

Aberdeen Agglomeration

Noise Action Plan

ABERDEEN AGGLOMERATION

NOISE ACTION PLAN

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1. Introduction

The European Parliament and Council Directive for Assessment and Management of Environmental Noise 2002/49/EC, more commonly referred to as the 'European Noise Directive' hereinafter referred to as END was adopted in 2004 and requires Member States to bring about measures "*intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise*".

The existence of the legislation and the work to produce and deliver the strategic noise maps and associated action plans reflects that noise can have a significant effect on the quality of life for communities and individuals. As such this work delivers a number of benefits for communities and individuals, the perception of Scotland as a place to visit and do business; we live in well designed, sustainable places where we are able to access the amenities and services we need. This helps support the Government's purpose of delivering sustainable economic growth.

The Directive was transposed into Scottish legislation with the Environmental Noise (Scotland) Regulations 2006. These regulations set out two key tasks for managing environmental noise:

- Production of strategic noise maps for major roads, rail, airports and industry; and
- Development of Noise Action Plans (NAPs) to manage noise.

The city of Aberdeen and parts of neighbouring Local Authorities falls within the definition of 'agglomeration' as given in the END. (The Directive defines 'agglomerations' as urbanised areas with a population exceeding 100,000). It is a requirement of the Directive that noise exposure levels are mapped and managed within agglomeration boundaries and that certain information is made available to the public.

Aberdeen is one of four agglomerations in Scotland (together with Dundee, Edinburgh and Glasgow) This action plan for Aberdeen is therefore intended to form part of the Scottish Government's response to the requirements of the Environmental Noise Directive.

The Scottish Government is committed to understanding and managing environmental impacts. The Scottish Government acknowledge that noise can be distressing; affects our quality of life; and can impact on our health and environment. Attitudes to noise are changing and it has been suggested that people are becoming less tolerant of their noise environment. The assessment of noise and noise annoyance is a complex process and different noise sources affect people in different ways. Whilst the WHO (2011)¹ concluded that there is sufficient

¹WHO defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. [See WHO \(2011\) Burden of disease from environmental noise: Quantification of healthy life years lost in Europe.](#)

evidence from large-scale epidemiological studies linking the population's exposure to environmental noise with adverse health effects at specific health end points, others suggest such effects may occur only in a susceptible minority of the population. The issue of health effects and noise is an ongoing area of research. Recent research suggests that annoyance and sleep disturbance may be the most significant impacts of noise.

2. Scope of the Noise Action Plan

1.1 What it includes

This Aberdeen Agglomeration Noise Action Plan is one of a set of Noise Action Plans. The Scottish Noise Action Plans describe how the Scottish Government and its partners will deliver their obligations under the Environmental Noise Directive (END). Other areas for which Noise Action Plans are being developed are;

- The Dundee Agglomeration Noise Action Plan
- The Edinburgh Agglomeration Noise Action Plan
- The Glasgow Agglomeration Noise Action Plan
- The Transportation Noise Action Plan
- The Aberdeen Airport Noise Action Plan
- The Edinburgh Airport Noise Action Plan
- The Glasgow Airport Noise Action Plan

1.2 Definition of 'Environmental Noise'

For the purposes of the Directive, the definition of 'environmental noise' is given as "unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity.



It should be noted that the END does not apply to noise that is caused by the person exposed to the noise, noise from domestic activities, noise created by neighbours, noise at work places, or noise inside means of transport or due to military activities in military areas.

1.3 Industrial noise

No attempt has been made to address industrial noise as part of the action planning process other than what is set out below. This is because this type of noise is at present adequately provided for in the Scottish legislative framework for the control of noise from industrial sources.

Industrial noise for Part A process (as defined within the Pollution Prevention and Control (Scotland) Regulations 2000) is controlled through The Pollution Prevention and Control (Scotland) Regulations 2000 (the PPC Regulations). These regulations designate the Scottish Environment Protection Agency (SEPA) as the 'Regulator' responsible for enforcing the regime. As part of its role as regulator, SEPA produces guidance for use in enforcing the PPC Regulations. SEPA has produced guidance on the control of noise at PPC installations, which will be used when considering applications for, and inspections of PPC installations. For non Part A processes the control of noise is exercised by the relevant local authority under the Statutory Nuisance regime under the Environmental Protection Act 1990.

In view of this and following consultation with SEPA and the local authorities it was agreed that industrial noise sources and/or areas would not be included in the action planning process other than at the request of the regulatory authority.

1.4 Strategic Noise Mapping and Action Planning

Strategic noise maps² for END Round 2 (for 2012) were produced on behalf of the Scottish Government and for the agglomerations by AECOM consultants. The selection criteria for the determination of which noise sources should be mapped is outlined in Table 1.

Utilising the latest available data, population exposure levels derived from the maps were submitted by the Scottish Government to Europe on the 20 December 2012. Noise maps were produced by a computer based prediction methodology and can be found on the Scottish Noise Mapping website at www.scottishnoisemapping.org.

Stage of END	Round 1 of END	Round 2 of END
Major roads	> 6,000,000 vehicle passages per year	> 3,000,000 vehicle passages per year
Railways	> 60,000 train passages per year	> 30,000 train passages per year
Agglomerations	> 250,000 population	> 100,000 population
Airports*	> 50,000 air traffic movements per year and airports within agglomerations	> 50,000 air traffic movements per year and airports within agglomerations

Table 1 – Differences between Round 1 and Round 2 of the END with respect to transportation. Note that Airport transportation noise is covered in a specific Airports Noise Action Plan. Round 2 will cover corridors across the Scottish Trunk Road Network³, Rail Network⁴ and local authority networks⁵

² END required competent authorities to draw up "strategic noise maps" for major roads, railways, airports and agglomerations, using harmonised noise indicators L_{den} (day-evening-night equivalent level) and L_{night} (night equivalent level).

³ Scotland's trunk road network covers a distance of 3,500 kilometres with 1,900 bridges and 3,700 other structures.

1.5 Aberdeen Agglomeration Population Exposure

Based on the results of the noise mapping process, Tables 2a and 2b show the estimated number of people exposed to noise for Round 1 mapping. Aberdeen was not modelled as part of END Round 1 mapping.

	L _{den} (dB)			L _{night} (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 2	63900	13000	0	54400	4700	0

Table 2a – Population exposure from roads within the Aberdeen agglomeration as mapped for END

	L _{den} (dB)			L _{night} (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 2	7700	1900	200	2100	500	0

Table 2b – Population exposure from rail within Aberdeen agglomeration as mapped for END

As the published noise contours give a strategic level representation of the modelled noise climate for the areas mapped in Scotland, the resulting Action Plans are also strategic in nature, and comply with the requirements of END Annex 5. The noise maps cannot be used to determine the noise level at any specific property. With this point in mind, it is essential to note the following points:

- A noise map is analogous to a weather map in that it maps strategic noise levels in terms of coloured contour bands at 5dB noise contour bands.
- The strategic noise levels show annual average noise levels.
- The noise contours are not receptor-specific levels experienced on the ground. Rather, the noise levels are calculated on the basis of a 10m grid at a height of 4m above ground level. They do not represent levels at ground, or typical human ear level.

Initial analysis of the noise maps for road and rail sources, using the Prioritisation Matrix (see Section 5), provides a focus for deriving actions to reduce noise by identifying Candidate Noise Management Area (CNMA) (as described in Section 5). The CNMAs may subsequently progress into a Noise Management Area (NMA) status (as described in Section 5). During the time period between 2013 and 2018, the NMAs have been/will be a primary consideration when formulating

⁴ Scotland's rail network comprises 2,729 kilometres of railway - 23% electrified - with 344 stations leased by First ScotRail and 4 others operated by Network Rail (Glasgow Central and Edinburgh Waverley), GNER (Dunbar), or a private company (Prestwick International Airport). Two thirds of rail passenger journeys were supported by the west of Scotland commuter network, and one third were elsewhere in Scotland.

⁵ Local authorities manage and maintain local roads, which comprise approximately 94% of Scotland's roads (around 56,000km).

environmental noise management actions/policy following the actions listed in this Aberdeen Noise Action Plan (in line with PAN 1/2011).

The prioritisation process follows the Technical Guidance published by the Scottish Government during END Round 1⁶.

⁶ http://www.scottishnoisemapping.org/public/action-planning_END_1.aspx

3. Context – Legislation and Policy

The END was transposed into the Environmental Noise (Scotland) Regulations 2006 (see Section 1 of this Action Plan). The definitions used as part of the noise mapping process are evident in the Scottish regulations. A useful summary of the regulatory framework is available in the Scottish Governments Draft Guidance on Noise Action Planning⁷.

The action planning process for the first round of noise mapping resulted in the publication of a new planning advice note in Scotland (PAN 1/2011⁸ and the accompanying TAN). This planning advice note aims to ensure that Noise Management Areas (NMA) and Quiet Areas (QAs) (see Section 5) are now an acknowledged part of the baseline for management of environmental noise and should be included as a material planning consideration.

⁷ <http://www.scotland.gov.uk/Publications/2007/08/24141743/0>

⁸ <http://www.scotland.gov.uk/Publications/2011/02/28153945/0>

4. Governance of Noise Action Planning

1.6 Competent Authority

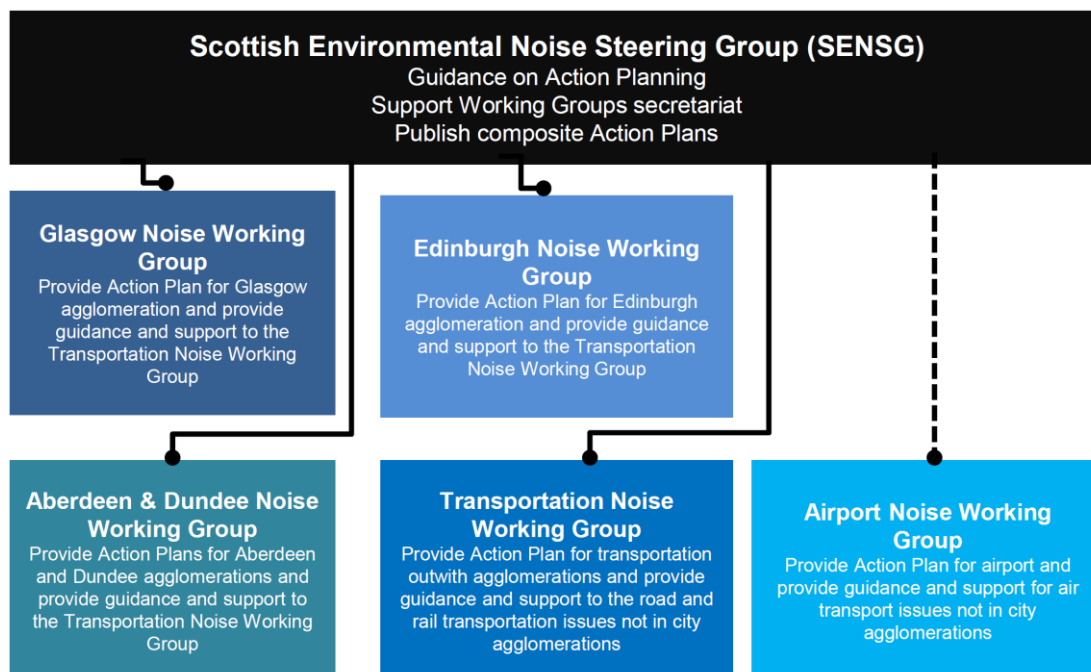
The Scottish Government is the Competent Authority for END in Scotland.

1.7 Scottish Environmental Noise Steering Group (SENSG)

Delivery of the END Directive objectives in Scotland has been achieved through extensive partnership working. Scottish Government has assumed responsibility for co-ordination of the noise mapping and action planning exercises but this has been heavily supported by individual working groups dealing with each of the agglomerations, major airports and other transport systems. These working groups have benefited from a multi disciplinary membership including Local Authorities, other agencies and key partners.

The Scottish Environmental Noise Steering Group (SENSG) comprises representation from organisations with varying responsibility for environmental noise, namely the Scottish Government, AECOM, Local Authorities, SEPA, Transport Scotland and airport operators. SENSG provides a forum for discussion on progression of the Noise Action Planning progression, with the governance arrangement shown in Figure 1.

Figure 1: END Governance Arrangements in Scotland



1.8 Aberdeen Agglomeration Noise Working Group

Production of the Aberdeen Noise Action Plan was overseen by the Aberdeen Noise Working Group (under the auspice of SENSG) and comprised Aberdeen City Council (chair), Aberdeenshire Council and AECOM. The principle objective of the Aberdeen Noise Working Group was to comply with END and the Scottish Regulations in order to 'produce an Aberdeen Noise Action Plan containing clear tangible actions via collaboration and partnering'.

5. Identification of Management Areas

1.9 Need to identify Management Areas

Production of the strategic noise maps is only the first step in the process of the management of environmental noise. The Directive is clear that Member States should aim to “*avoid, prevent or reduce **on a prioritised basis** the harmful effects, including annoyance, due to exposure to environmental noise*”. In Scotland, specific steps have been taken in order to use the noise maps as a basis for identifying and focusing on those areas where people are most likely to be annoyed by noise. These are referred to as Noise Management Areas (NMAs). It is such areas that are largely intended to form the basis of associated Action Plans. The process of agreeing NMAs involves various steps including provisional assignment as a Candidate Noise Management Area (CNMA).

The Directive is also clear that Member States should aim to identify and preserve its Quiet Areas. Hence a similar process is followed whereby noise mapping can be used to identify Candidate Quiet Areas with a subsequent process leading to agreement of actual Quiet Areas.

1.10 Process of Identification of Noise Management and Quiet Areas – Prioritisation Matrix

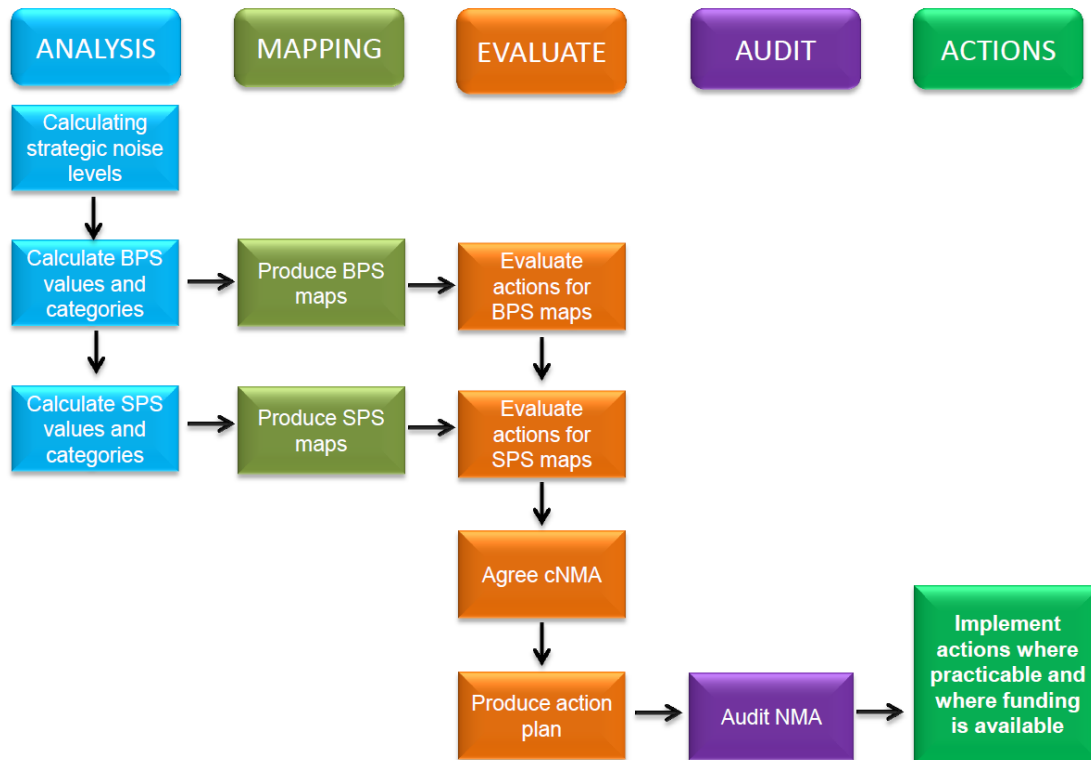
There are no noise limits values or noise thresholds in place in Scotland as it is recognised that analysing the noise contours alone will not necessarily identify areas suffering from the greatest noise impact. In order to gain a better understanding of the potential noise impacts it is helpful to identify those areas where high population density comes together with high levels of noise. The means of achieving this has emerged using a specially developed prioritisation matrix which operates by assigning a numerical value to buildings and road/rail segments within the relevant areas.⁹

The objective of the prioritisation matrix is to identify areas where people living within these areas are most likely to be annoyed by noise from either road or railway traffic noise sources. The identification of such areas has been based on a scoring system which takes into account the number of people potentially affected, and the annoyance response to the particular noise source under consideration (either rail or road).

From initial analysis of the noise maps, the prioritisation process is a method of determining ‘Candidate Noise Management Areas’ (CNMAs) and thereafter ‘Noise Management Areas’ (NMAs). Figure 2 outlines the step-by-step journey of the prioritisation process.

⁹ It is important to note that at this stage in the Action Planning process it has been decided by the Scottish Government Working Groups, through consultation with SEPA and the relevant local authorities, that an industrial noise source or an area affected by industrial noise should not be included in the prioritisation matrix and that any prioritisation, or noise intervention, of such industrial areas/sources should be at the request of the regulatory authority.

Figure 2 Step by step stages of the Prioritisation Process. BPS = Building Prioritisation Score; SPS = Source Prioritisation Score (see below for more detail).



A prioritisation matrix is generated from a computer based model, where each building is assigned a Building Prioritisation Score (BPS), which takes into account the predicted road and rail noise levels, in conjunction with the number of people potentially affected and the annoyance response of that exposed population relative to the transportation noise source in question. A Source Prioritisation Score (SPS) is then determined by first segmenting the road or rail corridors into 100m sections. Each road/rail segment is then given a unique ID and for each building with a noise level greater than or equal to $L_{den} 55dB$ the ID of the road/rail segment that is closest to it is assigned to that building. The logarithmic sum of BPS values for all buildings with the same nearest road/rail segment ID is then assigned to the relevant road segment to give the Source Prioritisation Score for that road/rail segment.

All SPS values are ranked, where the top 1% of SPSs (normally distributed) corresponded to the mean SPS plus two standard deviations to identify the highest three 1% bands of the SPS scores across the road and railway network. These are subsequently referred to as Candidate Noise Management Areas (CNMAs). Determination of a CNMA is simply a means of highlighting that a geographical area should be considered further in terms of a potential need for noise management. It may be that following further analysis, the area will be disregarded entirely or extended or reduced. Ultimately, the decision about whether or not a CNMA is eventually assigned full Noise Management Area (NMA) status is dependent on a series of steps during which various assessments and

considerations are taken into account. These are outlined in separate Technical Guidance¹⁰.

The areas with CNMA status within the Aberdeen agglomeration are shown in Appendix 1. The CNMA to NMA review process will, amongst other steps, verify the noise model findings and assumptions in comparison to physical features which are evident on the transport network. The assigning of Noise Management Areas and subsequent appraisal, planning, and prioritisation of potential mitigation measures in the NMAs form a core part of the Action Planning Process.

It is estimated that within the Aberdeen agglomeration a minimum of 4100 people are housed within the road CNMA approximate areas and a minimum of 600 people are housed within the rail CNMA approximate areas.

1.11 Identification of Candidate Quiet Areas

The END recognises the importance of the preservation of existing quiet areas. Access to quiet areas and peaceful soundscapes is generally known to bring about a range of benefits to human health and well being.^{11 12} 'Quiet Areas' are not specifically defined in the Directive, rather they are recognised as areas to be determined by the Member State and which are subject to noise falling beneath a limit value set by the Member State.



With that in mind, a study by the Transport and Research Laboratory (TRL)¹³ was used as a basis for identification of 'Quiet Areas' in Scotland. It was decided by SENSG that Quiet Areas should be defined as areas which are a minimum of 9 hectares and in which at least 75% of the area is subject to noise levels not exceeding $< 55 \text{ dB L}_{\text{day}}$. In addition, for the second round of mapping SENSG decided that any local authority within an agglomeration

boundary can, with good and justifiable reasons, request that an area be classified as a Quiet Area.

In addition to identifying candidate noise management areas (described above), the strategic noise mapping exercise can also be used to identify Candidate Quiet Areas (CQAs). As with the CNMA process, there are a series of steps to be taken to determine which of the CQAs will fully progress to actual Quiet Area status. This is covered in separate Technical Guidance¹⁴. The areas with CQA status within the Aberdeen agglomeration are shown in Appendix 2. These CQAs were obtained

¹⁰ http://www.scottishnoisemapping.org/downloads/guidance/Technical_Guidance_CNMA2NMA.pdf

¹¹ Aircraft and road traffic noise and children's cognition and health: A cross sectional study. *Lancet*, 365, p1942-1949 : Stansfeld, S.A., Berglund, B., Clark, C., Lopez-Barrio, I., Fischer, P., Öhrström, E., Haines, M.M., Head, J., Hygge, S., van Kamp, I., & Berry, B.F. (2005)

¹² Soundscapes in city parks and suburban green parks. In: *Proceedings of Euronoise 2006* : Tampere, Finland, Nilsson ME, Berglund B (2006).

¹³ Research into quiet areas. Recommendations for identification: Defra. 2006.

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=14839>

¹⁴ http://www.scottishnoisemapping.org/downloads/guidance/Technical_Guidance_for_Quiet_Areas.pdf

from national data sets and maps and local knowledge will be used to identify and assess any other potential CQAs during the consultation process.

1.12 Action Planning

The Directive requires that action plans are produced for each of the qualifying agglomerations, major airports and major transport systems. The content of the Action Plans are however for member states to determine but based on some minimum requirements as set out in Annex 5 of the Directive. This action plan document provides the basic outline of how we intend to manage noise and preserve quiet areas. On that basis, action plans are largely focused on taking forward the candidate noise management areas and quiet areas identified by the strategic noise mapping and prioritisation exercises described previously.

Scotland's Greenspace Map <http://www.greenspacescotland.org.uk/scotlands-greenspace-map.aspx> is a world first; no other country has mapped its greenspace in this way. This interactive map provides information about the type and extent of greenspace in urban Scotland (i.e. towns and cities with a population of over 3000). It was compiled in 2011 from greenspace data provided by the 32 Scottish Councils. Although Greenspace Map does not directly use the term quiet it does embrace the concept of passive recreation and breathing spaces which are defined as an, 'oasis of calm amongst city bustle'. Defining Quiet Areas as part of the Action Planning process can be seen as an extension of that work.

The preliminary actions to be undertaken as part the action planning process are set out in Table 3 below.

Preliminary Actions	Anticipated Completion Date
Assess all CNMA's as set out in the previously published guidance ¹⁰	20th April 2014
Assess all CQA's as set out in the previously published guidance ¹⁴	20th April 2014

Table 3 – Preliminary actions as part of planning process

1.13 Noise Mitigation Measures

A number of road infrastructure developments are programmed over the next 5 years that will reduce noise levels across the CNMAs.

The most significant of these is the Aberdeen Western Peripheral Route (AWPR) which will provide a link from the north to the south enabling traffic to bypass Aberdeen. Benefits will be most apparent on Anderson Drive and Auchmill Road where the traffic flow is predicted to reduce by 5-10%, with associated reduction in

noise levels. Traffic flows will also reduce on the majority of the other CNMAs. Preparation works commenced in 2013 and completion of the AWPR is predicted by 2018.

A Third Crossing over the River Don is also a major development that will provide a new route to reduce congestion at the existing 2 crossings over the River. The Crossing will particularly reduce the traffic flow on parts of King Street, parts of Great Northern Road and Auchmill Road, again with an anticipated noise reduction in the CNMAs in these areas. Construction is due to commence in 2014 for a late 2015 opening.

Other road infrastructure measures with the potential to reduce noise levels in the CNMAs include improvements to Haudagain roundabout on the North Anderson Dr/Auchmill Road corridor, the Berryden corridor, South College Street and the partial pedestrianisation of Union St.

Similarly, the Council commenced the development of a Strategic Urban Mobility Plan (SUMP) for the City Centre during 2012. A SUMP is essentially a transport masterplan looking at the way people move around by different modes of transport. These include walking, cycling, bus, train, taxi, motorcycle, car, van and HGVs. The SUMP vision is to create a vibrant, attractive, connected and economically sustainable city centre that is accessible to all and well equipped to adapt to changing circumstances over time. Footfalls studies, on street interviews, on-line questionnaire and 4 stakeholder workshops were all used to engage and consult with the public and other stakeholders. Aberdeen received a E10,000 EU award in recognition of excellence in the development of the SUMP. The Plan will be further developed in 2014 and, when implemented, has the potential to reduce noise levels in the City Centre CNMAs.

Potential additional noise mitigations measures will be considered between 2013 and 2018.

1.14 Aberdeen Agglomeration proposed noise actions between 2013 and 2018

Noise action options fall into five categories, as outlined in Table 4. The potential remedial actions will be the subject of a cost benefit analysis. Consideration will also be given to who would be responsible for any proposed actions and whether or not they are affordable or desirable.

Category	Options
1	Maintenance and improvement works where appropriate
2	Network operational management of roads within agglomeration of Aberdeen where appropriate
3	Development Proposals and Policies where appropriate
4	Desktop: Research, appraisal and evaluation where appropriate
5	Communications and stakeholder engagement

Table 4 – Remedial Actions

Aberdeen NAP objectives, actions (falling within the above categories), timescales and cross-linkages to other Noise Action Plans in Scotland are outlined in Table 5. It is estimated that within the Aberdeen agglomeration a minimum of 4100 people are housed within the road CNMA approximate areas and a minimum of 600 people are housed within the rail CNMA approximate areas.

No	Action	'13	'14	'15	'16	'17	'18
1a	Develop and apply appropriate Appraisal and Test of Reasonableness tools through SENSG, including cost benefit analysis, to rank effective NMA interventions.	•	•				
1b	Where appropriate apply noise management interventions on a prioritised basis during existing maintenance and improvement programmes where reasonably practicable.	•	•	•	•	•	•
1c	Engage with Transportation Working Group to assess trunk road and rail NMAs within agglomerations.	•	•	•	•	•	•
2a	Consider incorporating a commitment to mitigate environmental noise emissions into future corporate and/or annual service plans	•	•	•	•	•	•
2b	Incorporate consideration of noise issues into future construction or maintenance contracts, franchise agreements and specifications.	•	•	•			
2c	Conduct before-and-after sample noise measurement, where possible, to (i) determine measured baseline at selected NMAs prior to mitigation construction and (ii) appraise noise mitigation approaches in terms of cost benefit and delivery of effective noise reduction.	•	•	•	•	•	•
2d	Consideration to be given to post evaluation of completed mitigation measures specified within planning conditions where appropriate		•	•			
3a	Transport and travel policies and proposals to both take into account and facilitate noise management.	•	•	•	•	•	•
3b	Consider promoting Intelligent Transport Systems to better manage road flows.	•	•	•	•	•	•
3c	Consider promoting uptake of low noise tyres where appropriate through SENSG	•	•				

3d	Support for an update to Noise Insulation Scotland Regulations (NISR) legislation		•	•			
4a	Provide guidance, information and progress updates on the Aberdeen NAP actions to the Scottish Noise Mapping Website	•	•	•	•	•	•
4b	Conduct review of noise complaints on road network over the last 5 years in order to better understand their nature.	•					
4c	Incorporate noise maps into appropriate local authority traffic models where feasible		•				

Table 5 – Transportation (within Aberdeen agglomeration) noise mitigation between 2013 and 2018

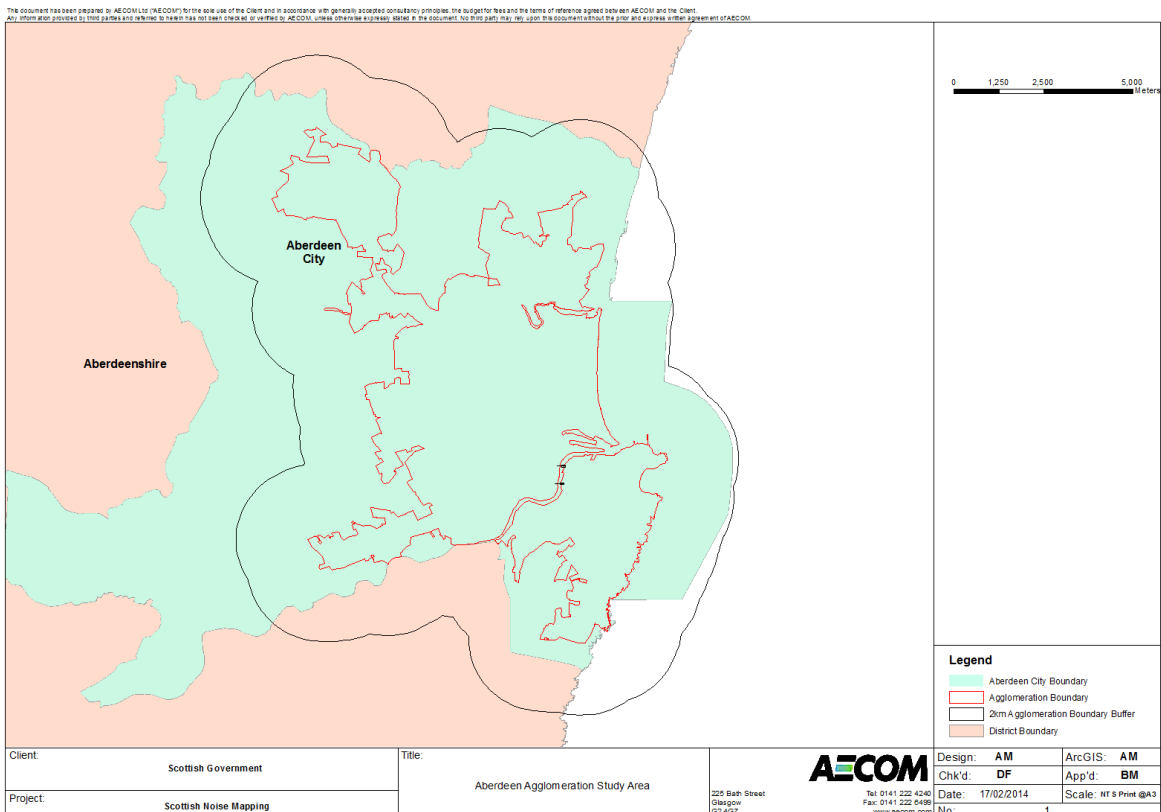
6. Description of Agglomeration – Aberdeen

1.15 Description of the Aberdeen Agglomeration

The City of Aberdeen is situated on the North East coast of mainland Scotland, straddling the Rivers Dee and Don which run through the City. The City is the third largest in Scotland with a population of approximately 220,000: the wider City-Region has a total population of 475,770 (census 2011). Aberdeen is a university city, the centre for much employment in the surrounding region, the oil capital of Europe, emerging energy capital of Europe and a tourist destination. Aberdeen is also a centre of employment for the surrounding commuter belt, and a centre for tourists, resulting in significant transient populations of commuters and tourists throughout the year.

The biggest local authority within the agglomeration is Aberdeen City. A small part of Aberdeenshire Council falls within the agglomeration boundary. For the purposes of Strategic Noise mapping the agglomeration included a 2km buffer to ensure that any environmental noise effects from just outside the boundary were taken into account within the agglomeration, and that noise generated within the agglomeration boundary is assessed to determine possible impacts inside the agglomeration. This area is included within the action plan study area, to ensure that any policies or plans affecting transportation or industrial noise from outwith the agglomeration boundary are properly considered. The Aberdeen agglomeration and buffer area are shown in Figure 3.

Figure 3 Aberdeen Agglomeration



Aberdeen City Council's area is a mixed urban and rural environment bounded by the Green Belt. The City includes a busy commercial and domestic port/harbour in the heart of the City, one college and two universities with approximately 50,000 students in 2011/12, two major rail stations with commuter and freight links and an international airport at Dyce. Aberdeen International Airport has both domestic and international flights and has recently published a masterplan outlining a growth strategy. It is the fastest growing of all Scottish airports and the world's busiest heliport handling over 35,000 helicopters every year (the majority serving the off-shore oil and gas industry).

Car ownership in the area is high with 88,100 cars registered in Aberdeen in 2011 and a further 131,700 in Aberdeenshire (Source Scottish Transport Statistics). However, some 23% of households in the City do not have access to a car or van. Aberdeen City has approximately 936km of roads.

The most significant imminent changes to the noise climate in the Aberdeen agglomeration both now and in the future are the development of major housing developments. New planned developments across Aberdeen City and Aberdeenshire will result in an increase of 72,000 houses and 255 hectares of employment land over a 25 year period, with a target to raise the population to 480,000 across the city region by 2030. Planned infrastructure projects include the Aberdeen Western Peripheral Route, a third crossing over the River Don, improvements to the Haudagain roundabout and a ring of new Park and Choose services around the city.

1.16 Relevant Plans and Policies

Environmental noise issues are addressed through:

- the Planning and Development Management process;
- the design and maintenance of transport infrastructure, road and rail;
- Air Quality Action Plans; and
- Local and Regional Transport Strategies and Local Development Plans.

There are obvious links between traffic and noise pollution. At a national level legislation places a responsibility on the highway authority to provide a compensation package, normally sound insulation, to residents who are adversely affected by a newly constructed road or by significant changes to an existing road e.g. the addition of an additional carriageway. This is taken into account at the design stage.

1.16.1 Local Transport Strategy (LTS)

In 2008 Aberdeen City Council adopted the Aberdeen Local Transport Strategy (LTS) 2008-2012. This document outlines the Council's vision and aims for transport in the City and sets out a series of policies and interventions that the

Council will work towards to guide the planning and improvement of the local transport network in the years leading up to the opening of the AWPR (originally anticipated in 2012). The LTS vision is of:

"A sustainable transport system that is fit for the 21st Century, accessible to all, supports a vibrant economy and minimises the impact on our environment"

The LTS includes 5 high level aims, as follows:

- Support and contribute to a thriving economy for Aberdeen City and its region
- Ensure a safe and secure transport system
- Minimise the environmental impact of transport on our community and the wider world
- Ensure that the transport system is integrated and accessible to all
- Ensure that our transport policies integrate with and support sustainable development, health and social inclusion policies

A series of more detailed objectives, linked to specific targets sit beneath these aims.

The Council is in the process of refreshing the LTS for 2014-2018 to bring it up to date and to reflect the revised timescale for the AWPR. No significant changes are expected in the document; the main outcome will continue to be a reduction in traffic volumes in the City (especially single occupancy vehicle trips) and the promotion of alternative, quieter modes of transport, particularly cycling and walking. This should contribute to improving noise levels at sites throughout the City.

1.16.2 Regional Transport Strategy (RTS)

The 2008 RTS sets out the challenges facing Aberdeen City and Shire to 2021 and how these will be addressed. It is a strategic document which includes a comprehensive appraisal of the problems and issues affecting transport in the north east and sets out the vision and objectives for the period to 2021. A Delivery Plan was published to accompany the strategy.

- 12 key issues were identified for the strategy to address:
- Supporting sustainable economic growth
- Reducing emissions of greenhouse gases and pollutants
- Ensuring social inclusion
- Improving safety and security
- Improving connectivity

- Increasing public transport usage
- Ensuring efficient movement of goods
- Maximising the benefits of the Aberdeen Western Peripheral Route
- Developing a strong City Centre
- Supporting vibrant Aberdeenshire towns
- Embracing new technologies
- Changing travel behaviour

1.16.3 Planning

Aberdeen City and Aberdeenshire Councils have up to date Local Development Plans adopted in 2012. The Aberdeen City and Shire Structure Plan was approved in 2009 and is currently under review. A Strategic Development Plan for the City and Shire will replace the current Structure Plan, it is anticipated that this will be adopted in late Spring 2014.

Local development plans include policies that either directly or indirectly impact on Environmental Noise, for example:

- Policies designed to ensure that new development will not be permitted where there will be significant adverse effects for health, the environment and amenity unless appropriate mitigation to minimise any adverse effects can be provided.
- Developments, including changes of use, which would have a materially detrimental effect on the living conditions of nearby residents will not be permitted.
- Policies that provide a framework to put in place conditions of development that would mitigate adverse environmental effects of traffic generation.

A full description of the Local Development and Structure Plans and associated Policies, LTS and RTS can be found on the Aberdeen City Council and Aberdeenshire Council websites www.aberdeencity.gov.uk and www.aberdeenshire.gov.uk.

1.16.4 Local Air Quality Action Plans

Air quality is monitored both nationally and locally. All local authorities in Scotland are required to regularly review and assess air quality in their areas against objectives for a number of air pollutants of particular concern for human health. If any objective is unlikely to be achieved by the due date, the authority concerned

must declare an Air Quality Management Area (AQMA) and produce an Action Plan outlining how it intends to tackle the issues identified.

In Aberdeen there are 3 air quality management areas: the City Centre, Anderson Drive/Haudagain roundabout/Aumchill Road corridor and Wellington Road. The air quality problem in Aberdeen is predominantly a result of emissions from road vehicles (causing around 90% of all NO₂ emissions within the City Centre) and this is reflected in the locations of the AQMAs. An Air Quality Action Plan (AQAP) covering the 3 AQMAs was adopted in 2011 recommending a wide range of initiatives to address the air quality problem. These focus on promoting sustainable transport in the city by reducing the need to travel, reducing existing emissions from vehicles, increasing awareness of air quality issues and improving traffic management and infrastructure measures including a feasibility study of a Low Emissions Zone.

Any proposed noise mitigation measures will be cross referenced to the measures contained within the Air Quality Action Plan. The Air Quality Action Plan will also be examined for any measures that may impact on the noise climate.

APPENDICES

1. Candidate Noise Management Areas

Aberdeen Road CNMA			
CNMA ID	Map Number	Address	Local Authority
1	1	Auchmill Road At Newton Terrace, Aberdeen	Aberdeen City
2	1	North Anderson Drive At Clifton Road, Aberdeen	Aberdeen City
3	1	Great Northern Road Near Smithfield Lane, Aberdeen	Aberdeen City
4	2	King Street At Don Street, Aberdeen	Aberdeen City
5	3	North Anderson Drive At Mastrick Road, Aberdeen	Aberdeen City
6	3	North Anderson Drive At Lang Stracht, Aberdeen	Aberdeen City
7	3	North Anderson Drive At Laburnum Walk, Aberdeen	Aberdeen City
8	4	Littlejohn Street, Mealmarket Street, King Street, Aberdeen	Aberdeen City
9	4	King Street At St Clair Street, Aberdeen	Aberdeen City
10	4 and 6	Union Street At Dee Street, Aberdeen	Aberdeen City
11	4 and 6	Rennie's Wynd, Wapping Street, Carmelite Street, Trinity Street, Guild Street, Aberdeen	Aberdeen City
12	4 and 6	Market Street, Union Street, Netherkirkgate, Aberdeen	Aberdeen City
13	4 and 6	Market Street, Virginia Street, Shore Brae, Aberdeen	Aberdeen City
14	5	Queen's Road At Royfold Crescent,	Aberdeen City

Aberdeen Road CNMA			
CNMA ID	Map Number	Address	Local Authority
		Aberdeen	
15	6	Whinhill Road At Fonthill Road, Aberdeen	Aberdeen City
16	6	Wellington Place, South College Street, Aberdeen	Aberdeen City
17	6	Palmerston Road, Market Street, Aberdeen	Aberdeen City
18	6	Victoria Road At Walker Road, Aberdeen	Aberdeen City
19	7	A90 At Holburn Street, Aberdeen	Aberdeen City
20	6	Holburn Steet at Union Street	Aberdeen City

Aberdeen Rail CNMA			
CNMA ID	Map Number	Address	Local Authority
1	1	Near Polmuir Road, Riverside Drive	Aberdeen City
2	1	Near South College Street, North Esplanade West	Aberdeen City

2. Candidate Quiet Areas

ID	Map Number	Name	Source
1	1	Playing Field At Laurel Drive	Parks and Gardens
2	1	West Field Park	Parks and Gardens
3	1	Seaton Park	Parks and Gardens
4	1	Seaton Playing Field	Parks and Gardens
5	2	Hazlehead Park	Parks and Gardens
6	2	Hazlehead Park	Parks and Gardens

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