DRAFT NOISE ACTION PLAN

CONSULTATION ON THE ENVIRONMENTAL NOISE DIRECTIVE ACTION PLAN: STRATEGIC NOISE ACTION PLAN FOR THE EDINBURGH AGGLOMERATION

THE ENVIRONMENTAL NOISE DIRECTIVE ACTION PLAN: STRATEGIC NOISE ACTION PLAN FOR THE EDINBURGH AGGLOMERATION

The Scottish Government
Riaghaltas na h-Alba

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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 Scottish 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 Edinburgh 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.

Edinburgh is one of four agglomerations in Scotland (together with Dundee, Glasgow and Aberdeen). This action plan for Edinburgh 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

[1]WHO 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. http://www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf

sufficient 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

2.1 What it includes

This Edinburgh 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 Aberdeen Agglomeration Noise Action Plan
- The Dundee 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

2.2 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.

2.3 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 adequately provided for in the Scottish legislative framework for the control of noise from industrial sources. Industrial noise for Part A process is controlled through The Pollution Prevention and Control (Scotland) Regulations 2012 (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.

2.4 Strategic Noise Mapping and Action Planning

Strategic noise maps[2] for END Round 3 (for 2017) were produced on behalf of the Scottish Government and for the agglomerations by Jacobs 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 in December 2017. Noise maps were produced by a computer based prediction methodology and can be found on the Scottish Noise Mapping website at https://noise.environment.gov.scot/

Stage of END	Round 1 of END	Round 2 and 3 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 and 3 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, Rail Network[3], Scottish Trunk Road Network and local authority networks[4]

2.5 Edinburgh 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 both END Round 1, Round 2 and Round 3.

[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 rail network comprises 2,819 kilometres of railway (709 kilometres electrified). Note, these figures do not represent the total length of railway track (e.g. a kilometre of single-track and a kilometre of double track count as 1 kilometre of route length). Currently there are 359 stations within Scotland and there were 94 passenger journeys on ScotRail services in 2016-2017 (https://www.transport.gov.scot/publication/scottish-transport-statistics-no-36-2017-edition/chapter-7-rail-services/)

[4] In 2016 there was 56,250 km of roads in Scotland – 3,669km trunk roads and 52,581km local authority roads (https://www.transport.gov.scot/media/41863/scottish-transport-statistics-2017-with-correction-to-table-214.pdf)

Statistics for Round 1 and 2 were calculated using an average household size of 2.36, as this was the national average household size for the UK according Web-Tag[5]. In Round 3, agglomeration specific average household size was used (i.e. 2.07 for Edinburgh according to the 2011 census). For consistency, the Round 2 statistics have also been calculated using the agglomeration specific average household sizes.

	L_{den} (dB)			L_{night} (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 1 (national population constant – 2.36)	220,300	111,600	2,400	172,100	53,000	200
END Round 2 (national population constant – 2.36)	216,500	82,500	0	167,800	18,200	0
END Round 2 (agglomeration specific population constant – 2.07)	190,100	72,500	0	147,000	15,800	0
END Round 3 (agglomeration specific population constant – 2.07)	233,000	100,400	300	185,300	31,600	0

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

	L_{den} (dB)			L_{night} (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 1 (national population constant – 2.36)	44,600	16,900	1,900	35,900	12,200	600
END Round 2 (national population constant – 2.36)	41,200	14,600	4,100	31,400	11,300	2,000
END Round 2 (agglomeration specific population constant – 2.07)	19,100	5,000	100	14,500	2,700	0
END Round 3 (agglomeration specific population constant – 2.07)	26,700	8,900	700	23,000	7,300	300

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

The reasons for the change in the numbers of people exposed to noise over the period are varied. For example, differences in road traffic data or rail movements, updates to road networks and changes to address point data all contribute to the differences between

5 http://webarchive.nationalarchives.gov.uk/20140304105653/http://www.dft.gov.uk/webtag/documents/expert/unit3.3.2.php#02

rounds. Further analysis of these statistics will be undertaken to try and draw out meaningful conclusions.

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 complying 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 2018 and 2023, the NMAs will be a primary consideration when formulating environmental noise management actions/policy following the actions listed in this Edinburgh Noise Action Plan (in line with PAN 1/2011).

The prioritisation process follows the Technical Guidance published by the Scottish Government during END Round 1[6].

[6] https://noise.environment.gov.scot/pdf/Technical_Guidance_CNMA2NMA.pdf

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 Planning[7]**.**

The action planning process for the first round of noise mapping resulted in the publication of a new planning advice note in Scotland (PAN 1/2011[8] and the accompanying TAN[9]). This planning advice note aims to ensure that Candidate Noise Management Areas (CNMA) and Candidate Quiet Areas (CQAs) (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
[9] http://www.gov.scot/Resource/Doc/343341/0114220.pdf

4. Governance of Noise Action Planning

4.1 Competent Authority

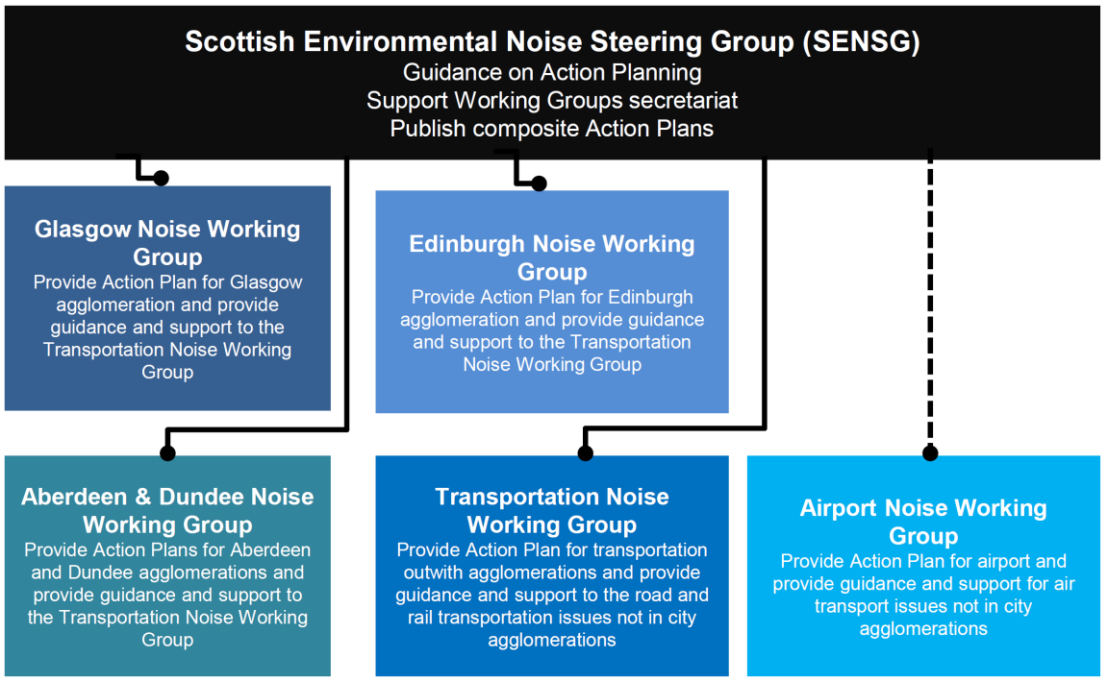
The Scottish Government is the Competent Authority for END in Scotland.

4.2 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, Jacobs, 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



4.3 Edinburgh Agglomeration Noise Working Group

Production of the Edinburgh Noise Action Plan was overseen by the Edinburgh Noise Working Group (under the auspice of SENSG) and comprised officials from The City of Edinburgh Council's Environmental Protection Team, Planning and Transportation as well as a representative from the Scottish Government and the consultants Jacobs. The principle objective of the Edinburgh Noise Working Group was to comply with END and the Scottish Regulations in order to 'produce an Edinburgh Noise Action Plan containing clear tangible actions via collaboration and partnering'.

5. Identification of Management Areas

5.1 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.

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

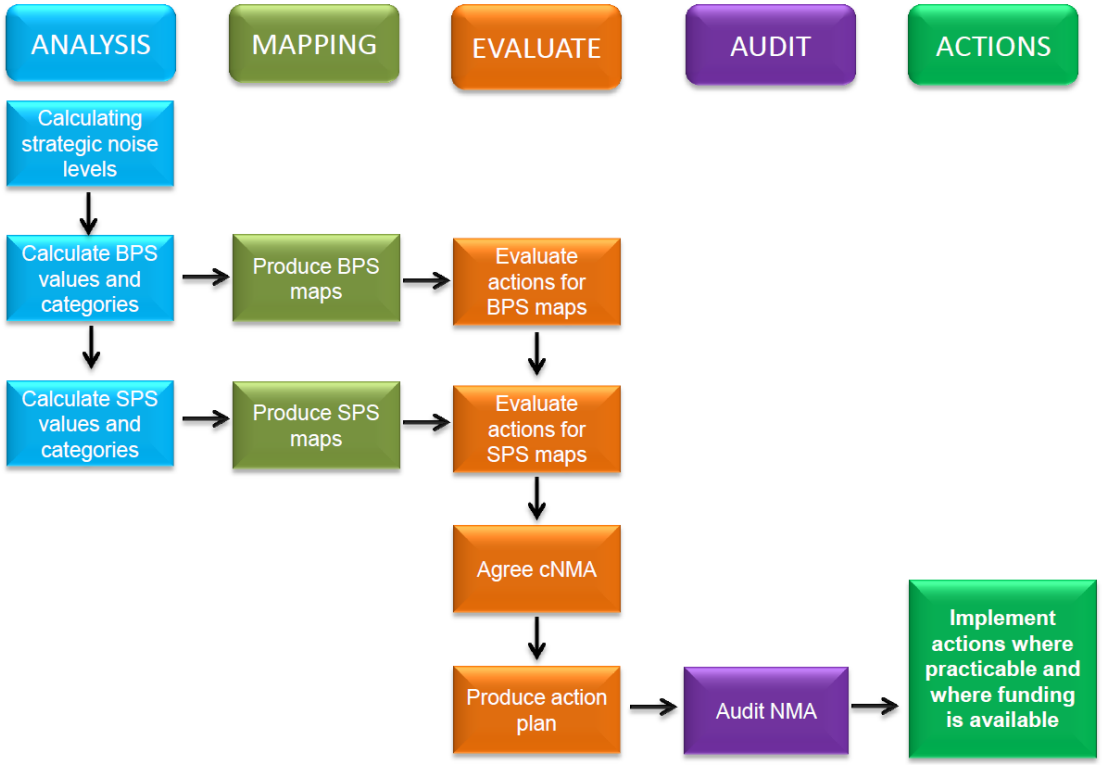
There are no noise limits values or noise thresholds in place in Scotland as it is recognised that analysing the noise contours alone will not necessarily identify areas suffering from the greatest noise impact. In order to gain a better understanding of the potential noise impacts it is helpful to identify 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.[10]

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.

[10] 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 Guidance[11].

The areas with CNMA status within the Edinburgh 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 Edinburgh agglomeration a minimum of 12,900 people are housed within the road CNMA approximate areas and a minimum of 1,200 people are housed within the rail CNMA approximate areas.

5.3 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.[12] [13] '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)[14] 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 dB $L_{day.}$ 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

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[11] https://noise.environment.gov.scot/pdf/Technical_Guidance_CNMA2NMA.pdf

[12] 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)

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

[14] 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

Technical Guidance[15]. The areas with CQA status within the Edinburgh agglomeration are shown in Appendix 2.

5.4 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 is 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 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	**30th April 2019**
Assess all CQA's as set out in the previously published guidance	**31st May 2019**

Table 3 – Preliminary actions as part of planning process

5.5 Edinburgh Agglomeration noise actions up to 2017

A number noise management measures and outcomes have been achieved in Scotland since the first Edinburgh NAP was published, as detailed in Table 4.

[15] http://www.scottishnoisemapping.org/downloads/guidance/Technical_Guidance_for_Quiet_Areas.pdf

Measures and Outcomes
A review of current research on road surface reduction techniques. This research commissioned by the Scottish Government comments on the applicability for Scotland.
Planning advice to local authorities has been updated - PAN 1/2011
The European Commission (through DEFRA) for quieter vehicle requirements e.g. quieter tyres and quieter vehicles.
A review of Air Quality guidance to consider noise.
DEFRA have been asked to carry out further annoyance research on a UK basis.
Noise barrier installation considered for developments alongside busy road and rail routes where appropriate.
Promoting the use of (low carbon) electric cars and City Car Clubs.
Ongoing integration of Noise Management Areas and Quiet Areas within local authority development control (planning) processes.

Table 4 – Examples of noise mitigation between 2006 and 2017

5.6 Edinburgh Agglomeration proposed noise actions between 2018 to 2023

Noise action options fall into three categories, as outlined in Table 5. 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
2	Network operational management of roads within agglomerations
3	Development Proposals and Policies

Table 5 – Remedial Actions

Edinburgh NAP objectives, actions (falling within the above categories), timescales and cross-linkages to other Noise Action Plans in Scotland are outlined in Table 6.

No	Action	Timescale						
		'17	'18	'19	'20	'21	'22	'23
Objective 1 - On a prioritised basis, by 2023 we aim to reduce the exposure to environmental noise in NMAs								
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.	•	•	•	•	•	•	•
Objective 2 - By 2023, we will incorporate environmental noise management within all stages of the planning process including transportation planning, design, construction and maintenance activities as appropriate								
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.			•	•			

No	Action	Timescale						
		'17	'18	'19	'20	'21	'22	'23
Objective 3 - By 2023, we will endeavour to demonstrate a practical contribution to noise reduction via existing and future proposals and policies								
3a	Continue to ensure that Transport and travel policies and proposals consider 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.			•	•			
Objective 4 - By 2023, we will promote channels of communication to stakeholders that encourage a learning environment								
4a	Provide guidance, information and progress updates on the Edinburgh NAP actions to the Scottish Noise Mapping Website.		•	•	•	•	•	•
4b	Consider reviewing noise complaints on road network over the last 5 years to better understand their nature.	•	•					
4c	Consider in conjunction with SENSG the relationship between noise maps and local authority traffic models.			•				

Table 6 – Transportation (within Edinburgh agglomeration) noise mitigation between 2017 and 2023

6. Description of Agglomeration Edinburgh

6.1 Description of the Edinburgh Agglomeration

Edinburgh is the Capital city of Scotland with a population of approximately 507,000 with one of the fastest growing populations of any city in the UK. It is a university city, the locus for much employment in the surrounding region and a tourist centre. It is estimated that the non-residential population of Edinburgh increases by 60,000 commuters and, during term time, by 10,000 students. It is further estimated that at the peak of the tourist season the population is increased by some 400,000 tourists.

The agglomeration boundary is approximately 123 km^2 with approximately 222,000 households. It has an airport which lies just outside the agglomeration boundary, a seaport at Leith, and two major rail stations in the city centre. The city is bounded by Green Belt.

The biggest local authority within the agglomeration study area is the City of Edinburgh Council. A small part of Midlothian Council and a small part of East Lothian Council also fall within the agglomeration study area boundary. For the purposes of Strategic Noise mapping the agglomeration includes a 2km buffer (approximately 284km^2). The Edinburgh agglomeration boundary and 2km study area are shown in Figure 3.

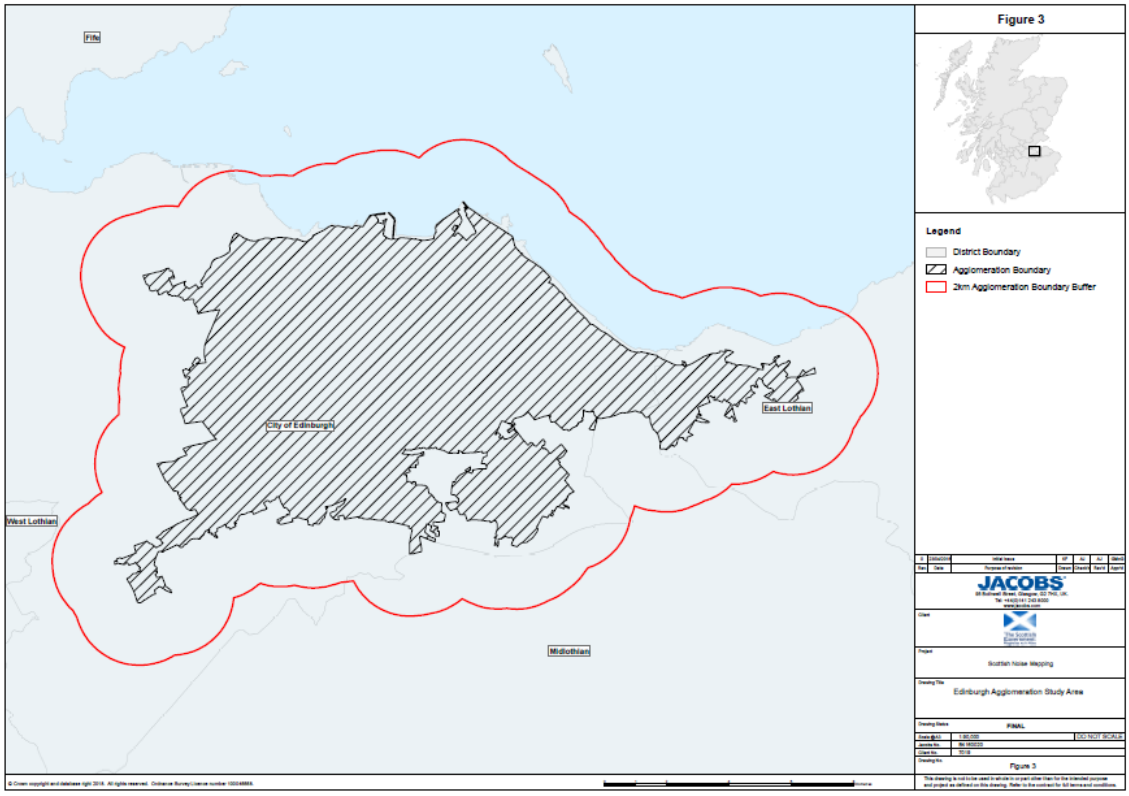

Figure 3: Edinburgh Agglomeration

Scottish Transport statistics (2011) show that there are approximately 1500km of roads and 400 bridges within the agglomeration. There are 165,800 licensed private and light goods

vehicles in the city. The 2001 Census showed that 40% of households had no access to a car and the 2011 Census showed that 42% of households had no access to a car, perhaps indicating that the previous trend of increasing car dependency may have been halted or even slightly reversed.

The most significant changes to the noise climate in the Edinburgh agglomeration was the development of the Edinburgh tram system, a local development plan that includes new housing developments of 2,000 houses in the west of Edinburgh and 1,000 houses in south-east Edinburgh. The major housing developments planned for Edinburgh waterfront have been partly reallocated for business and industry. These changes all occur within the agglomeration. A further two housing developments have commenced at Shawfair and Wallyford which lie just outside the boundary of the agglomeration but within the study area. The new developments amount to a population increase of approximately 55,000.

6.2 Policies

A City Development Plan, which effectively is a second Local Development Plan for Edinburgh, is currently being formulated by the Planning Service and their relevant partners. The contribution that noise mapping will have in relation to this will be incorporated into this revised plan where appropriate. This plan will be used to consider future developments in terms of location and scale. If the City is to continue to expand then transport is a very serious issue that will need to be considered. There will be an emphasis on creating new open spaces to improve quality of life and a stronger policy on existing green spaces.

It is intended to continue to incorporate the contribution associated with noise mapping into the cities Local Transport Strategy which is also currently being reviewed.

Noise mapping has also been incorporated into the Planning and Environmental Health Protocol. Many planning applications will present potential environmental issues that require objective assessment and quantification. In some cases, the impacts will be minor and readily amenable to mitigation. Others may be more onerous, requiring more detailed assessment and potentially more complex technical solutions.

The following is a key type of development when Planning would consult Environmental Protection, where development potentially affects a Noise Management Area or Quiet Area or may lead to significant noise impacts in other locations.

APPENDICES

1. Candidate Noise Management Areas

** New CNMA in Round 3*

Rail CNMAs

CNMA ID	Map Number	Address	Local Authority
1	2	Near Stenhouse Drive	City of Edinburgh
2*	2	Near Whitson Walk	City of Edinburgh
3	3	Near A71	City of Edinburgh
4*	4	Near North Bridge	City of Edinburgh
5*	4	Near Abbey Mount	City of Edinburgh
6*	4	Near Spring Gardens	City of Edinburgh
7	5	Near Porobello Road	City of Edinburgh

Road CNMAs

CNMA ID	Map Number	Address	Local Authority
1*	2	Maybury Road	City of Edinburgh
2*	3	Maidencraig Crescent	City of Edinburgh
3	4	Murrayfield Avenue	City of Edinburgh
4	5	Stewart Terrace	City of Edinburgh
5	6	Moat Street	City of Edinburgh
6	5	Newton Street	City of Edinburgh
7*	5	Murieston Road	City of Edinburgh
8*	7	Yeaman Place	City of Edinburgh
9	7	Easter Dalry Road	City of Edinburgh
10*	10	Merchiston Place	City of Edinburgh
11	10	Miller Crescent	City of Edinburgh
12	7	Viewforth	City of Edinburgh
13	7 and 8	Grove Street	City of Edinburgh
14	8	Morrison Street	City of Edinburgh
15*	8	Torphicen Street	City of Edinburgh
16	8 and 9	East Fountainbridge	City of Edinburgh
17	9	Lauriston Place	City of Edinburgh
18	9	King’s Stables Lane	City of Edinburgh
19*	11	Buccleuch Street	City of Edinburgh
20	11	Potterrow	City of Edinburgh
21*	11	Pleasance	City of Edinburgh
22*	11	South Bridge	City of Edinburgh
23	13	Abbeyhill	City of Edinburgh
24*	13	Abbey Lane	City of Edinburgh
25*	12	Dundas Street	City of Edinburgh
26*	18	Peffermill Road	City of Edinburgh
27	13	Albion Road	City of Edinburgh
28*	17	Portobello Road	City of Edinburgh
29	14	Great Junction Street	City of Edinburgh
30	16	North Junction Street	City of Edinburgh
31*	16	Annfield	City of Edinburgh
32	15 and 16	Dock Street	City of Edinburgh
33	15	Bernard Street	City of Edinburgh
34	15	Salamander Street	City of Edinburgh

2. Candidate Quiet Areas

** New CQAs in Round 3*

ID	Map Number	Name
1	2,4,5	Firth of Forth
2	3	Ancient Woodland at Cammo House
3	3	Corstorphine Hill
4	4	Royal Botanic Gardens
5	4	Lochend Park
6	5	Jewel Park
7	5	Holyrood Park, Arthur's Sear Volcano, Duddingston Loch
9	6	Burdiehouse Burn Valley Park
10*	7	Hillend Country Park
11	7	Ancient Woodland at Buckstone
12	7	Hermitage of Braid/ Blackford Hill
13	7	Mains Park
14	7	Easter Craiglockhart Hill
15	7	Ancient Woodland at Water of Leith Walkway
16*	7	Hailes Park
18	8	Balerno SSSI