

Noise Action Plan

Brighton Agglomeration

Environmental Noise (England) Regulations 2006, as amended

March 2010

Formal Adoption

I formally adopt this Noise Action Plan covering the Brighton agglomeration as required by the Environmental Noise (England) Regulations 2006 (as amended)¹



.....
Rt Hon Hilary Benn MP, Secretary of State for Environment, Food and Rural Affairs

15th March 2010

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¹ The Environmental Noise (England) Regulations 2006 (as amended) transpose Directive 2002/49/EC relating to the assessment and management of environmental noise.

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Part A

Introduction & General Issues

1 Introduction

- 1.01 This Noise Action Plan (hereafter referred to as an 'Action Plan') is designed to address the management of noise issues and effects in the Brighton agglomeration under the terms of the Environmental Noise (England) Regulations 2006² as amended (the "Regulations"). These Regulations transpose 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 END³.
- 1.02 In particular, this Action Plan covers the noise issues arising from road, railway, aviation and industrial sources (as described in the Directive) that affect the Brighton agglomeration. The management of noise issues and effects from major roads, major railways and major airports that are located outside first round agglomerations are addressed within the Action Plans for those sources.
- 1.03 It is recognised that the scope of this Action Plan is confined to the noise sources mentioned above. Nothing in this Action Plan affects the management of noise from any other noise source.
- 1.04 The Government intends that the END Action Plans will assist the management of environmental noise in the context of Government policy on sustainable development. Within this policy context, this Noise Action Plan aims to promote good health and good quality of life.
- 1.05 The END and the Regulations require that Action Plans apply in particular to the most important areas as established by the strategic noise maps.
- 1.06 When identifying possible actions, account should be taken of the principles that already exist in current legislation and guidance. Consequently, this Action Plan has been developed in the context of the existing regulatory background.
- 1.07 In the longer term, the Government intends that the action planning process should contribute to delivering the vision and aims of the Noise Policy Statement for England.
- 1.08 This Action Plan is in seven parts. Part A provides an introduction, Part B addresses noise from road traffic, Part C - noise from railways, Part D - noise from industry, Part E – quiet areas Part F –, noise from aircraft, where relevant and Part G – consultation. A glossary of acoustical and technical terms can be found at Appendix A. A list of local authorities wholly or partly within the Brighton agglomeration can be found at Appendix B. Process flow diagrams can be found in Appendix C.

² S.I.2006/2238. This was amended by S.I. 2008/375 and S.I. 2009/1610

³ For further information see

http://eur-lex.europa.eu/pri/en/oj/dat/2002/l_189/l_18920020718en00120025.pdf

- 1.09 The Competent Authority intends to issue guidance to assist with the implementation of this Action Plan.
- 1.10 A flow chart showing the general process can be found in Appendix C1.

2 General Issues

Scope of Action Plan

2.01 The first round agglomeration⁴ (Brighton) covered by this Action Plan is that identified in the Environmental Noise (Identification of Noise Sources) (England) Regulations 2007⁵, and, in particular, Regulation 3.

The authority responsible

2.02 The competent authority for preparing this Action Plan is the Secretary of State for Environment, Food and Rural Affairs (the “Competent Authority”).

The legal context

2.03 Regulation 16 of the Regulations confirms that the Secretary of State is the Competent Authority for preparing this Action Plan⁶.

2.04 The management of noise in this agglomeration rests with various authorities. These include:

- for road traffic sources – the relevant highway authority and the Department for Transport;
- for railway sources – the relevant rail authorities and the Department for Transport;
- for aviation sources (where relevant) – the airport operator, the Civil Aviation Authority, NATS (formerly National Air Traffic Services) and the Department for Transport;
- for industrial sources – the relevant industrial operator, the Environment Agency, Defra and the relevant local authority;
- for land use planning – the relevant planning authorities and the Department for Communities and Local Government;
- for transport planning – the relevant transport planning authorities and the Department for Transport; and
- for the protection of quiet areas – the relevant local planning authority, the relevant authorities that are responsible for the sources of noise covered by this Action Plan, Defra, the Department for

⁴ A first round agglomeration has been defined as a large urban area with a population of over 250,000 and a population density of more than 500 persons per square kilometre. The locations of all the 23 first round agglomerations that have been mapped can be seen on the Defra website at: <http://www.defra.gov.uk/environment/quality/noise/ambient.htm>

⁵ SI 2007/415

⁶ SI 2006/2238

Transport and the Department for Communities and Local Government.

Financial information

- 2.05 The Competent Authority will monitor that any identified action is evaluated to check that the benefit to be accrued justifies the cost and that the expected benefit is achieved, in the context of the objective set out in paragraph 1.04 above.

Monitoring

- 2.06 The Competent Authority will monitor the progress of this Action Plan through liaison with the relevant authorities. The Competent Authority will provide periodic updates on progress.

Outcome

- 2.07 The analysis described in this Action Plan has identified the approximate number of dwellings and locations in this agglomeration to be investigated to determine what measures, if any, might be taken in order to assist the management of environmental noise in the context of Government policy on sustainable development. Given the extensive noise management that already exists in the larger urban areas of England, it is expected that not all of the dwellings and locations that are investigated will require further action.
- 2.08 In addition local authorities in this agglomeration are encouraged to consider their approach to the management of open spaces and whether any existing quiet open spaces should attract particular attention with the aim of protecting them from an increase in noise.
- 2.09 The Competent Authority intends to identify a co-ordinator to act as a focal point for the implementation of this Action Plan within this agglomeration.

Part B

Noise from Road Traffic

3 Noise from road traffic in the Brighton agglomeration: current approach to noise management

- 3.01 This Action Plan covers noise from all roads mapped in this agglomeration. The management of the roads covered by this Action Plan rests with the relevant highway authority through the implementation of the Highways Act 1980 (as amended). This includes the Highways Agency, which is responsible for motorways and other trunk⁷ roads. The remaining roads are the responsibility of local highway authorities either as part of a County Council or as part of a Unitary Authority. In some agglomerations these responsibilities may be devolved further.
- 3.02 There are currently several approaches taken to control the impact of noise from road traffic:
- control of noise at source;
 - planning controls – through the operation of the national, regional and local transport and land use planning system;
 - compensation and insulation - in the case of a new or improved highway;
 - maintenance;
 - specific initiatives; and
 - limit values.

A brief summary of the current approach follows.

Control of noise at source

- 3.03 Noise from individual vehicles is controlled under mandatory EU noise emission standards which apply to all new road vehicles. These have been implemented in regulations made under the Road Traffic Acts. These requirements must be met by all models, or in the case of heavier vehicles, by engine types, before vehicles are permitted to enter into service. In addition, once in service, silencers and exhaust systems are required to be maintained in good condition and not altered so as to increase noise. Noise made by the contact of tyres with road surfaces when in motion is also controlled through an EU directive which since 2005 has mandated noise limits that all tyres fitted to newly manufactured vehicles have to meet. This directive has also been implemented in regulations made under the Road Traffic Acts. By 2011 through a phased introduction, all replacement tyres will have to meet the same noise limits as tyres fitted to newly manufactured

⁷ As defined in the Highways Act 1980

vehicles. Further reductions in tyre noise limits will take effect from 2016 under new legislation⁸.

Planning controls

- 3.04 When proposing the construction of a new road, or an additional carriageway to an existing road, a noise impact assessment must be carried out. For large scale projects, an Environmental Impact Assessment is required by law, which normally include a noise impact assessment. In addition, the Highways Agency requires a noise impact assessment to be undertaken if there is an expected increase of 1 dB $L_{A10,18h}$ as a result of any works it carries out on its network, including maintenance. The process which tends to be followed is set out in the Design Manual for Roads and Bridges⁹. Mitigation such as optimising the route alignment and the use of noise barriers, either through landscaping or purpose built walls or fences, is included in the design to minimise any adverse noise impact. This process also has regard to the protection of tranquil areas in general through consideration of the impact on landscape.
- 3.05 Once the basic data regarding the potential impact of the proposals has been obtained (including predicting the noise from the new network), an estimate of the likely numbers of people to be affected is made. In addition, through the Transport Appraisal Guidance¹⁰, the noise impact is monetised as a means of evaluating the overall merits of the proposal.
- 3.06 Through the operation of the land use planning system, a noise assessment would normally be carried out for any proposed residential development that may be affected by road traffic noise. Planning Policy Guidance 24¹¹ provides guidance regarding the suitability or otherwise of the site for such development. Guidance is also given about the type of mitigation that might be needed in order to achieve appropriate internal noise levels within homes. The approaches used to achieve these levels include designing appropriate façade insulation or optimising the proposed layout of the buildings.
- 3.07 Similarly, British Standard 8233:1999¹² (BS8233) provides design advice for various buildings, including dwellings and offices in order to mitigate the effects of noise from road traffic. Advice is provided on what constitutes a

⁸ Directive 2001/43/EC. Relating to tyres for motor vehicles and their trailers and to their fitting.

⁹ Design Manual for Roads and Bridges, Vol 11, Section 3, HA 213/08 (August 2008)

¹⁰ Department for Transport, Transport Analysis Guidance, Unit 3.3.2 Noise Sub-Objective (November 2006)

¹¹ Planning Policy Guidance 24: Planning and Noise (1994)

¹² BS8233:1999, Sound insulation and noise reduction in buildings – Code of Practice

reasonable or good standard in terms of the internal noise levels and on what mitigation might be used to achieve those levels.

- 3.08 Building Bulletin 93¹³ (BB93), provides guidance on acoustics in schools, including target noise levels for the indoor and outdoor environment in order to secure an appropriate acoustic environment for teaching. Following the guidance in BB93 is one way of ensuring that new schools comply with the requirements of the Building Regulations 2000 (as amended 2003).

Compensation and insulation

- 3.09 For new or improved highways, the Land Compensation Act 1973¹⁴ allowed regulations to be promulgated to provide compensation for dwellings affected by increased noise. These regulations are the Noise Insulation Regulations 1975, as amended 1988¹⁵. If certain criteria are met, the highway authority must offer secondary glazing and alternative ventilation for habitable rooms of dwellings so affected.
- 3.10 In addition, Part 1 of the Land Compensation Act¹⁶ provides for monetary compensation to those home owners affected by the new or improved highway recognising any loss in value of the home that has occurred by the opening of the new or improved highway. This assessment is purely subjective, carried out by surveyors, and claims have to be made within a certain time period.

Maintenance

- 3.11 It is the Highways Agency's current policy that when a length of highway requires a replacement road surface (due to wear and tear) the opportunity is often taken to lay a low noise road surface, one that assists in reducing the noise generated by the tyre/road interface. Other highway authorities adopt a similar policy to varying extents.

Specific initiatives

- 3.12 From time to time a highway authority will undertake a specific noise abatement initiative. Arguably the most notable example is the work being carried out by the Highways Agency, where it is addressing sites on the motorway and trunk road network that have been identified as having the most pressing noise problems. Around 60 sites across that network have benefited from additional noise mitigation either through the application of low noise road surfaces or by the use of noise barriers since around 1999/2000. Additional sites are already under consideration for noise abatement works during the next few years.

¹³ BB93 Acoustics Design of Schools, A design guide, (2003)

¹⁴ 1973, c.26.

¹⁵, SI 1975/1763 as amended The Noise Insulation (Amendment) Regulations 1988. SI 1988/2000,

¹⁶ 1973, c. 26.

Limit values

- 3.13 There are no relevant formal noise limit values in force in England with regard to environmental noise from roads. However, the Noise Insulation Regulations 1975, as amended in 1988¹⁷ define a threshold level as part of the eligibility criteria. Furthermore, there are guideline levels to be found in Planning Policy Guidance 24¹⁸ that provides guidance on land use with respect to noise from road traffic.

General policy

- 3.14 More recently, the Department for Transport has published the sustainable transport strategy – “Delivering a Sustainable Transport System” in November 2008¹⁹ which sets clear goals to take full account of transport’s wider impact on climate change, health, quality of life and the natural environment.

¹⁷ SI 1975/1763, as amended The Noise Insulation (Amendment) Regulations 1988. SI 1988/2000,

¹⁸ As footnote 9

¹⁹ Department for Transport, Delivering a Sustainable Transport System, 2008

4. **Noise from road traffic in the Brighton agglomeration: a summary of the results of the noise mapping, including an evaluation of the estimated number of people exposed to noise**

4.01 The Regulations required that noise level information be determined in terms of several noise indicators²⁰. These include:

- L_{den}
- L_{night} ; and
- $L_{A10,18h}$.

4.02 The estimated number of people²¹ and dwellings (rounded to the nearest thousand) exposed above various noise levels²² from the strategic mapping of road traffic noise in this agglomeration are shown in Tables 4.1 to 4.3 below²³:

Table 4.1
Estimated number of people and dwellings above various noise levels due to road traffic noise, L_{den}

Noise Level (L_{den}) (dB)	Number of Dwellings	Number of People
≥55	184,000	398,000
≥60	150,000	325,000
≥65	33,000	67,000
≥70	10,000	20,000
≥75	2,000	3,000

²⁰ The Environmental Noise (England) Regulations 2006, Regulation 4 (2) and Schedule 3 (2)

²¹ The number of people has been determined by assigning population information from the 2001 census to residential building locations and has been rounded to the nearest 1,000

²² The noise levels throughout this document refer to free-field levels at a height of 4m at the facades of the dwellings.

²³ Some of the statistics presented in this Action Plan have been produced from updated information and may differ to those previously published elsewhere.

Table 4.2
Estimated number of people and dwellings above various noise levels
due to road traffic noise, L_{night}

Noise Level (L_{night}) (dB)	Number of Dwellings	Number of People
≥50	159,000	344,000
≥55	47,000	99,000
≥60	11,000	22,000
≥65	2,000	3,000
≥70	<500	<500

Table 4.3
Estimated number of people and dwellings above various noise levels
due to road traffic noise, $L_{A10,18h}$

Noise Level ($L_{A10,18h}$) (dB)	Number of Dwellings	Number of People
≥55	184,000	399,000
≥60	156,000	338,000
≥65	55,000	116,000
≥70	12,000	24,000
≥75	4,000	7,000

5. **Noise from road traffic in the Brighton agglomeration: identification of problems and situations that need to be investigated**

5.01 This Action Plan has been designed to manage noise issues and effects, including noise reduction if necessary.²⁴ The following process is being adopted with regard to the results of the noise mapping of road traffic sources in this agglomeration:

- Is there scope for implementing additional noise management measures in the context of Government policy on sustainable development?
- If the answer is yes, then further assessment is required.

5.02 The Regulations require that this Action Plan should

“apply in particular to the most important areas as established by strategic noise maps”²⁵.

To fulfil this requirement, attention has been focused on those most exposed to noise (according to the results of the strategic noise mapping) from those roads mapped in this agglomeration.

5.03 Furthermore, the Secretary of State requires that any action taken will assist the management of environmental noise in the context of Government policy on sustainable development.

Identification of Important Areas

5.04 The publication “Calculation of Road Traffic Noise”²⁶ describes the calculation method used for generating the strategic noise maps, produces results in terms of the $L_{A10,18h}$ noise indicator. The results were adapted²⁷ to produce the other noise indicators shown in 4.01 above. Furthermore, this indicator is used as the main means of assessing the impact of road traffic noise in England and also as the basis for the criteria used to determine compensation under the Noise Insulation Regulations (see Section 3). The Competent Authority has decided, therefore, to use the $L_{A10,18h}$ indicator as the basis for identifying important areas to be investigated for potential action.

5.05 The Competent Authority undertook an Impact Assessment which considered a number of options for identifying Important Areas. The selected option helps to deliver the vision and aims of the Noise Policy Statement for England.

²⁴ SI 2006/2238 Regulations 15 (1) (b)

²⁵ SI 2006/2238 Regulations 15 (1) (e)

²⁶ Calculation of Road Traffic Noise, 1988 HMSO ISBN 0 11 550847 3

²⁷ SI 2006/2238 Regulations, Schedule 2 (2)

- 5.06 It has been decided that the important areas with respect to road traffic noise in this agglomeration will be where the 1% of the population²⁸ that are affected by the highest noise levels from those roads mapped in this agglomeration are located according to the results of the strategic noise mapping²⁹ (“Important Areas”). This approach has been taken because the population at these locations in this agglomeration are likely to be at the greatest risk of experiencing a significant adverse impact to health and quality of life as a result of their exposure to road traffic noise.
- 5.07 In addition, those locations where the $L_{A10,18h}$ is at least 76 dB according to the results of the strategic noise mapping have been identified as First Priority Locations (“First Priority Locations”). It is envisaged that in general the highways authorities will investigate as a priority the Important Areas that contain First Priority Locations. This threshold value should only be used for the purposes of identifying First Priority Locations for investigation in the context of this Noise Action Plan and should not be used for any other purpose or in any other policy context.
- 5.08 The $L_{A10,18h}$ indicator describes only the noise that occurs between the hours of 0600 and 2400 and doesn’t cover the night period. Even so, the identification of Important Areas has been based solely on the $L_{A10,18h}$ value. This reflects the fact that for the first round of mapping the L_{night} values had to be derived (as mentioned in Paragraph 5.04 above). Furthermore, implementing many of the potential actions available to manage noise issues and effects would not only address the noise as measured by the $L_{A10,18h}$ indicator but also the noise that occurs at night.

²⁸ The population is the total number of people living in this agglomeration according to the 2001 census.

²⁹ In some agglomerations there may be an opportunity to investigate beyond the top 1% of the population but there is no requirement to investigate those dwellings where the $L_{A10,18h}$ is below 65 dB according to the results of the strategic noise mapping.

Important Areas

5.09 Table 5.1 below shows the approximate number of dwellings and associated population to be investigated for potential action with respect to road traffic noise in this agglomeration for any relevant local authority³⁰ that is wholly or partly within this agglomeration:

Table 5.1
Approximate number of dwellings (and associated population) per local authority to be investigated due to noise from those roads mapped in this agglomeration

Local Authority	Number of Dwellings	Associated Population
Brighton & Hove City Council	2,250	4,100
Adur District Council	550	1,200
Arun District Council	50	100
Worthing Borough Council	700	1,300
TOTAL	3,600	6,700

Note to Table 5.1:

- 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".
- The totals may not appear to add up due to rounding.
- The 1% of the population has been identified based on the resolution available from the strategic noise mapping and in practice will be slightly greater than 1%.
- The figures quoted only relate to that part of the Local Authority area that falls within the agglomeration boundary.

³⁰ This information has been provided by Local Authority as a convenient way of describing the geographical distribution of locations. This does not necessarily imply any current or future responsibility for actions.

First Priority Locations

5.10 Table 5.2 below shows the approximate number of dwellings and associated population in this agglomeration that have been identified as First Priority Locations with respect to road traffic noise for any relevant local authority³¹ that is wholly or partly within this agglomeration:

Table 5.2
Approximate number of dwellings (and associated population) per local authority to be investigated as a first priority due to noise from those roads mapped in this agglomeration

Local Authority	Number of Dwellings	Associated Population
Brighton & Hove City Council	1,400	2,600
Adur District Council	250	600
Arun District Council	< 50	< 100
Worthing Borough Council	450	800
TOTAL	2,150	3,900

Note to Table 5.2:

- 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".
- The totals may not appear to add up due to rounding
- The figures quoted only relate to that part of the Local Authority area that falls within the agglomeration boundary.

5.11 It is envisaged that the highways authorities will investigate as a priority the Important Areas that contain First Priority Locations whilst having regard to any ongoing noise mitigation initiatives, schemes and plans. The highway authorities, however, may use their discretion when deciding on the investigation priority.

³¹ This information has been provided by Local Authority as a convenient way of describing the geographical distribution of locations. This does not necessarily imply any current or future responsibility for actions.

6. **Noise from road traffic in the Brighton agglomeration: noise reduction measures already in force and any projects in preparation**

6.01 Section 3 describes in general terms the noise reduction and mitigation measures that are already in use regarding road traffic noise in this agglomeration.

6.02 For any particular location, there is a wide range of measures that can be implemented to provide improved management of the road traffic and/or noise reduction. Some of these measures are described below:

Façade insulation

6.03 Securing an appropriate standard of internal acoustic conditions is often achieved by the careful design of the sound insulation provided by the building envelope. This can either occur at the design stage of a new structure or by improving the insulation of an existing building. Where necessary, alternative ventilation is provided so that windows can be kept closed but with ventilation still available.

Noise barriers or other similar methods

6.04 The use of barriers to reduce the propagation of noise from a road to a sensitive receptor is widespread in England. At its simplest, purpose built barriers can be found alongside many roads. In addition, or alternatively, landscaping and the built environment itself may be used to provide similar mitigation.

6.05 The design of the layout of a development is also used such that less sensitive buildings are used as barrier blocks to protect more sensitive structures elsewhere.

Source levels

6.06 Over recent years, the use of low noise roads surfaces has become increasingly widespread. These surfaces are now routinely used for new strategic roads, and are generally used when the road surface has to be replaced due to wear and tear.

6.07 Other techniques that have been implemented that effectively reduce noise at source include traffic management schemes. These can manifest themselves in several ways:

- the re-routing of traffic away from sensitive receptors;
- restrictions on the type of traffic (e.g. heavy vehicles) that can use certain roads at certain times of day; and
- the design and building of new roads to provide an alternative route away from noise sensitive premises.

- 6.08 Other source related measures that are available include imposing speed restrictions directly or as a consequence of congestion management schemes.
- 6.09 For all these potential measures, the overall cost and benefit needs to be considered (e.g. see paragraph 3.05). For example, establishing a speed restriction along a length of road may assist in reducing the noise, but that benefit must be off-set against the costs that arise from any increased journey times.

7. **Noise from road traffic in the Brighton agglomeration: actions which the Competent Authority intends to take in the next five years**
- 7.01 The implementation of the part of this Action Plan concerned with road traffic noise in this agglomeration will be a continuous process commencing from the adoption of the plan. As required by the Regulations, this Action Plan will be reviewed at least once every five years³².
- 7.02 The Competent Authority will liaise with the relevant highway authorities that are responsible for roads that are generating noise at those Important Areas identified in Section 5 above, and these authorities will be provided with information based on the strategic noise maps about those locations.
- 7.03 Concurrently, relevant local authorities, in whose areas the Important Areas fall, will be provided with similar information. It is expected that this information would go to the departments with planning and environmental health responsibilities. This will enable the local authorities to participate in the detailed identification of any measures.
- 7.04 The Competent Authority will liaise with the relevant local authorities so that the relevant departments are involved in the process.
- 7.05 The relevant highway authorities will be asked to examine initially the Important Areas containing First Priority Locations and in due course the other Important Areas, and form a view about what measures, if any, might be taken in order to assist the management of environmental noise in the context of Government policy on sustainable development at those locations. If it is found that identified locations are affected by noise from more than one source of transport noise the relevant authorities will liaise, as necessary, with the assistance of the Competent Authority so that any action identified is the most appropriate.
- 7.06 The Competent Authority will work with the relevant highway authorities to facilitate the carrying out of this task.
- 7.07 The assessment by the relevant highway authorities will be as follows:

³² SI 2006/2238 Regulation 17(3)(b).

Consideration of possible actions

- 7.08 For each Important Area the relevant highway authority will consider what, if any, actions might be taken. This will include, but not be limited to, exploring the scope for (in no particular order):
- erecting noise barriers;
 - installing low noise road surfaces;
 - local traffic management measures; or
 - improving the sound insulation.
- 7.09 If a certain length of highway is associated with several Important Areas, the relevant highway authority should consider measures that could address the noise issues at all the locations concurrently. This might include, for example, the development of a highway scheme to provide an alternative route.
- 7.10 The highway authority should also take account of any existing plans (e.g. any local transport plans or land-use plans) or any specific noise mitigation schemes that are already in preparation that may affect the Important Areas.
- 7.11 For each Important Area, the highway authority will identify proposed actions that will meet the objective set out in paragraphs 1.04 and 5.03 above, or state why, in their view, no further action can or needs to be taken in order to meet this objective.
- 7.12 In forming their view about possible action, the relevant highway authority should take account of any benefit that might also be achieved for any other noise sensitive premises in the vicinity of the Important Area being investigated. In addition, the relevant highway authority should take account of any impacts that might occur for any other noise sensitive premises or locations. Furthermore, consideration should be given to integrating noise management actions at an Important Area with the concurrent implementation of other environmental or related initiatives.
- 7.13 It is expected that these deliberations will result in four general outcomes:
- a) It is possible to be able to implement an action and there are financial resources immediately available to do so;
 - b) It is possible to be able to implement an action but there are no immediately available financial resources to do so;
 - c) It is not possible to implement any action because there is no scope for doing so (e.g. reasonable sound insulation already exists at the affected dwelling, or a noise barrier at its optimum size and location already exists), or there is some overriding technical issue that prevents

implementation (e.g. ground conditions do not allow a barrier to be erected); or

- d) It is not possible to implement any action because there would be large adverse non-acoustics effects that could not be accommodated by the proposed measure. Such non acoustic effects could include an adverse effect on safety, or a significant adverse air pollution impact, or an unacceptable increase in congestion or journey times.

7.14 For each of these outcomes the following action will occur:

7.15 **Outcome (a): - It is possible to be able to implement and there are financial resources immediately available to do so**

If it is clear that the proposed action will provide the expected benefit, then the highway authority will determine a timetable for implementation.

7.16 **Outcome (b): - It is possible to be able to implement but there are no immediately available financial resources to do so**

The highway authority will make arrangements to secure financial resources to carry out this work in future financial years. This might be achieved by either:

- securing new resources for this work; or
- re-prioritising existing budgets to enable the funds for the action to become available.

Once the budget has been secured, the highway authority will determine a timetable for implementation.

7.17 **Outcome (c) - It is not possible to implement any action because there is no scope for doing so or there is some overriding technical issue that prevents implementation**

The highway authority will inform the Competent Authority that this is the case, appropriately justified.

7.18 **Outcome (d) - it is not possible to implement any action because there would be large adverse non-acoustics effects that could not be accommodated by the proposed measure**

The highway authority will inform the Competent Authority that this is the case, appropriately justified.

7.19 When an Important Area is affected by roads which are the responsibility of more than one highway authority, the relevant highway authorities should work together to determine the appropriate action.

Liaison with relevant local authorities

7.20 At appropriate times during the consideration of possible actions, the relevant highway authority will liaise with the relevant local authorities about progress and, in the end, the outcomes. This liaison should cover:

- information about the proposed schedule of investigation of Important Areas; and
- information about the proposed timing of any implementation of possible actions.

7.21 The relevant local authority may separately identify locations that have not currently been identified as Important Areas for possible further noise management actions and request that consideration be given by the relevant highway authority to including them in the action planning schedule.

7.22 Given that one of the obligations regarding Action Plans for agglomerations is the aim to protect formally identified Quiet Areas in first round agglomerations, a highway authority will need to consider whether any element of the proposed measures might conflict with the Quiet Area objectives within this Action Plan³³. In order to avoid any such conflict arising, the highway authority should liaise with the relevant local authorities and the Competent Authority to agree the best way forward. For further information, see Part E.

³³ The protection of Quiet Areas in an agglomeration should not automatically take precedence over the protection of quiet open spaces (and other areas where environmental noise quality is good) outside an agglomeration.

Liaison with the Public

- 7.23 The relevant highway authority should, at the appropriate time, liaise with those members of the public who are likely to be most affected by any proposed new noise management proposal.

Reporting and consultation

- 7.24 The Competent Authority will liaise with the relevant highway authorities to prepare documentation setting out the results of these investigations, including the timetable for any proposed actions. The Competent Authority in conjunction with the relevant highway authorities will consult with the relevant local authorities and any other relevant stakeholders on these results.
- 7.25 The Competent Authority will liaise with the relevant highway authorities and consider the responses to that consultation and with the highway authorities make any alterations to the proposals as they see fit.
- 7.26 The Competent Authority will liaise with the relevant highway authorities to finalise the documentation described in paragraph 7.24 including information about the consultation described in paragraph 7.24.

Implementation

- 7.27 Regulation 21 of the Regulations states that any actions identified during this process are regarded as forming part of the policy of the relevant public authority, and hence need to be implemented as indicated.

Timetable

7.28 The outline timetable for this process is shown in Table 7.1:

**Table 7.1
Outline Timetable**

Action	Date
Competent Authority identifies Important Areas (IAs) and First Priority Locations (FPLs)	2009/2010
Competent Authority liaises with relevant highway authorities	April 2010 onwards
Competent Authority issues guidance regarding the process for investigating IAs	July 2010
Local highway authorities (other than the Highways Agency) investigate IAs (giving priority to those containing FPLs)	July 2010 – June 2011
Highways Agency investigate IAs (giving priority to those containing FPLs)	April 2010 – October 2011
Relevant highway authorities implement any actions or secure budget for actions	April 2011 onwards
Relevant highway authorities investigate remaining IAs and implement any actions or secure budget for actions	April 2012 onwards
Competent Authority undertakes second round of noise mapping	During 2012

7.29 The flowchart for this process can be found in Appendix C2.

**8. Noise from road traffic in the Brighton agglomeration:
long term strategy**

- 8.01 The Competent Authority will continue to work with the Department for Transport, Highways Agency and highway authorities to establish a clear framework of responsibility so that noise from road traffic is not only properly managed in the context of Government policy on sustainable development, but that the process is also clearly understood by the public.
- 8.02 The Competent Authority recognises the need for a robust and reliable system of data collection, management and control to enable the strategic noise mapping to take fully into account all the input variables that affect the resulting noise levels generated. Consequently, the Competent Authority will liaise with the relevant bodies to improve data quality and coverage for future road noise mapping.
- 8.03 The Competent Authority has recognised that it was possible in the current round of noise mapping to gain no more than an indication of the night noise impact from road traffic. In connection with the undertaking in the paragraph above, the Competent Authority will concentrate on establishing a mechanism that secures robust data regarding traffic flow and associated information for the night period (23.00 – 07.00). In addition, the Competent Authority will work with the Highways Agency and others, as appropriate, to develop a robust prediction methodology for night noise from road traffic. This will enable a greater focus to be made on the management of night time road traffic noise given the increasing emphasis being put on the effects of night noise by the World Health Organisation.
- 8.04 The Competent Authority will continue to engage pro-actively with the European Commission and other relevant organisations on initiatives that seek to reduce the noise from road traffic at source and with the development of measures that are designed in general to manage the impact of noise from road traffic.
- 8.05 The Competent Authority will encourage future land use planning policies at a national, regional and local level to reflect the processes set out in this Action Plan.
- 8.06 The Competent Authority will liaise with relevant national and local policy making bodies to encourage proper consideration of noise management issues in policy development. Furthermore, the Competent Authority will work with relevant Government departments to put forward proposals, where necessary, for relevant legislative or other regulatory changes to

enable the identified actions to proceed (e.g. altering the scope and application of the Noise Insulation Regulations³⁴).

- 8.07 The Competent Authority will liaise with the Department for Transport and highway authorities to explore the possibility of setting up a robust and easily accessible complaints handling system for road traffic noise issues.
- 8.08 The Competent Authority will check that the detailed noise actions identified by the highway authorities recognise wider national and local government policy objectives.
- 8.09 The Competent Authority will work with the relevant Government bodies to assist with any future revisions of Calculation of Road Traffic Noise.
- 8.10 The Competent Authority will continue to encourage and support the development of low noise road surfaces, and research into improved building envelope sound insulation and related ventilation issues.
- 8.11 The Competent Authority will encourage all highway authorities to consider adopting the good practice that is promulgated by the Highways Agency in the assessment and management of road traffic noise.
- 8.12 The Competent Authority will consider and evaluate the implications of moving towards a greater use of L_{den} and L_{Aeq} indicators in general as a means of understanding the effects of noise from road traffic.
- 8.13 The Competent Authority will keep under review the definition of Important Areas used in this Action Plan.
- 8.14 The Competent Authority will develop, agree and disseminate good practice approaches and methodologies through the Interdepartmental Group on Costs and Benefits noise subject group (IGCB(N)) to support the policy appraisal of noise. Further information is available from www.defra.gov.uk/evidence/economics/igcb.
- 8.15 The Competent Authority will keep under review the issues raised in this Section and will publish a progress report in 2012.

³⁴ SI 1975/1763 as amended by The Noise Insulation (Amendment) Regulations 1988 (SI 1988/2000).

Part C

Noise from Railways

9. Noise from railway sources in the Brighton agglomeration: current approach to noise management

- 9.01 This Action Plan covers noise from all railways mapped in this agglomeration. The management structure of the railway industry post white paper³⁵ is complex with many bodies having various roles and responsibilities. With regard to noise management, this features in the Office of Rail Regulation (“ORR”) Sustainable Development and Environmental Duties document, which includes an undertaking to address the management of operational noise from train services.³⁶
- 9.02 There are currently several approaches taken to control the impact of noise from rail traffic:
- control of noise at source;
 - planning controls – through the operation of the national, regional and local transport and land use planning system;
 - compensation and insulation - in the case of a new, additional or altered works;
 - maintenance;
 - general policy;
 - specific initiatives; and
 - limit values.

A brief summary of the current approach follows.

Control of noise at source

- 9.03 Noise from individual railway vehicles is increasingly being controlled through legislation. The European Commission (EC) introduced a Technical Specification for Interoperability (TSI) to provide limits for noise emission from rail vehicles. Limits from rail plant and equipment are provided by Directive 2000/14/EC, which relates to noise emissions in the environment from equipment used outdoors.
- 9.04 The EC adopted a Technical Specification for Interoperability relating to rolling stock noise for conventional rolling stock in 2006 (Decision 2006/66/EC). This TSI states in its implementation section (Chapter 7) that the Commission will consider options for retrofitting of existing freight wagons for noise reduction with stakeholders and the rail industry. The possibility of such an initiative is also reflected in the more recent Commission Communication on rail noise abatement (COM(2008)432). In

³⁵ The Future of Rail (July 2004)

³⁶ ORR – Sustainable Development and Environmental Duties, para 3.3 (h)

this Communication, the Commission proposes a combination of measures including noise-differentiated access charges for freight vehicles and noise emissions limits for all vehicles. The Commission proposes to implement the access aspects through a future recast of Directive 2001/14/EC, which provides for general requirements on access to and charging for the use of railway infrastructure. The TSIs (on conventional and high speed rolling stock) include noise limits for starting noise, noise from stationary vehicles and pass-by noise. Many vehicles have already been introduced that meet these limits.

- 9.05 Further research managed by the Rail Safety and Standards Board has produced a long term trend line for the United Kingdom rail fleet in terms of its noise outputs, measured using the TSI criteria³⁷. Both of the TSIs (covering conventional and high speed rolling stock) adopt a two-step approach to reduce the noise emissions limits over time. Furthermore, quieter disc brakes or composite brake block (as opposed to the noisier cast iron brake blocks) have been installed on many passenger vehicles and freight vehicles. Presently, the Noise TSI is under revision. The limits for start-up, pass-by and stationary noise are not expected to change. However, the methods used to determine how these limits are met will be revised to extend the test options available to stakeholders.

Planning controls

- 9.06 When proposing the construction of a new railway, or additional lines to an existing rail corridor, a noise impact assessment must be carried out. The process to be followed is set out in relevant Environmental Impact Assessment Regulations³⁸. Mitigation such as optimising the track construction and the use of noise barriers, either through landscaping or purpose built walls or fences, are included in the design to minimise any adverse noise impact.
- 9.07 Once the basic data regarding the potential impact of the proposals has been obtained (including predicting the noise from the new or altered railway), an estimate of the likely numbers of people to be affected is made. In addition, through the Transport Appraisal Guidance³⁹, the noise impact can be monetised as a means of evaluating the overall merits of the proposal.
- 9.08 Through land use planning, a noise assessment would normally be carried out for any proposed residential development that may be affected by

³⁷ T835 Trends in GB rolling stock noise levels
(www.rssb.co.uk/research/rail_industry_research_programme.asp)

³⁸ For example, The Transport and Works (Assessment of Environmental Effects) Regulations 2006

³⁹ More information on WebTAG is available at <http://www.webtag.org.uk/>

railway noise. Planning Policy Guidance 24⁴⁰ provides guidance regarding the suitability or otherwise of the site for such development. Guidance is also given about the type of mitigation that might be needed in order to achieve appropriate internal noise levels within homes. The approaches used to achieve these levels include designing appropriate façade insulation or optimising the proposed layout of the buildings.

- 9.09 Similarly, British Standard 8233:1999⁴¹ (BS8233) provides design advice for various buildings, including dwellings and offices in order to mitigate the effects of noise from railways. Advice is provided on what constitutes a reasonable or good standard in terms of the internal noise levels and on what mitigation might be used to achieve those levels.
- 9.10 Building Bulletin 93⁴² (BB93), provides guidance on acoustics in schools, including target noise levels for the indoor and outdoor environment in order to secure an appropriate acoustic environment for teaching. Following the guidance in BB93 is one way of ensuring that new schools comply with the requirements of the Building Regulations 2000 (as amended 2003).

Compensation and insulation

- 9.11 For new, additional or altered works to a railway system, the Land Compensation Act 1973 allowed regulations to be promulgated to provide compensation for dwellings affected by increased noise. These regulations are the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996⁴³. If certain criteria are met, the promoter of the scheme must offer secondary glazing and alternative ventilation for habitable rooms of dwellings so affected.
- 9.12 In addition, Part 1 of the Land Compensation Act provides for monetary compensation to those home owners affected by the new or altered railway recognising any loss in value of the home that has occurred by the opening of the new or improved railway. This assessment is purely subjective, carried out by surveyors, and claims have to be made within a certain time period.

Maintenance

- 9.13 Railhead grinding, an inherently noisy process, occurs as part of the general maintenance of the track. Such grinding, provided it is regularly repeated, has been found to reduce maintenance costs, extend rail life and reduce the noise emitted from the wheel/railhead interface. Consequently, this process

⁴⁰ Planning Policy Guidance 24: Planning and Noise (1994)

⁴¹ BS8233:1999, Sound insulation and noise reduction in buildings – Code of practice

⁴² BB93 Acoustics Design of Schools, A design guide, (2003)

⁴³ Statutory Instrument 1996 No. 428 -The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996

has the benefits of providing noise reduction at the wheel/rail interface and through reduced railway maintenance activities involving rail replacement. The Competent Authority commissioned research to understand the potential acoustics benefits of railhead grinding, so that, if appropriate, it might be considered as part of an Action Plan⁴⁴. In addition, track renewals are often carried out using continuous welded rail, which produces less running noise than short sections of jointed rail and reduces the need for maintenance activity involving the replacement of damaged rail joints.

General policy

- 9.14 The ORR has adopted as part of its sustainable development and environmental duties an undertaking to address the issue of the management of operational noise from train services. Furthermore, the Department for Transport published the sustainable transport strategy – “Delivering a Sustainable Transport System” in November 2008⁴⁵ which sets clear goals to take full account of transport’s wider impact on climate change, health, quality of life and the natural environment. In particular, it notes that measures, that include encouraging a modal shift to public transport, are likely to make a positive contribution to economic growth, reducing greenhouse gas emissions and enhancing the local environment as well as improving public and personal health.

Specific initiatives

- 9.15 The use of continuously welded rail has been found to help reduce operational noise although switch and crossing noise cannot be eliminated by continuous welding.
- 9.16 Although not directly related to operational noise, the noise from train horns has been addressed over recent years. The national Railway Group Standard for horns now specifies a maximum noise level (in addition to a minimum level). Furthermore, the Rule Book has been amended to reduce the number of occasions on which the sounding of the horn is mandatory.
- 9.17 In a similar vein, there has been improved management of the noise from station Public Address systems, with the sound level of these announcements being deliberately reduced and with the number of announcements in the early morning being reduced.
- 9.18 The Network Rail National Helpline is operated 24 hours a day, every day, to answer questions from the public and to assist with any issues arising from the operation of the railway, including noise. The Helpline number is

⁴⁴ “Rail and wheel roughness – implications for noise mapping based on the Calculation of Railway Noise procedure” (DEFRA, March 2004)

⁴⁵ Department for Transport, Delivering a Sustainable Transport System, 2008

08457 11 41 41. Alternatively, the helpline can be reached via:
www.networkrail.co.uk.

Limit values

- 9.19 There are no relevant formal limit values in force in England with regard to environmental noise from railways. However, the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996⁴⁶ define a threshold level as part of the eligibility criteria. Furthermore, there are guideline levels to be found in Planning Policy Guidance 24⁴⁷ that provides guidance on land use with respect to noise from railways. Technical Specifications for Interoperability (TSIs) include limit values at source for railway vehicles, and occupational noise limits apply through general Health & Safety legislation for workplaces.

⁴⁶ Statutory Instrument 1996 No. 428 -The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996

⁴⁷ Planning Policy Guidance 24: Planning and Noise (1994)

10. Noise from railway sources in the Brighton agglomeration: summary of the results of the noise mapping, including an evaluation of the estimated number of people exposed to noise

10.01 The Regulations required that noise level information be determined in terms of several noise indicators⁴⁸. These include:

- L_{den}
- L_{night} ; and
- $L_{Aeq,18h}$.

10.02 The estimated number of people⁴⁹ and dwellings (rounded to the nearest thousand) exposed above various noise levels⁵⁰ from the strategic mapping of railway noise in this agglomeration are shown in Tables 10.1 – 10.3 below:

**Table 10.1
Estimated number of people and dwellings above various noise levels due to railway noise, L_{den}**

Noise Level (L_{den}) (dB)	Number of Dwellings	Number of People
≥55	6,000	13,000
≥60	3,000	7,000
≥65	1,000	3,000
≥70	<500	<500
≥75	0	0

⁴⁸ The Environmental Noise (England) Regulations 2006, Regulation 4 (2) and Schedule 3 (2)

⁴⁹ The number of people has been determined by assigning population information from the 2001 census to residential building locations and rounded to the nearest 1,000

⁵⁰ The noise levels throughout this document refer to free-field levels at a height of 4m at the facades of the dwellings.

Table 10.2
Estimated number of people and dwellings above various noise levels
due to railway noise, L_{night}

Noise Level (L_{night}) (dB)	Number of Dwellings	Number of People
≥50	4,000	9,000
≥55	2,000	4,000
≥60	<500	<500
≥65	0	0
≥70	0	0

Table 10.3
Estimated number of people and dwellings above various noise levels
due to railway noise, $L_{\text{Aeq,18h}}$

Noise Level ($L_{\text{Aeq,18h}}$) (dB)	Number of Dwellings	Number of People
≥55	5,000	10,000
≥60	2,000	5,000
≥65	1,000	1,000
≥70	<500	<500
≥75	0	0

11. Noise from railway sources in the Brighton agglomeration: identification of problems and situations that need to be investigated

11.01 This Action Plan has been designed to manage noise issues and effects, including noise reduction if necessary.⁵¹ Generically the following process is being adopted with regard to the results of the noise mapping of railway sources in this agglomeration:

- is there scope for implementing additional noise management measures in the context of Government policy on sustainable development?
- if the answer is yes, then further assessment is required.

11.02 The Regulations require that this Action Plan should

“apply in particular to the most important areas as established by the strategic noise maps”⁵².

To fulfil this requirement, attention has been focused on those most exposed to noise (according to the results from the strategic noise mapping) from railway sources in this agglomeration.

11.03 Furthermore, the Secretary of State requires that any action promulgated will assist the management of environmental noise in the context of Government policy on sustainable development.

Identification of Important Areas

11.04 The Noise Insulation (Railways and Other Guided Transport Systems) Regulations include in their definition of criteria for eligibility a noise level expressed as $L_{Aeq,18h}$. The Competent Authority has decided, therefore, to use the $L_{Aeq,18h}$ indicator as the basis for identifying Important Areas to be investigated for potential action.

11.05 The Competent Authority undertook an Impact Assessment which considered a number of options for identifying Important Areas, The selected option helps to deliver the vision and aims of the Noise Policy Statement for England.

11.06 It has been decided that the Important Areas with respect to noise from railway sources in this agglomeration will be where the 1% of the population⁵³ that are affected by the highest noise levels from the railway sources mapped in this agglomeration are located according to the results of the strategic noise mapping⁵⁴. This approach has been taken because

⁵¹ SI 2006/2238 Regulations 15 (1) (b)

⁵² SI 2006/2238 Regulations 15 (1) (e)

⁵³ The population is the number of people in this agglomeration who are within the 50 dB(A), $L_{Aeq,18h}$ contour due to noise from the railway sources that have been mapped in this agglomeration.

⁵⁴ In some agglomerations, the noise exposure that corresponds with the top 1% falls below the level of 65 dB LAeq,18h. There is no requirement to investigate those dwellings where the

the population at these locations in this agglomeration are likely to be at the greatest risk of experiencing a significant adverse impact to health and quality of life as a result of their exposure to rail traffic noise.

- 11.07 In addition, those locations where the $L_{Aeq,18h}$ is at least 73 dB according to the results of the strategic noise mapping have been identified as First Priority Locations (“First Priority Locations”). It is envisaged that in general the relevant rail authorities will investigate as a priority the Important Areas that contain First Priority Locations. This threshold value should only be used for the purposes of identifying First Priority Locations for investigation in the context of this Noise Action Plan and should not be used for any other purpose or in any other policy context.
- 11.08 The $L_{Aeq,18h}$ indicator describes only the noise that occurs between the hours of 0600 and 2400 and doesn’t cover the night period. Even so, the identification of Important Areas has been based solely on the $L_{Aeq,18h}$ value. This reflects the fact that for the first round of mapping the L_{night} values had to be based on a range of assumptions that, while perfectly adequate for strategic noise mapping, do not provide a robust basis for developing detailed actions. Furthermore, implementing many of the potential actions available to manage noise issues and effects would not only address the noise as measured by the $L_{Aeq,18h}$ indicator but also the noise that occurs at night.

$L_{Aeq,18h}$ is below 65 dB according to the results of the strategic noise mapping. Furthermore, in some agglomerations there may be an opportunity to investigate beyond the top 1% of the population but, again, there is no requirement to investigate those dwellings where the $L_{Aeq,18h}$ is below 65 dB according to the results of the strategic noise mapping.

Important Areas

11.09 Table 11.1 below shows the approximate number of dwellings and associated population to be investigated for potential action with respect to noise from railway sources in this agglomeration for any relevant local authority⁵⁵ that is wholly or partly within this agglomeration:

Table 11.1
Approximate number of dwellings (and associated population) per local authority to be investigated due to noise from railways in this agglomeration

Local Authority	Number of Dwellings	Associated Population
Brighton & Hove City Council	< 50	< 100
Adur District Council	< 50	< 100
Arun District Council	< 50	< 100
Worthing Borough Council	< 50	< 100
TOTAL	100	200

Note to Table 11.1:

- 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".
- The totals may not appear to add up due to rounding.
- The 1% of the population has been identified based on the resolution available from the strategic noise mapping and in practice will be slightly greater than 1%.
- The figures quoted only relate to that part of the Local Authority area that falls within the agglomeration boundary.

⁵⁵ This information has been provided by Local Authority as a convenient way of describing the geographical distribution of locations. This does not necessarily imply any current or future responsibility for actions.

First Priority Locations

11.10 Table 11.2 below shows the approximate number of dwellings and associated population in this agglomeration that have been identified as First Priority Locations with respect to railway noise for any relevant local authority⁵⁶ that is wholly or partly within this agglomeration:

Table 11.2
Approximate number of dwellings (and associated population) per local authority to be investigated as a first priority due to noise from those railways mapped in this agglomeration (≥ 73 dB $L_{Aeq,18h}$)

Local Authority	Number of Dwellings	Associated Population
TOTAL	0	0

Note to Table 11.2:

- 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 figures quoted only relate to that part of the Local Authority area that falls within the agglomeration boundary
- 11.11 It is envisaged that the relevant rail authorities will investigate as a priority the Important Areas that contain First Priority Locations whilst having regard to any ongoing noise mitigation initiatives, schemes and plans. The relevant rail authorities, however, may use their discretion when deciding on the investigation priority.
- 11.12 For the purposes of noise action planning in England, the relevant rail authorities are the Department for Transport and the Office of Rail Regulation. In developing plans for managing rail related noise, the relevant rail authorities will consult and be advised by a cross-industry group. This group will be facilitated by the Rail Safety and Standards Board ("RSSB") and involve Network Rail, the Association of Train Operating Companies ("ATOC"), train owners, the rail supply industry and passenger and freight operators.

⁵⁶ This information has been provided by Local Authority as a convenient way of describing the geographical distribution of locations. This does not necessarily imply any current or future responsibility for actions.

12. Noise from railway sources in the Brighton agglomeration: noise reduction measures already in force and any projects in preparation

12.01 Section 9 describes in general terms the noise reduction and mitigation measures that are already in use regarding railways in this agglomeration.

12.02 For any particular location, there is a wide range of measures that can be implemented to provide improved management of the railway noise and/or noise reduction. Some of these measures are described below:

Façade insulation

12.03 Securing an appropriate standard of internal acoustic conditions is often achieved by the careful design of the sound insulation provided by the building envelope. This can either occur at the design stage of a new structure or by improving the insulation of an existing building. Where necessary, alternative ventilation is provided so that windows can be kept closed but with ventilation still available.

Noise barriers or other similar methods

12.04 The use of barriers to reduce the propagation of noise from a railway to a sensitive receptor is used, where appropriate.

12.05 The design of the layout of a development is also used such that less sensitive buildings are used as barrier blocks to protect more sensitive structures elsewhere.

Source levels

12.06 Routinely, railhead grinding occurs as part of the general maintenance of the track. Such grinding has been found to reduce the noise emitted from the wheel/railhead interface and, hence, has the benefit of providing noise reduction.

12.07 Other techniques that have been implemented that effectively reduce noise at source include the design of the track mounting system, the use of slab track designs and the replacement of tread brakes by disc brakes on rolling stock.

12.08 In addition, the continued implementation of the TSI standards for new rolling stock will reduce the source noise from rail vehicles.

12.09 For all these potential measures, the overall cost and benefit needs to be considered (e.g. see paragraph 9.07).

13. Noise from railway sources in the Brighton agglomeration: actions which the Competent Authority intends to take in the next five years

- 13.01 The implementation of those parts of this Action Plan concerned with railway noise in this agglomeration will be a continuous process commencing from the adoption of the plan. As required by the Regulations, this Action Plan will be reviewed at least once every five years.
- 13.02 The Competent Authority will liaise with the relevant rail authorities that are responsible for railways that are generating noise at those Important Areas identified in Section 11 above, and these authorities will be provided with information regarding the whereabouts of those locations.
- 13.03 Concurrently, relevant local authorities in whose areas the Important Areas fall that meet the threshold set out in Section 11 above, will be provided with similar information. It is expected that this information would go to the departments with planning and environmental health responsibilities. This will enable the local authorities to participate in the detailed identification of any measures.
- 13.04 The Competent Authority will liaise with the relevant local authorities so that the relevant departments are involved in the process.
- 13.05 The relevant rail authorities will be asked to examine initially the Important Areas containing First Priority Locations and in due course the other Important Areas and form a view about what measures, if any, might be taken in order to assist the management of environmental noise in the context of Government policy on sustainable development. If it is found that identified locations are affected by noise from more than one source of transport noise the relevant authorities will liaise, as necessary, with the assistance of the Competent Authority so that any action identified is the most appropriate.
- 13.06 The Competent Authority will work with the relevant rail authorities to facilitate the carrying out of this task.
- 13.07 The assessment by the relevant rail authorities will be as follows:

Consideration of Possible Actions

- 13.08 For each Important Area, the relevant rail authorities will consider what, if any, actions might be taken. This will include, but not be limited to, exploring the scope for (in no particular order):
- increasing the frequency and nature of railhead grinding and the profiling of rolling stock wheels to reduce the presence of wheel flats on the rail network;

- altering the type of rolling stock that uses the particular rail corridor;
 - changing how traffic is managed (for example, to reduce engine noise from starting and accelerating and braking noise from frequent stopping;
 - greasing rails on tight corners, and activities as part of a normal maintenance regime, and reducing the number of wheel profiles in use on the network to improve the contact conditions at the wheel / rail interface;
 - erecting noise barriers; or
 - improving the sound insulation.
- 13.09 If a certain length of railway is associated with several Important Areas the relevant rail authorities should consider measures that could address the noise issues at all the locations concurrently.
- 13.10 The relevant rail authorities should also take account of any existing plans (e.g. any local transport plans or land-use plans) or any specific noise mitigation schemes that are already in preparation may affect the Important Areas.
- 13.11 For each Important Area, the relevant rail authorities will identify proposed actions that will meet the objective set out in paragraphs 1.04 and 11.03 above, or state why, in their view, no further action can or needs to be taken in order to meet this objective.
- 13.12 In forming their view about possible action, the relevant rail authority should take account of any benefit that might also be achieved for any other noise sensitive premises in the vicinity of the Important Area being investigated. In addition, the relevant rail authority should take account of any impacts that might occur for any other noise sensitive premises or locations. Furthermore, consideration should be given to integrating noise management actions at an Important Area with the concurrent implementation of other environmental or related initiatives.
- 13.13 It is expected that these deliberations will result in four general outcomes:
- a. It is possible to be able to implement and there are financial resources immediately available to do so;
 - b. It is possible to be able to implement but there are no immediately available financial resources to do so;
 - c. It is not possible to implement any action because there is no scope for doing so (e.g. reasonable sound insulation already exists at the affected dwelling, or a noise barrier at its optimum size and location already exists), or there is some overriding technical issue that prevents

implementation (e.g. ground conditions do not allow a barrier to be erected); or

- d. It is not possible to implement any action because there would be large adverse non-acoustics effects that could not be accommodated by the proposed measure. Such non acoustic effects could include an adverse effect on safety, or a significant adverse air pollution impact, or an unacceptable increase in congestion or journey times.

13.14 For each of these outcomes the following action will occur:

13.15 Outcome (a): - It is possible to be able to implement and there are financial resources immediately available to do so

If it is clear that the proposed action will provide the expected benefit, then the relevant rail authorities will determine a timetable for implementation.

13.16 Outcome (b): - It is possible to be able to implement but there are no immediately available financial resources to do so

The relevant rail authorities will make arrangements to secure financial resources to carry out this work in future financial years. This might be achieved by either:

- securing new resources for this work; or
- re-prioritising existing budgets to enable the funds for the action to become available

Once the budget has been secured, the relevant rail authorities will determine a timetable for implementation.

13.17 Outcome (c) - It is not possible to implement any action because there is no scope for doing so or there is some overriding technical issue that prevents implementation

The relevant rail authorities will inform the Competent Authority that this is the case, appropriately justified.

13.18 Outcome (d) - it is not possible to implement any action because there would be large adverse non-acoustics effects that could not be accommodated by the proposed measure

The relevant rail authorities will inform the Competent Authority that this is the case, appropriately justified.

13.19 When an Important Area is affected by noise from a railway which is the responsibility of more than one rail authority, the relevant rail authorities should work together to determine the appropriate action.

Liaison with relevant local authorities

13.20 At appropriate times during the consideration of possible actions, the relevant rail authorities will liaise with the relevant local authorities about progress and, in the end, the outcomes. This liaison should cover

- information about the proposed schedule of investigation of Important Areas; and
- information about the proposed timing of any implementation of possible actions.

13.21 The relevant local authority may separately identify locations that have not currently been identified as Important Areas for possible further noise management actions and request that consideration be given by the relevant rail authorities to including them in the action planning schedule.

13.22 Given that one of the obligations regarding Action Plans for agglomerations is the aim to protect formally identified Quiet Areas in first round agglomerations, the relevant rail authorities will need to consider whether any element of the proposed measures might conflict with the Quiet Area objectives within this Action Plan⁵⁷. In order to avoid any such conflict arising, the relevant rail authorities should liaise with the relevant local authorities and the Competent Authority to agree the best way forward. For further on Quiet Areas, see Part E.

Liaison with the Public

13.23 The relevant rail authorities should, at the appropriate time, liaise with those members of the public who are likely to be most affected by any proposed new noise management proposal.

Reporting and consultation

13.24 The Competent Authority will liaise with the relevant rail authorities to prepare documentation setting out the results of these investigations, including the timetable for any proposed actions. The Competent Authority in conjunction with the relevant rail authorities will consult with the relevant local authorities and any other relevant stakeholders on these results.

⁵⁷ The protection of Quiet Areas in an agglomeration should not automatically take precedence over the protection of quiet open spaces (and other areas where environmental noise quality is good) outside an agglomeration.

13.25 The Competent Authority will liaise with the relevant rail authorities and consider the responses to that consultation and with the rail authorities make any alterations to the proposals as they see fit.

13.26 The Competent Authority will liaise with the relevant rail authorities to finalise the documentation described in paragraph 13.24 including information about the consultation described in paragraph 13.24.

Implementation

13.27 Regulation 21 of the Regulations states that any actions identified during this process are regarded as forming part of the policy of the relevant rail authorities, and hence need to be implemented as indicated.

Timetable

13.28 The outline timetable for this process is shown in Table 13.1:

**Table 13.1
Outline Timetable**

Action	Date
Competent Authority identifies Important Areas (IAs)	2009/2010
Competent Authority liaises with relevant rail authorities	April 2010
Competent Authority issues guidance regarding the process for investigating IAs	July 2010
Relevant rail authorities investigate IAs (giving priority to those containing FPLs)	April 2010 – October 2011
Relevant rail authorities implement any actions or secure budget for actions	April 2011 onwards
Relevant rail authorities investigate remaining IAs and implement any actions or secure budget for actions	April 2012 onwards
Competent Authority undertakes second round of noise mapping	During 2012

13.29 The flowchart for this process can be found in Appendix C3.

14 Noise from railway sources in the Brighton agglomeration: long term strategy

- 14.01 Managing the impact of noise generated by the railways will require action by both the infrastructure provider – Network Rail – and train operators. However, any such action has to be considered within the wider rail planning, regulatory and franchising framework. The Competent Authority will work with the Department for Transport and relevant rail authorities to establish a clear framework of responsibility so that noise from railways is properly managed in the context of Government policy on sustainable development and that the process is clearly understood by the public.
- 14.02 The Competent Authority recognises the need for a robust and reliable system of data collection, management and control is needed to enable the strategic noise mapping to take fully into account all the input variables that affect the resulting noise levels generated. Consequently, the Competent Authority will liaise with the relevant bodies to improve data quality and coverage for future railway noise mapping.
- 14.03 The Competent Authority has recognised that it was possible in the current round of noise mapping to gain no more than an indication of the night noise impact from railways. In connection with the undertaking in the paragraph above, the Competent Authority will liaise with the relevant rail authorities to secure robust data regarding traffic flow and associated information for the night period (23.00 – 07.00). This will enable a greater focus to be made on the management of night time railway noise given the increasing emphasis being put on the effects of night noise by the World Health Organisation.
- 14.04 The Competent Authority will continue to engage pro-actively with the European Commission and other relevant organisations on initiatives that seek to reduce the noise from railways at source and with the development of measures that are designed in general to manage the impact of noise from railways.
- 14.05 The Competent Authority will encourage future land use planning policies at a national, regional and local level to reflect the processes set out in this Action Plan.
- 14.06 The Competent Authority will liaise with relevant national and local policy making bodies to encourage proper consideration of noise management issues in policy development. Furthermore, the Competent Authority will work with relevant Government departments to put forward proposals, where necessary, for relevant legislative or other regulatory changes to enable the identified actions to proceed (e.g. altering the scope and application of the Noise Insulation Regulations).
- 14.07 The Competent Authority will liaise with Network Rail, the Department for Transport and relevant rail authorities to explore the extent to which the

current complaint system operated by Network Rail does provide a robust and easily accessible complaints handling system for railway noise issues.

- 14.08 The Competent Authority will check that the detailed noise actions identified by the relevant rail authorities recognise wider national and local government policy objectives.
- 14.09 The Competent Authority will continue to encourage research into improved building envelope sound insulation and related ventilation issues.
- 14.10 The Competent Authority will liaise with the Department for Transport to explore a range of issues including:
- the current overall community response to railway noise, including whether or not further survey work required;
 - the importance and relevance to people of the potentially quiet gaps between train movements;
 - the role that sound from railways might play as a feature of soundscape.
- 14.11 The Competent Authority will consider and evaluate the implications of moving towards a greater use of the L_{den} indicator in general as a means of understanding the effects of noise from railways.
- 14.12 The Competent Authority will keep under review the definition of Important Areas used in this Action Plan.
- 14.13 The Competent Authority will develop, agree and disseminate good practice approaches and methodologies through the Interdepartmental Group on Costs and Benefits noise subject group (IGCB(N)) to support the policy appraisal of noise. Further information is available from www.defra.gov.uk/evidence/economics/igcb.
- 14.14 The Competent Authority will keep under review the issues raised in this Section and will publish a progress report in 2012.

Part D

Noise from Industry

15 Noise from industrial sources in the Brighton agglomeration: current approach to noise management

15.01 Noise from industrial sources is currently managed through three parallel and complimentary regimes. These are:

- development Control through land use planning;
- control through the Environmental Permitting Regulation process; and
- control through the use of Statutory Nuisance legislation.

Noise from industrial sources in the Brighton agglomeration: summary of the results of the noise mapping, including an evaluation of the estimated number of people exposed to noise

15.02 The Regulations required that noise level information from industrial sources be determined in terms of several noise indicators. These included:

- L_{den} ; and
- L_{night} .⁵⁸

15.03 The estimated number of people and dwellings exposed above various noise levels from the strategic mapping of industrial noise in each agglomeration are available on the interactive maps and charts page of the Defra Noise Mapping England website (<http://www.defra.gov.uk/noisemapping>).

15.04 When inspecting these results, it is very important to bear in mind the limitations of the strategic noise mapping methodology that was followed in order to meet the requirement of the Regulations. Consequently, the results should be treated with caution.

⁵⁸ The Environmental Noise (England) Regulations 2006, Regulation 4 (2) and Schedule 3 (5)

Noise from industrial sources in the Brighton agglomeration: identification of problems and situations that need to be investigated

15.05 It is considered that the existing noise management regime as outlined in 15.01 above provides suitable mechanisms for the proactive and reactive management of noise issues from the industrial sources mapped in this agglomeration.

Noise from industrial sources in the Brighton agglomeration: actions which the Competent Authority intends to take

15.06 It is proposed that the existing noise management regime should continue and no new specific initiatives are to be adopted regarding the management of noise from industrial sources mapped in this agglomeration.

Noise from industrial sources in the Brighton agglomeration: long term strategy

15.07 The Competent Authority will encourage the relevant authorities to review current policy and practice for the management of noise from industrial sources. This would include:

- the procedures for responding to complaints; and
- the arrangements for liaison between the planning and environmental health functions of local authorities and the Environment Agency regarding the noise management of current and new industrial development.

15.08 The Competent Authority will continue to liaise with the Department for Communities and Local Government to consider the need for further guidance on the management of noise from industrial sites within any future revision of PPG24: Planning & Noise.

15.09 The Competent Authority will liaise with BSI to explore whether there is a need for a revision of BS4142: Method for rating industrial noise affecting mixed residential and industrial areas.

15.10 The Competent Authority will continue to monitor community response to noise from industrial sources.

15.11 The Competent Authority will continue to engage pro-actively with the European Commission regarding any review of procedures and requirements concerning the future of industrial noise mapping.

15.12 The Competent Authority will review the issues raised in this Section when the second round of action planning occurs in 2012/2013.

Part E

Quiet Areas

16 Quiet Areas – Brighton Agglomeration

16.01 The Regulations⁵⁹ require that Action Plans for agglomerations include provisions that aim to protect any formally identified Quiet Areas in the agglomeration from an increase in noise⁶⁰.

Identification of Quiet Areas

16.02 The Competent Authority will liaise with local authorities in this agglomeration to obtain information on the open spaces within each local authority and then form a view with them regarding which of these open spaces should attract particular attention taking account of the results of the strategic noise mapping. A list of those local authorities wholly or partly within this agglomeration is included at Appendix B.

16.03 The Competent Authority following consultation with the local authorities in this agglomeration will determine whether any of the open spaces should be formally identified⁶¹ as Quiet Areas. The Competent Authority will publish the identified Quiet Areas in an appropriate form.

16.04 The Competent Authority will only formally identify as Quiet Areas those open spaces which provide significant and important benefits because they are quiet. It is expected that such open spaces will already be regarded as special and that they may already be managed to sustain their quietness. The Competent Authority will consider identifying as a Quiet Area part of an open space as long as it meets the requirements.

16.05 The process through which Quiet Areas are formally identified by the Competent Authority will include consultation with local authorities in this agglomeration and consideration of the key attributes of the open spaces proposed for formal identification. Good practice in open space planning^{62,63} underlines the importance of understanding the key attributes of open spaces, including their multi-functionality. The Competent Authority will pay particular attention to areas where the primary purpose is quiet and how quiet contributes to the overall quality of the open space in its locality.

16.06 The Competent Authority does not intend to set noise thresholds to steer the consideration of proposed Quiet Areas by local authorities within this agglomeration.

⁵⁹ The Environmental Noise (England) Regulations 2006 as amended, Regulation 13 (1) and Regulation 15 (1) (c)

⁶⁰ In this context noise refers only to noise arising from those sources covered by the Environmental Noise Directive

⁶¹ The Environmental Noise (England) Regulations 2006 as amended, Regulation 13 (1)

⁶² Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation (2002) or any successor to it.

⁶³ Assessing needs and opportunities: a companion guide to PPG17 (2002) or any successor to it.

16.07 Pilot and research studies have been undertaken during 2009-10 in order to obtain a better understanding of the issues that may arise.

Management of Quiet Areas

16.08 The Government recognises that open spaces contribute to the quality of urban life. Good management of open spaces, including well designed and implemented planning policies for open space are therefore fundamental to delivering broader Government objectives.

16.09 Through the process described above the status of some of the open spaces in this agglomeration will be enhanced by being formally identified as Quiet Areas. Local authorities will then be expected to adopt policies to manage the local noise environment so as to protect the quietness of these open spaces and avoid increases in noise from those sources of noise covered by this Action Plan. This will include reviewing their approach to the management of the open spaces concerned in the course of the normal development and implementation of their open space policies.

16.10 Local approaches to the management of Quiet Areas should be integrated with wider policies for securing Government policy on sustainable development. The aim should be to realise the benefits of Quiet Areas and their contribution to the quality of life in this agglomeration in ways consistent with meeting community needs for affordable homes, jobs and regeneration. The Competent Authority will liaise with the local authorities to determine how this is best achieved. Any noise thresholds set for the management of individual Quiet Areas will be determined by the Competent Authority in consultation with the relevant local authority.

16.11 In developing policies, local authorities should also have regard to the presence of Quiet Areas in adjacent authorities within this agglomeration, including quiet open spaces on the urban fringe.

Timetable

16.12 The outline timetable for this process is shown in Table 16.1:

Table 16.1
Outline Timetable

Action	Date
Competent Authority liaises with local authorities	2009 / 2010
Competent Authority issues guidance regarding the formal identification of Quiet Areas and their subsequent management	July 2010
Opportunity for Local Authorities to decide whether to apply for certain open spaces to be formally identified as Quiet Areas	July 2010 – April 2011
Competent Authority determines whether or not formally to identify certain open spaces as Quiet Areas	April - June 2011
Formally identified Quiet Areas published	By end of June 2011
Further opportunity for Local Authorities to decide whether to apply for certain open spaces to be formally identified as Quiet Areas	April 2011 – March 2012
Competent Authority determines whether or not formally to identify these additional open spaces as Quiet Areas	April – June 2012
Additional formally identified Quiet Areas published	By end of June 2012
Competent Authority undertakes second round of noise mapping	During 2012

16.13 The flowchart for this process can be found in Appendix C4.

Long term strategy for the management of Quiet Areas

- 16.14 The Competent Authority will publish guidance regarding the identification of Quiet Areas in agglomerations to assist the relevant bodies.
- 16.15 The Competent Authority will support research to understand the importance of relatively quiet open spaces that may not be regarded as quiet in absolute terms but which may nevertheless provide an important local resource.
- 16.16 The Competent Authority will keep under review any possible refinement to the noise mapping exercise that would strengthen the contribution of the strategic noise maps in the identification of Quiet Areas.
- 16.17 The Competent Authority will continue to search for opportunities to integrate further the management of quiet into open space, biodiversity and climate change mitigation and adaptation policies and the green infrastructure agenda.

Part F

Noise from Aircraft

17 The management of the impact of aircraft noise in the Brighton agglomeration

- 17.01 This agglomeration is affected by noise from the operations at Shoreham (Brighton City) Airport. According to the requirements set out in the Environmental Noise (England) Regulations 2006 (as amended) (the Regulations), noise mapping must be undertaken and a noise action plan must be developed for this airport.
- 17.02 According to the Regulations, the Airport Operator is the Competent Authority for making the noise maps and developing the action plan for this airport.
- 17.03 The Regulations require that noise level information from aircraft (air noise)⁶⁴ be determined in terms of several noise indicators. These include:
- L_{den} ; and
 - L_{night} .⁶⁵
- 17.04 The estimated total number of people and dwellings exposed above various noise levels from the strategic mapping of noise from aircraft using this airport are available on the interactive maps and charts page of the Defra Noise Mapping England website (<http://www.defra.gov.uk/noisemapping>).
(When inspecting these results it should be noted that not all the people and dwellings shown on the charts necessarily live in this agglomeration because the aircraft noise contours may extend outside the agglomeration boundary).
- 17.05 A draft noise action plan has been developed by the operator of Shoreham (Brighton City) Airport and was published for consultation.
- 17.06 The Airport Operator has reviewed the comments received and has submitted the final draft noise action plan to the Secretary of State for Transport for review and ultimately for adoption by the Secretary of State for Environment, Food and Rural Affairs.

⁶⁴ The Regulations require that only air noise be mapped, that is the noise from the moment that the aircraft is about to move down the runway at take-off (known as start of roll) to the moment after landing and just before it turns off the runway to taxi to the stand.

⁶⁵ The Environmental Noise (England) Regulations 2006, Regulation 4 (2) and Schedule 3 (2)

Noise from aircraft in the Brighton agglomeration: identification of problems and situations that need to be investigated

17.07 Once adopted, the noise action plan for Shoreham (Brighton City) Airport can be found at

<http://www.shorehamairport.co.uk/>

Noise from aircraft in the Brighton agglomeration: actions which the Competent Authority intends to take

17.08 The Secretary of State for Environment, Food and Rural Affairs (SoS Defra) as the Competent Authority responsible for preparing this agglomeration action plan will take account of the interaction between the relevant airport operator and the relevant local authorities and will satisfy himself that the proposed draft noise action plan for the airport takes into account the impact of the aircraft noise from that airport on those living within the agglomeration.

17.09 Furthermore, SoS Defra will continue to liaise with the relevant airport operator and relevant local authorities to seek to avoid any actions proposed by the airport operator from compromising the aim to protect formally identified Quiet Areas in this agglomeration (see Section 16). This reflects the requirement on airport operators to liaise with SoS Defra to agree the best way forward regarding this issue.

17.10 It is intended that any unresolved conflicts between the Airport Action Plan and this Action Plan will be addressed during the implementation of the plans.

Noise from aircraft in the Brighton agglomeration: long term strategy

17.11 SoS Defra will encourage any development of future policy on aviation and sustainable transport to reflect any emerging scientific knowledge or trends in community response to noise from aircraft.

17.12 SoS Defra will continue to liaise with the Department for Transport regarding the establishment of reliable data on the community response to noise from aircraft.

17.13 SoS Defra, in liaison with the Department for Transport, will monitor the implementation of the Noise Action Plan for Shoreham (Brighton City) Airport.

17.14 The Competent Authority will develop, agree and disseminate good practice approaches and methodologies through the Interdepartmental Group on Costs and Benefits noise subject group (IGCB(N)) to support the policy appraisal of noise. Further information is available from www.defra.gov.uk/evidence/economics/igcb.

Part G

Consultation

18. Consultation

Informal consultation

18.01 During the development of this Action Plan, the Competent Authority held informal discussions with various stakeholders including:

- The Highways Agency;
- The Railway Forum;
- Airport Operators;
- The Department for Transport;
- The Department of Communities and Local Government;
- Various individual local authorities;
- The Local Authorities Co-ordinators of Regulatory Services (LACORS); and
- Environmental Protection UK

Formal public consultation

18.02 The formal public consultation on this document commenced on 15 July 2009 and closed on the 4 November 2009.

18.03 The consultation package consisted of a draft noise action plan agglomeration template along with a supporting document which contained statistics regarding the noise impact in this agglomeration and an indication of the numbers of people likely to be affected by the implementation of this action plan.

18.04 During September 2009, the Competent Authority held Stakeholder workshops at five different locations across the country. The purpose of these workshops was to engage with stakeholders, to provide them with information on the proposed action planning process and for them to communicate their initial views. Stakeholders were encouraged to provide feedback and respond to the consultation.

18.05 A total of 137 responses were received from local authorities, professional bodies, industry, NGOs and private individuals. The various responses were reviewed and amendments have been made to this action plan where appropriate. A document has been published summarising the responses to this consultation. It can be found at:
<http://www.defra.gov.uk/corporate/consult/noise-action-plan/index.htm> .

Appendices

Appendix A

Glossary of acoustic and technical terms

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
First Round Agglomeration	An agglomeration but having a population in excess of 250,000 persons. A schedule of first round agglomerations can be found in Schedule 1 of SI 2007/415 ⁶⁶
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 10 dB(A) (for strategic noise mapping this is an annual average)
L _{Aeq,18h}	The L _{Aeq} over the period 0600 – 2400, local time (for strategic noise mapping this is an annual average)
L _{Aeq,6h}	The L _{Aeq} over the period 0000 – 0600, local time (for strategic noise mapping this is an annual average)
L _{A10,18h}	The noise level exceeded for 10% of the time averaged hourly over the period 0600-2400.

⁶⁶ SI 2007 No 415 – The Environmental Noise (Identification of Noise Sources) (England) Regulations 2007

Appendix B

List of Local Authorities wholly or partly within this agglomeration

Adur District Council

Arun District Council

Brighton & Hove City Council

Lewes District Council

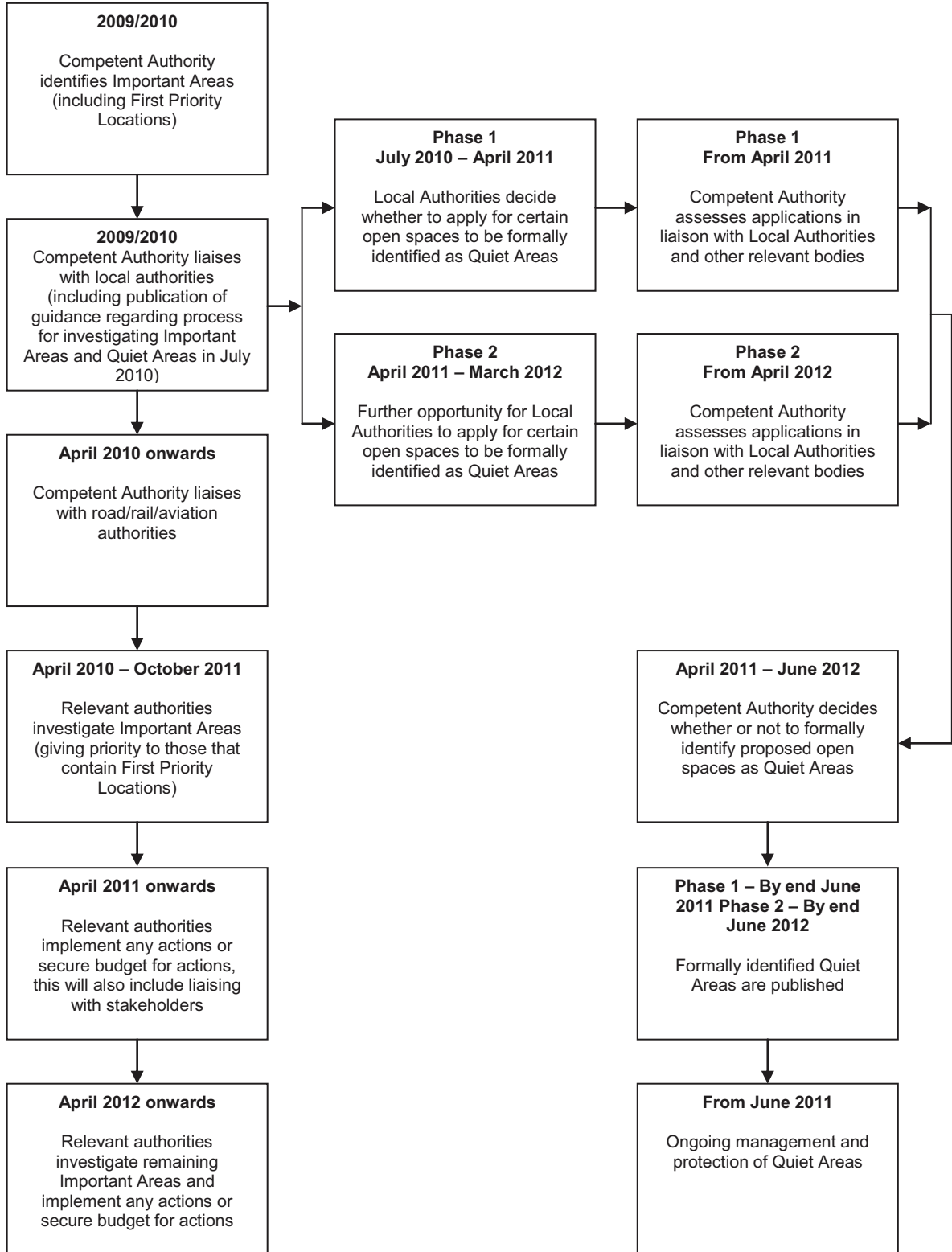
Worthing Borough Council

Appendix C Process Flow Diagrams

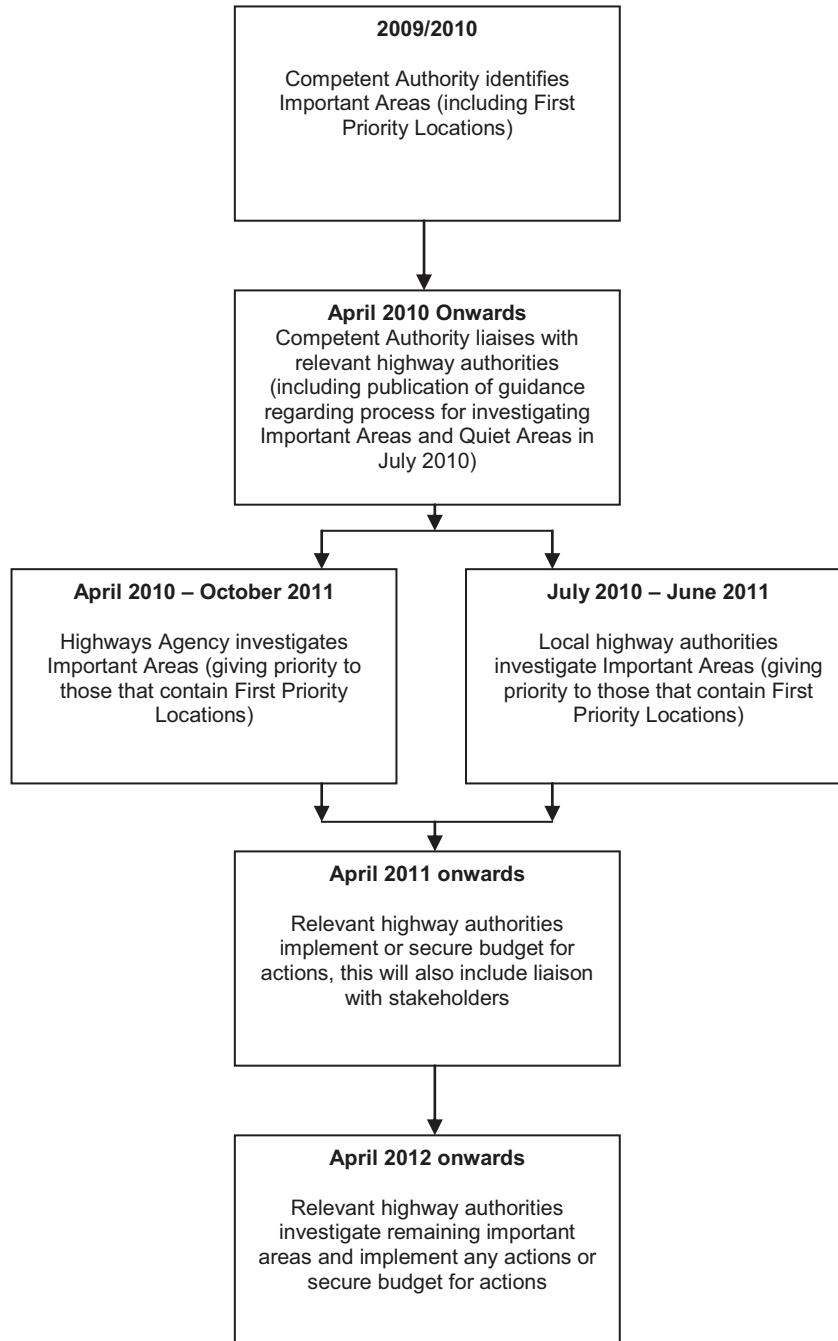
C1	General Process
C2	Process for Roads
C3	Process for Railways
C4	Process for Quiet Areas

Note: These flow charts provide an overview of the envisaged process. Please consult the text of this Noise Action Plan for a full description of the process.

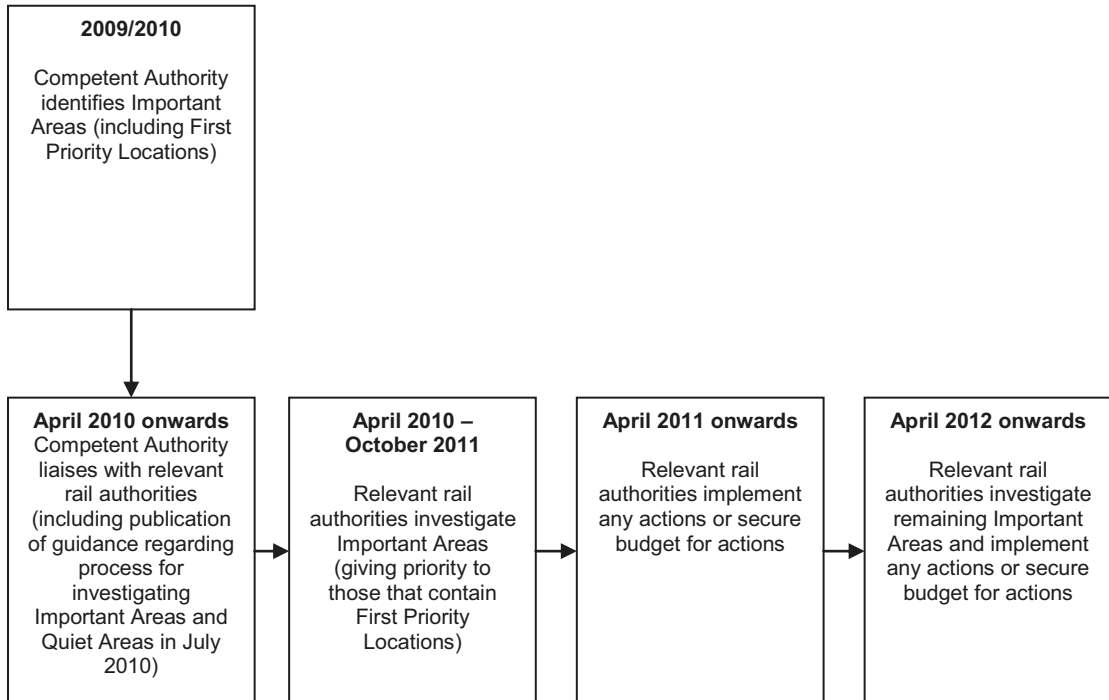
C1 – Flow Diagram of the General Action Planning Process



C2 – Flow Diagram of the Action Planning Process for Roads



C3 – Flow Diagram of the Action Planning Process for Railways



C4 – Flow Diagram of the Action Planning Process for Quiet Areas

