TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

TRANSPORTATION NOISE ACTION PLAN

Prepared by the Transportation Noise Working Group

The Scottish Government
Riaghaltas na h-Alba

Contents

1 Foreword

The Scottish Government's Economic Strategy highlights that tackling the causes of environmental concern will make our nation fairer. This is translated into one of the 5 National Transport strategy High Level Objectives to protect our environment and improve health. Furthermore, Scottish Government transport vision is for a transport system that meets everyone's needs, respects our environment and contributes to health, wellbeing and sustainable economic growth. Noise management is a key component in protecting our environment.

With this mandate in mind, this plan will outline the range of direct and indirect actions that shall be undertaken with respect to road and rail related environmental noise to which humans are exposed.

Our overall aim is twofold. Firstly, we will ensure that, where practicable, noise management is incorporated into all transport-related activities, across the spectrum of design, construction, maintenance, policy and point-to-point transportation activities. Secondly, we will seek to manage noise levels where necessary and practicable at Noise Management Areas (NMA's) and aim to preserve environmental noise quality where it is good.

2 Introduction

2.1 What is noise and why is noise an issue?

Environmental noise is defined 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'*[1][2]. Placed into context, transportation noise is the biggest source of environmental noise in Scotland

Noise may negatively impact on speech, sleep, music or sounds of nature. These elements contribute in various degrees to most people's quality of life but disturbance, masking or detraction of these positive elements can lead to annoyance. Noise can also have economic impacts by potentially affecting tourism, learning/studying and workplace productivity.

2.2 Noise and health

The Scottish Government is committed to understanding and managing the environmental impact of our transport network. We acknowledge that noise

[1] Environmental noise definition is based on Environmental Noise Directive Annex I to Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control

[2] END does not apply to noise 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. It should be noted that whilst transport noise is the most common form of noise (from road transport, aircraft and railways with road responsible for ~90% of transportation noise), noise can also occur from industrial or workplace processes, wind turbines, pubs, clubs, next door neighbours and people in the street.

can be distressing, affects our quality of life and can impact on our health[3] and environment. Attitudes to noise are changing and it has been suggested that people are becoming less tolerant with their noise environment.

The assessment of noise and noise annoyance is a complex process and different [transport] noise sources affect people in different ways. Whilst WHO (2011) suggest that there is sufficient evidence from large-scale epidemiological studies linking the population's exposure to environmental noise with adverse health effects, others suggest some effects may occur only in a susceptible minority of the population[4]. This issue is an ongoing area of research. Recent research suggests that annoyance and sleep disturbance may be the most significant impacts of noise.

2.3 Scope of the Noise Action Plan

The Scottish Noise Action Plans describe how the Scottish Government has worked with relevant stakeholders in identifying potential options for noise management, as discussed in Section 3.1. This Transportation Noise Action Plan is one of a set of Noise Action Plans covering the following areas:

- The Aberdeen Agglomeration Noise Action Plan
- 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

2.4 Strategic Noise Mapping and Action Planning

Strategic noise maps[5] for END Round 2 (for 2012) were produced on behalf of the Scottish Government by AECOM consultants. Noise maps for Round 2 were produced by a computer based prediction methodology and can be found on the Scottish Noise Mapping website at www.scottishnoisemapping.org. Utilising the most up to date available data,

[3] 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

[4] Maynard (2010) Environmental Noise and Health in the UK: A report by the Ad Hoc Expert Group on Noise and Health. Health Protection Agency. http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1279888026747.

[5] 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).

population exposure levels derived from the maps were submitted by the Scottish Government to Europe on the 20 December 2012.

As outlined in Table 1, Round 2 of END requires 'places near'[6] major roads with more than three million *vehicle* passages a year and places near major railways which have more than thirty thousand train passages per year to be included in the mapping and action planning. This criteria defines the scope of this transportation noise action plan. Key differences in scope between Round 1 and Round 2 of END are outlined in Table 1.

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 Network[7], Rail Network[8] and local authority networks[9]

The noise mapping process identified sections across a number of transport corridors that fall within the Round Two Transportation Action Planning Process. These corridors are shown in Appendix 1.

As a result of the noise mapping, Tables 2a and 2b show the estimated number of people exposed to noise during the END Round 2 mapping, with comparison to the END Round 1 data.

[6] The Scottish Government has defined 'places near' as areas where the noise mapping indicates the Lden exceeds the 55 dB(A) noise contour and the Lnight exceeds the 50 dB(A) noise contour.

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

[8] Scotlands 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.

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

	Lden (dB)			Lnight (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 1	191,000	44,600	1,600	115,900	20,200	100
END Round 2	201,200	60,300	600	153,200	15,600	0

Table 2a – Population exposure from major roads outwith the agglomerations as mapped for END

	Lden (dB)			Lnight (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 1	20,500	5,700	100	14,300	3,300	0
END Round 2	37,700	13,500	2,800	32,100	12,500	1200

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

Noise from local roads is covered within the respective agglomeration action plans noted in Section 2.2. Thus, local road population exposure is not detailed in Table 2a.

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 must also be of a strategic level in nature, whilst complying with the minimum requirement 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 intervals. 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[10].

Initial analysis of the noise map, using the Prioritisation Matrix (see Section 5), provides a focus for deriving actions to manage noise by identifying Candidate Noise Management Area (CNMA) (as described in Section 6). The CNMAs may subsequently progress into a Noise Management Area (NMA) status (as

[10] Strategic maps cannot be used to determine the noise level for any specific property particularly in the presence/absence of local features e.g. walls which may influence actual noise levels.

described in Section 6). Between 2013 and 2018, the NMAs[11] will be the primary consideration when formulating environmental noise management actions/policy following the actions listed in this Transportation Noise Action Plan (in line with PAN 1 (2011)).

The process listed above follows the Technical Guidance[12] published by the Scottish Government during END Round 1.

[11] Noise complaints will occur outwith NMAs. As such, consideration of actions/policy will also be given to areas outwith the NMAs, given the strategic nature of the Transportation Noise Action Plan

[12] http://www.scottishnoisemapping.org/public/action-planning.aspx

3 Context – Legislation and policy

3.1 The European Directive on Environmental Noise

The European Parliament and Council Directive for Assessment and Management of Environmental Noise 2002/49/EC, more commonly referred to as the Environmental Noise Directive (END), was published in July 2002 and adopted in 2004. END required Member States to bring about measures "*to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise".* END objectives[13] are:

- To determine the noise exposure of the population through noise mapping.
- To make information available on environmental noise to the public.
- To establish Action Plans, based on the mapping results, to reduce noise levels where necessary, and to preserve environmental noise quality where it is good.

END does not set limit values, nor does it prescribe Action Plans measures; these remain at the discretion of the competent authority.

3.2 Legal Context in Scotland

The END was transposed into the Environmental Noise (Scotland) Regulations 2006; END definitions 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[14]. This guidance highlights a number of legal issues with respect to transportation:

- Noise from lawful use of existing roads[15] and railways cannot be construed as noise nuisance, under the terms of the Environmental Protection Act.
- If noise from a new or "altered" road exceeds a certain trigger level[16], and meets other qualifying criteria, the Noise Insulation (Scotland) Regulations 1975 (NISR) states that insulation work can be carried out, or a grant offered in respect of the insulation work. Compensation for depreciation in land value caused by public works may be due under the Land Compensation (Scotland) Act 1973.
- The railway equivalent of the NISR is the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996. Whilst the 1996 Regulations do not apply to Scotland, they have been adopted on certain new rail corridor projects in Scotland on a case by case basis.

[13] Objectives sought Round 1 mapping completion and reporting in 2009 and revision by early 2014

[14] http://www.scotland.gov.uk/Publications/2007/08/24141743/0

[15] Noise from new roads can be managed via the planning process, as detailed in Planning Advice Note 1/2011 and PAN 51.

[16] Trigger level is 68dB LA10, 18hrs e.g.

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

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, airport operators and the Society for Chief Officers for Transportation in Scotland. SENSG provided a forum for discuss on the Noise Action Planning progression, with the governance arrangement noted in Figure 1. SENSG will host meetings twice yearly during the lifetime of the Noise Action Plans to review progress on the actions.

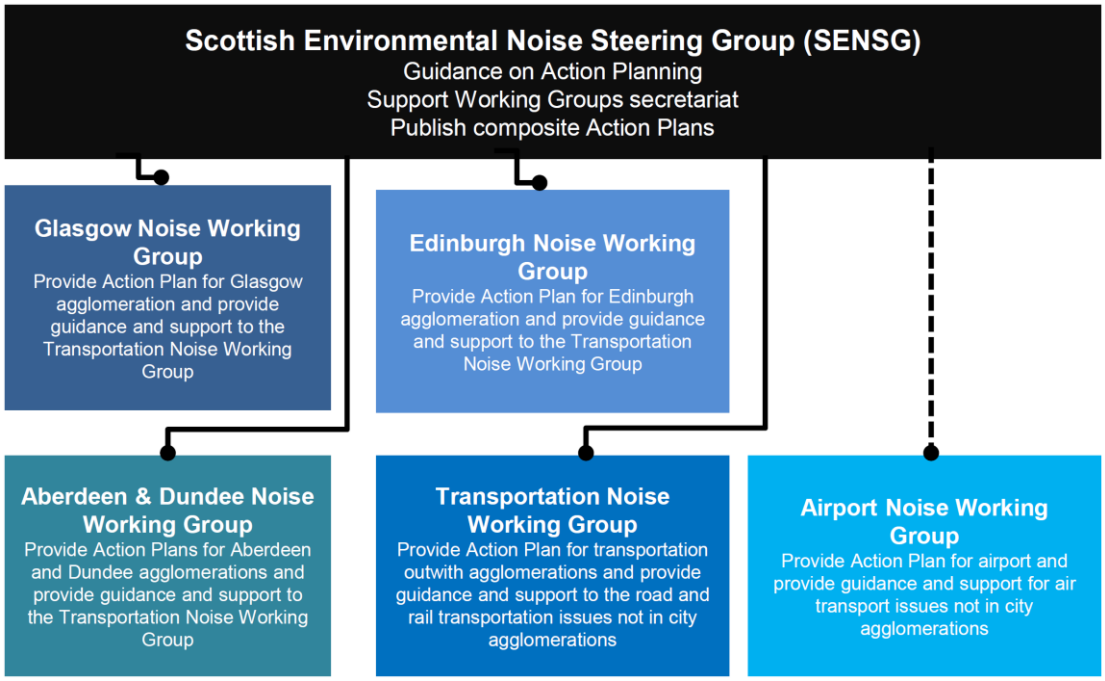

Figure 1 – Noise Action Planning governance via SENSG and associated Working Groups

4.3 Transportation Noise Working Group

Authoring of the Transportation Noise Action Plan was overseen by the Transportation Noise Working Group (under the auspice of SENSG) and comprised Transport Scotland (chair), Society for Chief Officers for Transportation in Scotland, Network Rail, First ScotRail, Road Haulage Association, the Scottish Hydrogen and Fuel Cell Association (representing the 2020 Climate Group) and AECOM. The principle objective of the Transportation Noise Working Group was to comply with END and the Scottish Regulations in order to 'produce a Transportation Noise Action Plan containing clear tangible actions via collaboration and partnering'.

5 Prioritisation Matrix – BPS and SPS

From initial analysis of the noise maps, the prioritisation process is a method of determining [the provisional assignment of] 'Candidate Noise Management Areas' (CNMAs) and thereafter 'Noise Management Areas' (NMAs). Figure 2 outlines the step-by-step journey of the prioritisation process. As noted in Section 2.2, the noise contour maps alone are not sufficient to determine where noise management is required.

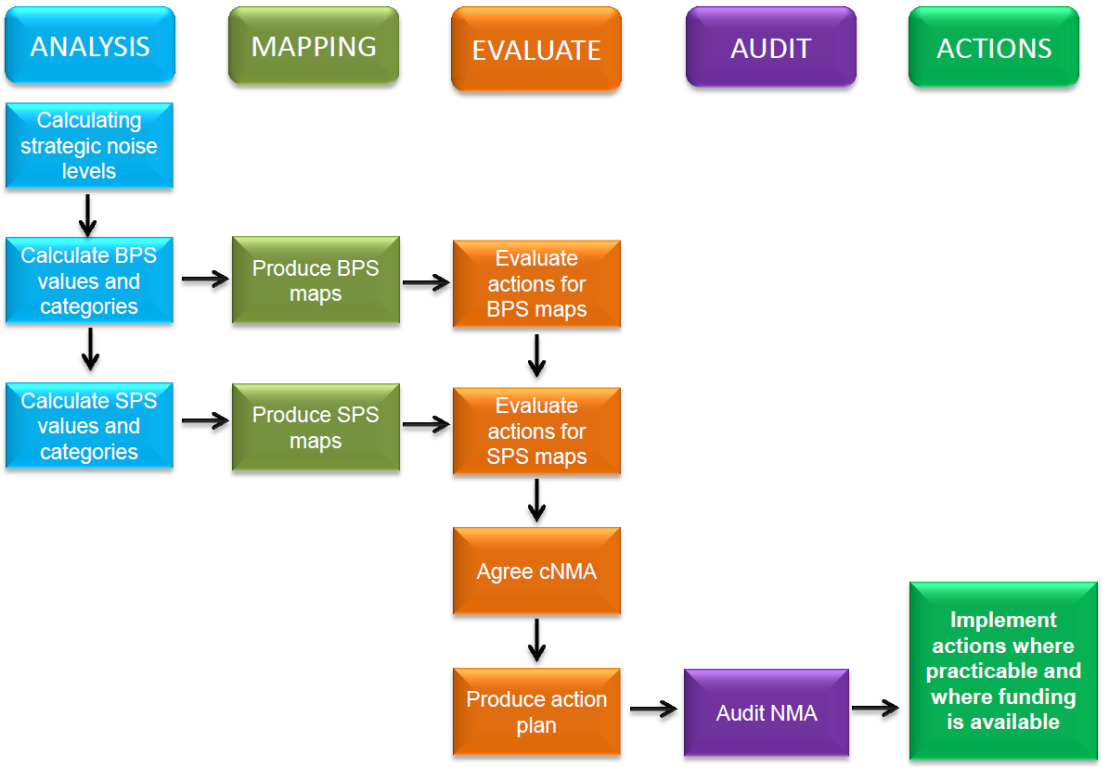

Figure 2 – Step by step stages of the Prioritisation Process. BPS = Building Prioritisation Score; SPS = Source Prioritisation Score (see below for more detail).

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 prioritised, 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[17].

[17] http://www.scottishnoisemapping.org/downloads/guidance/Technical_Guidance_CNMA2NMA.pdf

6 Identification of Noise Management Areas

6.1 Noise Management Area identification (CNMA to NMA)

The areas with CNMA status are shown in Appendix 2. A comparison of CNMA areas for Round 1and Round 2 of END are shown in Appendix 1.

Each CNMA will be reviewed to determine if it should become a Noise Management Area (NMA). The CNMA determination process and the CNMA to NMA review process is outlined in a technical note on the Scottish Noise Mapping website[18].

The CNMA to NMA review process will, amongst other steps, verify the noise model findings[19] and assumptions in comparison to physical features which are evident on the transport network[20]. The assigning of Noise Management Areas and subsequent appraisal, planning, and prioritisation of potential management measures in the NMAs form a core part of the Action Planning Process.

It should be noted that NMAs from Round 1 will continue to be NMAs during the END Round 2 period.

The total number of people exposed to road and rail noise during the day and night at Candidate Noise Management Areas has been outlined in Table 2a and 2b.

6.2 Determining noise management measures at NMAs

A transparent cost-benefit analysis will be required to determine practical, cost effective and noise management measures at NMAs. Criteria used to develop the prioritisation of actions in NMAs will cover the following:

- Identifying where most people are most likely to be annoyed by noise; this will be achieved via the prioritisation matrix (noted in Section 5).
- The options for managing noise for the affected population.
- Adoption of a whole life cost approach.
- Reviewing existing maintenance and improvement programmes to identify when and how interventions can be implemented.
- If noise management measures are needed, these will be subject to the appropriate funding being available.

7 Identification of Quiet Areas (QAs)

7.1 Introduction to quiet areas

END is also clear that Member States should aim to identify and preserve its

[18] http://www.scottishnoisemapping.org/default.aspx

[19] Such as traffic flow, composition, speed, surface type, gradient and topography

[20] Such as existing sound insulation, existing noise barriers or building orientation

Quiet Areas[21]. Preserving existing quiet areas is of equal importance to managing high noise levels in noisy areas where people are most likely to be affected by noise. Noise mapping has been used to identify Candidate Quiet Areas in Scotland with a subsequent process leading to agreement of designating actual Quiet Areas[22].

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7.2 Quiet Noise identification (cQA to QA)

There are no candidate Quiet Areas (cQA) on the major road or rail networks mapped during END Round 2.

[21] Although 'Quiet Areas' are not specifically defined in the Directive, a study by the Transport and Research Laboratory (TRL) recommended that UK 'Quiet Areas' should be defined as areas ≥9 hectares and in which at least 75% of the area is subject to noise levels not exceeding < 55 dB L_{day}

[22] This is covered in separate Technical Guidance on the Scottish Noise Mapping website

8 Transportation Noise Actions

8.1 Transportation noise actions up to 2012

A number of direct and indirect[23] transportation noise management measures and outcomes have been achieved in Scotland since the first TNAP was published, as detailed in Table 3.

Actions	Primary	Secondary
Use of low noise road surfacing[24] on the trunk road network via the new design of new surface course material specification called TS2010 that incorporates noise reduction properties[25]	•	•
Noise barrier installation on trunk road major projects[26]	•	
Rail technical specification for interoperability	•	
Promoting the use of [low carbon] electric cars via the Smarter Choices, Smarter Places programme[27]		•
Phased implementation of Intelligent Transport Systems in Scotland[28]		•

Table 3 – Examples of transportation noise management between 2006 and 2012

8.2 Transportation noise actions between 2013 to 2018

Noise action optioneering falls into five options, as outlined in Table 4. Options 1 and 3 will endeavour to manage noise at the pathway whereas Options 2, 3 and 5 will aim to manage noise at source and receptor.

Option	Option description
1	Hard and soft engineering solutions
2	Network operational management of roads and rail

[23] Noise management may not have been the principle driver, but such actions nevertheless have contributed towards noise abatement in Scotland

[24] http://www.transportscotland.gov.uk/road/policy/design/new-road-surface-specification?current_state=mobile

[25] http://www.transportscotland.gov.uk/system/files/documents/guides/TS2010_Ver_02_Jan_12_pdf.pdf

[26] http://www.transportscotland.gov.uk/road/projects/m80-stepps-to-haggs/construction-progress/construction-progress-archive#nov09

[27] http://www.transportscotland.gov.uk/road/sustainability/low-carbon-vehicles

[28] http://www.transportscotland.gov.uk/road/technology/intelligent-transport-systems

3	Proposals and Policies
4	Desktop: Research, appraisal and tool development
5	Communications and stakeholder engagement

Table 4 – Proposed noise action categorisation. Network operational management refers to the application of products and systems that facilitate more efficient use of our networks (and as a result may facilitate noise management), such as Intelligent Transport Systems (ITS) on Scotland's trunk roads which aim to manage our roads more efficiently and keep traffic moving.

TNAP objectives, actions (falling within the above categories), timescales and cross-linkages to other Noise Action Plans in Scotland are outlined in Table 5.

In terms of evaluating the implementation of actions, the results will be evaluated during the next round of mapping. Evidence will be sourced to demonstrate progress, on an annual basis, against the objectives outlined in Table 5, with an annual update provided on the Transport Scotland website and Scottish Noise Mapping website.

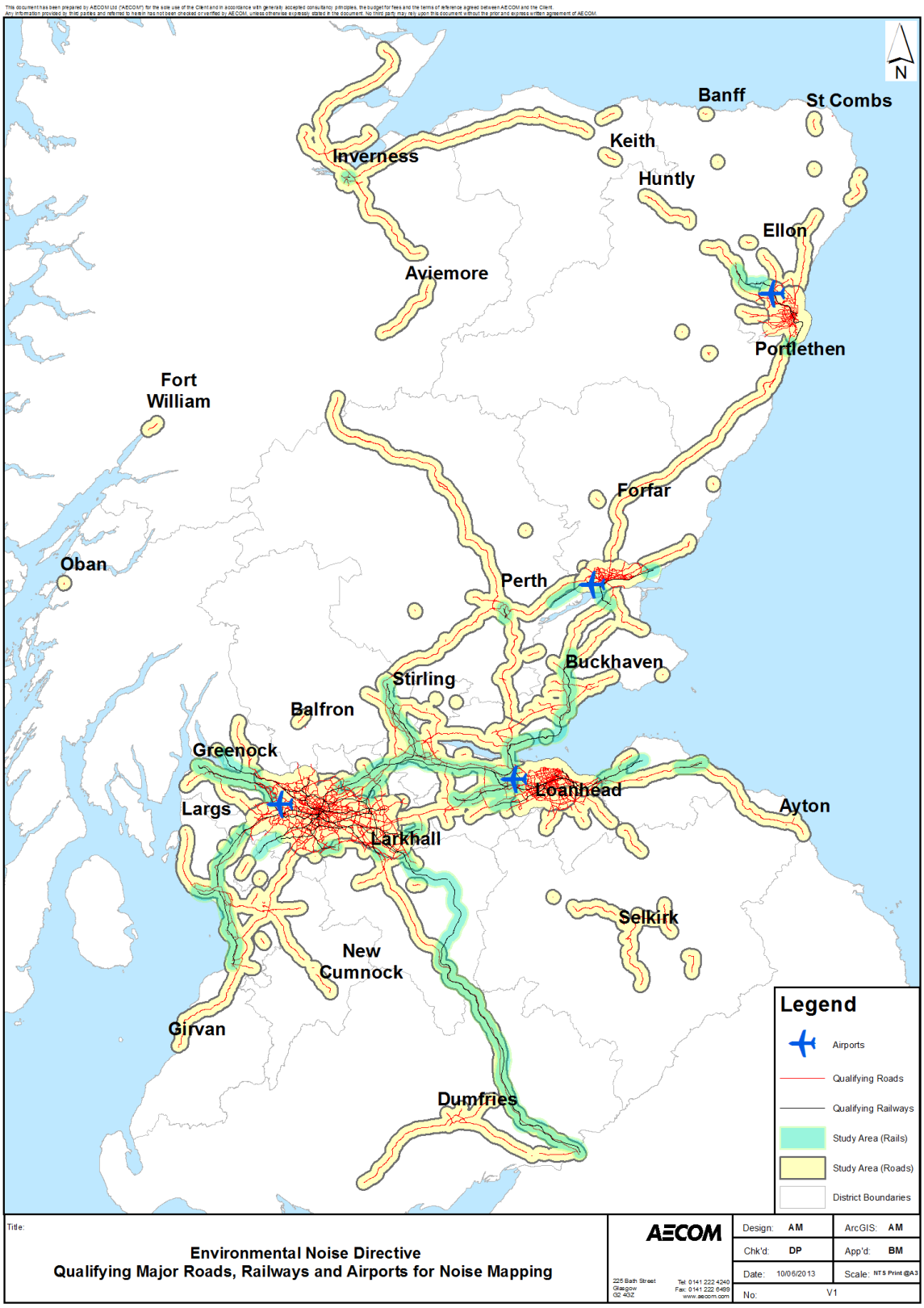
No	Road	Rail	Action	Table 4 options	Timescale					
					'13	'14	'15	'16	'17	'18
Objective 1 - On a prioritised basis, by 2018 we aim to manage the exposure to environmental noise in NMAs										
1a	•	•	Develop and apply appropriate Appraisal and Test of Reasonableness tools to rank effective NMA interventions.	Research & evaluate best practice	•	•				
1b	•	•	Where appropriate, apply noise management interventions on a prioritised basis during existing maintenance and improvement programmes where reasonably practicable.	Hard & Soft Engineering	•	•	•	•	•	•
1c	•		Engage with Aberdeen, Dundee, Edinburgh and Glasgow to assess major road NMAs within agglomerations.	Research & evaluate best practice	•	•	•	•	•	•
Objective 2 - By 2018, we will incorporate environmental noise management within all stages of transportation planning, design, construction and maintenance activities as appropriate										
2a	•	•	Incorporate a commitment to management environmental emissions (such as noise) into future corporate and/or annual business plans	Proposals, Policies, Contracts & Procedures	•	•	•	•	•	•
2b	•	•	Incorporate consideration of noise issues into future construction or maintenance contracts, franchise agreements and specifications.	Proposals, Policies, Contracts & Procedures	•	•				
2c	•	•	Championing the consideration of noise management into local authority development control (planning) process and periodically review transportation appraisal process	Proposals, Policies, Contracts & Procedures	•	•	•	•	•	•

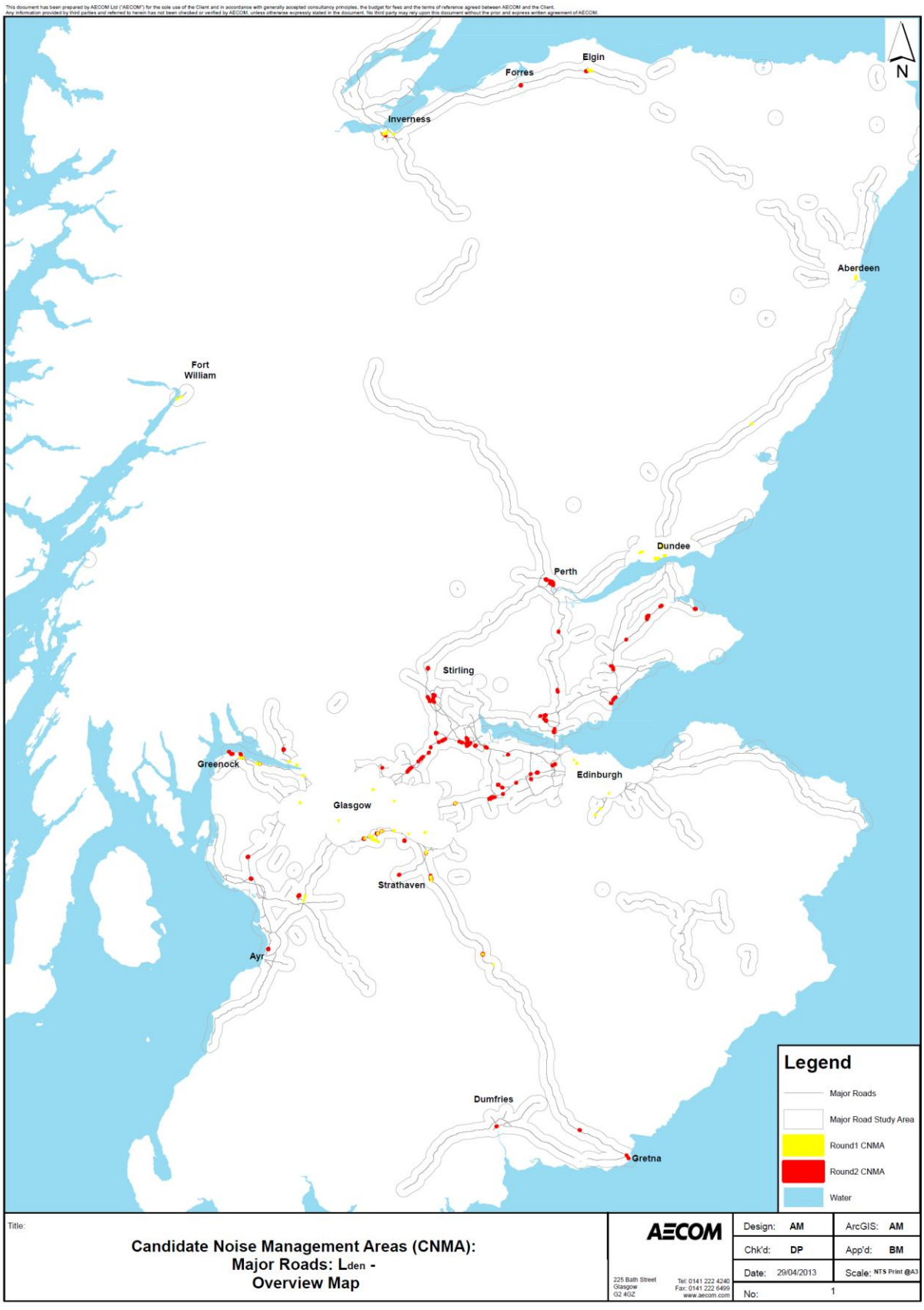
2d	•		Develop a process for approval of noise barriers near the Trunk Road network	Proposals, Policies, Contracts & Procedures	•	•				
2e	•	•	Conduct before-and-after sample noise measurement to (i) determine measured baseline at selected NMAs prior to noise management construction and (ii) appraise noise management approaches in terms of cost benefit and delivery of effective noise management.	Research & evaluate best practice	•	•	•	•	•	•
Objective 3 - By 2018, we will demonstrate a practical contribution to noise management via existing and future proposals and policies										
3a	•		Transport and travel policies and proposals to both take into account and facilitate noise management.	Proposals, Policies, Contracts & Procedures	•	•	•	•	•	•
3b	•		Promote Intelligent Transport Systems to better manage trunk road flows.	Road Operations	•	•	•	•	•	•
3c	•		Promote uptake of low noise tyres	Proposals, Policies, Contracts & Procedures	•	•				
3d	•		Consider update to Noise Insulation Scotland Regulations (NISR) legislation	Research & evaluate best practice			•			
Objective 4 - By 2018, we will promote channels of communication to stakeholders that encourage a learning environment										
4a	•	•	Provide guidance, information and progress	Communications	•	•	•	•	•	•

			updates on the TNAP actions to the Scottish Noise Mapping Website via links to the Transport Scotland/SCOTS website and social media platforms.							
4b	•	•	Conduct review of noise complaints on trunk road and rail network over the last 5 years in order to better understand their nature.	Research & evaluate best practice	•					
4c	•	•	Incorporate noise maps into transportation GIS	Road Operations	•					
4d	•	•	Undertake research to better understand and quantify the effects of END-related noise	Research & evaluate best practice	•	•	•	•	•	•

Table 5 – Transportation noise management between 2013 and 2018

Appendix 1 – Round 2 Noise Mapping locations along with comparison of Major Road and Rail CNMA locations for END Round 1 and Round 2

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Strathaven
Ayr
Dumfries
Gretna
Legend
Major Roads
Major Road Study Area
Round1 CNMA
Round2 CNMA
Water
Title:
Candidate Noise Management Areas (CNMA):
Major Roads: Lden -
Overview Map
AECOM
225 Bath Street
Glasgow
G2 4GZ
Tel: 0141 222 4240
Fax: 0141 222 6499
www.aecom.com
Design: AM
ArcGIS: AM
Chk'd: DP
App'd: BM
Date: 29/04/2013
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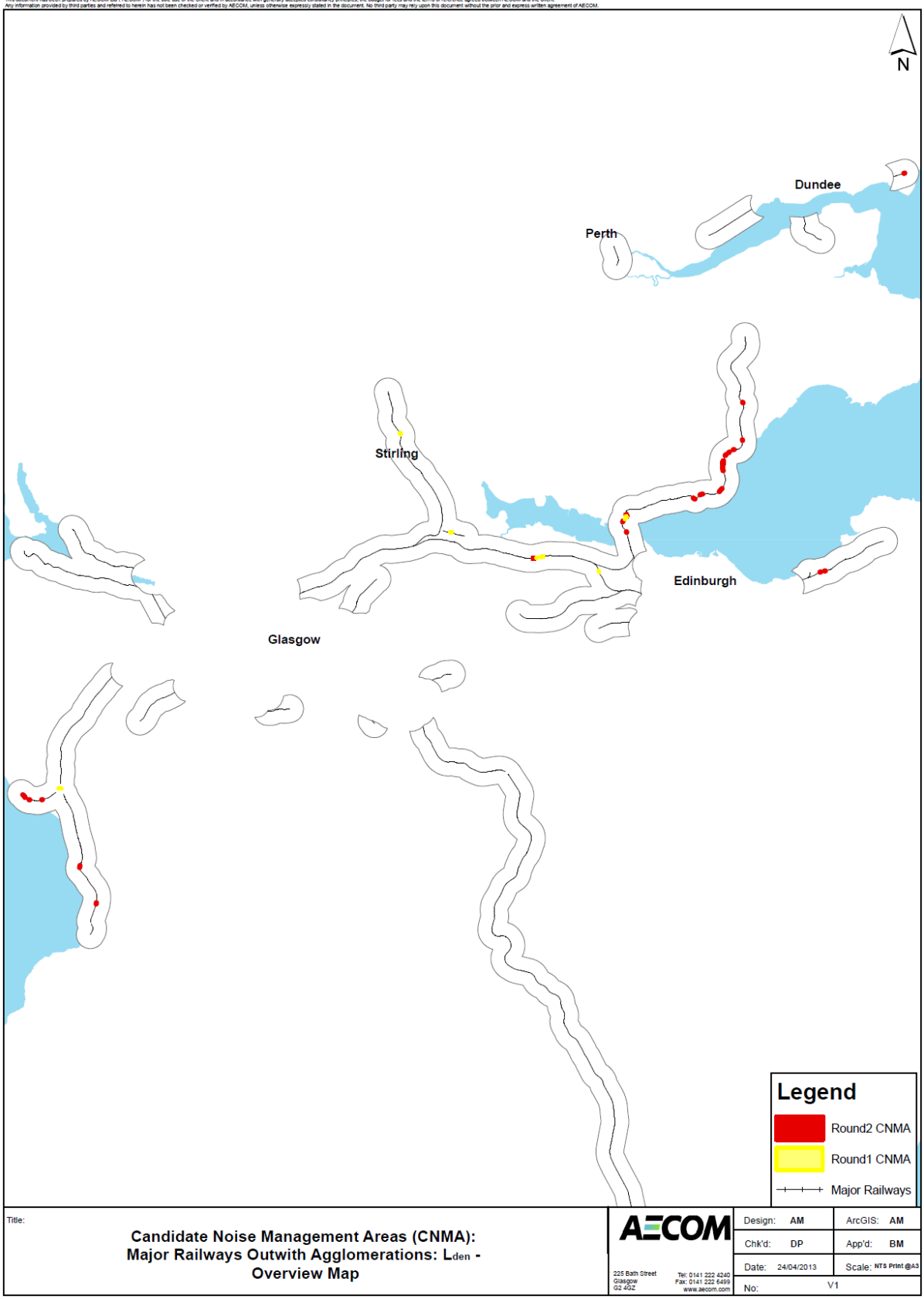

Title:

Candidate Noise Management Areas (CNMA): Major Railways Outwith Agglomerations: L_{den} - Overview Map

AECOM
225 Bath Street
Glasgow
G2 4GZ
Tel: 0141 222 4240
Fax: 0141 222 6499
www.aecom.com

Design:	AM	ArcGIS:	AM
Chk'd:	DP	App'd:	BM
Date:	24/04/2013	Scale:	NTS Print @A3
No:	V1		

Appendix 2 – Major Road and Rail locations designated as Candidate Noise Management Areas for END Round 2 (top 1%)

CNMA #	Map #	Location
1	1	A96, High Street at Hill Street, Elgin
2	2	A96, Market Street at Invererne Gardens, Forres.
3	3	A82, Telford Street at Harrowden Road, Inverness.
4	3	A82, Bank Street at Bank Lane, Inverness
5	4	A85, Crieff Road at Grampian Court, Perth
6	5	A912 Balhousie Avenue, Perth
7	5	A93, Caledonian Road at High Street, Perth,
8	5	A989, Atholl Street at Stormont Street, Perth.
9	5	A989, Charlotte Street at West Bridge Street, Perth.
10	5	A989, Tay Street at George Inn Lane, Perth.
11	5	A989, Tay Street At Water Vennel, Perth.
12	5	A989, Tay Street at Canal Street, Perth.
13	6	A91, Main Street at Addencaple Terrace, Cupar.
14	6	A91, Main Street at Station Road, Dairsie, Cupar.
15	7	A918, City Road at South Street, St. Andrews.
16	7	A918, South Street at Queen's Gardens, St. Andrews.
17	8	A91, Bowling Green Road, Cupar.
18	8	A914, East Bridge, Cupar.
19	8	A914, Station Road at South Road, Cupar.
20	8	A914, South Road at St Michael Drive, Cupar.
21	9	M90, Main Street, Glenfarg.
22	10	A914, near Annfield Cottage, Balmalcolm, Cupar.
23	11	A911, Queensway at Auchmuty Driver, Glenrothes.
24	11	A92, near Laverrock Avenue, Glenrothes.
25	11	A92 near Woodside Road, Glenrothes
26	12	B8033, Stirling Road at Glenallen Court, Dunblane.
27	13	M90 at Dullomuir Drive, Kelty.
28	13	M90 at Keltyhill Avenue, Kelty.
29	14	A811, Dumbarton Road and Port Street, Stirling.
30	14	A905, Wellgreen Road at Upper Craigs, Stirling.
31	14	A9, St Ninians Road near Melville Terrace, Stirling.
32	15	M9 at Birkhill Road, Stirling.
33	15	M9 Grampian Road, Stirling.
34	15	M9 near Wordie Road, Stirling.
35	16	A921, Nether Street at Flesh Wynd, Kirkcaldy.
36	16	A921, High Street at Lord Gambier Wharf, Kirkcaldy.
37	17	A9, Newhouse at Bellfield Road, Stirling.
38	17	A9, Main Street at Weaver Row, Stirling.
39	17	A9, Bannockburn Road at Mayfield Street, Stirling.
40	18	A910, Nicol Street at Halley's Court, Kirkcaldy
41	19	A907, Pittencrieff Street at Segal Place, Dunfermline.

42	20	A907, Appin Crescent at Couston Street, Dunfermline.
43	20	A823 near Whirlbut Street, Dunfermline.
44	20	A823, Hospital Hill at Aberdour Road, Dunfermline.
45	21	M90 near Park Lea, Rosyth.
46	21	M90 near Craig Street, Rosyth.
47	21	M90 near Selvage Street, Rosyth.
48	22	M80 near Wallace Crescent, Denny.
49	23	M876 near Norwood Avenue, Bonnybridge.
50	23	M876 near Ure Crescent, Bonnybridge
51	23	M876 near Balfour Street, Bonnybridge.
52	23	M876 at Balfour Street, Bonnybridge.
53	24	B902, Main Street at Union Street, Falkirk.
54	24	B902, Grahams Road at Castings Avenue, Falkirk.
55	24	B902, Graham Road at Dalderse Avenue, Falkirk.
56	25	M876 near Elmbank Crescent, Dennyloadhead.
57	26	A803, Glasgow Road at Hamilton Street, Camelon, Falkirk.
58	26	A803, Main Streetat Carnegie Drive, Camelon, Falkirk.
59	26	A803, Main Street at Gordon Place, Falkirk.
60	27	B902 near Vicar Street at Grahams Road and Garrison Place, Falkirk.
61	27	A803, West Bridge Street at Penders Lane, Falkirk.
62	27	A803, Cockburn Street at Ranners Road, Falkirk.
63	27	B803, Cochrane Avenue at Griffiths Street, Falkirk.
64	27	B803, High Station Road at Woodside Court, Falkirk.
65	27	B8080 near St. Crispin's Place, Arnot Street and Corporation Street, Falkirk.
66	27	A803 near Bellevue Street, Kerse Lane and Ladysmill, Falkirk.
67	27	A904, Ladysmill at Sutton Place, Falkirk.
68	28	A803, Mary Street at Abbotsford Drive, Laurieston.
69	29	M80 near Glenview Avenue, Banknock.
70	30	M9 near Bo'ness Road, Polmont.
71	30	M9 near Eastcroft Drive, Polmont.
72	31	B857, Main Street at Bilsland Place, Renton.
73	32	M80 near Tollpark Place, Cumbernauld, Glasgow.
74	33	A770, Kempock Street near Bath Street, Gourock
75	33	A770, Chapel Street at Broomberry Driver, Gourock
76	33	A770, Cardwell Road at Steel Street, Gourock
77	34	A803, High Street, New Well Wynd, Linlithgow.
78	35	A770 near Brougham Street at Margaret Street, Greenock.
79	35	A770, Brougham Street at Campbell Street, Greenock.
80	35	A78, High Street at Sir Michale Place, Greenock.
81	36	M80 near Rigghead Avenue, Cumbernauld, Glasgow.
82	36	M80 near Southerness Drive, Cumbernauld, Glasgow.
83	36	M80 near Eastfield Holdings, Glasgow.
84	37	A8, Greenock Road at Bay Street, Port Glasgow
85	38	M9 near King Edwards Way, Kirkliston.
86	38	B800 near High Street and Station Road, Kirkliston.
87	39	B757 near Townhead at Industry Street Kirkintilloch.

88	40	M80 near North Road, Condorrant, Glasgow.
89	40	M80 near Rosehill Drive, Condorrant, Glasgow.
90	40	M80 near Deerdykes Place, Condorrant, Glasgow.
91	40	M80 near Deerdykes Court South, Condorrant, Glasgow.
92	41	A899, West Main Street at Buchan Court, Broxburn.
93	41	A899, West Main Street at Holygate Place, Broxburn.
94	42	A899, West Main Street at Ecclesmachan Road, Uphall.
95	42	B8046, Pumpherson Road at Marrfield Terrace, Uphall.
96	43	M8 near Chuckethall Road, Livingston.
97	44	A89, North Bridge Street at Menzies Road, Bathgate.
98	44	A89, Edinburgh Road at Castle Place, Bathgate.
99	45	M8 near Beechwood Road, Blackburn.
100	46	A705, Main Street at Brucefueld Drive, Bathgate.
101	46	M8 near Torridon Road, Whitburn
102	46	M8 near Moidart Road, Whitburn
103	46	M8 near Torbane Drive, East Whitburn
104	47	M8 near Dewshill Cottages at Forrest Road, Kirk of Shotts.
105	48	B783, East Mains Road, Gullion Park, East Kilbride
106*	48	A725, Hamilton Road at Bosworth Road, East Kilbride
107	49	B764, Easglesham Road at Easglesham Court, East Kilbride.
108	50	A723, Strathaven Road at Graham Avenue, Hamilton.
109	51	M74 near Donaldson Road, Larkhall, Glasgow.
110	52	A737, Towend Street at Roche Way, Dalry.
111	53	A71, Kirk Street at Corneys Close, Strathaven.
112	54	M74 near Carlisle Road, Kirkmuirhill.
113	54	M74 near Carnegie Gardens, Kirkmuirhill.
114	54	M74 near Rogerhill Drive, Kirkmuirhill.
115	55	A737, Howgate at Lauchlan Way, Kilwinning.
116	56	B7038, Dean Street at Cuthbert Place, Kilmarnock.
117	56	A735, Witch Road and Dead Street, Kilmarnock
118	57	A79, Preswick Road near Fernbank Court, Prestwick
119	58	A74(M) near Leadhills Road, Abington.
120	59	A780, Galloway Street, Dumfries.
121	60	A74(M) near Castle-Break, Ecclefechan.
122	61	A74(M) near Gretna Loanings, Gretna

Table 6 – Major Road Candidate Noise Management Areas (top 1%).

CNMA #	MAP #	LOCATION
1	1	Near Station Road, Carnoustie
2	2	Near Main Street, Glenrothes
3	3	Near Boreland Road at Boreland Place, Kirkcaldy
4	4	Near St Clair Street, Kirkcaldy
5	4	Near Den Road, Kirkcaldy
6	4	Near Rosebery Terrace, Kirkcaldy
7	5	Near Nicol street, Kirkcaldy
8	5	Near Abbotshall Road, Kirkcaldy
9	5	Near Pratt Street, Kirkcaldy
10	6	Near Invertiel Road, Kirkcaldy
11	7	Near Abden Place, Kinghorn
12	7	Near Rossland Place, Kinghorn
13	8	Near Kinghorn Road, Burntisland
14	8	Near Lochies Road, Burntisland
15	8	Near Harbour Place, Burntisland
16	9	Near A198 at Seton Steading, Longniddry
17	9	Near A198 at Seton castle
18	10	Near Boreland Road, Inverkeithing
19	10	Near Hope Street, Inverkeithing
20	11	Near Ferryhill Road, North Queensferry
21	12	Near Preston Road, Linlithgow
22	13	Near Ardrossan Road and Stanley Road, Saltcoats
23	13	Near Canal Street at Barnett Crescent, Saltcoats
24	14	Near Station Road at Shore Road, Stevenson
25	15	Near Dundonald Road, Troon
26	16	Near Montgomerie Road, Ayr

Table 7 – Rail Candidate Noise Management Areas (top 1%)

Further copies of this document are available, on request, in audio and large print formats and in community languages (Urdu; Bengali; Gaelic; Hindi; Punjabi; Cantonese; Arabic; Polish).

اس دستاویز کی مزید کاپیاں آڈیو کیسیٹ پر اور بڑے حروف کی چھپائی میں اور کمیونٹی کی زبانوں میں طلب کیے جانے پر دستیاب ہیں، برائے مہربانی اس پتہ پر رابطہ کریں:

এই ডকুমেন্ট-এর (দলিল) অতিরিক্ত কপি, অডিও এবং বড়ো ছাপার অক্ষর আকারে এবং সম্প্রদায়ভুক্ত লোর ভাষায় অনুরোধের মাধ্যমে পাওয়া যাবে, অনুগ্রহ করে যোগাযোগ করুন:

Gheibhear lethbhreacan a bharrachd ann an cruth ris an èistear, ann an clò mòr agus ann an cànain coimhearsnachd. Cuir fios gu:

इस दस्तावेज़/काग़ज़ात की और प्रतियाँ, माँगे जाने पर, ऑडियो टैप पर और बड़े अक्षरों में तथा कम्यूनिटी भाषाओं में मिल सकती हैं, कृपया संपर्क करें:

ਇਸ ਦਸਤਾਵੇਜ਼/ਕਾਗ਼ਜ਼ਾਤ ਦੀਆਂ ਹੋਰ ਕਾਪੀਆਂ, ਮੰਗੇ ਜਾਣ 'ਤੇ, ਔਡਿਓ ਟੇਪ ਉੱਪਰ ਅਤੇ ਵੱਡੇ ਅੱਖਰਾਂ ਵਿਚ ਅਤੇ ਕੰਮਿਉਨਿਟੀ ਭਾਸ਼ਾਵਾਂ ਦੇ ਵਿਚ ਮਿਲ ਸਕਦੀਆਂ ਹਨ, ਕ੍ਰਿਪਾ ਕਰਕੇ ਸੰਪਰਕ ਕਰੋ:

此文件有更多備份，如果需要，語音版本和大字體版本及少數種族語言版本也可提供，請聯絡：

يمكن أن تطلب النسخ الأخرى من هذا المستند كالتسجيل الصوتي والخط المكبر ونسخ بلغات أخرى، يرجى الإتصال على:

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