

LONDON SOUTHEND AIRPORT

NOISE ACTION PLAN

Adopted by the Secretary of State for Environment Food and Rural Affairs
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INTRODUCTION

- 1 This Noise Action Plan has been prepared in accordance with the Environmental Noise (England) Regulations 2006 (as amended) (the "Regulations"). These Regulations transposed the EU Environment Noise Directive (2002/49/EC), known as END, relating to the assessment and management of environmental noise into UK legislation and make the preparation of a Noise Action Plan for a number of different noise sources, including airports, a legal requirement.

- 2 Government, through the Department for Environment, Food and Rural Affairs (DEFRA), issued guidelines in March 2009 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 approval.
- 3 The guidelines included a timetable for consultation and submission of Noise Action Plans. However, at the time of preparing the Noise Action Plan, Southend Airport was in the middle of a long process of seeking approval for development, initially through a Joint Area Action Plan, followed by a planning application. The timetable for this Noise Action Plan was been aligned with the planning application, which has now been approved. A draft Noise Action Plan was published on 13 October 2009 and responses were requested by 9 February 2009.
- 4 The draft Noise Action Plan covered two scenarios. The first scenario covered the situation with the existing runway and other facilities which either exist now or for which planning permission had already been granted. This was known as the **Base Case**. The second scenario covered the situation in which planning permission has been granted for a runway extension and other developments which would enable approximately 2 million passengers per annum to be handled. This was known as the **Development Case**. In the final version of the Noise Action Plan, only the Development Case is considered.
- 5 The Noise Action Plan is consistent with the noise information provided in the planning application and its associated environmental statement. However, the Noise Action Plan follows the DEFRA guidelines which require the information to be based on 2006 assessments and to be presented in a particular way. The planning application environmental assessment used more recent assessments and is more comprehensive. For this reason the figures in this draft Noise Action Plan may be different from those in the planning application environmental statement.

STRATEGIC NOISE MAPPING 2006

- 6 A Strategic Noise Mapping Report, describing the situation in 2006, was submitted to DEFRA in June 2007. Subsequently, DEFRA published the results on its website (<http://services.defra.gov.uk/wps/portal/noise>).

DESCRIPTION OF THE AIRPORT

- 7 Southend Airport lies immediately to the north of Southend-on-Sea. Rayleigh lies to the west of the airport. Rochford lies to the northeast of

the airport site. 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.

- 8 In 2006, all terminal, aprons, cargo buildings and airside facilities are situated on land to the south of the runway with the exception of the maintenance area which is situated on land to the north of the runway. The runway, bearing 06/24, is 1605 m long. A northwest-southeast taxiway crosses the runway and serves all airside facilities. CAA airport statistics show that in 2006 Southend Airport had 38,858 aircraft movements, of which 1,492 were air transport movements and 112 were military, and served approximately 30,000 passengers.
- 9 Details of aircraft operations, including traffic distribution by aircraft type, flight tracks, dispersion, flight profiles and traffic distribution by route for the Base Case are given in the Strategic Noise Mapping Report.
- 10 In the Development Case, the new terminal and apron has been constructed near the eastern boundary of the Airport, along side a new rail station, the terminal and apron have been increased in size from the initial development and the runway has been extended to the south west to give a total length of 1799 m. Details of the forecasts of passengers, cargo and aircraft movements are provided in the planning application and accompanying environmental assessment, but in summary are as follows in Table 1:

Type	Existing 2008		Development Case 2020 Forecast
Passengers	0.048 million		1.97 million
Aircraft movements	41,700		53,300

Table 1: Existing and Forecast Activity

THE AUTHORITY RESPONSIBLE

- 11 As defined in the guidelines, the Authority responsible for preparing this Noise Action Plan is London Southend Airport Company Ltd, part of the Stobart Group.

THE LEGAL CONTEXT

International and National Regulatory Framework for Aircraft Noise

- 12 Regulations 18 and 19 of The Environmental Noise (England) Regulations 2006 (as amended) require airports to draw up an action plan and submit it to the Secretary of State.
- 13 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 Organisation (ICAO), known as the 'balanced approach'. In summary the 'balanced approach' requires the consideration of the contribution to noise amelioration that can be made by each of the following measures:

- reducing aircraft noise at source;
 - land-use planning;
 - noise abatement operational procedures; and
 - restrictions on the use of the noisiest aircraft.
- 14 When considering the need for operating restrictions, ICAO urges that they are not employed as a first resort and that they are only employed after careful consideration of the benefits to be gained from all other elements of the balanced approach. This is part of the Government's overall 'control, mitigate and compensate' approach. This is comprehensively explained in the Future of Air Transport White Paper.
- 15 The Civil Aviation Act 2006 affords airports the powers to establish and enforce a noise control scheme. The noise control scheme can have wide-ranging powers including 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.
- 16 The Future of Air Transport White Paper was published by Government in 2003 after extensive consultation and provides a strategic policy framework for airport development in the U.K. over the next 25-30 years. The Government sets out its support for the development of Southend Airport in the White Paper. The Government recognises the valuable role Southend Airport could play in meeting local demand, reducing pressure on other airports, providing capacity for business aviation and contributing to regional economic development.
- 17 The White Paper recognises that today's aircraft are much quieter than their predecessors, but that increased activity might still lead to a deterioration of the noise environment around airports. Therefore, the White Paper sets out as a basic aim to limit, and where possible reduce, the number of people in the U.K. significantly affected by aircraft noise. Within the context of the international and national framework it advises that most solutions should be delivered locally and that the airport master plans should actively address environmental mitigation measures, such as noise.
- 18 Planning Policy Guidance Note 24 – Planning and Noise is issued by the Department for Communities and Local Government and essentially directs local authorities and developers as to how noise should be considered in reaching decisions about new development. Noise from

aircraft is specifically addressed. Precisely how is explained in Appendix 3, but essentially it places restrictions on certain types of development, depending on how high a level of noise they might be subject to.

Local Policy Framework

- 19 The potential benefits of the airport to meet local demand, reduce travel to other airports, and to be a catalyst for regeneration and economic development of Southend and the wider Thames Gateway Sub Region, a priority area for urban regeneration under the Government's Sustainable Communities Plan, are also recognised in existing and evolving policy for the East of England region and the Thames Gateway. This is set out for example in the East of England Plan, Southend-on-Sea Core Strategy, Saved Policies of the Southend Borough Local Plan and Rochford Replacement Local Plan.
- 20 Following the 2003 White Paper, the Southend Airport Master Plan was drawn up and, after consultation, published in July 2005. The Master Plan sets out proposals for growth to 2 million passengers per annum and describes the impact and proposals for mitigation.
- 21 Parts of Southend Airport lie in Rochford District Council and Southend-on-Sea Borough Council and the two local authorities decided to initiate a Joint Area Action Plan (JAAP) for Southend Airport and Environs. In June 2008, an Issues & Options report was published for consultation and, following consideration of the responses received, a Preferred Options report was published in February 2009. As at the time of preparing the draft Noise Action Plan, the Councils were considering the responses received, and anticipate submitting the JAAP to the Secretary of State in the near future. The Preferred Option includes the development of the Airport to around 2 million passengers per annum, to include an extension of the runway to 1799 metres.
- 22 The Airport prepared a planning application for the runway extension and associated matters. Accompanying the planning application was an environmental assessment and proposed mitigation measures, in particular those associated with aircraft noise. Permission was granted in May 2010 and was accompanied by a Section 106 agreement.

EXISTING NOISE LIMITS

- 23 Currently, noise at Southend Airport is limited by three regulations: the lease; planning conditions; and noise abatement procedures.

The Lease

- 24 Southend Airport is held on a 150 year lease from Southend-on-Sea Borough Council from 1994. It includes the following noise-related restrictions:

- Ground running restricted to between 8am and 9pm (propeller aircraft) and 8am to 8pm (jet aircraft)
- Night flying between 2359 and 0600 is limited to certain numbers of particular types of aircraft which, in summary, means that up to 915 aircraft movements are permitted per month, with a daily limit of 46.

Planning Conditions

- 25 Planning conditions and a Section 106 agreement apply to a new terminal, permission for which was granted in outline in 1999 and in detail in 2004. However, these conditions have now been incorporated in a new set of conditions which accompany the planning permission granted for the runway extension. The relevant noise conditions are set out in a later section of this Noise Action Plan, under the heading 'Existing and Future Noise Reduction Measures'.

Noise Abatement Procedures

- 26 Noise abatement procedures are published in the UK Aeronautical Information Package (AIP) for Southend Airport, as follows:
- Operators of all aircraft using the aerodrome shall ensure at all times that aircraft are operated in a manner calculated to cause the least disturbance practicable in the areas surrounding the aerodrome. The following procedures and routeings apply to all aircraft whether landing or taking off or making a missed approach in either VMC (Visual Meteorological Conditions) or IMC (Instrument Meteorological Conditions).
 - a. On departure from either runway all propeller driven aircraft must climb straight ahead to at least 600 ft above aerodrome level (aal) before turning. On departure from Runway 24 propeller driven aircraft requiring a left turn shall, after passing on 600 ft aal, maintain a track of 190° to the north bank of the River Thames, or until Detling DME 13 nm or less, before turning onto the required track.
 - b. Jet aircraft departing from either runway shall climb straight ahead to a minimum height of 1000 ft aal before turning.
 - c. Between the hours of 2300 and 0700 (winter), 2200-0600 (summer), aircraft with a MTWA (Maximum Take Off Weight Authorised) exceeding 5700 kg on departure from Runway 24 must climb straight ahead to a minimum height of 1500 ft before turning left or right.
 - d. When making a visual approach to either runway, all aircraft of 5.7 tonnes or more AUW should intercept the extended runway centre-line at a minimum range of 2 nm from touchdown at a

height not below the Precision Approach Path Indicator (PAPI) indicated approach slope of 3° (RWY 06), 3.5° (RWY 24).

- e. The routeings and procedures specified above are compatible with normal Air Traffic Control requirements. In individual cases they may be varied by Air Traffic Control when necessary. The use of the procedures is supplementary to standard noise abatement take-off techniques as used by piston, turbo-prop and turbo-jet aircraft. Any of the above requirements may be departed from to the extent necessary for the avoidance of immediate danger.
- f. Due to the close proximity of residential areas ground running of aircraft engines for maintenance purposes is only permitted as follows: Propeller aircraft 0800-2100 (winter) 0700-2000 (summer). Jet aircraft 0800-2000 (winter) 0700-1900 (summer). Ground running of aircraft engines for maintenance purposes is only permitted on Taxiways B, F and the north apron and are subject to ATC permission.

SUMMARY OF THE RESULTS OF NOISE MAPPING

27 The Strategic Noise Mapping report of June 2007 gave the following results based on actual aircraft movements for August 2006. The contours, as published by DEFRA, are reproduced at Appendix A. The areas within the contours for the following periods are set out in Tables 2 to 6 below:

- 12 hour day (0700-1900) - Table 2
- 4 hour evening (1900-2300) - Table 3
- 16 hour daytime (0700-2300) - Table 4
- 8 hour night (2300-0700) - Table 5
- the combined 24 hour - Table 6

For the 24 hour period the unit is a L_{Aeq} for the whole 24 hour period but includes weightings depending on when during the 24 hour period the noise occurs. If the noise is during the 12 hour day there is no adjustment, if it is during the evening a weighting of +5 dB(A) is added, and if it is at night a weighting of +10 dB(A) is added. The unit is therefore biased to respond more to noise in the evening, and particularly at night, than during the 12 hour day.

28 To compute the noise contours, each period is considered separately and a L_{Aeq} determined for it. The weightings are then added to the evening and night L_{Aeq} s and then the L_{Aeq} s for the three periods are

added together taking into account the period durations. In movement terms the effect of the weightings is equivalent to more than trebling the number of movements during the evening and multiplying by ten the number of movements at night.

Contour Level (dB L _{Aeq,12h})	Area of L _{day} Air Noise Contours (km ²)
50	7.40
55	3.01
50	1.16
65	0.48
70	0.24
75	0.07

Table 2: Noise Contour Areas - L_{day} (12h Period): 2006

Contour Level (dB L _{Aeq,4h})	Area of L _{evening} Air Noise Contours (km ²)
50	3.09
55	1.15
50	0.50
65	0.25
70	0.07
75	0.01

Table 3: Noise Contour Areas - L_{evening} (4h Period): 2006

Contour Level (dB L _{Aeq,16h})	Area of L _{Aeq,16h} Air Noise Contours (km ²)
50	6.47
55	2.59
50	0.99
65	0.42
70	0.21
75	0.06

Table 4: Noise Contour Areas - Daytime (16h Period): 2006

Contour Level (dB L _{Aeq,8h})	Area of L _{night} Air Noise Contours (km ²)
45	3.60
50	1.23
55	0.50
60	0.24
65	0.08

Table 5: Noise Contour Areas - L_{night} (8h Period): 2006

Contour Level (dB L _{den})	Area of L _{den} Air Noise Contours (km ²)
50	8.24
55	3.17
50	1.18
65	0.49
70	0.25
75	0.08

Table 6: Noise Contour Areas - L_{den} (24h Period): 2006

- 29 The noise exposure at noise sensitive premises are set out in Tables 7 to 9 below. As these are all schools or training establishments the evening and night periods have not been considered.

Building Name	Address	Approx Noise Level (dB L _{Aeq,12h})
Kingsdown School	Snakes Lane, Southend-on-Sea, Essex, SS2 6XT	51
The St Christopher School	Mountdale Gardens, Leigh-on-Sea, Essex, SS9 4AW	56
Blenheim Primary School	School Way, Blenheim Chase, Leigh-on-Sea, Essex, SS9 4HX	55
West Leigh Junior School	Ronald Hill Grove, Leigh-on-Sea, Essex, SS9 2JB	50
West Leigh Infants School	Ronald Hill Grove, Leigh-on-Sea, Essex, SS9 2JB	50
St Michael's School	198 Hadleigh Road, Leigh-on-Sea, Essex, SS9 2LP	50
Avro Adult Training Centre	Avro Road, Southend-on-Sea, Essex, SS2 6UX	59

Table 7: Noise Sensitive Buildings in the 2006 L_{day} (12h Period) Contour Area

Building Name	Address	Approx Noise Level (dB L _{Aeq,16h})
Kingsdown School	Snakes Lane, Southend-on-Sea, Essex, SS2 6XT	50
The St Christopher School	Mountdale Gardens, Leigh-on-Sea, Essex, SS9 4AW	54
Blenheim Primary School	School Way, Blenheim Chase, Leigh-on-Sea, Essex, SS9 4HX	54
Avro Adult Training Centre	Avro Road, Southend-on-Sea, Essex, SS2 6UX	58

Table 8: Noise Sensitive Buildings in the 2006 Daytime (16h Period) Contour Area

Building Name	Address	Approx Noise Level (dB L _{den})
Kingsdown School	Snakes Lane, Southend-on-Sea, Essex, SS2 6XT	51
The St Christopher School	Mountdale Gardens, Leigh-on-Sea, Essex, SS9 4AW	56
Blenheim Primary School	School Way, Blenheim Chase, Leigh-on-Sea, Essex, SS9 4HX	56
West Leigh Junior School	Ronald Hill Grove, Leigh-on-Sea, Essex, SS9 2JB	51
West Leigh Infants School	Ronald Hill Grove, Leigh-on-Sea, Essex, SS9 2JB	51
St Michael's School	198 Hadleigh Road, Leigh-on-Sea, Essex, SS9 2LP	51
Avro Adult Training Centre	Avro Road, Southend-on-Sea, Essex, SS2 6UX	58
Belfairs High School	Highlands Boulevard, Leigh-on-Sea, Essex, SS9 3TG	50

Table 9: Noise Sensitive Buildings in the 2006 L_{den} (24h Period) Contour Area

EVALUATION OF THE ESTIMATED NUMBER OF PEOPLE EXPOSED TO NOISE, IDENTIFICATION OF PROBLEMS AND SITUATIONS THAT NEED TO BE IMPROVED

- 30 The number of people exposed to the noise levels identified in the Strategic Noise Mapping report has been estimated by DEFRA in Tables 10 to 14 below.

Contour Level (dB L _{Aeq,12h})	Number of Dwellings	Number of People
≥54	2,500	5,700
≥57	950	2,200
≥60	150	300
≥63	<50	<100
≥66	<50	<100
≥69	0	0

Table 10: Dwellings and People in Noise Contour Areas - L_{day} (12h Period): 2006

Contour Level (dB L _{Aeq,4h})	Number of Dwellings	Number of People
≥54	350	800
≥57	50	100
≥60	50	<100
≥63	0	0

Table 11: Dwellings and People in Noise Contour Areas - L_{evening} (4h Period): 2006

Contour Level (dB L _{Aeq,16h})	Number of Dwellings	Number of People
≥54	1,950	4,400
≥57	650	1,400
≥60	100	200
≥63	<50	<100
≥66	<50	<100
≥69	0	0

Table 12: Dwellings and People in Noise Contour Areas - L_{Aeq,16h} (16h Period): 2006

Contour Level (dB L _{Aeq,8h})	Number of Dwellings	Number of People
≥48	950	2,200
≥51	150	300
≥54	<50	<100
≥57	<50	<100
≥60	0	0

Table 13: Dwellings and People in Noise Contour Areas - L_{night} (8h Period): 2006

Contour Level (dB L _{den})	Number of Dwellings	Number of People
≥55	2,100	4,800
≥60	200	400
≥65	<50	<100
≥70	0	0

Table 14: Dwellings and People in Noise Contour Areas - L_{den} (24h Period): 2006

- 31 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. For the year relating to the Strategic Noise Mapping (2006), there were 38 complaints relating to aircraft movements at Southend Airport. For 2007 and 2008, there were 83 and 73 respectively. Complaints are regularly reviewed by the Consultative Committee and no significant issues have been raised.

- 32 Noise comments can be made by telephone, e-mail or in writing and are recorded in a database. An investigation takes place and a response is sent, normally within seven days. A summary of comments and responses is presented in the annual report to the Consultative Committee.

PUBLIC CONSULTATION

- 33 There have been consultations on the Master Plan (in 2005), on the JAAP Issues & Options (2008) and JAAP Preferred Option (2009), all of which have included some information on the operation and development of the Airport. In addition, a planning application was submitted in October 2009 and submissions were made in response.
- 34 In order to avoid confusion and 'consultation fatigue', consultation on the draft Noise Action Plan was being carried out in parallel with the consultation process for the planning application. The draft Noise Action Plan was published on 13 October 2009 and responses were requested by 9 February 2010.
- 35 Copies of the draft Noise Action Plan were sent to the local authorities, Rochford District Council and Southend-on-Sea Borough Council and to the Southend Airport Consultative Committee. A copy was also posted on the Airport website. Copies were available on request from the Airport. The draft Noise Action Plan was referred to in the planning application documents, which had a wide circulation among the local community.
- 36 Six responses were received to the draft Noise Action Plan. One was from the Institute of Acoustics. One was from Stop Airport Expansion Now (SAEN), a group which opposed the runway extension. One was from Southend-on-Sea Borough Council and one was from an individual resident of Rochford. In addition, two queries were received from individuals during the consultation period, to which replies were sent. One of these individuals (Mr Clarke) also submitted a response, which was virtually identical to the SAEN response.
- 37 The Institute of Acoustics' response is a generic response to a number of airport draft Noise Action Plans and does not refer to the Southend

Airport draft plan, although some data is included. This response contains many comments on the DEFRA guidance and its relationship to the EU Environmental Noise Directive, but nothing specific about Southend Airport. No changes to the draft plan for Southend Airport have therefore been made as a result of this submission.

- 38 The responses from SAEN and Mr Clarke include comments under a number of headings as follows:
- **Public consultation** is said to have been inadequate because it was combined with the planning application. In the Airport's view, the combination of the responses received to the JAAP and the representations received in relation to the planning application, many of which covered the noise issues, means that the subject has been widely consulted.
 - The **Objectives** of the draft Noise Action Plan are said to be mistaken and inconsistent with the END directives because there are no measures to deal with the existing situation and increases in flight numbers. However, the Noise Action Plan does contain information on the existing controls under the Lease and Noise Abatement Procedures and also about the future Noise Reduction Measures.
 - The **Noise Mapping Evidence Base** is said to be inadequate because it uses only one month's data. This limited data was agreed by DEFRA at the time of the noise mapping exercise.
 - It is noted that the Competent Authority for **Quiet Areas** is DEFRA and that the draft Noise Action Plan is dismissive of their importance. However, until Quiet Areas are identified it is not possible to consider them.
 - Under **Description of the Airport**, the figures for 2008 are queried. The CAA data does not include all movements, but the figures given in the NAP are consistent with the planning application and consistent between 2008 and 2020.
 - Under **The Legal Context**, a number of issues are noted in which the Airport is considered not to be bound by legal requirements. However, it is the Airport's view that, even if not legally required to do so, there are some circumstances where it is good practice to follow the requirements for larger airports. The comment is made that the Airport has not yet introduced a noise scheme under the Civil Aviation Act of 2006. However, the Noise Action Plan proposes exactly such schemes. This section also makes extensive comments about the origin of the 2mppa forecast, the JAAP and the planning application process. However, none of these are directly relevant to the Noise Action Plan.

- Under the heading **Existing Noise Limits** it is noted that there is a monthly limit on turbo-prop aircraft. This is correct and the Noise Action Plan has been amended.
 - Comments on the **Summary of the Results of the Noise Mapping** relate to the units and values used. However, the Noise Action Plan has used units and values required by DEFRA.
 - Comments are made about the information provided about the **Number of People Exposed**. The number of complaints (38) is the yearly total, even though the noise mapping is based on one month's data. The other comments are beyond the remit of the Noise Action Plan.
 - Under **Existing and Future Noise Reduction Measures**, comments are made about the mitigation proposals. The Base Case has now been deleted as also has the reference to unlimited turbo-props. The mitigation measures for the Development case have now been agreed as conditions or as part of a Section 106 agreement associated with the planning application, so we do not propose to change any of the measures from the draft Noise Action Plan.
 - Under the heading **Financial Information**, examples are given of the cost of alternative runway alignments or the costs to the NHS that should be estimated. However, the Airport believes that this goes way beyond the intent of the DEFRA guidelines and will provide costs of the measures in due course when these are available.
 - The **Expected Outcome** is challenged that it does not provide data on the effects of the noise reduction measures. However, Table 16 indicates the expected situation in terms of the total numbers affected after the measures have been implemented.
- 39 The response from Southend-on-Sea Borough Council observes that any noise control measures imposed as planning conditions or as part of a Section 106 agreement for the runway extension planning application should be included in the Noise Action Plan. It is confirmed that all such measures are included.
- 40 The response from the Rochford resident noted that he had no objections to the Noise Action Plan. The two queries from individuals during the consultation period were similar to each other and asked for details of the aircraft movement types and numbers used in compiling the noise mapping and for confirmation that ground noise and road traffic noise is not included in the contours. This information was provided.

EXISTING AND FUTURE NOISE REDUCTION MEASURES

- 41 The DEFRA Guidance suggests that existing noise reduction measures are reviewed against the Noise Mapping exercise, and proposed future noise reduction measures are noted, in both a five year and long term timescale.
- 42 For Southend Airport, this Noise Action Plan considers the existing noise reduction measures against the existing level of activity, and then proposed future noise reduction measures compared with the Development Case. For the Development Case, the measures are set out in detail in the Section 106 agreement dated 30 April 2010 which accompanied the planning permission for the runway extension. These are summarised in Table 15 below, but the definitive wording of the measures is in the Section 106 agreement. Except where noted, the proposed measures will all be implemented within a five year timescale, or when the relevant development is completed.

Existing	Development Case
Night defined as 0000 (Midnight) to 0600	Night defined as 2300 to 0630 local time
Night flying between 2359 and 0600 is limited to certain numbers of particular types of aircraft which, in summary, means that up to 915 aircraft movements are permitted per month, with a daily limit of 46.	<p>a. Only 120 Aircraft Movements (“the Monthly Quota”) shall be permitted during Night Time Hours (2300-0630hrs local time) in any one calendar month, subject to the provisions set out in (b) - (d) below.</p> <p>b. Delayed and diverted aircraft movements are excluded from the Monthly Quota.</p> <p>c. No aircraft with a noise level exceeding QC1¹ nor any helicopter shall take off or land during Night Time Hours unless they are emergency flights, military flights, Government business flights, police flights or flights of QC exempt aircraft (none of such flights shall be included in the Monthly Quota).</p> <p>d. No passenger flights may be scheduled to arrive or depart during Night Time Hours, <u>except</u> that up to a maximum of 90 passenger flights in any one calendar month may be scheduled to arrive between 23:00 and 23:30 local time, such flights to be included in the Monthly Quota.</p> <p>Note: An Aircraft Movement is defined as an aircraft (whether fixed wing or rotary) taking-off or landing at an airport. One arrival and one departure are counted as two movements.</p>
No limit on aircraft movement numbers	<p>a. Total aircraft movement numbers to be capped at 53,300 per annum, excluding emergency flights, military flights, Government business flights or police flights.</p> <p>b. Total aircraft movements by Boeing 737-300 aircraft shall not exceed 2,150 per annum.</p> <p>c. The total number of dedicated cargo aircraft movements to be limited to 5,330 per annum, or 10% of the total number of aircraft movements, whichever is the lesser.</p>
Engine testing permitted 0800-2000 (jets), 0800-2100 (propeller).	Engine testing permitted 0800-2000 (Mon-Sat), 0900-1800(Sundays).

Table 15 (part 1): Existing and Proposed Noise Reduction Measures

Note 1: QC = Quota Count, is a system of allocating a noise value to individual aircraft types. Examples are A319 = QC0.5, B737 = QC1, B727 = QC4.

Existing	Development Case
<p>No controls on noisier aircraft</p>	<p>No aircraft with a noise level exceeding QC2 shall take off or land at any time, unless they are emergency flights, military flights, Government business flights or police flights, maintenance flights or diversions. QC4 aircraft using the airport for maintenance may land or take off only during the Day Time (0630-2300 hrs) and the total QC4 aircraft movements will be limited to 60 per annum.</p>
<p>Aircraft departure routes:</p> <p>a. On departure from either runway all propeller driven aircraft must climb straight ahead to at least 600 ft aal before turning. On departure from Runway 24 propeller driven aircraft requiring a left turn shall, after passing on 600 ft aal, maintain a track of 190° to the north bank of the River Thames, or until Detling DME 13 nm or less, before turning onto the required track.</p> <p>b. Jet aircraft departing from either runway shall climb straight ahead to a minimum height of 1000 ft aal before turning.</p> <p>c. Between the hours of 2300 and 0700 (winter), 2200-0600 (summer), aircraft with a MTWA exceeding 5700 kg on departure from Runway 24 must climb straight ahead to a minimum height of 1500 ft before turning left or right.</p>	<p>On take off aircraft weighing over 5.7 tonnes (Maximum take off weight (MTOW)) will be required to maintain a runway heading and climb to at least 1,500 feet before they may turn at 2.5nm Distance Measuring Equipment (DME) when taking off to the SW (runway 24 departure) or at 1.0nm DME when taking off to the NE (runway 06 departure). Other than to maintain safety or in exceptional circumstances, this procedure shall be followed in all cases</p>

Table 15 (part 2): Existing and Proposed Noise Reduction Measures

Existing	Proposed for Development Case
No runway preference	At night (2300-0630hrs local) the airport will introduce a runway preference arrangement for aircraft to operate to and from the North East. Where wind conditions allow and it is safe to do so, aircraft will land from the North East (on runway 24) and take off to the North East (on runway 06). This will ensure that flying activity will minimise any nuisance to densely populated areas during night hours. During the Day Time (0630-2300 hrs) the airport will operate a runway preference arrangement, where aircraft will land from the North East (on runway 24) and take off to the North East (on runway 06), where movement volumes allow. In addition fewer than 50% of all aircraft movements will be over the South West. This will reduce the impact of aircraft movements over the densely populated areas of Leigh-on-Sea and Eastwood. The level of aircraft movements will be based on a 12 month rolling monitoring period to allow for adverse weather conditions. This will ensure that flying activity will minimise any nuisance to densely populated areas during Day Time hours.
No noise and track keeping monitoring system.	The airport will introduce a Quiet Operations Policy which includes the appointment of a Noise Manager and the implementation of a noise monitoring system .
No Property Purchase or Noise Insulation Grant Schemes.	The airport shall introduce <ul style="list-style-type: none"> • a Property Purchase Scheme - providing for the offering to purchase properties affected by both high levels of noise (69dB_{L_{Aeq}} over the period 0700-2300hrs or more); and a Noise Insulation Grant Scheme - offering to pay 100% of the cost of installing secondary double glazing or 50% of the cost of installing primary double glazing to any residential property which suffers from both a medium to high level of noise (63dB_{L_{Aeq}} over the period 0700-2300hrs or more).

Table 15 (part 3): Existing and Proposed Noise Reduction Measures

- 43 Quiet Areas are to be determined by the competent authority (DEFRA). DEFRA have not yet identified any such areas relevant to Southend Airport but, if they are, they can be added in future versions of Noise Action Plan.

FINANCIAL INFORMATION

- 44 Provision is being made for expenditure relating to the Property Purchase Scheme and the Noise Insulation Grant Scheme and for noise monitoring. However, at this stage it is not possible to estimate the amount that will be spent (because it will depend on actual noise levels in years to come). Nevertheless, the Airport has entered into a legally binding Section 106 agreement to purchase properties and to pay for secondary glazing, for which there is no upper financial limit.

EVALUATION

- 45 Monitoring of individual aircraft tracks and noise will become possible after the implementation of the proposed noise and track keeping systems referred to in Table 15 above. Evaluation of the measures will take place by annual reports to the Consultative Committee, including noise complaint reports, plus a full review of this Noise Action Plan after around five years.

EXPECTED OUTCOME

- 46 It is not possible at this stage to forecast the outcome of the proposed noise reduction measures. The planning application Environmental Assessment contains forecasts of the noise contours and the respective numbers of persons within each contour for the Base Case and the Development Case. In summary, the areas and populations within each contour are as set out in Table 16 below:

Contour Level (dB L _{Aeq,16h})	Area (km ²)		Number of People	
	Base Case	Development Case	Base Case	Development Case
≥54	3.9	5.8	4,972	9,881
≥57	2.1	3.1	1,552	3,787
≥60	1.1	1.6	230	801
≥63	0.6	0.9	79	111
≥66	0.4	0.5	30	30
≥69	0.3	0.4	0	5

Table 16: Dwellings and People in Noise Contour Areas - L_{Aeq,16h} (16h Period): 2020

APPENDIX A

DEFRA Noise Maps

Map 1: Noise Contour Areas - L_{day} (12h Period): 2006

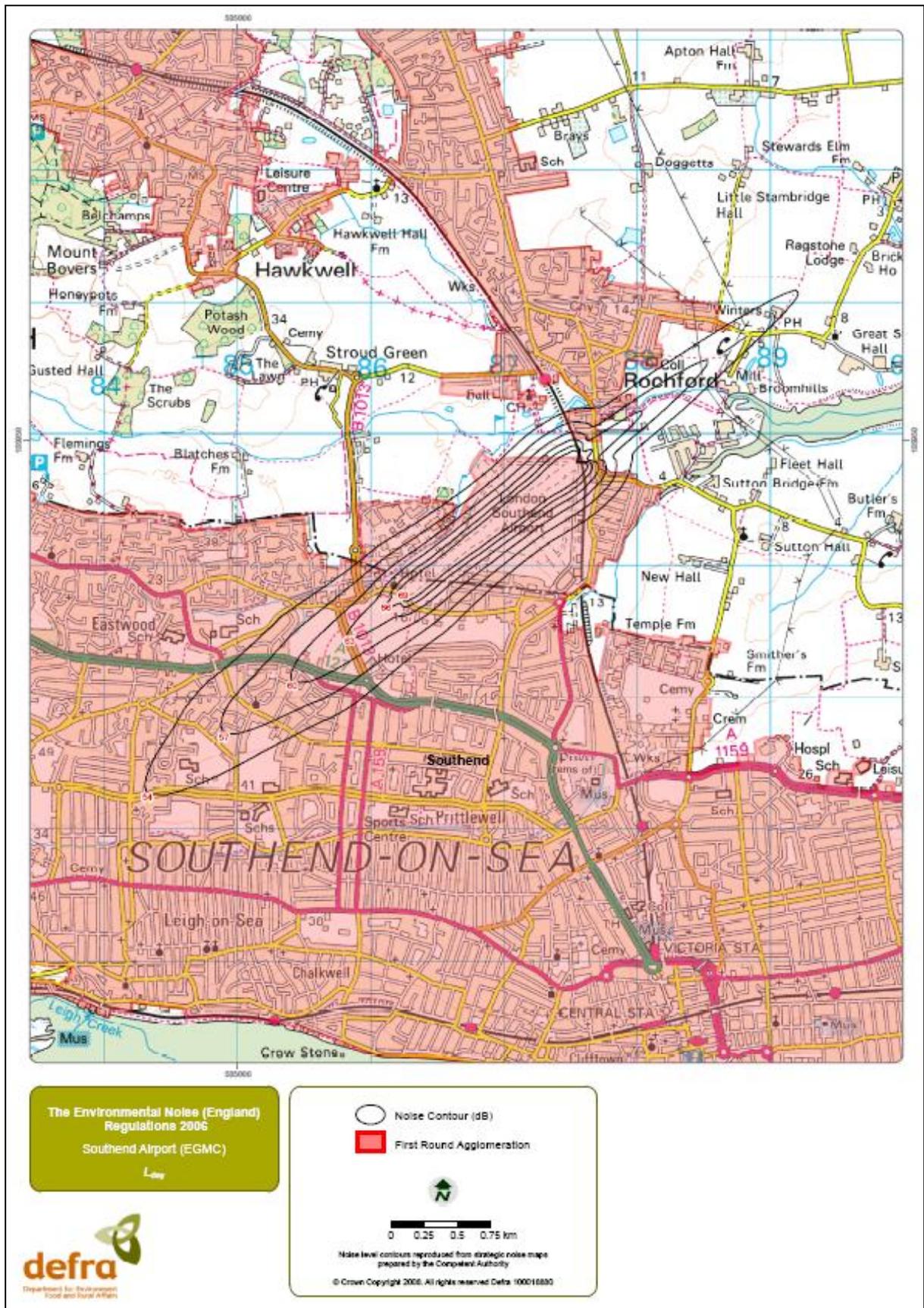
Map 2: Noise Contour Areas - L_{evening} (4h Period): 2006

Map 3: Noise Contour Areas - L_{daytime} (16h Period): 2006

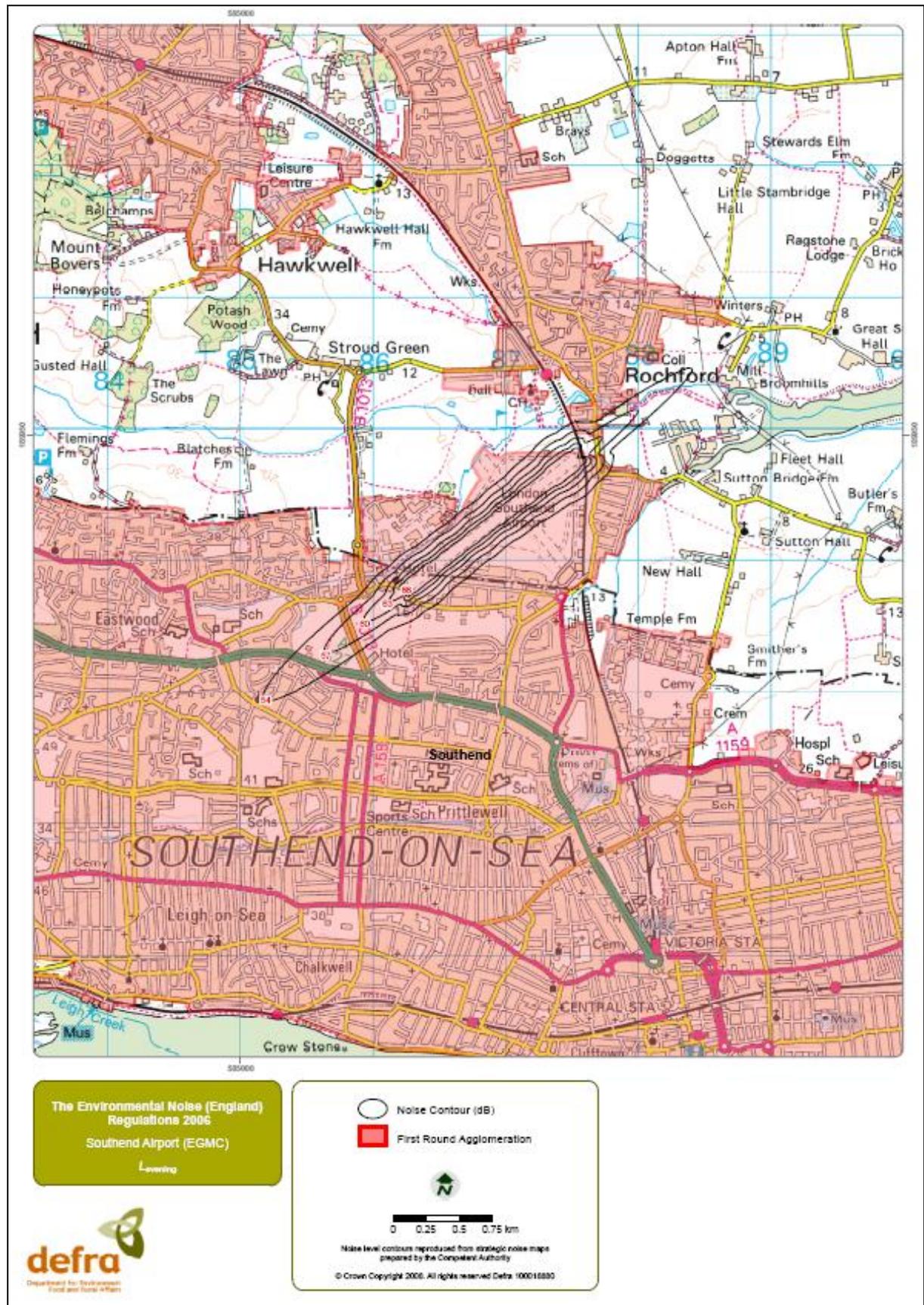
Map 4: Noise Contour Areas - L_{night} (8h Period): 2006

Map 5: Noise Contour Areas - L_{den} (24h Period): 2006

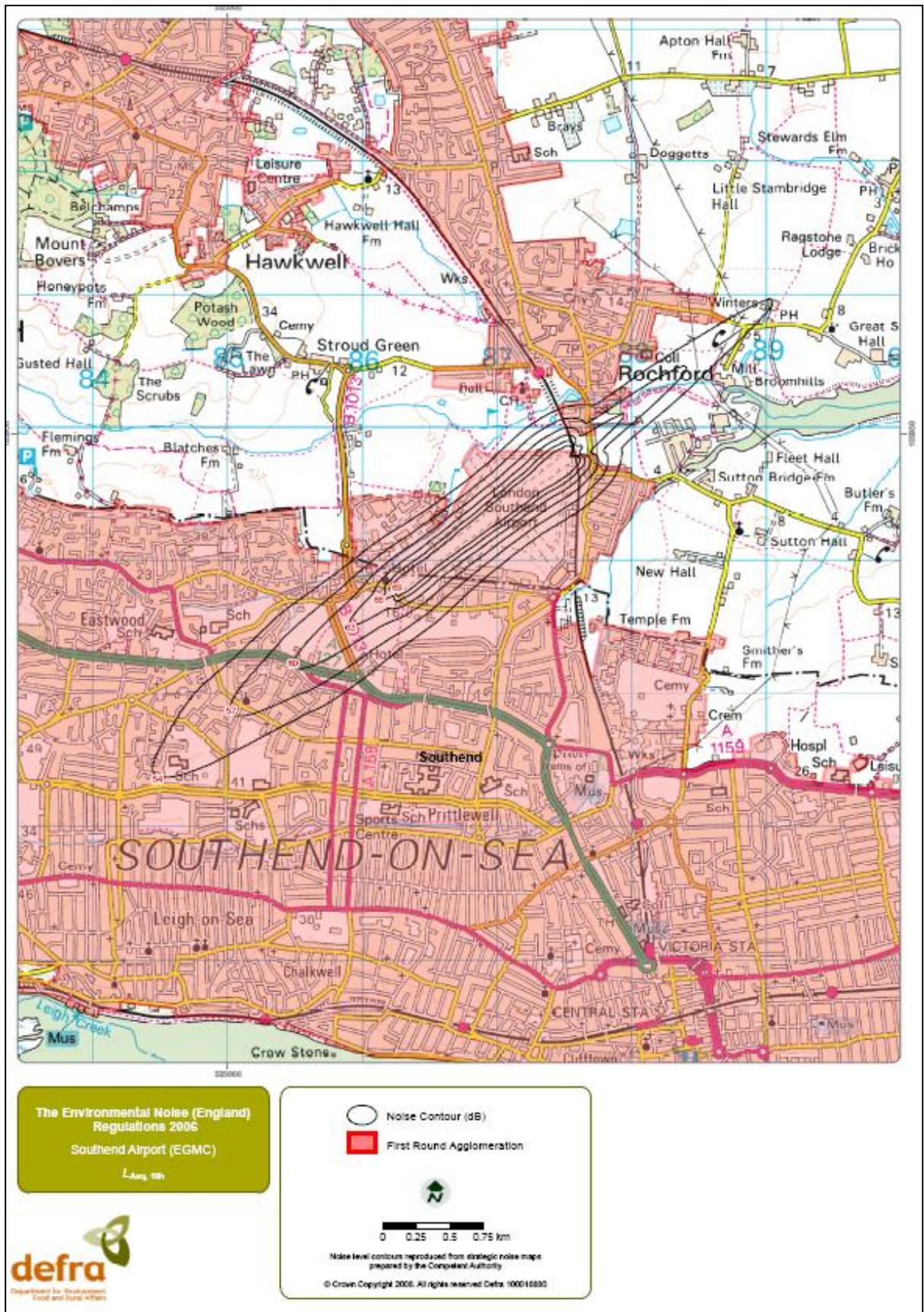
Map 1: Noise Contour Areas - L_{day} (12h Period): 2006



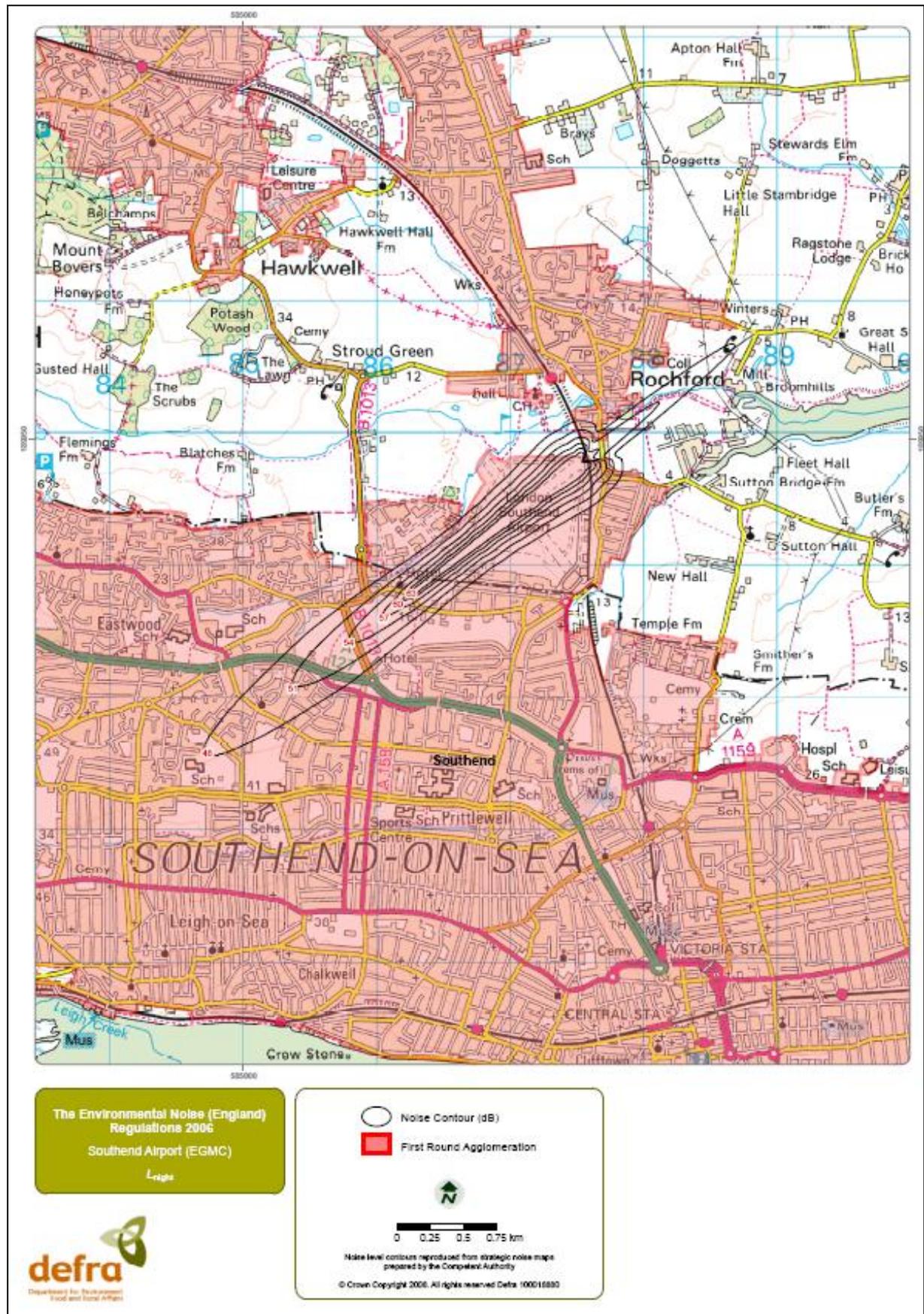
Map 2: Noise Contour Areas - Levening (4h Period): 2006



Map 3: Noise Contour Areas - L_{daytime} (16h Period): 2006



Map 4: Noise Contour Areas - L_{night} (8h Period): 2006



Map 5: Noise Contour Areas - L_{den} (24h Period): 2006

