Cambridge Airport





Noise Action Plan





INTERNATIONAL AIRPORT



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1. Executive Summary

Cambridge Airport is a small regional airport close to Cambridge City. As such we are acutely aware of our responsibilities to the local population as both a major employer and a concerned neighbour. We take our responsibilities very seriously regarding the impact our business may have on some members of the local community and this Noise Action Plan is one of many ways we endeavour to satisfy our environmental obligations.

Airports have a range of impacts relating to social, economic and environmental areas, both positive and negative. They act as important economic generators, providing jobs, encouraging inward investment and boosting tourism. Unfortunately there are some negative impacts for those that live and work around airports. One of the major impacts is noise and this can be a significant issue for people living or working close to airports or under flight paths. Cambridge Airport has a very real commitment to, where possible, reducing this noise within our sustainability agenda.

This action plan is designed to demonstrate how Cambridge Airport is dedicated to take note of the concerns and suggestions from local stakeholders and, where possible, implement changes to our daily operation to ensure a management of noise issues to control and minimise the adverse effects our operations have on the local community.

Whilst the NAP needs to be submitted to Defra every five years or when a major development occurs, e.g. a large infrastructure project, it is a living document and, as such, is under constant review. We are aiming to conduct a proactive engagement with our neighbours, through this forum, to where possible reduce the noise intrusion to as many people as possible whilst still complying with national and international regulatory constraints.

This is only the first stage in our plan to address all the concerns of our neighbours and provide a robust method of finding an amicable, safe and practical solution to all noise issues. These will include not only aircraft movements but engine testing, aircraft turnarounds, aircraft taxiing, helicopter movements and aircraft holding.

There are very clear guidelines by Defra as to the layout and content of this Noise Action Plan and much of the initial statistical evidence and data layout is as required by the guidance supplied by Defra. As the plan moves forward, and with the inclusion of the consultation feedback, this plan will become the core of our intention to try to reduce the noise impact upon local communities whilst supplying a sustainable airport for future generations to enjoy.

The main purpose of this plan is to limit and, where possible, reduce noise associated with the airport through achievable and realistic targets.



2. Glossary

Agglomeration	An area having a population in excess of 100,000 persons and a population density equal to or greater than 500 people per km ² and which is considered to be urbanised
dB(A)	A measure of sound pressure level ("A" weighted) in decibels as specified in British Standard BS EN 61672-2:2003
L _{Aeq,T}	The A-weighted equivalent continuous sound pressure level which is a notional continuous level that, at a given position and over the defined time period, T, contains the same sound energy as the actual fluctuating sound that occurred at the given position over the same time period, T
L _{day}	The L _{Aeq} over the period 0700 – 1900, local time (for strategic noise mapping this is an annual average)
L _{evening}	The L_{Aeq} over the period 1900 – 2300, local time (for strategic noise mapping this is an annual average)
L _{night}	The L_{Aeq} over the period 2300 – 0700, local time (for strategic noise mapping this is an annual average)
L _{Aeq,16h}	The L_{Aeq} over the period 0700 – 2300, local time (for strategic noise mapping this is an annual average)
L _{den}	The L_{Aeq} over the period 0000 – 2400, but with the evening values (1900 – 2300) weighted by the addition of 5 dB(A), and the night values (2300 – 0700) weighted by the addition of 10dB(A).

3. Introduction

The requirement to produce a Noise Action Plan is a legal requirement under Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise. This Directive is commonly referred to as the Environmental Noise Directive or END.

For member States to fulfil their regulatory requirements END requires them to produce strategic noise maps for the main sources of environmental noise, i.e. major roads, major railways, major airports and agglomerations with a population of more than 100,000 persons and a certain population density.

Government, through the Department for Environment, Food and Rural Affairs (DEFRA), issued guidelines in 2013 to airport operators to explain how to prepare Noise Action Plans. The guidelines are detailed and airport operators must have regard to them in drawing up their Noise Action Plans. The sections in this Noise Action Plan follow those suggested in the guidelines. The guidelines also outline the requirements for consulting on the draft plans. Following consultation a final draft plan has to be submitted to Government for adoption.

The responsible authority for Noise Action Plans within aviation are the airport operators, they are required to produce strategic noise maps and the plans must be based on the results of the noise mapping carried out and submitted to the Department for Environment, Food and Rural Affairs (DEFRA). As the competent authority Cambridge Airport has prepared this NAP.

The DEFRA requirement for the Cambridge Airport Strategic Noise Mapping operates on actual aircraft movements therefore the figures from 2011 were submitted to DEFRA as part of our obligation to satisfy the Directive, this forms the basis of our NAP. These figures are not required to include helicopter movements and therefore they have not been included in this NAP; however as noise from helicopters has an impact we have included in the NAP noise limiting procedures with regard to helicopter operations.

4. Cambridge Airport

Cambridge Airport lies immediately to the east of the city of Cambridge. The village of Teversham lies to the east of the airport site.

The main runway, bearing 05/23, is aligned southwest-northeast and is 1965 m long. All terminal, aprons, cargo buildings and airside facilities are situated on land to the northwest of the main runway. There are also two grass runways which are seldom used; one is 899 m long with bearing 05/23 and runs parallel to the main runway and is situated southeast of it, the other is 699 m long with bearing 10/28 and crosses the main runway. There are four taxiways serving the main runway from the northwest.

The Airport operates a mixture of traffic including scheduled passenger flights, business aviation, general aviation, Air Ambulance helicopter and maintenance positioning flights. Along with aircraft arrival and departures the airport has flying training and engine ground running which all combine to add to the Airports diverse aviation environment.

As Cambridge Airport develops the requirement to ensure the changes have a minimum effect upon the local population are paramount in the forward planning to achieve our goals.

Cambridge Airport operating hours currently are:

- 08:00 20:00 Mon Fri
- 08:00 18:00 Sat
- 09:00 20:00 Sun

Infrequent flights operate outside of these hours and normally consist of either Emergency Air Ambulance Helicopter flights up to 23:30 or one off business flights.

An aircraft movement is considered as a landing or departure. Historically Cambridge Airport aircraft movements have been sharply declining as follows¹:

2003 - 51263	2007 – 45491	2011 – 21768
2004 - 49490	2008 – 42520	2012 – 18663
2005 - 45004	2009 – 40956	2013 – 15356
2006 - 26150	2010 – 24750	

The reduction in aircraft movement numbers since 2009 is obvious but the actual drivers for this reduction consist of many reasons including, economy downturn, military contracts, reduction in flying training carried out a Cambridge by based and visiting operators.

The data required by Defra must be actual aircraft movements therefore this was conducted before the introduction of the present passenger scheduled flights. Whilst these have a limited effect upon the movements these aircraft are of the low noise turboprop design with a quick climb rate and therefore have a limited impact upon the noise levels experienced by people living in Cambridge City.

¹ This data is as required to be presented to the CAA by national and international regulatory instructions.



The aircraft movements are still less than 2003 when scheduled flights operated into and out of Cambridge Airport. If there is a significant increase in traffic levels or passenger numbers Cambridge Airport will work closely with local and national authorities to ensure these levels are managed in a responsible manner.

Whilst this is not directly linked to the forward planning of the Airport this Noise Action Plan will enable us to ensure we maintain the rigorous noise abatement procedures to address the concerns of anyone in the local area and, where possible, reduce the noise effects upon local communities.

5. The Legal Context

International and National Regulations

The Government fully recognises the ICAO Assembly 'balanced approach' principle to aircraft noise management. The 'balanced approach' consists of identifying the noise problem at an airport and then assessing the cost-effectiveness of the various measures available to reduce noise through the exploration of four principal elements, which are:

- Reduction at source (quieter aircraft)
- Land-use planning and management
- Noise abatement operational procedures (optimising how aircraft are flown and the routes they follow to limit the noise impacts)
- Operating restrictions (preventing certain (noisier) types of aircraft from flying either at all or at certain times).

The International Civil Aviation Organization (ICAO) encourages states not to apply operating restrictions as a first resort but only after consideration of the benefits to be gained from other elements of the balanced approach.

The Governments policy on aviation noise is set out in the Aviation Policy Framework published in March 2013. The Governments overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise within the context of the International and National framework, it advises that most solutions be delivered locally and that NAPs should actively address noise mitigation measures.

The Civil Aviation Act 2006 affords airports the powers to establish and enforce a noise control scheme. The noise control scheme can include limits on the numbers or types of aircraft that are permitted to operate, penalties on those that fail to comply with noise abatement procedures and charging mechanisms to incentivise airlines to operate quieter aircraft types.

Regulations 18 and 19 of The Environmental Noise (England) Regulations 2006 (as amended) require certain airports to draw up an action plan and submit it to the Secretary of State.

The Government National Planning Policy Framework (NPPF) states that planning policies and decisions should aim to avoid a situation where noise gives rise to a significant adverse impacts on health and quality of life as a result of new development, and to mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions. New online streamlined guidance on noise to support the NPPF from the Department of Communities and Local Government was published in its final form in 2014

Currently, noise at Cambridge Airport is limited by noise abatement procedures. These are published in the UK Aeronautical Information Package (AIP) for Cambridge Airport, as follows:

1) Pilots using Cambridge Airport should at all times endeavour to ensure that aircraft are operated in a manner which causes least disturbance to inhabited areas in the vicinity; more specifically:



- a) Except when taking off or landing, pilots should avoid flying below 2000ft (Cambridge QNH) within 3 nm of Cambridge city;
- b) Because of the close proximity of working accommodation, aircraft parked on the Airport terminal apron are not to have Aircraft Power Unit's (APU) running for more than 15 minutes before engine start. An environmental levy of £20 will be charged for every additional 15 minutes APU running time.
- 2) All inbound wide-body aircraft are normally to follow IFR procedures. Exceptionally, aircraft may be permitted to make visual approaches. In such cases the aircraft shall descend to not below 1500ft on the downwind leg to not below 1000ft on final approach and thereafter shall follow a descent path which will not result in its being at any time lower than the height of the approach path normally indicated by the PAPI. Visual approaches will not normally be permitted if the PAPI are unserviceable. Note: These lower heights are when clear of the City

3) Visual Circuit Height

Unless otherwise instructed by Air Traffic Control the visual circuit height is 1500ft for all multiengine types, 1000ft for other fixed-wing aircraft and 700ft for helicopters. All heights QFE.

4) Arrivals

(a) Aircraft approaching asphalt Runway 05/23 without assistance from Radar (or ILS, Runway 23) shall follow a descent path from at least 1000ft that is no lower than the normal approach path indicated by the PAPI.

5) **Departures**

a) Asphalt Runway 05

- The maximum take-off run available shall always be used by other than light types of aircraft. Light aircraft may start their take-off run from abeam Taxiway D or as instructed by ATC. Aircraft which require a left turn after departure shall avoid Cambridge City until at least 2000ft A.
- ii) Aircraft carrying out an Instrument Missed Approach Procedure shall maintain runway heading until at least 1600ft AAL
- iii) Aircraft which require a right turn after departure and those remaining in the circuit shall, as soon as practicable, but not below 500ft or within the aerodrome boundary, turn right, unless otherwise directed by ATC.

b) Asphalt Runway 23

- i) Aircraft which require a right turn after departure shall maintain runway heading until at least 2000ft AAL
- ii) Aircraft carrying out an Instrument Missed Approach Procedure shall maintain runway heading until at least 1600ft AAL
- iii) Aircraft which require a left turn after departure and those remaining in the circuit shall, as soon as practicable, but not below 500ft or within the aerodrome boundary, turn left, unless otherwise directed by ATC.

6) Circuit Directions



- a) The following circuit directions will be adhered to:
 - Runways 23, 28— left hand;
 - Runways 05, 10— right hand.
- b) Helicopters operating from H1 and H2 will fly variable circuits to minimise noise disturbance and avoid fixed-wing traffic.
- 7) The above procedures may be departed from at any time to the extent necessary for avoiding immediate danger.

8) Reverse Thrust

The use of reverse thrust should be kept to a minimum commensurate with operational safety.

9) Helicopter Operations

Whenever possible helicopters should approach Cambridge via the HVRPs to the north, east and south of the aerodrome. Routeing to the aerodrome should avoid over flight of, or passing in close proximity to Cambridge City and surrounding villages.



6. Summary of the Results of Noise mapping

The estimated total number of people and dwellings exposed above various noise levels in 2011 derived from the strategic mapping of noise from aircraft using this airport are shown in the tables below.

Contour	Area of Noise Contours ² , km ²				
Level, dB(A)	L den	Lnight	L _{Aeq 16h}	Lday	Levening
48	-	0.0	-	-	-
51	-	-	-	-	-
54	-	0.0	1.9	2.4	0.4
55	1.2	-	-	-	-
57	-	0.0	1.1	1.4	0.2
60	0.5	-	0.6	0.8	0.1
63	-	0.0	0.3	0.4	0.0
65	0.2	-	-	-	-
66	-	0.0	0.2	0.2	-
69	-	-	0.1	0.1	-
70	0.0	-	-	-	-

 Table 1: Noise Contour Areas, 2011

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	100	400
≥ 60	0	0
≥ 65	0	0
≥ 70	0	0
≥ 75	0	0

 Table 2: Estimated Total Number of People and

 Dwellings above Various Noise levels, L_{den}

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

Table 3: Estimated Total Number of people andDwellings above Various Noise Levels, Lday

² Values given have been rounded to one decimal place.

Noise Level (dB)	Number of Dwellings	Number of People
≥ 54	0	0
≥ 57	0	0
≥ 60	0	0
≥ 63	0	0
≥ 66	0	0
≥ 69	0	0

 Table 4: Estimated Total Number of people and

 Dwellings above Various Noise Levels, Levening

Noise Level (dB)	Number of Dwellings	Number of People
≥ 54	700	1,900
≥ 57	< 100	200
≥ 60	< 100	< 100
≥ 63	0	0
≥ 66	0	0
≥ 69	0	0

Table 5: Estimated Total Number of people andDwellings above Various Noise Levels, LAeq, 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 6: Estimated Total Number of people andDwellings above Various Noise Levels, Lnight

In order to derive the statistics presented above, analysis has been undertaken to count the population and number of dwellings within the specified noise contours. 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 (OS) Master Map Address Layer and Topography layer respectively. An average population per residential dwelling was calculated for each discrete dwelling utilising population data attained from the 2011 Census at Census Output Area (COA) level.

The total number of residential dwellings and the total associated population were calculated for each residential building polygon, 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 DEFRA Guidance recommends that Airports should consider whether any action is required based on a number of considerations, including the numbers of people within the 69 dB L_{Aeq},16h contour, any wider considerations from the numbers exposed to noise at different times of the day and night, complaints and issues raised by consultative committees.

As noted above, there are no people within the 69 dB L_{Aeq} , 16h contour and the numbers in each of the contour levels at various times of the day and night do not give rise to significant levels of complaint.

In terms of other sensitive premises there is one college in Cambridge City at the extreme end of some of the Noise Contour maps and this will be considered with any review of preferred departure and arrival track changes.

Noise complaints are regularly reviewed by the Airport and no significant issues have been raised. Noise comments are recorded in a database. An investigation takes place and a response is sent as soon as possible. They can be made by:

- Telephone 01223 373950, or
- Email <u>enquiries@cambridgeairport.com</u>, or
- In writing Cambridge Airport, Newmarket Road, Cambridge, CB5 8RX

We have made the means for members of the public voicing their concerns easier after suggestions from a member of the public at our consultative committee meetings; these meetings are open to any member of the public to attend. We have also enhanced the method of reply to these concerns by ensuring that the members of Cambridge Airport staff who deal with the concerns are available during all aerodrome operating hours.



7. Public Consultation

Introduction

This section contains details of the consultation for the draft Noise Action Plan (NAP) and the response to the consultation points raised.

Process

Cambridge Airport conducted a consultation on the draft NAP, in accordance with required guidelines, for a sixteen week period; whilst this concluded on the 25th of December 2013 due to the holiday period an amnesty was granted and any late entries were accepted as part of the consultation process. The draft NAP and consultation questionnaire was available on the Airports website. This was publicised on local radio and Cambridge City Councils website. The consultation was also published through the Cambridge Airport Consultation Committee and normal email channels.

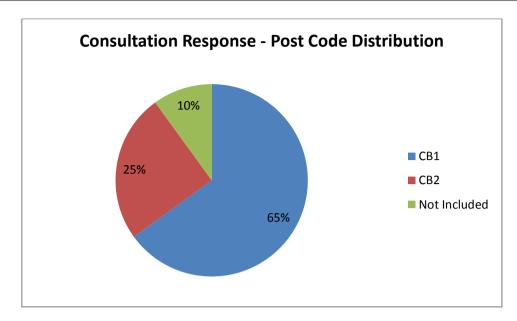
Responses to the Consultation

Overall there were 20 responses to the NAP consultation. This included replies from Cambridge City Council as a group and 19 responses from local residents, one local resident also owns a local business.

The consultation questions gave those that replied the opportunity to both score their answers and add additional comments to adequately put their opinions across. All responders that gave their postcodes came from either CB1 or CB2 (see map below); these are the areas that are influenced the most from aircraft taking-off from runway 23 and aircraft landing on runway 05. No other postcodes replied to the consultation.

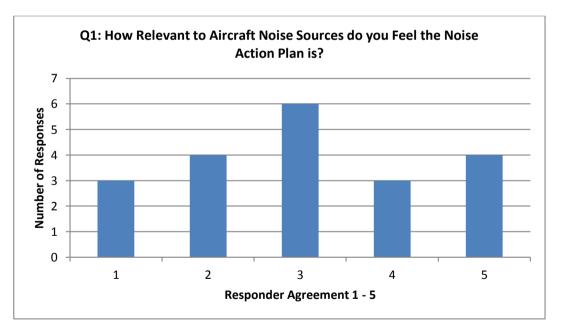




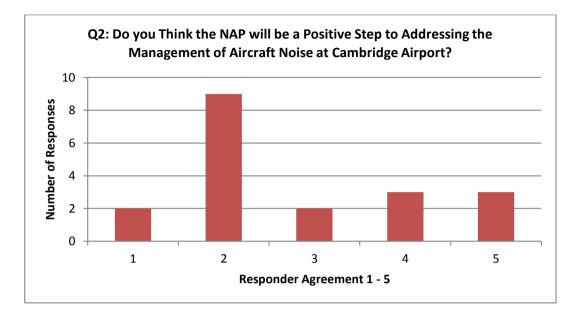


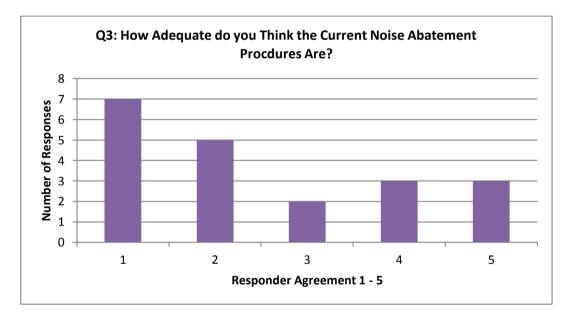
Consultation Questions

The consultation consisted of a series of six questions and an opportunity to comment further. The normal 1 - 5 to scale where 1 is 'Not at all' and 5 is 'Completely' to reflect how much the responder agrees with the statement was used and a chance to add additional comments was given. The questions and number of responses were assessed and a summary of the comments, with Cambridge Airport's reply, are contained below.





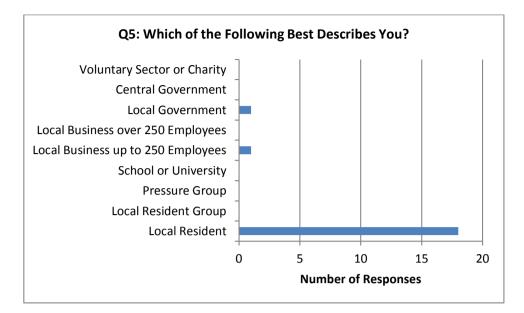


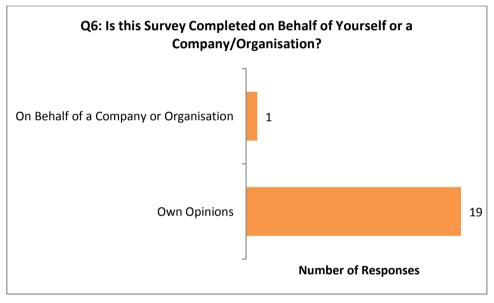


Q4: Do You Have any Other Comments About the Noise Action Plan?

Summary of answers included below.







Written Response Comments

Many responders offered written answers to enhance their views regarding the Noise Action Plan and the impact from Cambridge Airport. This is intended to respond to those areas that are not already captured in the Noise Action Plan. Whilst some responders were very supportive of the NAP and how Cambridge Airport Operates this section is designed to address the concerns that some raised.

1) Suitability and means of Data inclusion

Some members of the public who responded felt that the data was not relevant as it was historic data and not updated continuously or based on predicted flights. We acknowledge that the data collected can only be accurate at the time of collection but continuous data collection is both costly and not realistic for a document that must be resubmitted to the Government every time a change is incorporated, therefore whilst the NAP is an evolving document it is impractical to amend the plan unless a significant change occurs. The data

required must be accurate and therefore a complete year of flights must be included; as aircraft traffic levels fluctuate with the economic impetus that is prevalent at the time it is far more practical to gather the data within a known timescale to give a better representation of the impact upon local residents rather than perceived increases in traffic levels.

2) Aircraft Movements Outside of the Identified Areas

Although Cambridge Airport has some influence upon the aircraft that land and arrive at the Airport a lot of the aircraft that fly around the local area are not within our control, they are transiting traffic and are not required to contact Cambridge unless they choose to; any that do contact us will be advised to remain clear of the city or other built up areas but it is not in our power to control their flight paths. The NAP is only designed for the Airport to control those areas that it has an influence over and can make an impact upon.

3) Increase in Passenger Numbers will Increase Aircraft Movements

An increase in passenger numbers will not necessarily bring an increase in the numbers of aircraft operating at Cambridge Airport. Normally a new airline route brings a small number of passengers initially; the increase in numbers generally is as a long term effect that these routes bring which is a result of the aircraft passenger numbers increasing.

4) Current Plan Not Useable

Some residents felt that the Noise Action Plan was not useable as it didn't have any change that addressed the current noise from aircraft arrivals and departures. The current arrival and departure procedures, described on pages 8, 9 and 10, have been in place for a significant period of time and have also been designed to address safety issues. They ensure all aircraft follow the same routes and avoid areas of importance, i.e. those containing hospital and education establishments. As such we feel the Noise Action Plan does adequately address this matter.

5) Change Of Routes is Required

Aircraft land and take-off into the wind, this allows them to use less runway and minimises the amount of time they are under power, any change to this would require a longer runway due to the braking effect that has on a landing aircraft and the enhanced lift capability on a departing aircraft therefore if aircraft were to carry out either manoeuvre in the same direction as the wind this would have a negative impact by increasing the amount of noise during these times. Aircraft depart to the north and south and endeavour to avoid the City as much as is safely possible.

8. Existing and Future Noise Reduction Measures

The current noise abatement procedures³ and interaction with local planning authorities are designed to minimise the impact of noise to the local community. Whilst we do not propose to change these in the short term this Noise Action Plan and the reviews will serve to enhance these measures and, if necessary, change them to implement industry 'Best practice' in the process of reducing noise to any affected areas.

Whilst Cambridge Airport is constrained by regulatory legislation, e.g. local planning conditions and aerodrome licensing, we are always investigating alternatives to current practices that may have a positive effect upon the local population, it should be acknowledged though that these changes can sometimes take many years to implement due to the various oversight functions that must be completed prior to acceptance. Future plans may include:

- Continuous climb and descent procedures for aircraft arriving and departing resulting in a reduction in time the aircraft is at a level low enough to create a noise issue to residents and businesses
- A new engine running area using the latest suitable technology to reduce the amount of noise when engine testing is taking place on the ground
- Enhanced arrival and departure slot times in accordance with the Governments Future Airspace Strategy to reduce the amount of time aircraft are held on the ground or in the air thus reducing the amount of time aircraft noise is in the local area
- Changes to local noise abatement procedures to ensure the developments in the local area are not impacted upon by present methods
- Changes to the airspace structure surrounding Cambridge Airport to provide an environment that limits the amount of aircraft flying around Cambridge without being under the direct control of Cambridge Air Traffic Control
- Compliance with any current and future changes to International and National regulatory requirements to ensure Cambridge Airport is fully compliant
- When possible, aircraft arrivals and departures away from Cambridge City

³ See Part 5, B. Existing Noise Limiting Procedures, page 8

9. Long Term Strategy

Although the development of the airport is subject to the economy in the United Kingdom and around the world some assumptions can be made to allow the future growth of Cambridge Airport and the subsequent local employment may be made.

In line with the Governments Aviation Policy Statement Cambridge Airport intends to develop a small regional airport that serves the local community by concentrating on both business and leisure flights. The benefits of this are many and include:

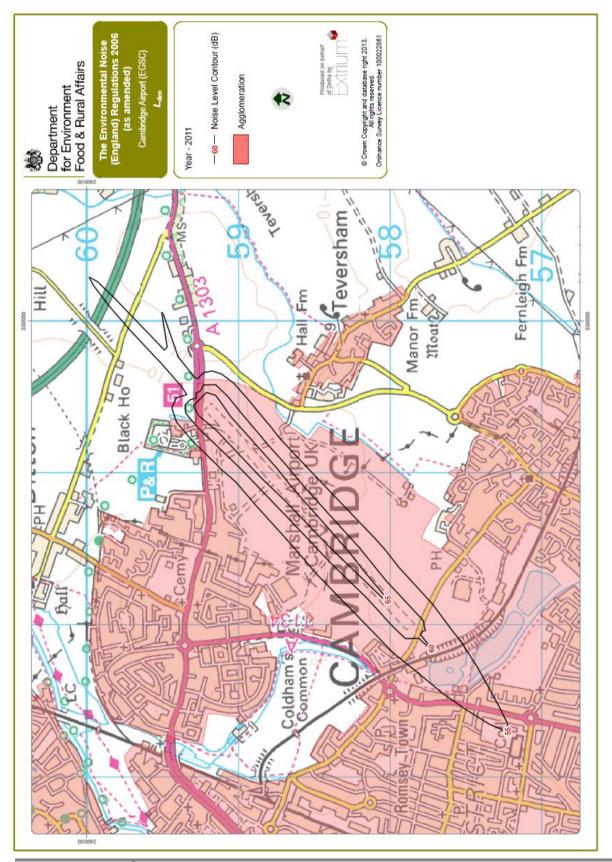
- A secure employment base for local people
- A local hub for business flights into and out of Cambridge
- Areas of development to enable new and existing businesses to grow
- Changes to airport infrastructure to minimise the disturbance to Airport neighbours that include:
 - Reduction in noise through new or amended procedures and initiatives
 - Enhanced environmental initiatives
- Ongoing involvement in regulatory initiatives that impact advances in aviation legislature

All these are designed to combine to ensure Cambridge Airport works in harmony with the local community for the benefit to all interested parties.

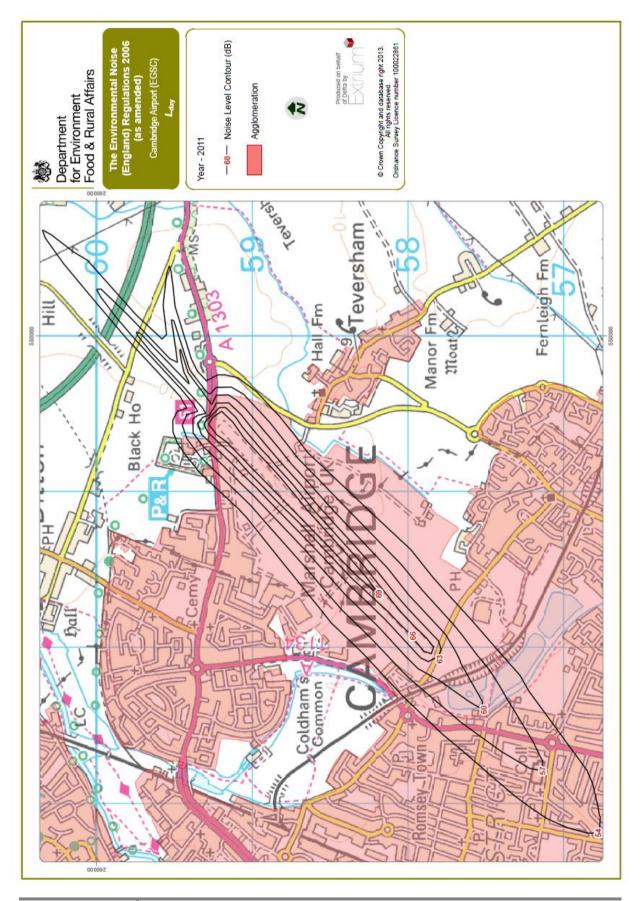
The encouraged use of local airports is part of the Governments Future Airspace Strategy; this will reduce the requirements for extended journeys through road transport to hub airports and reduce the carbon emissions and heavy traffic problems through local communities and Cambridge Airport fully supports this initiative to help reduce the congestion on the local transport infrastructure.



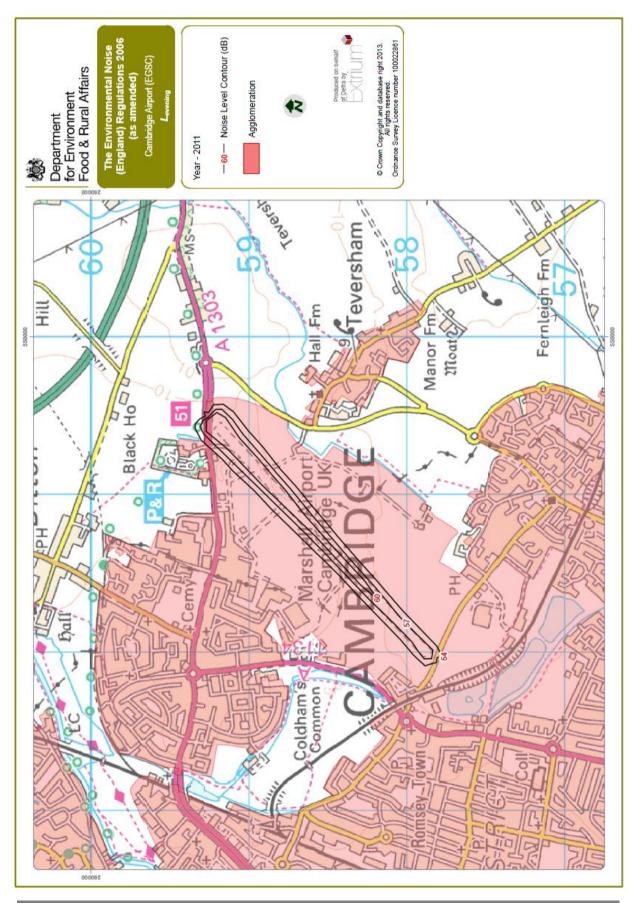
Annex A: Noise Contour Maps



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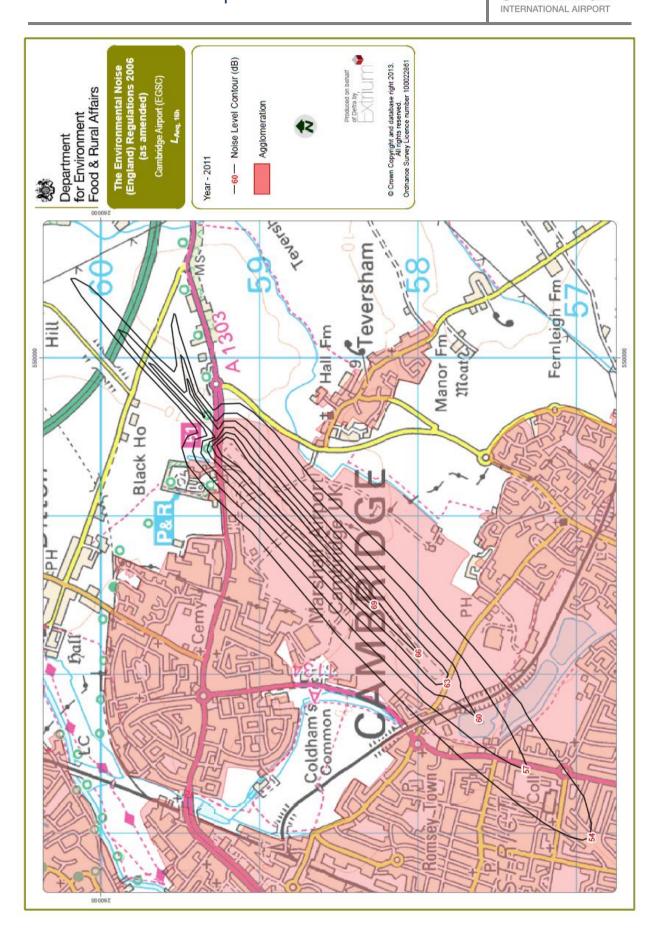


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