

Environmental Noise Directive

GLASGOW AGGLOMERATION DRAFT NOISE ACTION PLAN

2019 - 2023



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

**THE ENVIRONMENTAL NOISE DIRECTIVE ACTION PLAN: STRATEGIC
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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 Glasgow 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.

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

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

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 Glasgow Agglomeration Noise Action Plan is one of a suite 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 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 maps² 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 on the 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 onwards 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 Scottish Trunk Road Network³, Rail Network and local authority networks⁴.

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>)

2.5 Glasgow 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, 2 and 3.

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-Tag⁵. In Round 3, agglomeration specific average household size was used (i.e. 2.02 for Glasgow 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)	533,800	171,100	3,900	374,100	43,300	1,000
END Round 2 (national population constant – 2.36)	485,800	139,700	1,500	349,300	33,600	500
END Round 2 (agglomeration specific population constant – 2.02)	415,800	119,500	1,300	298,900	28,700	400
END Round 3 (agglomeration specific population constant – 2.02)	570,900	86,000	3,100	375,500	21,000	1,400

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

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

	L _{den} (dB)			L _{night} (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
END Round 1 (national population constant – 2.36)	123,400	30,000	2,300	89,800	19,600	1,500
END Round 2 (national population constant – 2.36)	89,400	21,200	1,400	65,600	14,200	500
END Round 2 (agglomeration specific population constant – 2.02)	57,900	10,700	300	38,000	3,900	200
END Round 3 (agglomeration specific population constant – 2.02)	60,400	11,700	100	38,200	3,900	0

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

Network Rail has demonstrated that improvements to track maintenance have achieved a significant reduction in noise associated with the operational railway in Great Britain. These findings have directly informed the second round of noise mapping. A 4 dB reduction in the Acoustic Track Quality (ATQ) correction has been implemented to reflect this in the second round mapping onwards.

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 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 noise 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 to 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 Glasgow Noise Action Plan (in line with PAN 1/2011). The process of

prioritisation 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 1/2011⁸ and the accompanying TAN⁹). 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>

⁹ <http://www.gov.scot/Resource/Doc/343341/0114220.pdf>

4. Governance of Noise Action Planning

4.1 Competent Authority

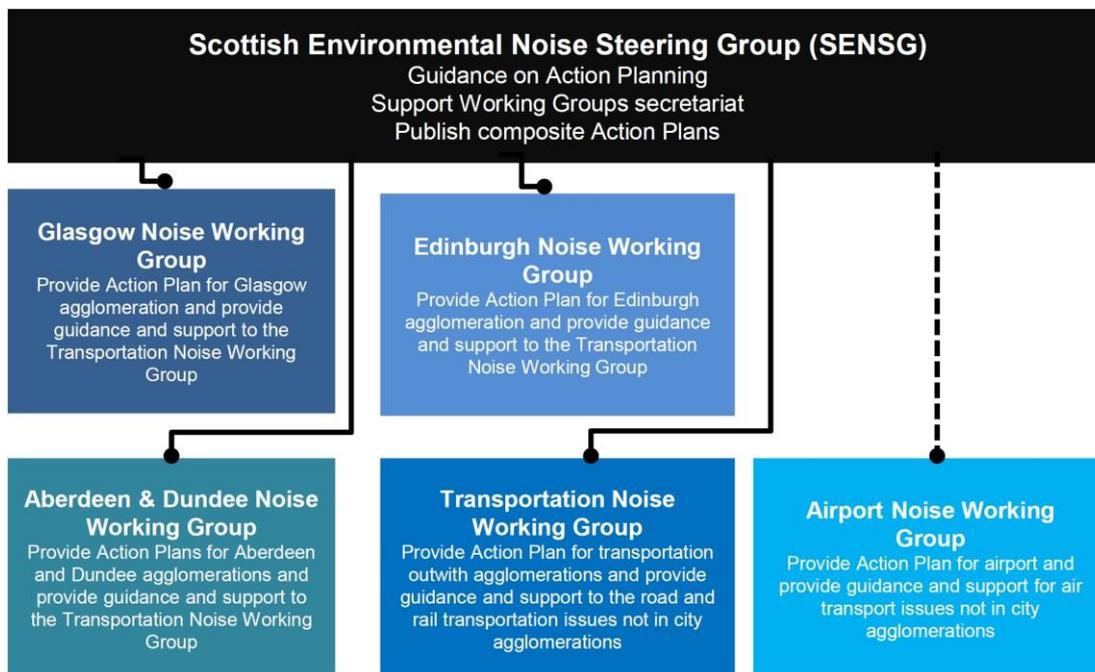
The Scottish Government is the Competent Authority for END in Scotland.

4.2 Scottish Environmental Noise Steering Group (SENSG)

Delivery of the END 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 discussions on progression of the Noise Action Planning, with the governance arrangement shown in Figure 1.

Figure 1: END Governance Arrangements in Scotland



4.3 Glasgow Agglomeration Noise Working Group

Production of the Glasgow Noise Action Plan was overseen by the Glasgow Noise Working Group (under the auspice of SENSG) and comprised Glasgow City Council (chair), East Dunbartonshire Council, South Lanarkshire Council, West Dunbartonshire Council, East Renfrewshire Council, Renfrewshire, North Lanarkshire and Jacobs. The principle objective of the Glasgow Noise Working Group was to comply with END and the Scottish Regulations in order to “produce a Glasgow 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 in 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

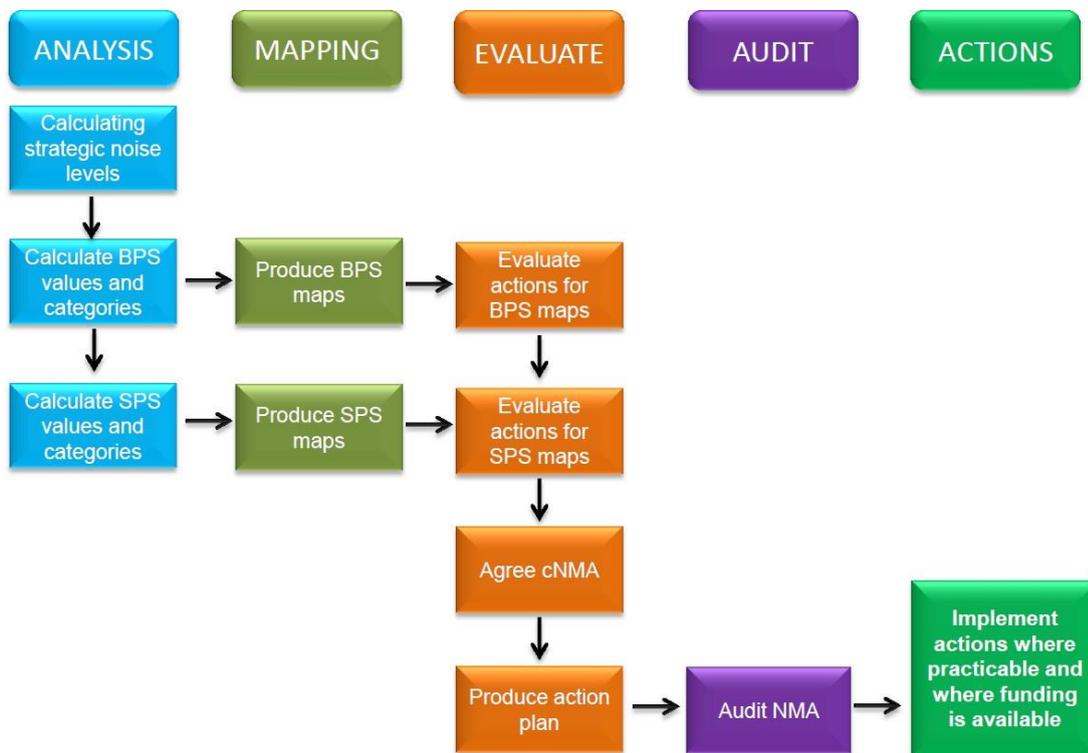
There are no noise limits values or noise thresholds in place in Scotland as it is recognised that analysing the noise contours alone will not necessarily identify areas suffering from the greatest noise impact. In order to gain a better understanding of the potential noise impacts it is helpful to identify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

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

The areas with CNMA status within the Glasgow agglomeration are shown in Appendix. 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 Glasgow agglomeration a minimum of 31,000 people are housed within the road CNMA approximate areas and a minimum of 5,000 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 “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 Guidance.¹⁴ The areas with CQA status within the Glasgow 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

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 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

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

Table 3 – Preliminary actions as part of planning process

5.5 Glasgow Agglomeration noise actions up to 2017

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

Options
A review of current research on road surface reduction techniques. This research commissioned by the Scottish Government comments on 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
Defra have been asked to carry out further annoyance research on a UK basis and this is now included in the research programme.
Use of low noise road surfacing on the roads within agglomerations where appropriate (and where benefits can be demonstrated) and the inclusion of this specification within tenders
Noise barrier installation considered for developments alongside busy road/rail routes where appropriate
Promoting the use of [low carbon] electric cars and City Car Clubs
Inclusion of Noise Management Areas and Quiet Areas within local authority development control (planning) process

Table 4 – Examples of noise mitigation between 2006 and 2012

5.6 Glasgow 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 where appropriate
2	Network operational management of roads within agglomerations where appropriate
3	Development Proposals and Policies where appropriate

Table 5 – Remedial Actions

Glasgow 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						
		'18	'19	'20	'21	'22	'23	'24
Objective 1 - On a prioritised basis, by 2018 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 2018, 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			.	.			

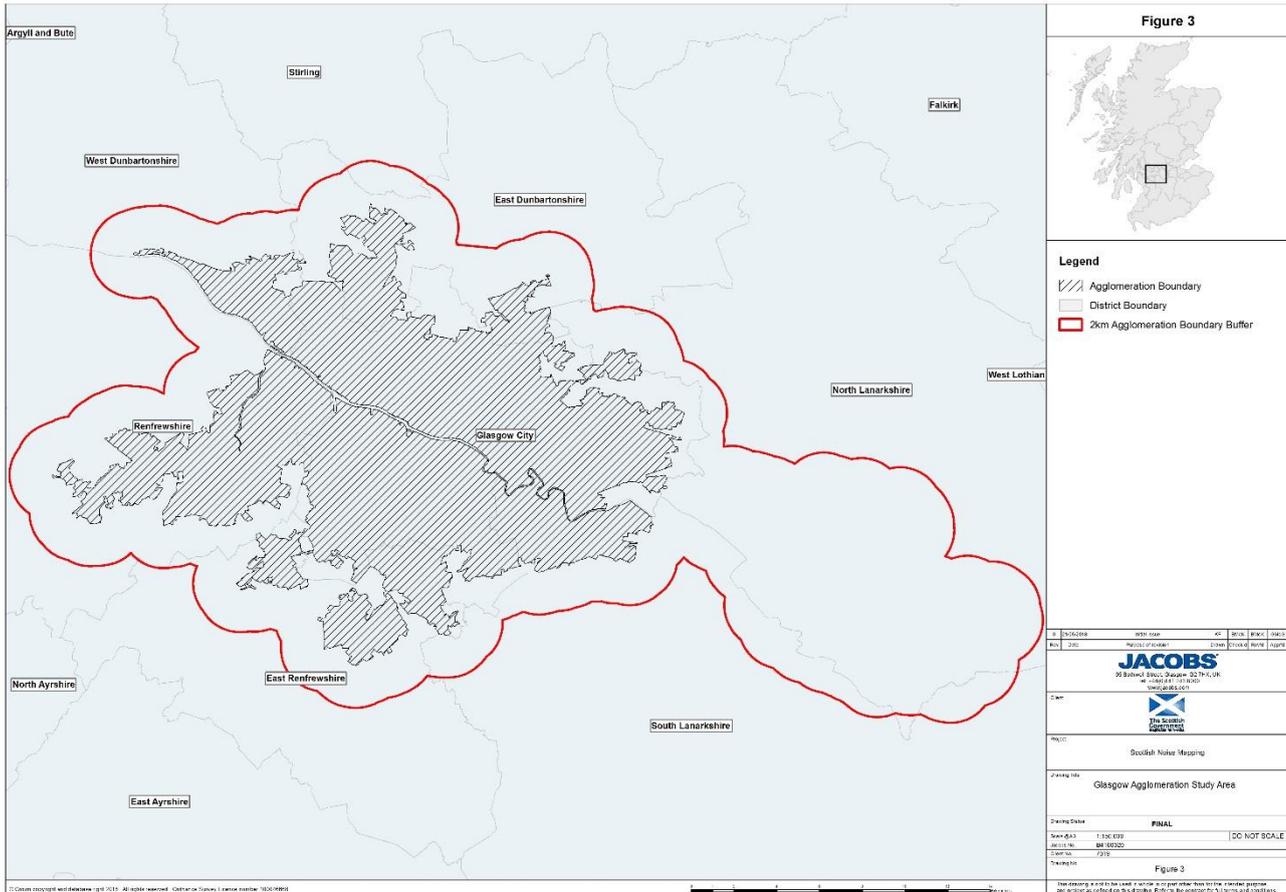
No	Action	Timescale						
		'18	'19	'20	'21	'22	'23	'24
Objective 3 - By 2018, we will endeavour to demonstrate a practical contribution to noise reduction via existing and future proposals and policies								
3a	Transport and travel policies and proposals to both take into account and facilitate noise 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			.	.			
3e	The Glasgow Agglomeration seek to lobby the Scottish Government to amend the Environmental Noise (Scotland) Regulations 2006 for the inclusion of a clause to allow authorities to revoke designated Noise Management Areas on the satisfactory completion of intervention works that are introduced to reduce noise levels	.	.	.	.	.	.	.
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 Glasgow 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 models			.				

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

6. Description of Agglomeration – Glasgow

The Glasgow agglomeration map is shown in Figure 3 below. Glasgow and the Clyde Valley (GCV) has a population of 1.75 million and covers 3,376km², encompassing the whole of the River Clyde catchment. Approximately 48% of Scotland’s exports are produced within the area, making it critically important to the national economy.

Figure 3 Glasgow Agglomeration



Glasgow and the Clyde Valley is predominantly a lowland area surrounded by hill ranges and in recent times the area has experienced the same trends as the rest of Scotland where urban development has the biggest impact on the environment. The GCV Area includes several landscapes that are recognised as being of national and regional importance including parts of the Loch Lomond National Park, the Campsie Fells, the Clyde Muirshiel Regional Park and the Southern Uplands.

Glasgow’s network of green spaces (4,878 ha) accounts for over 27% of the City’s total area. Indeed, Glasgow has one of the largest proportion of greenspace to its urban area of any UK city. The network consists of public parks, amenity open spaces, countryside areas, seven local nature reserves, 46 sites of City-wide importance for nature conservation and around 49 sites of local importance.

The 6,900 individual listed buildings in the City represent the principal elements of Glasgow's architectural heritage. The City also has 22 conservation areas, which extend over 1,476ha, each containing its own distinctive character.

Glasgow is a major Scottish transport node with a comprehensive internal transport network including motorways (M8, M73, M74, M77 and M80), the UK's second largest suburban commuter rail network, the only subway system in the UK outside London and an extensive network of bus routes. Around 94% of Glasgow's population lives within 300m of an hourly bus service and approximately 50 million rail journeys are taken on the rail network in and around the region annually. This network includes a suburban commuter rail system with 120km of track and 60 rail stations serving all parts of the City.

Glasgow Airport is situated within Renfrewshire Council on the south west of the Glasgow agglomeration. A separate Action Plan for this facility has been produced by the airport operator and can be viewed at <http://www.glasgowairport.com/aboutus/living-near-the-airport/local-environment-impacts/aircraft-noise>

The Glasgow and the Clyde Valley Strategic Development Plan was originally approved by Scottish Ministers in May 2012 and has since been updated and published in July 2017. The Strategic Development Plan July 2017 sets out a Vision and Spatial Development Strategy until 2036 of where new development should be located and a policy framework that helps deliver sustainable economic growth through the creation of high quality places, with the aim of reducing inequalities and enhancing the quality of life in the Glasgow City Region. The Plan focuses on growing the economy of the city region in a low carbon and sustainable manner and setting out a planning framework which positively encourages investment within Glasgow and the Clyde Valley.

Please note no responses were received from South Lanarkshire Council or Renfrewshire Council for Round 3 and so the text from Round 2 has been retained.

6.1 END Round 1 and Round 2

6.1.1 Glasgow City Council

Designated Noise Management Areas

Round 1 (2007) of the Scottish Noise Mapping assessment identified 83 Candidate Noise Management Areas (CNMAs) in the Glasgow Agglomeration, of which 70 were within the Glasgow City Council area. This resulted in a total of 37 individual Noise Management Areas (NMAs) being declared. These areas included both surface streets and trunk roads.

Round 2 (2012) of the END process identified 70 CNMAs within the Glasgow Agglomeration, of which 57 were with the Glasgow City Council area. This resulted in a further 15 designated NMAs being declared.

Since many of the NMAs within Glasgow City Council were in similar locations but fragmented, a rationalisation process was undertaken. The result was that the 52 individual NMAs were reduced to 18 consolidated NMAs which covered the relevant surface street

NMAs, 2 shared trunk road/surface street NMAs and 13 individual trunk road NMAs, which are the responsibility of Transport Scotland, who operate the motorway network.

Designated Quiet Areas

Round 1 of the END process identified 28 Candidate Quiet Areas (CQAs) throughout the Glasgow Agglomeration where individuals are likely to experience relatively low levels of noise and Glasgow City Council progressed 10 of these areas to designated Quiet Areas (QAs). These QAs are situated mainly in the large established parks located outwith the city centre.

Round 2 of the END process identified 78 CQAs throughout the Glasgow Agglomeration. No further areas were progressed to official QA status within Glasgow City Council.

Both the designated NMAs and QAs have been outlined in Glasgow City Council's Supplementary Planning Guidance which is required to ensure that new developments do not result in increasing adverse noise impacts in NMAs, to identify noise abatement measures designed to manage, avoid, prevent or reduce the harmful effects of noise exposure in NMAs and to maintain and protect the environmental quality of the city's QAs.

Urban Quiet Areas

The END also allows for a pro-active approach to be taken towards the protection of quiet places which are not officially designated QAs. The officially designated QAs are required to satisfy strict criteria based on noise contours, planning restrictions, use and amenity area. As a result, the areas which qualify are in parks located outside of the city centre. Therefore, Glasgow City Council has begun to explore the introduction of Urban Quiet Areas within the city. These smaller Urban Quiet Areas or Tranquil Areas are currently being identified as an alternative location for people to escape from environmental noise. Although this designation would not carry formal planning restrictions, it could act as a positive promotion for public areas of peace and quiet within the centre of the city itself. Using the END noise mapping process and working with the Planning section and various groups and stakeholders it is hoped that they will be established shortly.

6.1.2 Renfrewshire Council

Candidate Noise Management Areas

Round 1 of the END process identified 11 candidate NMAs for road and rail noise, within Paisley and Johnstone. However, none were considered appropriate for designating as Noise Management Areas.

Round 2 of the END process identified a further 12 candidate NMAs for road and rail noise, within Paisley and Johnstone. However, none were considered appropriate for designating as Noise Management Areas.

Candidate Quiet Areas

There were no candidate Quiet Areas identified within Round 1 of ENDs and only one which was considered within Round 2. This was not taken forward as a designated Quiet Area.

Whilst none of the potential NMAs/QAs were taken forward to designated areas, the Council does, through its Development Management process seek to ensure that noise from transportation does not adversely interfere with the amenity of both existing and residential properties.

6.1.3 East Renfrewshire Council**Candidate Noise Management Areas**

No CNMAs were identified within the East Renfrewshire Council during the Round 1 (2007) and Round 2 (2012) END process.

Candidate Quiet Areas

Rounds 1 and 2 identified 3 Candidate Quiet Areas within East Renfrewshire Areas. Two of the areas are established park areas and although the parks contain a number of quiet enclaves they also have a combination of public facilities and commercial enterprises /sports facilities that generate a significant level of noise. The third area is a wooded river glen unsuitable for development and also dissected by the local rail line. The three areas were not progressed to designated quiet areas.

6.1.4 North Lanarkshire Council**Candidate Noise Management Areas**

Round 1 (2007) of the Scottish Noise Mapping assessment identified 83 Candidate Noise Management Areas (CNMAs) in the Glasgow Agglomeration, of which 3 were within the North Lanarkshire Council area. However, investigation found that none of these sites merited declaration as a Noise Management Area (NMA)

Round 2 (2012) of the END process identified 70 CNMAs within the Glasgow Agglomeration, of which 1 was with the North Lanarkshire Council area. Upon investigation it was found that this site may have merited declaration as a Noise Management Area (NMA). However, the site was part of a major change to the local road network which would likely to result in a substantial decrease in road traffic here. It was therefore decided not to declare an NMA at that stage but revisit this area during Round 3.

Candidate Quiet Areas

Round 1 of the END process identified 28 Candidate Quiet Areas (CQAs) throughout the Glasgow Agglomeration where individuals are likely to experience relatively low levels of noise and North Lanarkshire Council did not progress any of these areas to designated Quiet Areas (QAs).

Round 2 of the END process identified 78 CQAs throughout the Glasgow Agglomeration. No QAs were designated by North Lanarkshire Council.

6.1.5 West Dunbartonshire Council

Noise Management Areas and Quiet Areas

There are currently no designated Noise Management areas nor designated Quiet Areas with the West Dunbartonshire Council area.

6.2 Local Development Plans

6.2.1 Glasgow City Council

The City Development Plan (CDP) - <http://www.glasgow.gov.uk/CHttpHandler.ashx?id=35882&p=0> was adopted by the Council in March 2017 and, as part of Glasgow's wider development plan, is used to guide the location, scale and quality of new development and to inform decisions on planning applications. It takes account of other national and local strategies and plans, including the City's community plan and a wide range of subject plans ranging from biodiversity and housing to transport and waste management. It has two key aims: creating and maintaining a high quality, healthy place; and developing a compact city form that supports sustainable development.

The Plan's policies look to help deliver these two aims. Policy CDP1: The Placemaking Principle aims to improve the quality of development taking place in Glasgow by promoting a design-led approach that will contribute towards protecting and improving the quality of the environment, improving health and reducing health inequality and ensuring that new development attains the highest sustainability levels. It states that the Council will expect new development to contribute towards making the City a better and healthier environment to live in by, amongst other things, ensuring "new activity does not introduce unacceptable additional noise particularly in, or adjacent to, Noise Management Areas nor have an adverse effect on Quiet Areas".

Further detail on how policy CDP1 should be interpreted and implemented is to be set out in associated Supplementary Guidance (SG1: Placemaking Principle). CDP1 states that SG1 will provide guidance on a number of specific topics, including managing noise. It is anticipated that noise management guidance for inclusion in SG1 will be brought forward in 2019.

6.2.2 Renfrewshire Council

The adopted Renfrewshire Local Development Plan together with the New Development Supplementary Guidance guide the use and development of land, indicating where development or changes in land use should or should not take place. The development plan requires to take account and be informed by many other plans, policies and strategies and this then sets the framework at the local level in Renfrewshire. The vision and the framework set out in the development plan focuses on promoting sustainable economic growth through indicating opportunities for change, supporting investment, creating and enhancing communities and places, providing high quality new development in the right locations. Central to this is places which can support a mix of uses, can be adaptable to future opportunities and can accommodate a range of development proposals.

The Renfrewshire Local Development Plan contains policies which are supported by New Development Supplementary Guidance providing detail and advice when considering developments in relation to noise. This informs the decision made when assessing planning application for development.

6.2.3 East Renfrewshire Council

The Local Development Plan was adopted in June 2015. The Plan sets the framework for the growth and development of East Renfrewshire up to 2025 and beyond and covers both the urban and rural areas of the Council area providing a framework for the economic, social and environmental future.

Work is underway on Local Development Plan 2 (LDP2) to cover the period upto 2029. The Main Issue Report was available for public consultation until February 2017 and this included background reports on transport, Green belt landscape character assessment and a strategic environmental Assessment. It is anticipated that the LDP 2 will be adopted in May 2019.

6.2.4 North Lanarkshire Council

The North Lanarkshire Local Plan at time of writing was adopted in 2012 and sets out detailed sites and policies for the development and use of land, as well as serving as a guide for all day-to-day planning decisions. This Local Plan is in the process of being revised and the Council approved North Lanarkshire Development Plan in 2016. This is intended to be the land use planning strategy for North Lanarkshire. The long-term aim is to increase sustainable growth and regeneration, and to improve places in support of the Corporate Vision. It is intended to be delivered in tandem with the Local Outcome Improvement Plan. Following publication, some 1,600 contributions were received and duly considered. In January 2018, the Council agreed to publish a Modified Local Development Plan, in order to take account of planning permissions granted since 2017 as well as factual and typographical errors and comments relating to layout and readability of the Plan.

Currently NLC has not declared any Noise Management Areas (NMAs) or Quiet Areas (QAs). Should this position change in the future any declared NMAs or QAs will be taken into consideration in any future updates of the Local Development Plan.

6.2.5 West Dunbartonshire Council

There are currently two Plans in place in West Dunbartonshire – the West Dunbartonshire Local Plan (adopted 2010) and the Local Development Plan (Proposed Plan) 2016, hereafter referred to as the Proposed Plan (2016). The Council took a decision in April 2016 that the Local Development Plan would not be adopted but would retain its Proposed Plan status and would continue to be a material consideration in the determination of planning applications, as the plan represents the most up to date policy position. Once adopted, Local Development Plan 2 will supersede both of these Plans.

This Main Issues Report is the first stage in the preparation of Local Development Plan 2 for the West Dunbartonshire area, excluding the area that falls within the Loch Lomond and the Trossachs National Park boundary. (The National Park Planning Authority is responsible for planning matters within the National Park and has its own Local Development Plan <http://www.lochlomond-trossachs.org/planning/planning-guidance/local-development-plan/>)

The Main Issues Report is a consultation document which focuses on the key changes which have occurred since the previous plans (the adopted Local Plan (2010) and the Proposed Plan (2016)) and it will highlight the key opportunity areas for future development in West Dunbartonshire <http://www.west-dunbarton.gov.uk/media/4312826/main-issues-report.pdf>

Currently there are no Noise Management Areas or Quiet Areas declared within West Dunbartonshire.

6.3 Local Transport Strategy

6.3.1 Glasgow City Council

Keeping Glasgow Moving

The transport strategy for Glasgow 'Keeping Glasgow Moving' Glasgow's Local Transport Strategy (LTS)" 2007-2009 remains current and continues to set out Glasgow City Council's aspirations for taking forward transport policy and infrastructure within the local authority area. The strategy has been developed taking account other relevant strategies at a national, regional and local level as well as the feedback from an extensive consultation exercise and an examination of local issues, problems and opportunities were proposed in five high level objectives. A revised transport strategy is expected in spring 2019, which will also take account of the Council's Connectivity Commission. Objective three (LTS3) outlines:

"Promote healthy and environmentally sustainable methods of transport that minimise harmful emissions and energy consumption including those that involve physical activity".

Noise Pollution is an environmental consideration. Current practice in dealing with road traffic noise by Local Authorities in Scotland is in response to the duty placed on them by the Noise Insulation (Scotland) Regulations 1975. This requires authorities to make initial

assessments of traffic noise for both new and altered roads at opening and after 5, 10 and 15 years after opening. These assessments are carried out in accordance with procedures set by central government. Where noise levels are exceeded the Local Authority has a duty to carry out insulation works to qualifying properties or make grants to have the work carried out.

The City Centre Strategy 2014-2024

In addition to the “Keeping Glasgow Moving” transport strategy Glasgow City Council published a further detailed strategic plan for the city centre in 2015. The City Centre Strategy 2014-2024 (<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=27887&p=0>) was designed to link up various planning and strategic policies. The document outlines the main objectives, desires and challenges facing the local authority with regard to transportation as it strives to make Glasgow an attractive and sustainable place for residents, visitors and businesses.

The three main themes of the report are Walking and Cycling, Public Transport and Traffic and Parking and these relate to five main objectives;

- Improve the health of Glasgow’s Citizens
- Support the growth in economic vibrancy of the city centre
- Enhance the quality of main pedestrian spaces
- Reduce harmful traffic emissions and noise
- Enhance road safety and personal security

The City Centre Strategy makes a clear and defined commitment to the council policy with regard to Noise Management Areas highlighting the need to “avoid, prevent or mitigate the harmful effects of environmental noise exposure on the residential population”.

The concepts proposed to deliver these objectives include;

- Redesigning existing thoroughfares into tree lined, work has commenced on the first phase of the Avenues project which is a redesign of existing thoroughfares into tree lined boulevards. The projected benefits being an improvement of the urban environment with a key strategic objective being the establishment of an integrated network of continuous pedestrian and cycle priority routes. It is hoped, in qualitative terms, the redevelopment will have a positive impact on both air quality and noise emissions.
- Further investment in cycling infrastructure expanding the network of cycle routes throughout the city centre. This includes lining established peripheral routes with new proposed routes in the city mirroring the Avenues. Further to this there is the intention of improve cycle storage, continue to provide the Mass Automated Cycle Hire scheme, and bring European initiatives like the “Woodside Mini Holland” project to the city where a Dutch-style cycle-friendly design improves streets and places for people, promoting increased uptake of walking and cycling and is associated with greater use of local businesses.

This ambitious project is a key component in Glasgow's proposed cycle network, and the first of its kind in Scotland. At the heart of this project is an aim to work with the community to rebalance streets to reduce the dominance of road traffic.

- Plans to reduce traffic congestion through traffic management and parking restrictions including the implementation of 20mph zones throughout the city, a measure which currently stands at 205km of the city's roads (15%).
- Introducing a fully integrated public transport ticketing system to make the use of public transport more attractive and efficient.
- Establish strategic park and ride locations to reduce the number of vehicles entering the city and promote car club membership within the city to change attitudes to vehicle ownership.

6.3.2 Renfrewshire Council

Renfrewshire's Local Transport Strategy (LTS) was approved in 2007 setting out a vision for transport over a 10 to 20 year timeframe and which supports the wider economic, environmental and social objectives of the Council. A key objective of the strategy is to ensure a healthy and sustainable environment and the impact of traffic noise is recognised in the accompanying Strategic Environmental Assessment (SEA):

- Under 'Population and Human Health' it is accepted that noise and vibration from transport can negatively impact health and that noise should be considered as part of the SEA objective of improving human health. However, at time of writing, no data was available on the extent of such problems, nor exactly how transport noise affects the population.
- The SEA lists under mitigation measures for 'Human Health' that noise impacts can be mitigated through appropriate acoustic screening, taking into account its appropriateness to the local environment.
- The SEA recognises the potential for transport projects to generate significant volumes of waste and sets an objective to use waste handling processes which do not cause a noise nuisance.

A review and refresh of the Local Transport Strategy was undertaken in February 2017 to provide an update on the Council's achievements against the actions set out in the 2007 Strategy. A great deal of progress has been made with most actions now implemented and outcomes measured. The review also confirmed that much of the content of the 2007 strategy, including the vision and key objectives, are still relevant. The review recognises that Scottish government is considering phasing out half of all petrol and diesel fuelled vehicles from urban environments by 2030 and will be considering a revision of the Noise Insulation Scotland Regulations with a view to create a new Scottish Statutory Instrument on the issue of householder protection from new road noise. The refreshed Local Transport Strategy including the update on measured outcomes can be found on the following webpage <http://www.renfrewshire.gov.uk/article/3556/Local-Transport-Strategy>.

The National Transport Strategy and the West of Scotland Regional Transport Strategy are also currently under review by the Scottish Government and Strathclyde Partnership for Transport respectively. The Council's current refreshed Local Transport Strategy sets out a broad direction of travel for Renfrewshire while the content of the new National and Regional Transport Strategies are awaited following which a new Renfrewshire Local Transport Strategy will be produced. The new Renfrewshire Local Transport Strategy will build upon the 2007 strategy, providing a framework to deliver an affordable, sustainable and effective travel and transport network. It will continue to identify short, medium and long-term priorities that contribute towards relevant local, regional and national transport targets and goals.

4.3.3 East Renfrewshire Council

The Transport strategy for East Renfrewshire Council "Working for you in Transportation – Transport strategy 2008-2011" remains valid. The main objectives of the strategy is to:

- Reduce the need to travel and stimulate sustainable economic development in the local area.
- Reduce car dependency and stimulate modal shift to walking, cycling and public transport.
- Enhance access to jobs and services by a variety of modes of transport for all members of society.
- Reduce the negative environmental impacts of transport.
- Reduce congestion on all transport modes and services.

4.3.4 North Lanarkshire Council

North Lanarkshire Council published its Local Transport Strategy (LTS) in 2010. The four key objectives identified in the document are:

- To stimulate business and the economy and develop North Lanarkshire as an attractive place to invest, work and do business;
- To provide equal opportunities and enhance the choice, accessibility and availability of transport, particularly for those in deprived areas and for those with limited access to the transport network;
- To promote safety in the community and enhance actual and perceived safety when travelling on the transport network; and
- To protect North Lanarkshire's natural and built environment and improve the health of its population.

The LTS identifies the need to improve access to employment, health and education by public transport, walking and cycling. Actions include enhancement of public transport links to stations serving the new Airdrie-Bathgate rail line, improving links to existing train services and lobbying for improved bus services in the evenings and weekends.

It also identifies the need to tackle the impacts of peak hour congestion and identifies a number of key actions to be taken against various transport-related issues, including road improvements, parking enhancements within town centres, softer measures aimed at reducing the demand for travel, and encouraging travel by means other than by car.

It is recognised that it is a number of years since the LTS was prepared, however at the time of writing there are no immediate plans to update the document. This is part in relation to an ongoing exercise within the Council to review the overall number of plans and policies that it has and instead include them under the same overarching policy/strategy. Regardless of where the policy sits, as a stand-alone document or under an umbrella of various related policies the work associated with these strategies will still be undertaken by the relevant department within North Lanarkshire.

4.3.5 West Dunbartonshire Council

West Dunbartonshire's Local Transport Strategy was published from 2013 to 2018, and revised to 2020. The 2nd Objective (of 6) identifies the Environment as a key objective to "support West Dunbartonshire as an attractive and sustainable place to live, work, and visit".

Whilst there are already above average levels of public transport use in West Dunbartonshire key to the implementation of the strategy is to further reduce car use and encourage more use of sustainable modes of transport like walking, cycling and public transport.

http://www.west-dunbarton.gov.uk/media/1779733/wdc_local_transport_strategy_2013-2018.pdf

6.4 Local Air Quality Action Plans

6.4.1 Glasgow City Council

Glasgow currently has three Air Quality Management Area (AQMA) in respect of exceedances of the annual mean objective for nitrogen dioxide (NO₂). The AQMAs are the City Centre, Parkhead Cross and Byres Road/Dumbarton Road. Two of these AQMAs, the City Centre and Byres Road/ Dumbarton Road are also declared in respect of exceedances of the annual mean objective for particulate matter (PM₁₀).

The largest source of air pollution within Glasgow is from road transport. Glasgow's Air Quality Action Plans therefore contain a range of measures across the city targeting road transport and promoting sustainable transport. The action plans can be found here.

Some of the current works taking place, that may lead to reductions in noise include the following:

Low Emission Zone (LEZ)

Glasgow will introduce Scotland's first LEZ on 31st of December 2018. This will set emission standards on vehicles entering the city centre, starting with the bus fleet but expanding to cover all vehicles by 2022. The emissions standards may be met through the adoption of newer vehicles or the retrofitting of older vehicles with emissions reduction

equipment. It is expected that the LEZ will lead to the faster turnover of the vehicle fleet using the city centre than would otherwise have occurred.

As part of the Glasgow City Region City Deal funding, Glasgow City Council is investing approximately £115 million within the city centre to deliver the Avenues programme. This will deliver streetscape improvements to the public realm establishing principle Avenues throughout the city centre prioritising the pedestrian and cyclist. The avenues will be used to integrate public realm and placemaking initiatives, making the city centre a more attractive and people friendly environment.

Cycling facilities

Glasgow has expanded its Mass Automated Cycle Hire scheme (NextBike) throughout the city and further improved cycle parking and by-pass lanes / advanced stop lines and feeder lanes at various locations to encourage the uptake of cycling. Recent infrastructure improvements include dedicated, segregated cycle routes such as the West City Way and the South-West City Way. Developments which are under construction or fully committed include the South City Way, the Connecting Woodside project and the Sighthill Cycling Village project.

Glasgow ECO Stars

ECO Stars fleet recognition scheme was established in Glasgow in September 2014 primarily as an air quality awareness tool as part of the air quality action plan. GCC has encouraged the ECO Stars operator, Transport Research Laboratory (TRL) to raise member's awareness and responsibility of not just exhaust emissions but also noise pollution and methods to reduce the impact through driver behavior, vehicle renewal, engine maintenance and tyre replacement for low noise tyres.

The Glasgow scheme has now achieved 160 unique members which account for approximately 8000 diesel powered vehicles that have a detrimental impact on the city's air quality and has recently expanded to the Glasgow public hire taxi fleet, which encapsulates a group of 885 diesel powered vehicles.

It is hoped with the Roadmap provided by TRL the membership will continually improve their fleet thereby improving the air quality and transport noise climate within the city.

6.4.2 Renfrewshire Council

Renfrewshire Council declared an additional two Air Quality Management Area (AQMA) in respect of nitrogen dioxide within Johnstone and Renfrew town centres in 2016. This is in addition to the 2010 declared Paisley Town Centre AQMA. The largest source of air pollution within the AQMAs is attributable to road transportation. Renfrewshire's Air Quality Action Plan, approved in 2013, focused on a range of measures specifically targeting road transport as well as attempting to promote sustainable transport.

Some of the works which took place to reduce pollutant emissions (also lead to reductions in noise) included:

- A recent refurbishment to Central Road has resulted in the traffic flow being reduced to a single direction (westbound traffic only). The numbers of bus stops were also reduced from four to two thus effectively halving the traffic using Central Road and reducing the number of buses idling. The positive effects on air quality as a result of this is evident from subsequent monitoring results.
- The Statutory Quality Bus Partnership Scheme is in operation in the area and has seen the introduction of progressive emission standards for buses. Roadside vehicle emission and idling enforcement activities will continue to be undertaken throughout the area.

Renfrewshire is currently producing a new Renfrewshire Wide Air Quality Action Plan, due of public consultation imminently, and again has a focus on improving road traffic emissions and a few of the action measures being proposed are:

- The Glasgow City Deals projects at the Clyde Waterfront and Renfrew Riverside and at the Glasgow Airport Investment Area which will move traffic out of Renfrew town centre and away from more populated areas.
- Upgrades and improvements to the Council's Urban Traffic Control system which will maximise the efficiency of traffic signals throughout the town centre areas, reducing traffic queues/delays by up to 20%. This will also have potential benefits in terms of noise at the affected locations.
- Improvements to the Council fleet with significant increases in use of electric vehicles, improving both emissions in terms of air quality and noise.

Renfrewshire ECO Stars Scheme

The ECO Stars scheme is also now operating within Renfrewshire and has done so for the past two years. Membership is growing, with around 30 members using 1800 vehicles and includes the Council's own fleet, which has gained a four star rating.

The Scheme will continue to grow with new members being identified and bought into it with the resultant benefits of improved exhaust emissions, driver behavior, and vehicle renewal. There will also be benefits in terms of noise pollution through utilisation of methods to reduce the impact through engine maintenance, speed limiting and tyre replacement for low noise tyres.

6.4.3 East Renfrewshire Council

Air quality in East Renfrewshire is generally good. There are no major industrial or commercial sources of air pollutants within the area and road traffic is therefore the main source of local air pollution. No air quality management areas (AQMA) have been declared in East Renfrewshire and our monitoring of air quality across the district has found that pollutant levels to decrease over recent years.

East Renfrewshire Council focuses on a range of measures designed to improve local air quality and increase public awareness of the steps that can be taken to minimise our

impact on our local environment. Vehicle idling enforcement schemes operate around local schools and an “anti-idling” message is promoted to primary school pupils. Active school transport co-ordinators help promote walking busses, safe cycling and active travel routes for primary school children and a personal travel plan is developed for each pupil transferring from primary to secondary school. These measures will help reduce the number of vehicles travelling to and from schools and will also help reduce the level of noise generated by traffic at that time of day.

6.4.4 North Lanarkshire Council

North Lanarkshire Council currently has 4 Air Quality Management Areas (AQMAs). These are located in Chapelhall, Coatbridge, Motherwell Town Centre and Croy. All AQMAs have been declared for exceedances of the national annual mean objective for Particulate Matter (PM10). The AQMA in Chapelhall has also been declared for exceedances for monitored exceedances of the annual mean objective for Nitrogen Dioxide (NO₂).

At the time of writing North Lanarkshire Council is about to publish its third Air Quality Action Plan which details measures the Council intends to take to improve air quality in the AQMAs. Some of the current action plan measures may lead to reductions in noise

North Lanarkshire ECO Stars

North Lanarkshire Council have also established the ECO Stars fleet recognition scheme. The NLC currently has 161 members which equates to 6380 vehicles.

6.4.5 West Dunbartonshire Council

There are currently no Air Quality Management Areas within West Dunbartonshire.

6.5 City Deal

6.5.1 Glasgow City Council

Grant funding from the UK and Scottish Governments each provided the city region with an additional £500 million for a variety of projects focusing on infrastructure, skills and employment and innovation and business growth.

With traditional municipal construction schemes limited due to resourcing pressures this additional investment is an important opportunity to design and build noise mitigation into future City Deal projects within Glasgow.

Regeneration projects are under design, planning consent and construction throughout the Glasgow Agglomeration and major works in Govan, Yoker and the Canal area of the M8 within the city are under consultation with GCC with regard to noise impact, modelling and mitigation.

6.5.2 North Lanarkshire Council

Through the City Deal Infrastructure Investment Fund the Council is investing in new and improved infrastructure to create an improved transport interchange in Motherwell town

centre, to support investment by ScotRail and its partners in upgrading Motherwell Station. The Project Scope is to create an improved multi-modal transport interchange on Muir Street to improve access to Motherwell Station, enhance the interchange between car/bus/bike and train and expand park and ride provision. The project deliverables will improve the efficiency of the local road network, encourage increased modal shift to public transport and active travel, resulting in highway and local decongestion and hopefully result in reduced noise from transport within Motherwell Town Centre. The project deliverables will also help to improve the mobility of the area's workforce and provide a more efficient and connected transport system. The direct deliverables of the project will provide:

- Highway and local road network decongestion benefits;
- Improved journey times and reduced queue lengths;
- Improved public transport journey time reliability;
- Enhanced road, cycle and pedestrian network safety and security;
- Enhance access and connectivity to the regional transport network, job training and education opportunities;
- A safe and more attractive environment with amenity and air quality benefits.

In addition, through the City Deal programme the Council are proposing to develop a park and ride at Eurocentral to support the Strategic Economic Investment Location and encourage modal shift to lessen congestion on M8 to Glasgow/Edinburgh, improve journey times and reduce air pollution across the strategic network.

In addition to this, the Pan Lanarkshire Orbital Transport Corridor proposal includes the planned East Airdrie Link Road (EALR) which will run from the hamlet of Stand, bypassing Chapelhall, to Newhouse, and seeks to create more reliable and sustainable movements within North Lanarkshire and beyond, moving through traffic from the local road network, improving journey time, reducing congestion and improving road safety.

APPENDICES

1 Candidate Noise Management Areas

* New CNMA in Round 3

Glasgow Road CNMAs			
CNMA ID	Map	ADDRESS	Local Authority
1*	Figure 10	A82	West Dunbartonshire Council
2*	Figure 10	KIRKOSWALD DRIVE	West Dunbartonshire Council
3*	Figure 11	GLASGOW ROAD	West Dunbartonshire Council
4*	Figure 11	DUMBARTON ROAD	Glasgow City Council
5	Figure 11	DUMBARTON ROAD	Glasgow City Council
6*	Figure 11	DUMBARTON ROAD	Glasgow City Council
7*	Figure 13	DUMBARTON ROAD	Glasgow City Council
8*	Figure 14	M8	Renfrewshire Council
9*	Figure 14	COCKLES LOAN	Renfrewshire Council
10*	Figure 14	COCKLES LOAN	Renfrewshire Council
11*	Figure 15	MONTGOMERY ROAD	Renfrewshire Council
12	Figure 15	CAUSEYSIDE STREET	Renfrewshire Council
13*	Figure 16	QUEENSLAND DRIVE	Glasgow City Council
14*	Figure 16	M8	Glasgow City Council
15*	Figure 16	BARFILLAN DRIVE	Glasgow City Council
16	Figure 16	M8	Glasgow City Council
17*	Figure 23	PAISLEY ROAD WEST	Glasgow City Council
18*	Figure 23	M8	Glasgow City Council
19	Figure 23	PAISLEY ROAD WEST	Glasgow City Council
20*	Figure 23	M77	Glasgow City Council
21	Figure 23	M8	Glasgow City Council
22*	Figure 23	M8	Glasgow City Council
23	Figure 20	FINNIESTON STREET	Glasgow City Council
24	Figure 22	POLLOKSHAWS ROAD	Glasgow City Council
25*	Figure 22	EGLINTON STREET	Glasgow City Council

Glasgow Road CNMAs			
CNMA ID	Map	ADDRESS	Local Authority
26	Figure 22	WALLACE STREET	Glasgow City Council
27	Figure 22	PAISLEY ROAD	Glasgow City Council
28	Figure 25	HIGH STREET	Glasgow City Council
29	Figure 25	ALBION STREET	Glasgow City Council
30*	Figure 25	GEORGE SQUARE	Glasgow City Council
31*	Figure 21	ROBERTSON STREET	Glasgow City Council
32	Figure 21	WEST CAMPBELL STREET	Glasgow City Council
33	Figure 21	ARGYLE STREET	Glasgow City Council
34	Figure 21	DOUGLAS STREET	Glasgow City Council
35*	Figure 21	M8	Glasgow City Council
36*	Figure 21	STOBCROSS STREET	Glasgow City Council
37	Figure 18 and Figure 19	A82/M8	Glasgow City Council
38*	Figure 18	A82	Glasgow City Council
39	Figure 18	GIBSON STREET	Glasgow City Council
40	Figure 20	ARGYLE STREET	Glasgow City Council
41*	Figure 20	KELVINHAUGH STREET	Glasgow City Council
42*	Figure 20	YORKHILL STREET	Glasgow City Council
43	Figure 17	BEITH STREET	Glasgow City Council
44*	Figure 17	DUMBARTOBN ROAD	Glasgow City Council
45*	Figure 17	GARDNER STREET	Glasgow City Council
46*	Figure 17	BEITH STREET	Glasgow City Council
47	Figure 17	A814	Glasgow City Council
48*	Figure 16	A739	Glasgow City Council
49*	Figure 12	A82	Glasgow City Council
50	Figure 12	CROW ROAD	Glasgow City Council
51	Figure 12	A739	Glasgow City Council
52*	Figure 18	A82	Glasgow City Council
53	Figure 19	GARSCUBE ROAD	Glasgow City Council
54*	Figure 19	M8	Glasgow City Council
55*	Figure 19	GARSCUBE ROAD	Glasgow City Council
56*	Figure 19	PORT DUNDAS ROAD	Glasgow City Council

Glasgow Road CNMAs			
CNMA ID	Map	ADDRESS	Local Authority
57	Figure 24	M8	Glasgow City Council
58*	Figure 24	STAFFORD STREET	Glasgow City Council
59	Figure 24	SPRINGBURN ROAD	Glasgow City Council
60	Figure 24 and Figure 26	M8	Glasgow City Council
61*	Figure 26	HANSON STREET	Glasgow City Council
62*	Figure 26	M8	Glasgow City Council
63*	Figure 26	M8	Glasgow City Council
64*	Figure 26	VIEWPARK AVENUE	Glasgow City Council
65*	Figure 27	M8	Glasgow City Council
66*	Figure 28	GARTCRAIG ROAD	Glasgow City Council
67	Figure 28	M8	Glasgow City Council
68*	Figure 29	GARTLOCH ROAD	Glasgow City Council
69*	Figure 29	M8	Glasgow City Council
70	Figure 31	M8	Glasgow City Council
71*	Figure 31	M8	Glasgow City Council
72*	Figure 31	M8	Glasgow City Council
73*	Figure 33	M74	South Lanarkshire Council
74*	Figure 34	MAIN STREET	South Lanarkshire Council
75	Figure 32	CALDER STREET	North Lanarkshire Council
76*	Figure 36	AIRBLES ROAD	North Lanarkshire Council
77*	Figure 35	BLACKSWELL LANE	South Lanarkshire Council
78	Figure 30	FARMELOAN ROAD	South Lanarkshire Council
79*	Figure 30	JOHNSTONE DRIVE	South Lanarkshire Council
80*	Figure 37	M77	East Renfrewshire Council

Glasgow Rail CNMAS			
CNMA ID	Map	ADDRESS	Local Authority
1	Figure 16	Near Station Road	North Lanarkshire Council
2	Figure 16	Near Bell Street	North Lanarkshire Council
3*	Figure 16	Near Kimberley Street	North Lanarkshire Council
4*	Figure 15	Near Vesuvius Drive	North Lanarkshire Council
5*	Figure 15	Near Stirling Street	North Lanarkshire Council
6	Figure 14	Near Muir Street	North Lanarkshire Council
7	Figure 13	Near Motherwell Road	North Lanarkshire Council
8*	Figure 12	Near Old Glasgow Road	North Lanarkshire Council
9	Figure 11	Near Main Street	North Lanarkshire Council
10	Figure 11	Near Cambuslang Road	North Lanarkshire Council
11*	Figure 10	Near Kennishead Road	Glasgow City Council
12*	Figure 5	Near Pollockshaws Road	Glasgow City Council
13	Figure 6	Near Paisley Road West	Glasgow City Council
14	Figure 7	Near M8	Glasgow City Council
15*	Figure 4	Near Newton Street	Glasgow City Council
16*	Figure 3	Near Crow Road	Glasgow City Council
17	Figure 8	Near Brown Street	Refrewshire Council
18	Figure 9	Near North Road	Refrewshire Council
19*	Figure 2	Near Dumbarton Road	West Dunbartonshire Council

2 Candidate Quiet Areas

* New CQAs in Round 3

ID	Map	Location
2	Figure 22	Barrhill Wood
4	Figure 20 and Figure 21	Craigston Wood
5	Figure 20 and Figure 21	High Bardrain Wood, Bardrain Wood, Gleniffer Braes Country Park
9	Figure 2 and Figure 3	Clydebank Public Park
10	Figure 19	Robertson Park
13	Figure 17	Cowan Park
15	Figure 19	Rosshall Park
16	Figure 3	Garscadden Wood
17	Figure 3	Knightswood Park
20	Figure 4	Mugdock Country Park, Allander Park, Mugdock Wood
21	Figure 17	Rouken Glen Park
22*	Figure 5	Dawsholm Park
23	Figure 17	Eastwood Park
24	Figure 18	Pollok Country Park
25	Figure 16 and Figure 17	Green Bank Gardens
26	Figure 4	Back/Stable Woods
27	Figure 17	Giffnock Playing Field
29	Figure 5	Ruchill Park
30	Figure 15	Cart/Kittoch Valley Woods, Busby Glen Park
33	Figure 15	King's Park
34	Figure 15	Glen Wood
35	Figure 5	Springburn Park
36	Figure 15	Cathkin Braes Park
37	Figure 14	Tollcross Park
38	Figure 6	Hogganfield Park
39	Figure 13	Cambuslang Public Park
40	Figure 14	Greenfield Park

ID	Map	Location
42	Figure 6	Cardowan Moss
43	Figure 6	Lochwood Plantation, Bishop Loch
46	Figure 7	Viewpark Glen
47	Figure 7	Crowflat Wood
48	Figure 12	Orbiston Public Park
51	Figure 7	Reset & Byramsmuir Plantations
52	Figure 11 and Figure 12	Shields Glen public park, Dalzell Burn, Adder's Gill Wood
55*	Figure 9	Woodland at Chapelknowe
56*	Figure 9 and Figure 11	Garden Wood Wishawhill Wood
61	Figure 9 and Figure 11	Collyshot Wood
62	Figure 9 and Figure 12	Temple Gill
64	Figure 9	North Branchal Wood
66	Figure 9 and Figure 11	Perchy Pond
68	Figure 9 and Figure 10	Stable Glen
71	Figure 15	Big Wood