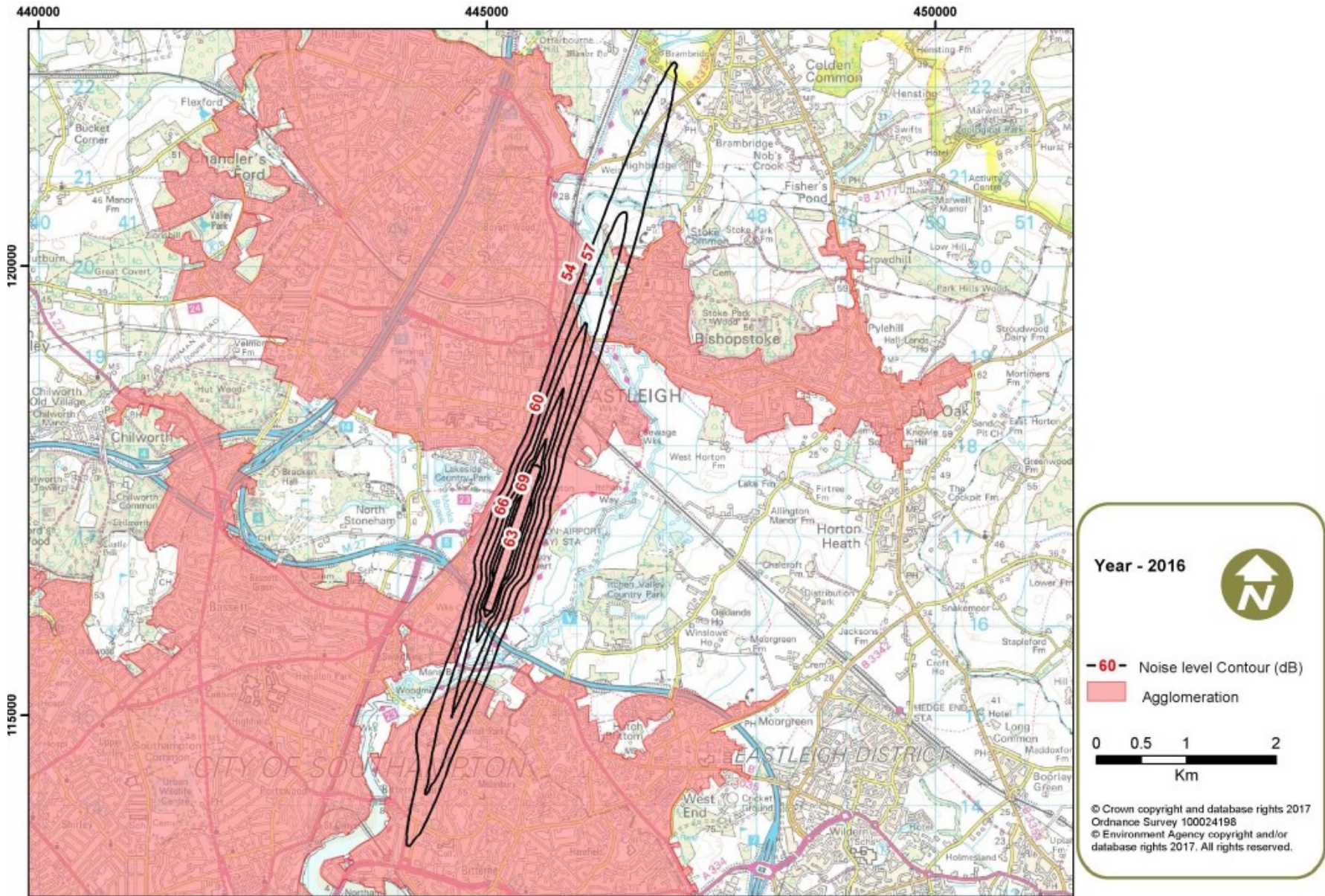


Figure 6: Levening noise contours overlapped on the Southampton Agglomeration

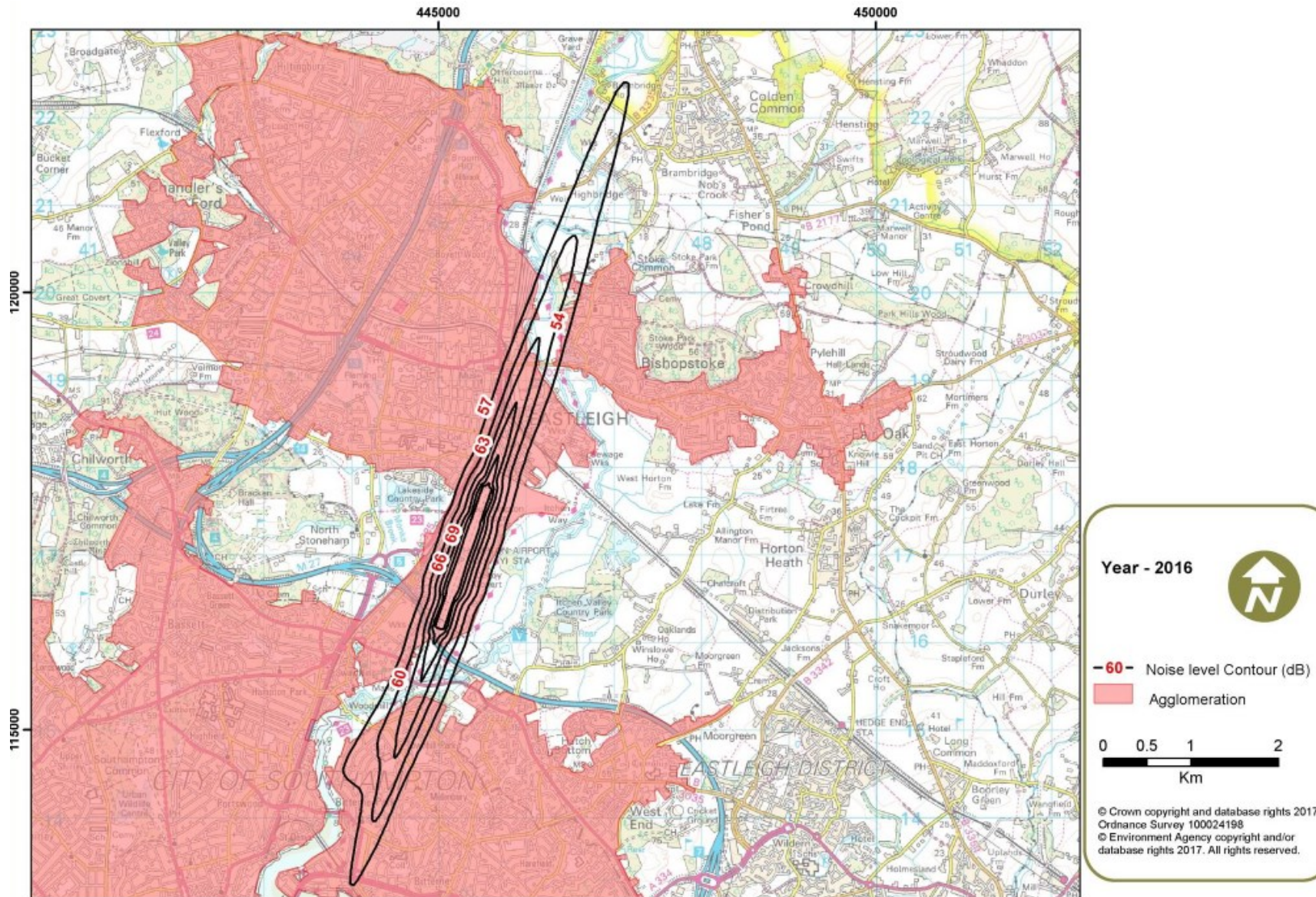


Figure 7: L_{Aeq} 16 noise contours overlapped on Southampton Agglomeration

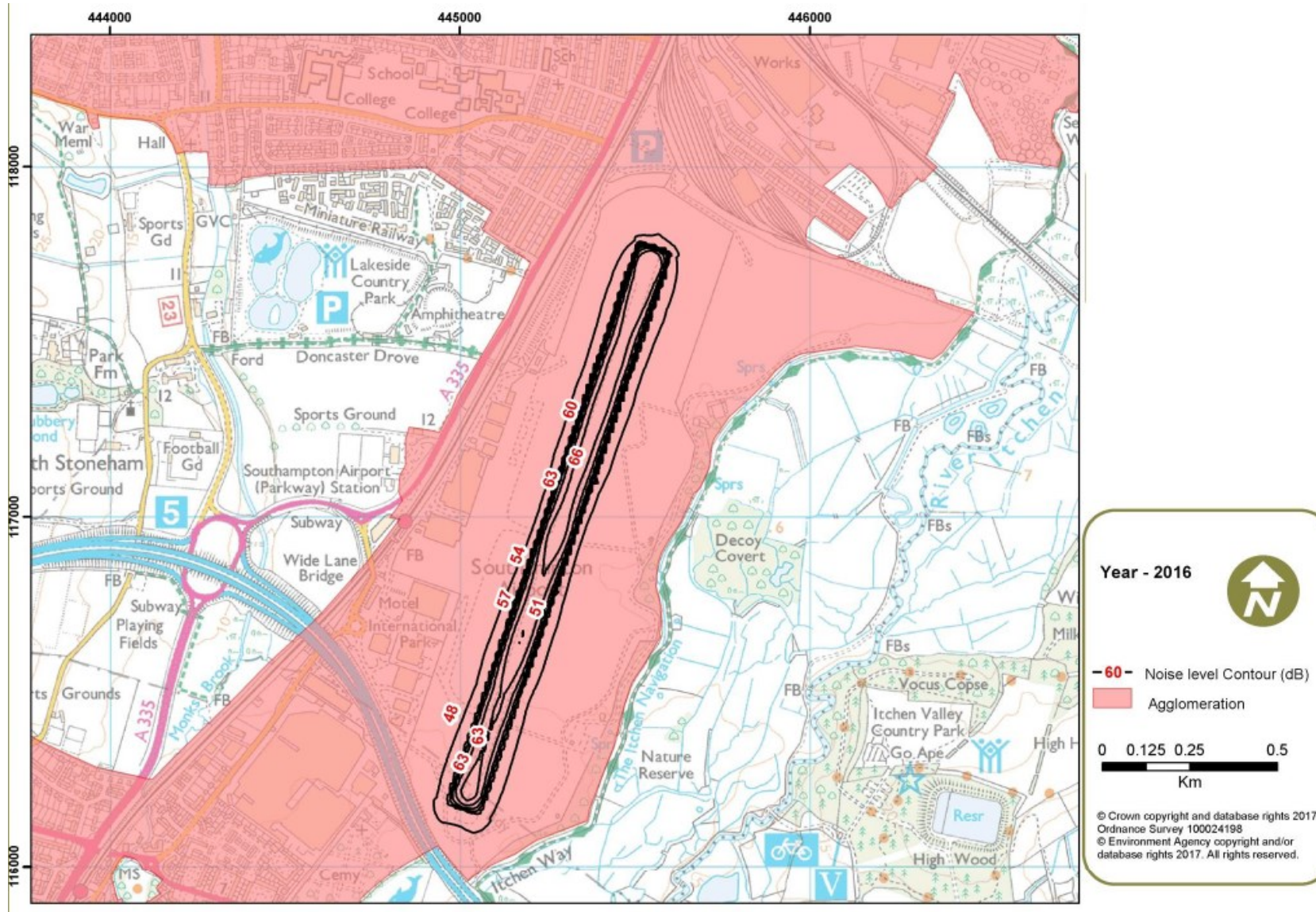
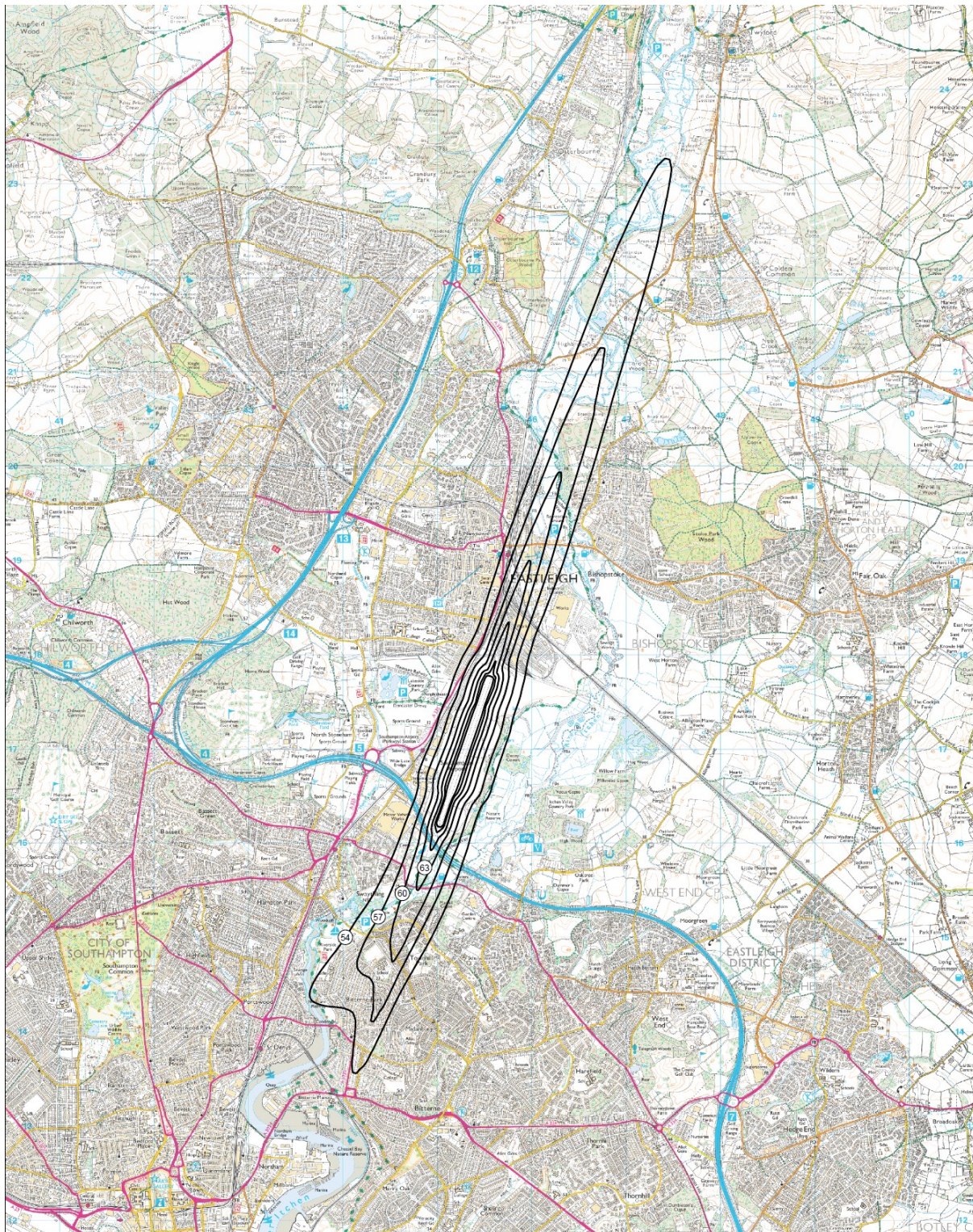


Figure 8: L_{night} noise contours overlapped on the Southampton Agglomeration

Appendix E: "Routine noise contours" - 2016dB LAeq,16h



SOUTHAMPTON AIRPORT
2016 average summer day LAeq,16hr 54-72 dB(A) contours
Actual modal split 76% RWY 20 / 24% RWY 02

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Appendix F: "Noise Regulation Contours" - 2016 dB Lden



SOUTHAMPTON AIRPORT
2016 L_{den} 55-75 dB(A) contours
Actual modal split 62% RWY 20 / 38% RWY 02

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Appendix G: Useful contacts

Southampton Airport Noise & Flight Evaluation Unit

Telephone: 023 8062 7070

Email: sounoisecomplaints@southamptonairport.com

Post: Noise & Flight Evaluation Unit, Southampton Airport, Southampton, SO18 2NL

Website: <https://www.southamptonairport.com/about-us/aircraft-noise/>

DEFRA

Website: www.defra.gov.uk

NATS (ATC)

Website: www.nats.co.uk

CAA

Website: www.caa.co.uk

Sustainable Aviation

Website: www.sustainableaviation.co.uk

Eastleigh Borough Council

Telephone: 023 8068 8000

Post: Eastleigh Borough Council, Leigh Road, Eastleigh, SO50 9YN

Website: www.eastleigh.gov.uk

Southampton City Council

Telephone: 023 8022 3855

Post: Southampton City Council, Civic Offices, Southampton, SO14 7LY

Website: www.southampton.gov.uk

Winchester City Council

Telephone: 01962 840 222

Post: Winchester City Council, City Offices, Colebrook Street, Winchester, SO23 9LJ

Website: www.winchester.gov.uk

Appendix G: Consultation Responses

This section will be updated with any responses received during the consultation.

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