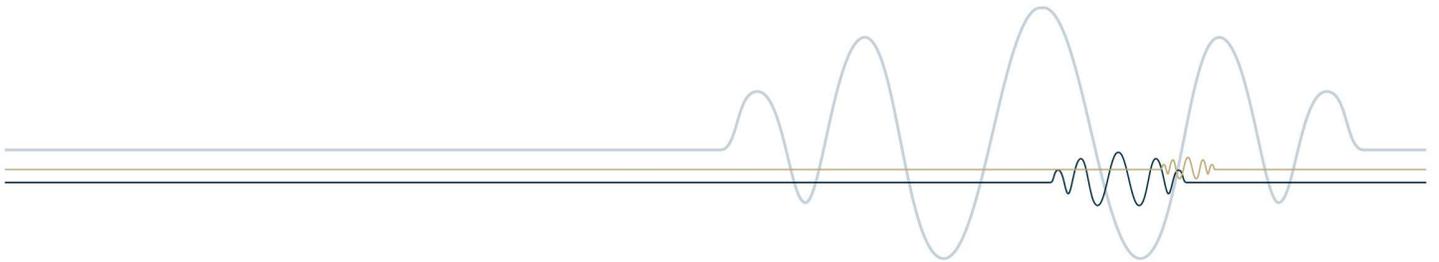


Technical Report ::

**Noise Action Plans
Strategic Environmental Assessment:
Environmental Report**

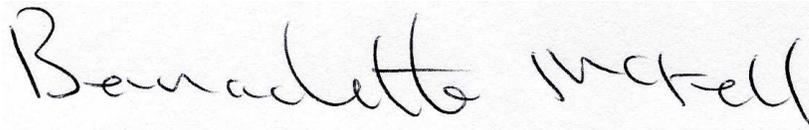
The Scottish Government



Strategic Environmental Assessment: Environmental Report

The Scottish Government

Approved by: Dr Bernadette McKell, BSc, MSc, PhD, CEng, MIOA

A handwritten signature in black ink that reads "Bernadette McKell". The signature is written in a cursive style and is positioned on a light grey rectangular background.

Prepared for: **David Wallace**
Head of Air Noise and Nuisance Team
Environmental Quality Directorate
Scottish Government
Area 1G (N) Victoria Quay
Edinburgh

October 2008

SEA CONSULTATION ON STRATEGIC NOISE ACTION PLANS

Responding to the SEA Environmental Report consultation paper

We are inviting written responses to this SEA Environmental Report by 19 December 2008

Please send your response to:

Noise@scotland.gsi.gov.uk

or

Air, Noise and Nuisance Team, Area 1G, Victoria Quay, Edinburgh EH6 6QQ

If you have any queries contact Linda Story on 0131 244 1521.

We would be grateful if you could clearly indicate in your response which parts of the SEA consultation paper you are responding to as this will aid our analysis of the responses received.

This consultation, and all other Scottish Government consultation exercises, can be viewed online on the consultation web pages of the [Scottish Government](http://www.scotland.gov.uk) website at <http://www.scotland.gov.uk/consultations>. You can telephone Freephone 0800 77 1234 to find out where your nearest public internet access point is.

The Scottish Government now has an [email alert system](http://www.scotland.gov.uk/consultations/seconsult.aspx) for consultations ([SEconsult:http://www.scotland.gov.uk/consultations/seconsult.aspx](http://www.scotland.gov.uk/consultations/seconsult.aspx)). This system allows stakeholders individuals and organisations to register and receive a weekly email containing details of all new consultations (including web links). SGconsult complements, but in no way replaces SG distribution lists, and is designed to allow stakeholders to keep up to date with all SG consultation activity, and therefore be alerted at the earliest opportunity to those of most interest. We would encourage you to register.

Handling your response

We need to know how you wish your response to be handled and, in particular, whether you are happy for your response to be made public. Please complete and return the **Respondent Information Form**: attached as this will ensure that we treat your response appropriately. If you ask for your response not to be published we will regard it as confidential, and we will treat it accordingly. All respondents should be aware that the Scottish Government are subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

Next steps in the process

Where respondents have given permission for their response to be made public (see the attached Respondent Information Form), these will be made available to the public in the Scottish Government Library and on the Scottish Government consultation web pages. We will check all responses where agreement to publish has been given for any potentially defamatory material before logging them in the library or placing them on the website. You can make arrangements to view responses by contacting the SG Library on 0131 244 4552. Responses can be copied and sent to you, but a charge may be made for this service.

What happens next?

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us finalise the action plans, before the final plan is published in January 2009.

Comments and complaints

If you have any comments about how this consultation exercise has been conducted, please send them to:

Linda Story
Air, Noise and Nuisance Team
Area 1G,
Victoria Quay
Edinburgh EH6 6QQ:
E-mail: Linda.story@scotland.gsi.gov.uk

Respondent Information Form

Please complete the details on the Respondent Information Form below. This will help ensure we handle your response appropriately.

Name:	<input type="text"/> * Required
Organisation: (if applicable)	<input type="text"/>
Postal Address:	<div style="border: 1px solid black; height: 100px; width: 100%;"></div> * Required
Post Code:	<input type="text"/> * Required
E-mail:	<input type="text"/>
Telephone Number:	<input type="text"/>

1. Are you responding as: (please tick one box) * Required	<input type="checkbox"/> An individual (go to Q2a/b and then Q4) <input type="checkbox"/> on behalf of a group or organisation (go to Q3 and then Q4)
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2a. INDIVIDUALS	
Do you agree to your response being made available to the public (in Scottish Government library and/or on the Scottish Government website)?	<input type="checkbox"/> Yes (go to 2b below) <input type="checkbox"/> No, not at all (We will treat your response as confidential)
2b. Where confidentiality is not requested, we will make your response available to the public on the following basis (please tick <u>one</u> of the following boxes)	<input type="checkbox"/> Yes, make my response, name and address all available <input type="checkbox"/> Yes, make my response available, but not my name or address <input type="checkbox"/> Yes, make my response and name available, but not my address

3. ON BEHALF OF GROUPS OR ORGANISATIONS

The name and address of your organisation *will be* made available to the public (in the Scottish Government library and/or on the Scottish Government website). Are you also content for your **response** to be made available?

Yes

No we will treat your response as confidential

4. SHARING RESPONSES/FUTURE ENGAGEMENT

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for the Scottish Government to contact you again in the future in relation to this consultation response?

Yes

No

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1. NON-TECHNICAL SUMMARY

1.1 Background

Strategic Environmental Assessment (SEA) is required under the Environmental Assessment of Plans and Programmes (Scotland) Regulations 2004. It is a systematic and robust method for assessing the environmental effects of plans and programmes during their preparation allowing for the mitigation of any adverse effects before implementation of a plan or series of plans.

This is the non technical summary of the Environmental Report prepared as part of the SEA of the draft Noise Action Plans (NAPs). It sets out a summary of the SEA process, followed by an outline of the likely significant effects of the NAPs. An important element of SEA is making the information about possible effects available to the public and this non technical summary also sets out how to make comments on the SEA process.

The draft Noise Action Plans were the subject of a consultation exercise between May and July 2008 and have been amended where appropriate as a result of comments received during that consultation.

1.2 Summary of the SEA process

The SEA process to date has comprised a number of key steps. At the outset of the assessment informal screening was undertaken to confirm that the NAPs would require an SEA. Following this, a scoping exercise was undertaken to identify the method and overall content of the SEA, with a scoping report having been sent to the Scottish Consultation Authorities; Scottish Natural Heritage, Historic Scotland and the Scottish Environment Protection Agency.

Following consideration of comments on the scoping report, the assessment of the NAPs and a number of alternative strategies was progressed, culminating in the preparation of this environmental report. This report is now being circulated for further comment, and will be reviewed alongside the content of the NAPs on conclusion of the consultation period. Key findings from the SEA will be monitored as the NAPs are implemented.

1.3 Scope of the Environmental Report

The Environmental Report includes the following; Key facts about the NAPs and the outline of NAPs objectives:-

- Relationships with other plans, programmes and environmental objectives;
- Environmental baseline – current state of the environment and state of the environment prior to the implementation of NAPs;
- Identification of SEA objectives for the assessment;
- Application of SEA objectives to alternative scenarios;

- Application of SEA objectives to the NAPs;
- Proposed mitigation measures;
- Proposed enhancement measures;
- Proposed SEA monitoring programme; and
- The Next steps

1.4 Main Objectives of NAPs and their relationship with other plans and programmes

The NAPs are required as a result of 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. The three main objectives of the Directive are:-

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

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 NAPs to manage noise.

The Noise mapping phase was completed in June 2007 and is available to view on the Scottish Government's Noise Mapping website:

<http://www.scottishnoisemapping.org/public/view-map.aspx>

This stage of the SEA considers the environmental characteristics of areas likely to be significantly affected arising from implementation of the NAPs. The NAPs have been derived following comprehensive and transparent protocols and aim to establish a range of actions and where practicable, interventions that shall aim to manage environmental noise based on the results of the strategic noise maps. Further information on these actions is discussed in other sections of this report.

1.5 Geographical Scope of the NAPs

The initial analysis of strategic noise mapping determined that NAPs should be developed for the following:

- Glasgow Agglomeration;
- Edinburgh Agglomeration;
- Glasgow Airport;
- Edinburgh Airport;
- Aberdeen Airport;

- Transportation (covering road and rail corridors outwith the above areas).

The two agglomerations cover a number of Local Authority areas. Those within the Glasgow and Edinburgh Action Plans are as follows:

The Glasgow Agglomeration:

- East Dunbartonshire Council;
- East Renfrewshire Council;
- Glasgow City Council;
- North Lanarkshire Council;
- Renfrewshire Council;
- South Lanarkshire Council;
- West Dunbartonshire Council.

The Edinburgh Agglomeration:

- City of Edinburgh Council;
- East Lothian Council;
- Midlothian Council.

The spatial extents of the two agglomerations are shown in Appendix 1 and 2.

The geographical scope for the Airport NAPs is determined, under the terms of the Directive, by the location of airports with over 50,000 movements a year; Scottish airports falling within these criteria are:

- Aberdeen
- Edinburgh;
- Glasgow

The geographical scope of the Transportation Action Plan is determined, under the terms of the Directive, by the location of roads with more than six million vehicle passages a year and places near major railways which have more than sixty thousand train passages per year; however, the following organisations are key stakeholders:

- Local Authorities not in agglomerations for local road issues;
- Network Rail.
- Regional Transport Partnerships;
- Transport Scotland;

The spatial extent of these transport corridors are shown in Appendix 3 and 4.

Noise Action Plans (NAPs)

1.6 The Contents of NAPs

The NAPs will include:

- A description of the geographical area, including the major roads and major railways taken into account;
- The authority responsible;
- The legal context;
- A summary of the results of the noise mapping;
- An evaluation of the estimated number of people exposed to noise;
- Identification of problems and situations that need to be improved;
- A record of the public consultations;
- Any noise-reduction measures already in force and any projects in preparation;
- Actions which the competent authorities intend to take in the next five years, including any measures to preserve quiet areas;
- Long-term strategy; and
- Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment.

Industrial noise will be covered by the NAPs only at the request of the regulatory authority; SEPA or the Local Authority. Legislation presently exists to address noise pollution incidents and this is enforced by SEPA and local authorities. The NAPs are intended to address cumulative increases in transport-related noise which is not presently covered by existing legislation.

1.7 The SEA Process

Prior to the assessment of the impacts of the NAPs, a Scoping Report was produced which set out the proposed method and level of detail for this SEA. This was submitted to the Scottish Government and allowed statutory consultees, Historic Scotland, Scottish Natural Heritage (SNH) and the Scottish Environment Protection Agency (SEPA) to provide comments and recommendations. These were taken into account in the assessment and preparation of the Environmental Report. The Scoping Report set out the potential environmental considerations, key aspects of the current state of the environment and relationships the NAPs have with other plans and programmes.

1.8 SEA Objectives and Key Findings

The SEA was carried out by assessment of the different parts of the draft NAPs against an agreed set of objectives. These objectives were identified from a review of relevant existing plans and strategies which defines the wider policy context within which the NAPs is set. The wider policy context includes local strategies and initiatives for air quality and general land use planning. The draft NAPs cover the areas mentioned in 1.5 above, and as a result has the potential to contribute (positively or negatively) to the overall quality of the environment in the designated areas. Where a positive impact is likely, this will be identified in this document and any potential

negative impacts will be considered further in the final decision making process when assigning interventions. Technical guidance is currently being developed to aide consistency of approach and to ensure potential negative impacts are managed and reduced where achievable.

A key challenge for the NAPs is the need to strike a sustainable balance between the economic importance of our transport infrastructure while maintaining a high quality environment. In addition the NAPs should contribute, as far as possible, to the quality of life of the most susceptible population exposed to potentially excessive noise.

1.9 Environmental protection objectives

There are many pieces of legislation, including strategic plans and policies, in place in Scotland that aim to protect the urban environment. This includes local policies and programmes which have stated objectives for managing and reducing noise. The principles and aims of sustainable development underpin many of the strategic policies and legislative drivers currently deployed and, where possible, aim to safeguard and improve biodiversity, landscape and cultural heritage.

The Scottish government has made a commitment to sustainable development that recognises and respects the quality of the environment, as well as plans for urban areas that emphasise the importance of considering the protection of the public. Other key national environmental policies include the importance of reducing road transport in favour of less polluting modes such as trains and transport by water. Climate change has also led to a number of key policy commitments, including the need to reduce emissions of harmful 'greenhouse' gases and to anticipate and respond to climate change as it progresses. Together, these policies provide a complex and challenging suite of environmental policies as the context in which the NAPs operate.

1.10 Summary of the likely effects of the NAPs

The Environmental Report has found that the NAPs will have a largely positive impact on the SEA issues. In particular, the NAPs will help to increase public awareness and understanding of noise and its adverse effects, although some uncertainties, arising from the level of detail within some of its policies, remain. The majority of proposed actions contained within the NAPs will have no adverse impacts on biodiversity, flora and fauna, water and soil. The NAPs do not specifically aim to deliver air quality benefits but it is possible that there will be some significant benefits to local air quality due to the potential for reduced transport use.

Testing the compatibility of the stated SEA objectives with the stated aims and objectives of the draft NAPs accords with all the SEA objectives. The findings of the SEA Environmental Report were considered by the core group members of the Scottish Environmental Noise Steering Group (SENSG). In conclusion, the SEA Environmental Report did not identify any significant impacts that necessitated modifications to the draft NAPs.

The SEA Environmental Report proposes key mitigation measures for potential significant negative impacts of the NAPs. Measures to mitigate transport impacts associated with the NAPs were identified. The SEA Environmental Report proposed a framework for monitoring the significant environmental effects of the implementation of the NAPs. The focus of this assessment was the environmental characteristics of the draft NAPs. The NAPs have the potential to improve the quality of life and result in other beneficial impacts for those people identified as requiring some degree of protection against excessive noise from transport sources. Additional beneficial impacts may derive from considerations proposed as part of the NAPs which include policy led issues for:

- Transportation and Land Use Planning;
- Sustainable Transport;
- Town Centres;
- Freight Transport;
- Rural Routes;
- Public Transport;
- School Travel;
- Road Safety;
- Maintenance and Network Management;
- Winter Maintenance; and
- Bridges and Road Structures.

Cumulative and synergistic effects of mitigation measures were appraised but cannot be fully assessed until the process of selection and declaration of NMAs and QAs has begun. A summary table showing possible interactions between policy areas and environmental effects is shown in Appendix 5.

2. INTRODUCTION

2.1. The Environmental Report

This Environmental Report presents the findings of the Strategic Environmental Assessment (SEA) that was carried out to assess the likely environmental consequences of Scotland's NAPs.

This introductory chapter provides some key facts regarding the NAPs. It also provides some background regarding SEA, including SEA activities carried out to date.

Following this introductory chapter, the Environmental Report discusses the environmental context for the NAP; including the environmental baseline, existing environmental problems and the relationship with other relevant strategies, plans and programmes. A summary of the assessment method is provided, followed by the results of the environmental assessment. Proposed measures to monitor environmental effects are set out at the end of the report.

This report has been prepared in accordance with the Environmental Assessment (Scotland) Act 2005.

2.2. Strategic Environmental Assessment

2.2.1. Background

SEA is a systematic process for identifying, predicting, reporting, mitigating and monitoring the environmental impacts of public sector plans, programmes and strategies.

The requirement to carry out SEA is underpinned by European legislation. EU Directive 2001/42/EC¹, more commonly referred to as the 'SEA Directive' came into being in 2001. This is applied in Scotland through the provisions of the Environmental Assessment (Scotland) Act 2005, which requires SEA to be undertaken for all public sector plans, programmes and strategies that are likely to have significant environmental effects.

2.2.2. SEA Activities to Date

No formal screening process has been undertaken to determine the requirement for this SEA. However an SEA was deemed necessary following discussions between the plan authors and the Scottish Government's SEA Gateway.

A Scoping Report was compiled and issued to the Consultation Authorities² via the SEA Gateway in May 2008. Responses were received and taken into account in the assessment.

2.3. NAPs

¹ Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment

² Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and Historic Scotland

2.3.1. Legislation and Noise Mapping

The requirement to develop NAPs originates with 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' (END). The three main objectives of the directive are:

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

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 NAPs to manage noise.

The Noise mapping phase was completed in June 2007 and is available to view on the Scottish Government's Noise Mapping website:

<http://www.scottishnoisemapping.org/public/view-map.aspx>

The noise maps show coloured contour bands within defined geographical areas. Variations in noise levels will occur throughout the day and year. The strategic maps show annual average noise levels based on computer modelling. Details of how these average annual noise levels have been calculated can be viewed on the aforementioned website.

2.3.2. NAP

Noise Action Planning is the process which enables environmental noise to be managed. This comprises the following four key stages:

- Analysis of strategic noise maps;
- Further investigation and analysis;
- An evaluation of existing Policies, Strategies, Plans and Programmes; and
- An evaluation and implementation of existing and potential noise mitigation measures where appropriate

2.3.2.1. Candidate Noise Management Areas

The purpose of the initial analysis of noise mapping is to identify areas where noise management is required. This stage requires areas to be prioritised and a consistent method for prioritising was therefore developed. This involves the use of a Prioritisation Matrix and the assignment of calculated Source Prioritisation Scores (SPS) to indicate the areas where action maybe required. The assigning of SPS takes the following into account:

- Predicted noise contours at each building;
- The number of people assumed to live in each building; and
- The annoyance response relative to the transportation source in question.

Statistical analysis was undertaken to identify the top 1% of the SPS. These areas were then designated as Candidate Noise Management Areas (CNMAs). The locations of the CNMAs are provided in the relevant parts of the Draft NAPs.

Technical Guidance is currently being prepared by the Scottish Government in association with SENSG to assist in the CNMA to NMA process. This will be available later in 2008. Following the adoption of the NAPs, further analysis will be undertaken using the Technical Guidance currently under preparation. This analysis will examine the CNMAs in detail to determine if original input data and resulting SPSs were sufficiently accurate and therefore if action is indeed required for these locations.

Please note that industrial noise will be covered by the NAPs at the request of the relevant lead regulatory authority; i.e. SEPA or the Local Authority. Legislation exists to address individual noise pollution incidents and SEPA and local authorities have powers to resolve these issues. The NAPs are intended to address cumulative increases in transport-related noise which is not covered by existing legislation.

2.3.2.2. Candidate Quiet Areas

Like CNMAs, Candidate Quiet Areas (CQAs) have been identified through strategic noise mapping. Candidate Quiet Areas are locations over a certain size, within urban agglomerations, where certain threshold values are met in terms of overall size of area, land use and noise level. The purpose of identifying these locations is to encourage local authorities and other relevant bodies to protect them through inclusion in relevant central, regional and local development control processes and plans.

CQAs will be subjected to further analysis using the aforementioned Technical Guidance currently under preparation and declared within NMAs.

2.3.3. Geographical Scope of NAPs

NAPs have been developed for the following:

- Glasgow Agglomeration;
- Edinburgh Agglomeration;
- Glasgow Airport;
- Edinburgh Airport;
- Aberdeen Airport; and
- Transportation (covering road and rail corridors outwith the above areas).

The two agglomerations cover a number of Local Authority areas. Those within the Glasgow and Edinburgh Action Plans are as follows:

Glasgow Agglomeration:

- East Dunbartonshire Council;
- East Renfrewshire Council;
- Glasgow City Council;
- North Lanarkshire Council;
- Renfrewshire Council;
- South Lanarkshire Council;
- West Dunbartonshire Council.

Edinburgh Agglomeration:

- City of Edinburgh Council;
- East Lothian Council;
- Midlothian Council.

The geographical scope for the Airport NAPs is determined, under the terms of the Directive, by the location of airports with over 50,000 movements a year; Scottish airports falling within this criteria are:-

- Glasgow;
- Edinburgh; and
- Aberdeen

The geographical scope of the Transportation Action Plan is determined, under the terms of the Directive, by the location of roads with more than six million vehicle passages a year and places near major railways which have more than sixty thousand train passages per year; however, the following organisations are key stakeholders:

- Local Authorities not in agglomerations for local road issues;
- Regional Transport Partnerships;
- Transport Scotland;
- Network Rail.

Key facts regarding the NAPs are set out below:

Table 2.1 Key Facts

Name of Responsible Authority	Scottish Government
Title of Plan	NAPs for Glasgow agglomeration, Edinburgh agglomeration, Glasgow Airport, Edinburgh Airport, Aberdeen Airport and Transportation
What prompted the Plan (e.g. legislative, regulatory or administrative provision)	Legislation
Subject (e.g. transport)	Noise
Period covered by Plan	2008 – 2013
Frequency of updates	Every 5 years
Area covered by Plan	Glasgow agglomeration, Edinburgh agglomeration, Glasgow Airport, Edinburgh Airport, Aberdeen Airport and some busy transport corridors (road and rail).
Purpose and/or objectives of Plan	To describe how the responsible authorities should deliver their obligations under the European Noise Directive.
Contact point	Linda Story Air, Noise and Nuisance Team Area 1G, Victoria Quay Edinburgh EH6 6QQ E-mail noise@scotland.gsi.gov.uk Tel 0131 244 1521

3. RELATIONSHIP WITH OTHER RELEVANT PLANS, PROGRAMMES & ENVIRONMENTAL PROTECTION OBJECTIVES

3.1 Introduction

This section describes the policy context for the NAPs, in relation to the SEA categories (biodiversity, air quality, etc.). Table 3.1 highlights the legislation, plans, programmes, strategies and environmental protection objectives that are relevant to the NAPs and to the SEA. The table states the names of relevant documents, briefly summarises each one and then discusses how these relate to the NAPs or the SEA.

Table 3.1 Other Relevant Legislation, Plans, Programmes, Strategies and Environmental Protection Objectives

Title	Main Requirements	Relationship with the NAPs
Human Health (Noise)		
The Environmental Noise (Scotland) Regulations 2006	Applies to environmental noise to which humans are exposed including in built up areas, public parks or other quiet areas in an agglomeration, near schools, hospitals, and other noise sensitive buildings and areas. The regulations apply to noise from road railway and airport sources, as well as industrial noise.	Strategic Noise Mapping and NAPs will inform future policy on managing noise from road, rail and aviation sources.
Noise Directive 2002/49/EC	Requires the development of NAPs	NAPs have been developed as a result of this directive.
Environmental Protection Act 1990	Provides provision to monitor and control noise from domestic, commercial and industrial sources. Emissions from Part B installations are covered under this act.	Noise nuisance is covered by Part III of the Environmental Protection Act 1990. This law empowers local authorities to deal with noise from fixed premises. To constitute a statutory nuisance noise must be prejudicial to health and/or cause an unreasonable and persistent disturbance to lifestyle. Other than industrial/commercial noise, deals with noise sources not covered by NAPs.
Control of Noise at Work Regulations 2005	Ensures compliance with noise exposure at work.	Deals with noise sources not covered by NAPs i.e. occupational exposure to noise.
Land Compensation (Scotland) Act 1973	Confers a right to compensation for depreciation in the value of land caused by public works. Public works do not include aerodromes.	Compensatory matters are outwith the scope of the Action Plans

Noise Insulation (Scotland) Regulations 1975 (NISR)	The Noise Insulation (Scotland) Regulations 1975 place a duty to offer insulation to eligible properties affected by new roads or a road to which an additional carriageway is added.	Eligibility to insulation is in terms of NISR requires certain qualifying criteria to be met in relation to new or altered roads and at present the noise level must be assessed using the Memorandum to Regulation (3) and (6) of the NISR. This methodology is different from that used in the production of the strategic maps and so the results are not directly comparable. NISR is more appropriate at a project level.
Pollution Prevention and Control (Scotland) Regulations 2000	Introduced a more integrated approach to controlling pollution from industrial sources. Main aim is to achieve a high level of protection of the environment by measures designed to prevent or, where that is not practicable, reduce emissions to air, water and land.	Industrial sources are included in the NAPs where requested by the regulatory authority. The Action Plans may inform future policy on land use planning.
Air		
Directive 1996/62/EC on Ambient Air Quality and Management	To protect the environment as a whole and human health. To maintain ambient air quality where it is good and to improve it in other cases using limit values and/or alert threshold set for ambient air pollution levels. Preserve best ambient air quality compatible with sustainable development.	Legislation, strategies and plans relating to air quality have no direct influence on the NAP process. However, the key source of noise covered by the NAPs is transportation, which also has a major influence on air quality. It is possible that NAPs will affect traffic management in some areas; however, the extent to which traffic management can be influenced may be restricted where Air Quality Management Areas are already in place. Aim to ensure integrated plans and policies where feasible.
The Air Quality Limit Values (Scotland) Regulations 2003	Transposed into national legislation the requirements of Directive 2002/3/EC. Duty to ensure compliance with limit values of relevant pollutants in ambient air and requires production of action plans where there is a risk of exceeding limit values for any of the relevant pollutants	
The Pollution Prevention and Control (Scotland) Regulations 2000	Aims to control pollution from industrial sources. It requires the prevention or reduction of emissions from installations and promotes techniques that reduce the amount of waste and releases overall.	
Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000)	Plans to improve and protect ambient air quality in the UK, to protect people's health and the environment without unacceptable economic or social costs. Details of national air quality standards and objectives for nine pollutants.	
Air Quality Management Plans	Air Quality Management Plans are required where Air Quality Management Areas have been designated due to exceedances of the air quality objectives set out in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000). Aims are site specific but generally such plans seek to lower the concentration of pollutants within an area.	

Climate		
Kyoto Protocol to the UN Framework Convention on Climate Change 1992	To stabilise and reduce greenhouse gas (GHG) emissions, mitigate climate change, and promote sustainable development worldwide.	As with Air Quality, climate change initiatives and agreements have no direct influence on the NAP process. However transportation, the main focus of the NAPs, is a key contributor of greenhouse gas emissions. NAPs may influence traffic management however it is unlikely that this will involve significant reductions or increases in traffic levels (and therefore transport-related CO ₂ emissions).
Our Energy Future – Creating a Low Carbon Economy 2003	To cut the UK's carbon dioxide emissions - the main contributor to global warming - by some 60% by about 2050, as recommended by the RCEP, with real progress by 2020.	
Scottish Climate Change Programme (2006)	Establish an analysts' network to assess and present the carbon impact of policies in a consistent and routine manner, and consider how climate factors are being addressed at policy, plan and programme level.	
draft Scottish Climate Change Bill	The Bill will create a long-term framework for the current and successive administrations in Scotland to ensure that emissions are reduced by 80% by 2050. This framework will help build a sustainable future for Scotland: it will contribute to the country's sustainable economic growth by moving the public and private sectors towards a low carbon economy.	
Biodiversity		
The EC Directive on the Conservation of Wild Birds 79/409/EEC 1979	Provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. Specific provisions include: <ul style="list-style-type: none"> ▪ The maintenance of the favourable conservation status of all wild bird species ▪ The identification and classification of Special Protection Areas for rare or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance. 	Environmental noise can adversely affect species and habitats. This is of greatest concern in sensitive designated sites or where protected species are concerned. Physical developments have not been proposed through the NAP process and therefore it is unlikely that significant adverse effects on biodiversity will occur as a result.
The EC Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC 1992	Preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora. Maintain and restore natural habitats and of wild fauna and flora, working towards ensuring bio diversity and taking account of economic social and cultural requirements and regional and local characteristics.	
Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment	Ensure that environmental considerations are integrated into plans, policies and programmes. Ensure that consultation takes place and that the views of the public and SEPA/SNH and Historic Scotland are taken into account.	

Wildlife and Countryside Act 1981	Protection of wildlife (birds, animals and plants), countryside, national parks, public rights of way and the designation of protected areas such as sites of special scientific interest or limestone pavement orders.	
The Conservation (Natural Habitats & c) Regulations 1994	Measures relating to the conservation of natural habitats and of wild fauna and flora. Provides for the designation and protection of 'European Sites'. (SCIs, SACs, SPAs and RAMSAR sites) Protection of European protected species (e.g. bats, otters, great crested newts)	
Nature Conservation (Scotland) Act 2004	<ul style="list-style-type: none"> ▪ Conservation of biodiversity ▪ Increases protection for Sites of Special Scientific Interest (SSSI) ▪ Amends legislation on Nature Conservation Orders ▪ Provides for Land Management Orders for SSSIs and associated land ▪ Strengthens wildlife enforcement legislation 	
Environmental Assessment (Scotland) Act 2005	Extends Scottish legislation for SEA beyond the requirements of the 'SEA Directive'.	
UK Biodiversity Action Plan (1994)	Includes action plans for the conservation of 391 species, 45 habitats and local biodiversity action plan targets.	
Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland	Outlines a number of actions with the overall aim of conserving biodiversity for the health, enjoyment and well being of the people of Scotland now and in the future.	
Scottish Biodiversity Strategy 05/2004.	To conserve biodiversity for the health, enjoyment and wellbeing of the people of Scotland now and in the future	
Local Biodiversity Action Plans	Identify local priorities and determine the contribution they can make to the delivery of the national Species and Habitat Action Plan targets.	
Transport Planning		
Road Traffic Reduction Act 1997	Requires local Authorities to create "an assessment of the levels of local road traffic in their area, and a forecast of the growth of these levels"; and to specify targets for "a reduction in the levels of local road traffic in the area or a reduction in the rate of growth on the level of such traffic".	The declaration of Noise Management Areas will potentially influence traffic management. Regional Transport Strategies have been developed across Scotland and are due to be adopted imminently. It is therefore too late for the NAPs to influence these strategies. Similarly, the

Scotland's Transport Future – Transport White Paper 2004	Aims to promote economic growth and social inclusion, protect the environment and improve health, reduce accidents and enhance safety, and improve integration between transport modes.	majority of Local Authorities have developed Local Transport Strategies so it is unlikely that these can be influenced. However, the outcomes of the NAPs should form policy which is taken account of for the next round of transport strategies, in approximately 3-5 years.
National Transport Strategy	The Strategy is based on the Scottish Government's five national transport objectives: <ul style="list-style-type: none"> ▪ To promote economic growth ▪ To protect our environment and improve health ▪ To promote social inclusion ▪ To improve safety ▪ To improve integration. 	
Regional Transport Strategies	Statutory document which translates the aims of the national strategy into a regional context and promote specific regional policies and schemes.	
Local Transport Strategies	Non-statutory document which translates the aims of the national and regional strategies into a local context and promotes location-specific policies and schemes.	
Strategic Transport Projects Review (currently being prepared and also being subject to SEA)	Aims to define the most appropriate strategic investments in Scotland's national transport network from 2012 until 2022.	
Development Planning		
Development Plans	Structure Plans and Local Plans are to be replaced in the coming years due to changes to Scotland's planning system. These will be replaced with Strategic and Local Development Plans, respectively. These plans will set out locations for residential and commercial development, as well as transport policies. Statutory plans with strong links with Local and Regional Transport Strategies.	The allocation of areas for commercial and residential development has an influence on exposure to environmental noise. Development plans do not influence the development of NAPs but may influence and constrain the designation of Candidate Noise Management Areas or Quiet Areas. Consultation with planning authorities will be necessary.
National Planning Framework	Identifies developments at Glasgow and Edinburgh airports as national developments and include elements such as new taxiways and aircraft stands. It also makes provisions for significant developments at Grangemouth and Rosyth	NAPs will provide parameters for development
West Edinburgh Planning Framework	Applies a co-ordinated approach to planning in the West of Edinburgh	Developments in West Edinburgh will need to take into account NAPs as developed within this Document.
Landscape		
Scotland's Scenic Heritage (CCS) 1978	To protect the integrity of Scotland's most scenic areas.	

<p>Scotland's Living Landscapes: Places for People (The Scottish Landscape Forum's Report to Scottish Ministers)</p>	<p>Advise and promote action for the better care of Scotland's landscapes.</p>	
<p>Natural Heritage Futures (SNH)</p>	<p>Highlights nationally significant landscape characteristics and provides an overview of changes in landuse and development that influence the character of the Scottish landscape and how changes may occur due to development.</p>	<p>The NAPs will be developed in accordance with landscapes across Scotland ensuring that sensitive areas are protected from excess noise.</p>
<p>Scotland Landscape Character Assessments (SNH)</p>	<p>Defines areas of the landscape under a set of uniform classifications to ensure that any developments are in keeping and sympathetic to the surrounding landscape.</p>	
<p>Wildness in Scotland's Countryside – SNH Policy Statement</p>	<p>Aims to safeguard wildness and wild land in Scotland's Countryside.</p>	

4. ENVIRONMENTAL PROBLEMS

4.1 Introduction

Existing environmental problems were identified to ensure that relevant issues were taken into account in the assessment. The environmental problems informed the development of SEA objectives and the baseline. Environmental problems i.e. noise were also fundamental to the formation of the NAP.

Having awareness of existing problems is important as there is the potential for interactions with other regimes to occur with the NAPs. Measures developed through these plans could improve or exacerbate existing problems. Relevant existing environmental problems are listed in the table below and the relationships with the NAPs are summarised.

Table 4.1 Existing Environmental Problems Relevant to the NAPs

SEA Category	Environmental Problem	Relationship with NAP
Population and Human Health	Exposure to environmental noise can affect human health and quality of life. A range of non-auditory health effects that may be associated with exposure to environmental noise include: <ul style="list-style-type: none"> ■ Annoyance; ■ Sleep disturbance; ■ Mental health; ■ Cardiovascular effects, hypertension, heart disease etc; and ■ Cognitive performance of children. 	The NAPs promote Candidate Noise Management Areas and Candidate Quiet Areas which have the potential to influence noise levels.
Biodiversity, Flora & Fauna	Exposure to environmental noise can affect sensitive habitats and species.	The NAP promotes Candidate Noise Management Areas and Candidate Quiet Areas, which have the potential to influence noise levels. Reduced noise levels could have positive effects on species and habitats.
Air Quality and Climatic Factors	Air quality can be adversely affected by transport and is also a major source of noise. In areas where there have been consistent exceedances of specified pollutants, in conflict with national air quality objectives, Air Quality Management Areas (AQMAs) have been designated.	Transport generates both noise and air pollutants. The designation of Noise Management Areas could influence transport management, which could therefore potentially result in impacts on local air quality and CO ₂ emissions.
Landscape	Environmental noise can adversely affect landscape character, particularly in sensitive locations.	The NAP promotes Candidate Noise Management Areas and Candidate Quiet Areas which have the potential to influence noise levels, particularly through the designation of Quiet Areas. These could enhance landscape character.

5. BASELINE

5.1 Introduction

SEA legislation requires 'the relevant aspects of the current state of the environment' to be identified in the Environmental Report. This 'environmental baseline' information or data provides the basis for predicting and evaluating the significance of environmental effects. Analysis of this has also informed the identification of environmental problems (Section 4). High level information about the State of Scotland's environment can be sourced from SEPA's 2006 report, Change Tomorrow Today which can be accessed from the following website:

www.sepa.org.uk/changetomorrowtoday/report/index.html

5.2 Noise

Strategic Noise Maps have been developed which detail noise levels throughout the study areas in 5dB contour bands. A prioritisation matrix was then developed to identify where people are most likely to be annoyed by noise (CNMA). Also, using land use classification, information on geographical extent predicted noise levels, areas within agglomerations which could potentially be considered as quiet were also identified (CQA). More information on the process for noise mapping and the maps can be found on the following website:

www.scottishnoisemapping.org/

5.3 Biodiversity

There are a series of protected areas and species within the study area which may need to be taken into account when undertaking specific projects relating to noise management areas and action plans. A detail of each including relevant legislation is given below:

5.3.1. Special Protected Areas (SPA)

SPAs are designated under the Wildlife and Countryside Act 1981, as amended by the Nature Conservation (Scotland) Act 2004, enabling the UK to meet obligations set under the EC Birds Directive (79/409/EEC). SPAs are designated as their habitats support rare (listed on Annex 1 of the directive) and migratory birds within the European Union.

5.3.2. Special Area of Conservation (SAC)

SACs are designated under the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, known as the Habitats Directive. In the UK, sites are protected under The Conservation (Natural Habitats, &c.) Regulations 1994, due to the presence of one or more habitats or species listed in the Directive and management plans are written to ensure 'favourable conservation status'.

5.3.3. Site of Special Scientific Interest (SSSI)

SSSIs have been designated in order to protect the best examples of the UK's flora, fauna or geological or physiographical features. Sites are also used to underpin other national and international designations. SSSIs are notified under the Wildlife and Countryside Act 1981 as amended by the Nature Conservation (Scotland) Act 2004.

5.3.4. European Protected Species

European Protected Species (EPS) including otters, bats and great crested newts are protected under the Habitats Directive and Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2004. Under the legislation, it is an offence to intentionally or recklessly capture, kill, injure or disturb any protected animal. This includes taking or destroying eggs or causing damage to their breeding sites or resting places. For plant species, it is an offence to pick, collect, cut, uproot or destroy the species named in the legislation.

5.3.5. National Nature Reserves (NNRs)

NNRs are designated under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 for the protection of habitats, communities and species and provide opportunities for scientific study.

5.3.6. Local Nature Reserves (LNRs)

These LNRs are designated under the National Parks and Access to the Countryside Act 1949. They are designated and managed for nature conservation and are seen to provide opportunities for education and research.

5.3.7. Wildlife Sites

Local authorities may designate certain areas as Wildlife Sites. Sometimes these are referred to as Sites of Importance to Nature Conservation or SINCs. They have no statutory protection and do not necessarily support protected species however they are considered important at a local level.

5.4 Landscape Designations

5.4.1. National Scenic Areas (NSAs)

NSAs are areas identified by the Scottish Ministers as having nationally important landscapes. These areas are afforded protection through development control measures introduced by the Development Department's SDD Circular No 20/1980. Regulations are also outlined in the National Planning policy for NSAs is set out in NPPG 14 on Natural Heritage.

5.4.2. National Parks

National Parks in Scotland are designated under the National Parks (Scotland) Act 2000 with the aim of promoting sustainable use of natural resources within an area and sustainable social and economic development within the community.

5.4.3. Areas of Great Landscape Value (AGLVs)

AGLVs are designated by Local Authorities and protect areas of high scenic value. They are afforded protection within Structure and Local Plans.

5.4.4. Country Parks

Country Parks are designated primarily for recreation and leisure under the Countryside (Scotland) Act 1967 and are managed by the local authorities.

5.4.5. Historic Gardens and Designed Landscapes

Identified by Scottish Natural Heritage and Historic Scotland these are noted for their natural heritage and cultural importance and are subject to the Town and Country Planning (General Development Procedure)(Scotland) Order 1992 (GDPO) and SDD Circular No 6/1992.

5.4.6. Landscape Character Areas

Landscape types within Scotland are classified through Scotland's Landscape Character Assessments (LCAs) (SNH 2002) under a variety of Landscape Character Areas. These give an indication of distinctive features within an area, allowing developments to apply appropriate enhancement and mitigation suitable to its surroundings.

5.5 Air Quality

5.1. Air Quality Management Areas

Where air quality falls below certain standards, the relevant local authority is responsible for the improvement of air quality within that area. This is done through the designation of Air Quality Management Areas (AQMAs). Air quality action plans are developed improve the situation for the AQMAs. Those designated within the Glasgow and Edinburgh agglomerations are set out in Table 5.1 and 5.2. AQMAs designated in areas highlighted as CNMAs for transportation (outwith agglomerations) are shown in Table 5.3.

Table 5.1 Air Quality Management Areas – Glasgow Agglomeration

Local Authority	Name of AQMA	Location
East Dunbartonshire Council	Bishopbriggs, Kirkintilloch Road AQMA	An area encompassing a 60m wide corridor along the A803 Kirkintilloch Road, Bishopbriggs between the council's border with Glasgow city and a point 30m north of Cadder Roundabout.
East Renfrewshire Council	None	
Glasgow City Council	Glasgow City Centre AQMA,	An area encompassing Glasgow City Centre.
Glasgow City Council	Parkhead Cross AQMA,	An area encompassing Parkhead Cross junction and parts of the streets leading into it and the properties fronting on to the streets.
Glasgow City Council	Byres Rd/Dumbarton Rd AQMA	An area encompassing properties along either side of Byres Road and Dumbarton Road, and along some of the streets running off them.
North Lanarkshire Council	Coatbridge AQMA	An area of Coatbridge, extending along Whifflet Street and North Road and encompassing buildings fronting the road.
North Lanarkshire Council	Chapelhall AQMA	An area of Chapelhall extending along Main Street, Bellside Road and Lauchope Street and extending to cover a number of properties close to the junctions of these roads.
North Lanarkshire Council	Motherwell AQMA	An area encompassing part of the centre of Motherwell to the north of the civic centre in the vicinity of Merry Street, Menteith Road and Arbles Road.
Renfrewshire Council	Paisley AQMA	An area encompassing part of Central Road, Paisley between Smithhills Street and County Square and the service road for the Piazza Shopping Centre adjacent to Central Road
South Lanarkshire Council	None	-
West Dunbartonshire Council	None	-

Table 5.2 Air Quality Management Areas – Edinburgh Agglomeration

Local Authority	Name of AQMA	Location
City of Edinburgh Council	Edinburgh AQMA No.1	An area covering the city centre, including the main link roads in to the city centre.
City of Edinburgh Council	Edinburgh AQMA No.2	An area encompassing St John's Road Edinburgh from just east of the junction with the B701 to just east of the junction with Kaimes Road.

East Lothian Council	None	-
Midlothian Council	Pathhead AQMA	An area encompassing 2 kilometre squares surrounding the village of Pathhead.

Table 5.3 Air Quality Management Areas – Transportation (outwith Agglomerations)

Local Authority	Name of AQMA	Location
Aberdeen City Council	Aberdeen AQMA	Market St, Union St, King St (between Castle St and Roslin Terrace), Virginia St, Commerce St, Guild St (between Market St and Stirling St) and Holburn St (between Great Southern Road and Union St).
Dundee City Council	Dundee AQMA	An area encompassing the whole of the city of Dundee declared due to breaches of the annual NO2 objective in the vicinity of the following junctions: Victoria Road/Hilltown junction, Logie Street/Loons Road junction, Lochee Road/Dudhope Terrace junction, Lochee Road/Rankine Street junction, and in the City Centre of Dundee (including Dock Street, Commercial Street Seagate, Nethergate, Whitehall Street, Union Street, and St Andrew's Street) .

5.6 Climatic Factors

In 2005 Scotland was responsible for emitting 14.9MtC (million tonnes of carbon equivalent), 8.3% of the UK net total. Amongst the highest industry emitters were energy supply, transport and business. Although emissions in total have decreased and energy supply and business emissions have fallen by 10% and 22% respectively since 1990, transport emissions have risen by 11%.

At present, the Scottish Government is drafting a Climate Change Bill for Scotland which will outline areas for improvement and provide targets and objectives for the reduction in CO2 emissions in Scotland.

6. OBJECTIVES

6.1 SEA Objectives

The use of SEA objectives is promoted by Scottish and UK SEA guidance. In assessing effects, judgements have been made regarding whether predicted changes to the baseline are likely to have positive, negative or neutral effects on the SEA objectives.

For each broad SEA objective, particular consideration has been given to potentially sensitive receptors and existing environmental problems. These are referred to as ‘matters for consideration’ in the table below.

The SEA objectives were presented in the Scoping Report and have been slightly adapted following consultation responses. The SEA objectives used in the assessment are presented below in Table 6.1.

Table 6.1 SEA Objectives

SEA Objective	Matters for Consideration	SEA Category
Improve human health	<ul style="list-style-type: none"> ■ Noise and vibration ■ Air quality ■ Reduction in accidents 	Population & Human Health
Protect, maintain and where appropriate, enhance biodiversity	<ul style="list-style-type: none"> ■ Internationally protected sites (Natura and Ramsar sites) ■ Nationally protected sites (SSSI) ■ Locally protected sites (SINC) ■ European Protected Species (e.g. bats, otters, great crested newts) ■ Nationally protected species (e.g. badgers) ■ LBAP priority habitats and species ■ Wildlife corridors (e.g. adjacent to transport infrastructure) 	Biodiversity, Flora and Fauna
Protect, maintain and where appropriate, enhance landscape and townscape character	<ul style="list-style-type: none"> ■ Designated sites and sensitive landscapes/townscapes e.g. National Scenic Areas ■ Visual amenity ■ Potentially sensitive receptors to visual impacts e.g. residential areas 	Landscape
Protect, maintain and enhance air quality	<ul style="list-style-type: none"> ■ Key pollution indicators e.g. PM10 and NO₂ ■ Sensitive areas, where pollution has exceeded recommended levels (AQMA) 	Air
Reduce greenhouse gas emissions	<ul style="list-style-type: none"> ■ Transport-related CO₂ emissions ■ Climate change adaption 	Climatic Factors

7. SEA METHODOLOGY

7.1 Introduction

As the Draft NAPs have developed in recent months the level of detail within the plans has become clearer. The proposed SEA method set out in the Scoping Report (May 2008) is now considered too detailed, given the level of information currently available to assess. The SEA method has therefore been adapted to reflect the detail available in the plans. This chapter describes the assessment method employed and highlights key changes.

7.2 Changes to the Assessment Method

The SEA Scoping Report proposed that relatively specific impacts of Candidate Noise Management Areas (CNMA) and Candidate Quiet Areas (CQA) would be assessed. It proposed that the locations of CNMAs and CQAs would be mapped alongside environmental designations and constraints to inform the assessment of impacts. The logic for this approach was to enable the impacts of specific measures or developments e.g. resurfacing of roads, to be identified in relation to local environmental features such as protected habitats or water bodies.

However, the NAPs do not set out specific interventions or developments. The NAPs identify Candidate Noise Management Areas and Candidate Quiet Areas. In approximately 2 years and following further analysis, the final Noise Management Areas and Quiet Areas will be declared. From that stage, physical interventions will be identified and adopted through local and central government plans, policies and initiatives. They may, at the discretion of the Local Authorities be incorporated in to Local Plans. Local Plans are promoted by individual Local Authorities and may be subject to further SEAs.

The NAPs that this Environmental Report accompanies do not as yet promote specific developments and as a result, at this stage, the plans will have no direct effects on the environment other than the potential for reduction in environmental noise levels. However, the process of declaration of NMAs and QAs will address potential conflicts with existing plans, policies and initiatives in terms of environmental effects. This will be included within the technical guidance currently being prepared in respect of the Candidate Noise Management and Candidate Quiet Area to actual Noise Management and Quiet Area process.

A more high-level approach has been taken for this SEA that reflects the above. To ensure that potential future impacts are identified, this Environmental Report states the types of interventions that could be taken forward and discusses the generic impacts that could result from these interventions. The results of the assessment are presented in Chapter 8.

The scope of the assessment has also been slightly altered due to consultation responses regarding the Scoping Report. Historic Scotland did not consider it likely that significant effects on the historic

environment would occur as a result of the NAPs. Impacts on the historic environment have therefore not been considered as part of the SEA.

7.3 Alternatives

SEA legislation requires the assessment of 'reasonable alternatives'. However discrete alternatives have not been considered to date in the development of the NAPs. Computer modelling has been used to develop the Strategic Noise Maps and further processing of the data has led to the identification of areas to be considered CNMAs and CQAs. These areas are defined by a set of predetermined criteria as explained within each of the Glasgow, Edinburgh and Transportation NAPs and at this stage in the process, there has been no opportunity to assess alternatives. Should alternatives be considered by virtue of further analysis the assessment would be tokenistic and for the purposes of the SEA only, rather than being intended to improve the NAPs. This has been avoided.

At a higher level, the appraisal of a 'Do Nothing' scenario is often used as a means to address alternatives. In this case, a 'Do Nothing' would entail not implementing the NAPs. But the development of NAPs is a legislative requirement for all EU member states, through the adopted European Noise Directive. Therefore a 'Do Nothing' scenario would not be a 'reasonable' alternative and this approach has also been avoided.

At this stage, no 'reasonable' alternatives have been identified therefore none have been assessed.

8 ASSESSMENT OF ENVIRONMENTAL EFFECTS

8.1 Introduction

At present, only CNMAs and CQAs have been identified. These areas may be declared as finalised Noise Management Areas and Quiet Areas at some point. However, it is not yet known what the declaration process will involve. This is currently being considered by Scottish Government legal advisors.

The technical guidance currently being prepared in respect of the Candidate Noise Management and Candidate Quiet Area to actual Noise Management and Quiet Area process will provide further detail in respect of possible interventions. It is therefore impossible at this early stage to identify and assess the likely environmental effects.

Although no formal assessment of environmental effects is possible, in the preparation of this Environmental Report it has been possible to determine the possible interventions in the management of noise.

8.2 Assessment of Noise Reduction Measures

A variety of measures could be adopted to reduce noise from transport. The following list illustrates some of these measures. For each one, a simple matrix has been added, which summarises potential environmental impacts. These are shown in Tables 8.1 to 8.8.

8.2.1 Road Traffic Speed

Noise emissions are a factor of both vehicle speed and type. Generally at lower speeds the engine unit is the main factor in noise generation. However, at higher speeds the road/tyre interaction tends to be the dominant noise source.

Table 8.1 : Speed

SEA Objective	Impact	Comments
Improve human health	✓	Reduced speeds on roads, where appropriate, may reduce accidents. It may also encourage walking and cycling, thereby promoting healthy lifestyles.
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts are predicted.
Protect, maintain and where appropriate, enhance landscape and townscape character	✓	Changes in vehicle speeds which result in lower noise emissions could benefit landscape/townscape character.
Protect, maintain and enhance air quality	✓/✗	Changes in vehicle speeds affects vehicle exhaust emissions; speed changes can therefore have both a positive or negative

SEA Objective	Impact	Comments
		effect depending on a variety of factors.
Reduce greenhouse gas emissions	✓	Lower speeds promotes engine efficiency, fuel consumption and CO ₂ emissions.

8.2.2 Night Time Restrictions

Repeated maximum noise levels associated with pass bys of heavy goods vehicles can potentially result in sleep disturbance within properties situated very close to roads used by heavy goods vehicles during the night time period. Rerouting those vehicles away from noise sensitive areas during night time periods may reduce these effects.

Table 8.2 Night Time Restrictions

SEA Objective	Impact	Comments
Improve human health	✓	Sleep loss can have adverse effects on mental and physical health, therefore any noise reduction in the number of events has the potential to be beneficial.
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts are predicted.
Protect, maintain and where appropriate, enhance landscape and townscape character	✓	In some locations, noise could adversely affect landscape or townscape character therefore noise reductions could be beneficial.
Protect, maintain and enhance air quality	×	Restrictions on vehicle movements at night may result in increased traffic congestion during the day.
Reduce greenhouse gas emissions	-	No impacts predicted

8.2.3 Road Traffic Calming

Traffic calming is designed to reduce speed which may in certain circumstances reduce noise. However, poorly designed speed humps and chicanes, together with inappropriate driving style can increase noise as drivers brake and accelerate.

Table 8.3 Road Traffic Calming

SEA Objective	Impact	Comments
Improve human health	✓	Accidents may be reduced
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts predicted
Protect, maintain and where appropriate, enhance landscape and townscape	×	Road traffic calming schemes generally introduce new features into existing road networks, with potentially adverse impacts on

SEA Objective	Impact	Comments
character		sensitive landscape and townscapes.
Protect, maintain and enhance air quality	-	Very small (negligible) positive and negative impacts predicted
Reduce greenhouse gas emissions	-	Very small (negligible) positive and negative impacts predicted

8.2.4 Noise Barriers

Should noise barriers be considered as a potential intervention in noise management a number of factors need to be taken into account including the design, cost/benefit and impact on other environmental factors such as visual impact.

Table 8.4 Noise Barriers

SEA Objective	Impact	Comments
Improve human health	✓	Noise barriers may reduce population exposure to environmental noise.
Protect, maintain and where appropriate, enhance biodiversity	✗	Noise barriers could act as physical barriers between habitats, interrupting species' movements.
Protect, maintain and where appropriate, enhance landscape and townscape character	✗	Noise barriers can be unattractive and obtrusive, with potentially adverse effects on sensitive landscapes and townscapes.
Protect, maintain and enhance air quality	-	No impacts predicted
Reduce greenhouse gas emissions	-	No impacts predicted

8.2.5 Road Surfacing

Measures to maintain and improve the quality of road surfaces can reduce noise. Poorly maintained roads have the potential to be generally noisier. Quieter road surfaces are available but expensive.

Table 8.5 Road Surfacing

SEA Objective	Impact	Comments
Improve human health	✓	Lower noise levels could be beneficial for mental and physical health.
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts predicted
Protect, maintain and where appropriate, enhance landscape and townscape character	✓	Lower noise levels could result in positive effects on landscape and townscape character.
Protect, maintain and enhance air quality	-	No impacts predicted
Reduce greenhouse gas emissions	-	No impacts predicted

8.2.6 Road Traffic Management

Road traffic management schemes may reduce population exposure to traffic noise, for example park and ride schemes, pedestrianisation and car free housing areas. Designing urban streets to encourage slower, smoother driving and ensuring smooth traffic flows may also reduce traffic noise emissions.

Table 8.6 Road Traffic Management

SEA Objective	Impact	Comments
Improve human health	✓	Lower noise levels could be beneficial for mental and physical health. Accidents may also be reduced.
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts predicted
Protect, maintain and where appropriate, enhance landscape and townscape character	✓	Reduced traffic levels in certain areas could be beneficial for landscape/townscapes and pedestrianisation, assuming it is well designed, can also result in positive streetscape effects.
Protect, maintain and enhance air quality	✓/✗	With redirection of traffic, air quality will improve in some locations but lower in quality in others.
Reduce greenhouse gas emissions	✓/✗	With redirection of traffic, emissions will improve in some locations but lower in quality in others. Modal shift has the potential to reduce greenhouse gas emissions.

8.2.7 Aircraft

There are international noise standards for aircraft, with an ongoing programme for noise reduction.

Table 8.7 Aircraft

SEA Objective	Impact	Comments
Improve human health	✓	Lower noise levels could be beneficial for mental and physical health.
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts predicted
Protect, maintain and where appropriate, enhance landscape and townscape character	✓	Lower noise levels could result in positive effects on landscape and townscape character.
Protect, maintain and enhance air quality	-	No impacts predicted
Reduce greenhouse gas emissions	-	No impacts predicted

8.2.8 Train Wagons

For trains, newer wagons are quieter, and EU incentives are planned throughout Europe for rail companies to retrofit wagons to reduce noise.

Table 8.8 Train Wagons

SEA Objective	Impact	Comments
Improve human health	✓	Lower noise levels could be beneficial for mental and physical health.
Protect, maintain and where appropriate, enhance biodiversity	-	No impacts predicted
Protect, maintain and where appropriate, enhance landscape and townscape character	✓	Lower noise levels could result in positive effects on landscape and townscape character.
Protect, maintain and enhance air quality	-	No impacts predicted
Reduce greenhouse gas emissions	-	No impacts predicted

8.3 Mitigation

8.3.1 Introduction

There is a statutory requirement under the Scotland SEA Act 2005 for the responsible authority to demonstrate how measures to prevent, reduce or offset any adverse effects identified from the assessment have been incorporated into the plan. The recognised approach to mitigating adverse effects often relates to changes being made to the overall plan or to the policies or actions included within the plan. These measures tend to include:

- Changes to the wording of the plan, policy or proposal
- Removal of a policy or proposal
- Addition of new policies or proposals
- Devising new alternatives, possibly a combination of the best aspects of existing alternatives
- Identifying issues to be considered as part of the design and implementation of specific developments/activities associated with the plan
- Identifying issues to be considered in the Environmental Impact Assessment (EIA) of specific developments/activities

For the above approach to mitigation to be effective there must be sufficient detail contained within the plan that is being assessed to enable the policies, proposals or actions to be clearly identified and amended accordingly. In terms of the NAPs, the aim of the consultation document upon which this SEA is based, is to set out the proposed structure and content of the NAPs.

As previously discussed, the NAPs do not set out specific interventions or developments. The NAPs identify CNMAs and CQAs. In approximately 2 years and following further analysis, the final NMAs and QAs will be declared. From that stage, physical interventions will be identified and the process of declaration of NMAs and CQAs will address potential conflicts with existing plans, policies and initiatives in terms of environmental effects. This will be included within the technical guidance currently being prepared in respect of the Candidate Noise Management and Candidate Quiet Area to actual Noise Management and Quiet Area process. Mitigation measures will be assessed at this juncture to ensure that all environmental factors are considered.

This highlights the importance of monitoring the implementation of plan as set out in Chapter 9.

8.3.2 Approach to Mitigation

In terms of this SEA the main focus for mitigation is to identify measures to prevent, reduce or offset the potential negative effects identified as part of the assessment of the individual policy areas and the overall NAPs. This will be achieved by identifying measures that could be integrated into the overall design of a policy area/or the wider NAPs and future technical guidance to ensure that the main functions of that policy area and the delivery of those functions do not have an adverse effect on the environment.

In order to ensure that mitigation measures are implemented (and remain relevant) it will be necessary to monitor the implementation of the plan at all key stages. The approach to mitigation is therefore directly linked to the approach to monitoring set out in Chapter 9.

8.3.3 Mitigation Measures

The SEA results have identified that overall, the NAPs are likely to have a positive effect on the noise environment. However, there are some areas where the NAPs or the main functions/actions could have negative effects on the environment. These effects include:

- Direct effects of the NAPs on a specific SEA topic
- Possible unknown effects. These relate to the element of risk or uncertainty associated with changes/introduction of policies or actions which could have unintended consequences. For example the NAPs may identify a NMA which is already covered by an Air Quality Management area; it is important that integrated policies are introduced whenever possible.

8.3.4 Mitigation Measures

Table 8.9 below sets out the possible options for mitigating and enhancing the NAPs based on the results from the SEA.

Table 8.9 Mitigation Strategy

Intervention	Mitigation or Enhancement	Potential Effects/Issues	Direct Mitigation	Secondary Mitigation
Speed	Mitigation	Possible negative effects on air quality	<ul style="list-style-type: none"> ▪ Clarity within NAPs and associated technical guidance to ensure that air quality considerations are addressed 	<ul style="list-style-type: none"> ▪ Detail on method/criteria that could be used for safeguarding air quality
	Mitigation and Enhancement	What mechanism will be put in place to ensure that interventions to reduce noise will not have a detrimental effect on air quality?		
	Enhancement	How will the NAPs be delivered to ensure integrated policies across a range of environmental considerations?		

9 PROPOSED SEA MONITORING FRAMEWORK

9.1 Introduction

The purpose of this chapter is to set out 'the measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme', as required by 18(3)(f) of the SEA Act. The plan which is the subject of this SEA is the Scottish Government's proposal to introduce NAPs which will create a new framework to reduce noise levels where necessary, and to preserve environmental noise quality where it is good.

Monitoring must be seen in the context of the plan which is being proposed and logically, monitoring must be linked to the various stages in the implementation of the plan. Detailed information on the implementation of the plan is currently not available and at this stage an outline framework for monitoring is proposed for consultation purposes. More detailed monitoring frameworks would be devised during the drafting of the technical guidance as described below.

No noise monitoring will be carried out to inform the strategic noise maps or the NAPs. These are based purely on computer models.

9.2 Purpose of Monitoring

Monitoring is an ongoing process which is undertaken throughout the lifetime of the plan. The information gathered through monitoring will assist the Scottish Government in identifying and mitigating the environmental effects of implementing the plan. If adverse effects are identified, these can be addressed by altering the way in which the plan is implemented.

The uncertainties associated with the high level, strategic assessment make monitoring all the more important. Monitoring allows for periodic checks to confirm the accuracy of the assumptions on which the original assessment was based and to ensure that the proposed intervention measures remain relevant and are being effectively implemented. Monitoring is therefore closely linked to the proposed mitigation measures set out in the previous chapter.

9.3 Monitoring Phases and Activities

Two main phases are proposed for monitoring, each of which need to be considered separately.

Phase 1 is the process of defining, agreeing and setting up the policy and management framework. This includes the drafting of the technical guidance and other relevant policy documents and the creation of management mechanisms for monitoring this progress. Monitoring lasts until all aspects of this process have been delivered. Phase 2 is the implementation stage.

Phase 1 is concerned with the wording of documents, organisational arrangements etc. Phase 2 is concerned with monitoring the changing environmental conditions that can be attributed to the NAPs.

For Phase 1 the key activities necessary to develop the detailed monitoring framework would be as follows:

- Establish a programme for monitoring based on the main stages of the implementation of the plan.
 - The main elements that would need to be monitored include, but are not limited to:
 - The drafting of the text of the Technical Guidance
 - Implementation of the Technical Guidance:
 - Providing a framework for the detailed assessment of CNMAs and CQAs
 - Assessing environmental impacts across the SEA objectives
 - Preparing and implementing a framework to ensure that environmental impacts are managed and mitigated where practical
- Undertake monitoring at each of the main phases including the following tasks:
 - Confirm that the proposed environmental measures set out in the draft NAPs and mitigation measures set out in Chapter 8 of the Environmental Report are (where they remain relevant) incorporated into the Technical Guidance or other delivery mechanisms.
 - Where amendments are made to the proposals for the delivery of the NAPs and management framework, undertake an environmental assessment of the amendments. This can be done by reviewing the original assessment as more information becomes available in order to confirm the results of the assessment.
 - Identify the need for other specific mitigation measures to prevent, reduce or offset adverse impacts or to create more positive outcomes.
- Reporting: a brief monitoring report would be prepared at each key stage of the plan's implementation.
- Consultation: the monitoring report would be made available to the Consultation Authorities (SNH, SEPA and Historic Scotland) in order that they may comment on the findings and make further recommendations.
- Monitoring would be undertaken by (or on behalf of) the Scottish Government.
- Programme and end point - monitoring of Phase 1 would continue to the point where all aspects of the NAPs and management framework have been delivered and are in operation.

For Phase 2 it would be necessary to review environmental conditions and identifying where changes to environmental conditions can be attributed to the implementation of the NAPs. Given the lack of information at this time it is proposed that a detailed monitoring framework is devised following adoption of the plan and set out in the post adoption SEA Statement. It will be necessary to:

- Develop a programme for monitoring for all aspects of the plan.

- Agree a method for monitoring, possibly using indicators. Indicators and contributory objectives will provide a means of informing the Scottish Government on the effects of the new NAPs and management framework.

10 NEXT STEPS

10.1 Next Steps

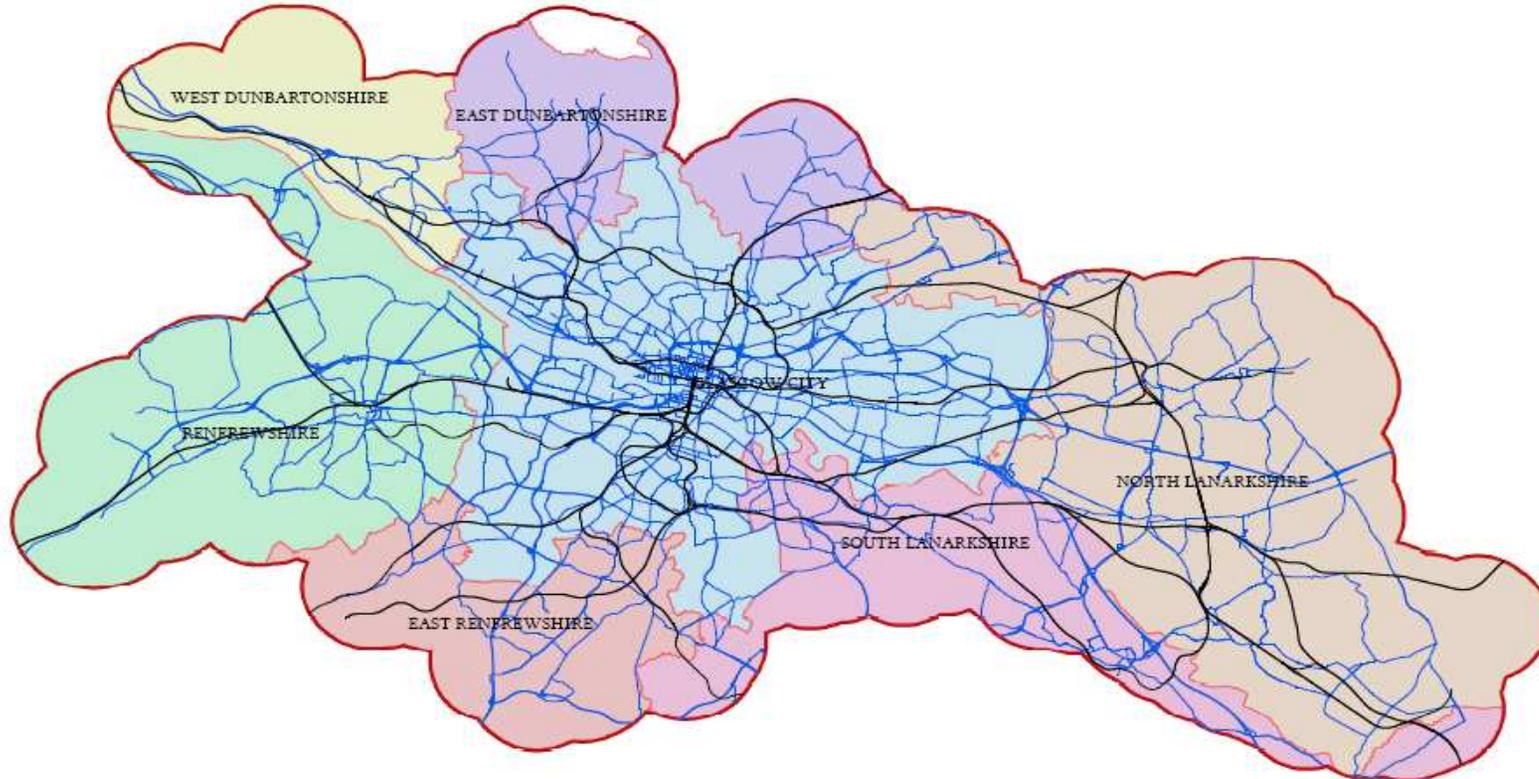
Table 10.1 below highlights key outstanding stages in the SEA process and the development of the NAPs.

Table 10.1 Next Steps

Task / Milestone	Description	Expected Date
Public Consultation	The draft Action Plans and the Environmental Report will be published for public consultation for a period of 8 weeks.	Oct-Dec 2008
Assess Significant Changes	Should consultation result in significant changes to the NAPs, the impacts of these changes will be assessed.	Dec 2008
Adoption of NAP	Adopted Action Plan will incorporate changes based on consultation responses, where appropriate.	Jan 2009
Prepare Post-Adoption SEA Statement	This will highlight how the findings of the SEA and comments from consultation have been taken into account in the development of the final NAPs. It will also set out a final monitoring framework.	Dec 2008/ Jan 2009
Analysis of CNMAs and CQAs	Analysis of data used to define CNMAs and CQAs, enabling an understanding of whether these should be determined and adopted in the future.	Jan 2008 onwards
Develop methods for designating NMAs and Quiet Areas	Development of technical guidance for declaring NMAs and Quiet Areas. This will be subject to consultation in January 2009 for 12 weeks.	Oct 2008 – Mar 2009
Declaration of NMAs and Quiet Areas	Final adoption of NMAs and QAs.	Ongoing post May 2009

APPENDICE 1

Glasgow Agglomeration Modelled Roads and Railways

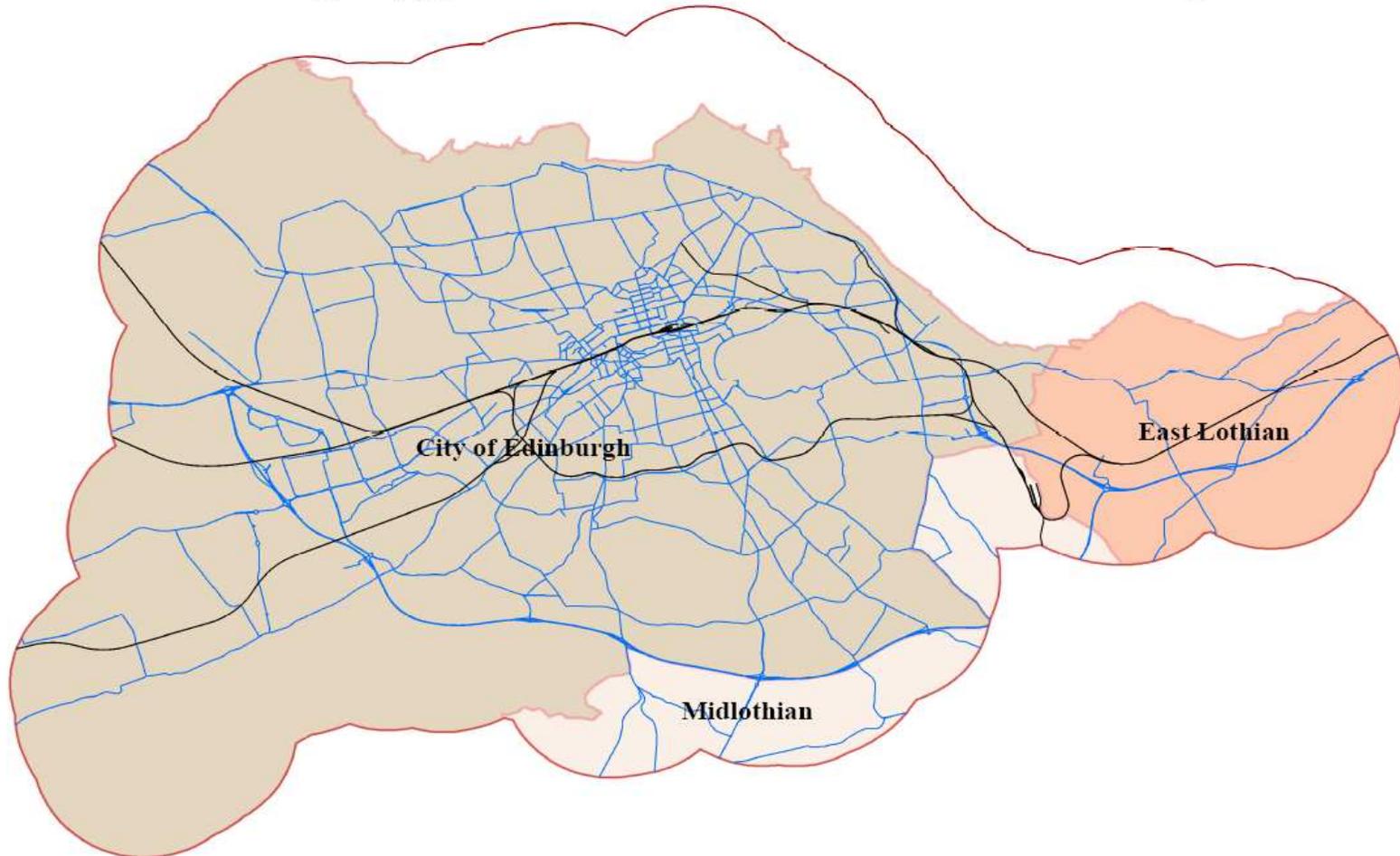


Legend

- Glasgow Modelled Railways
- Glasgow Modelled Roads
- Glasgow Administrative
- Glasgow Agglomeration

APPENDICE 2

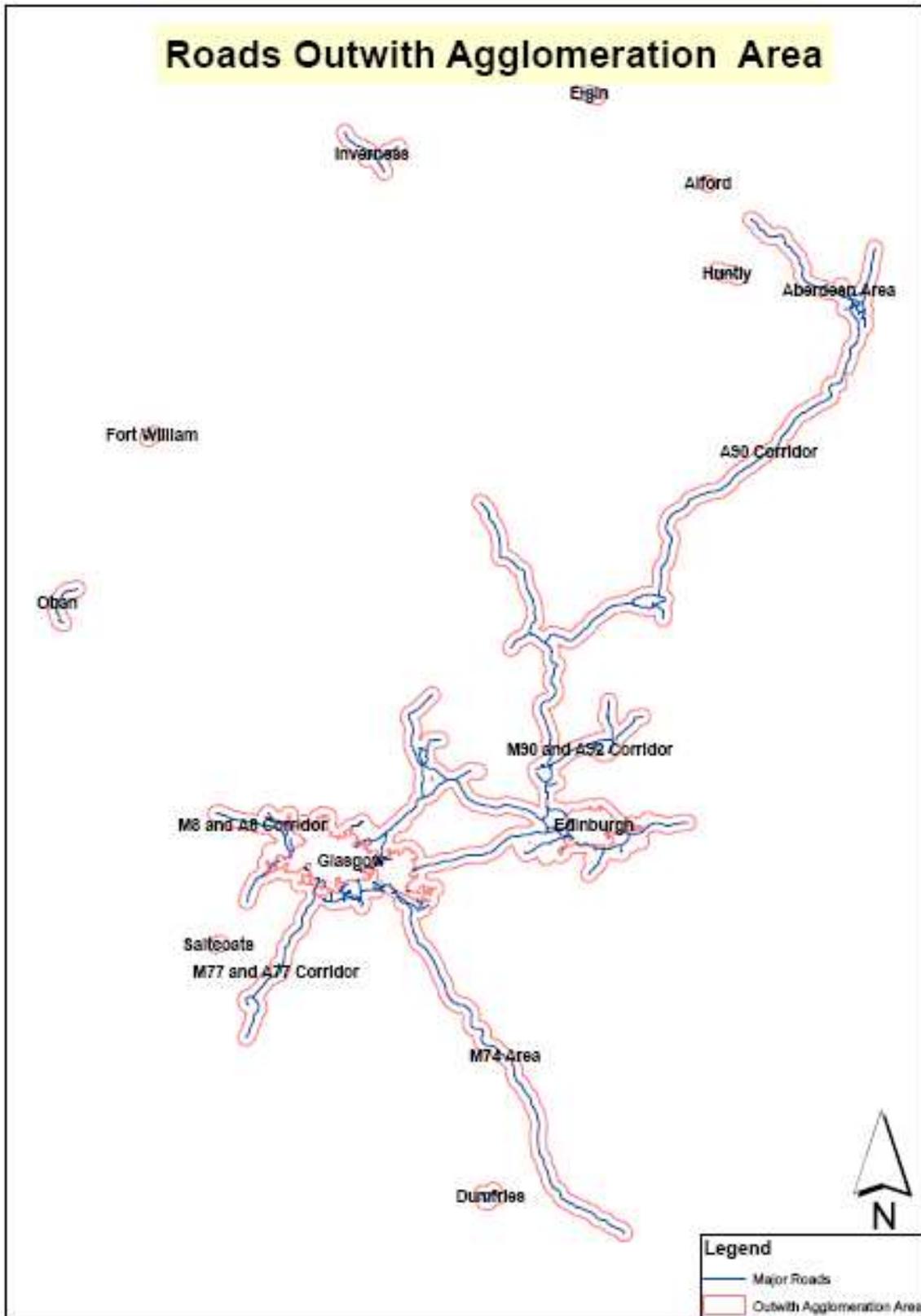
Edinburgh Agglomeration Modelled Roads and Railways



Legend

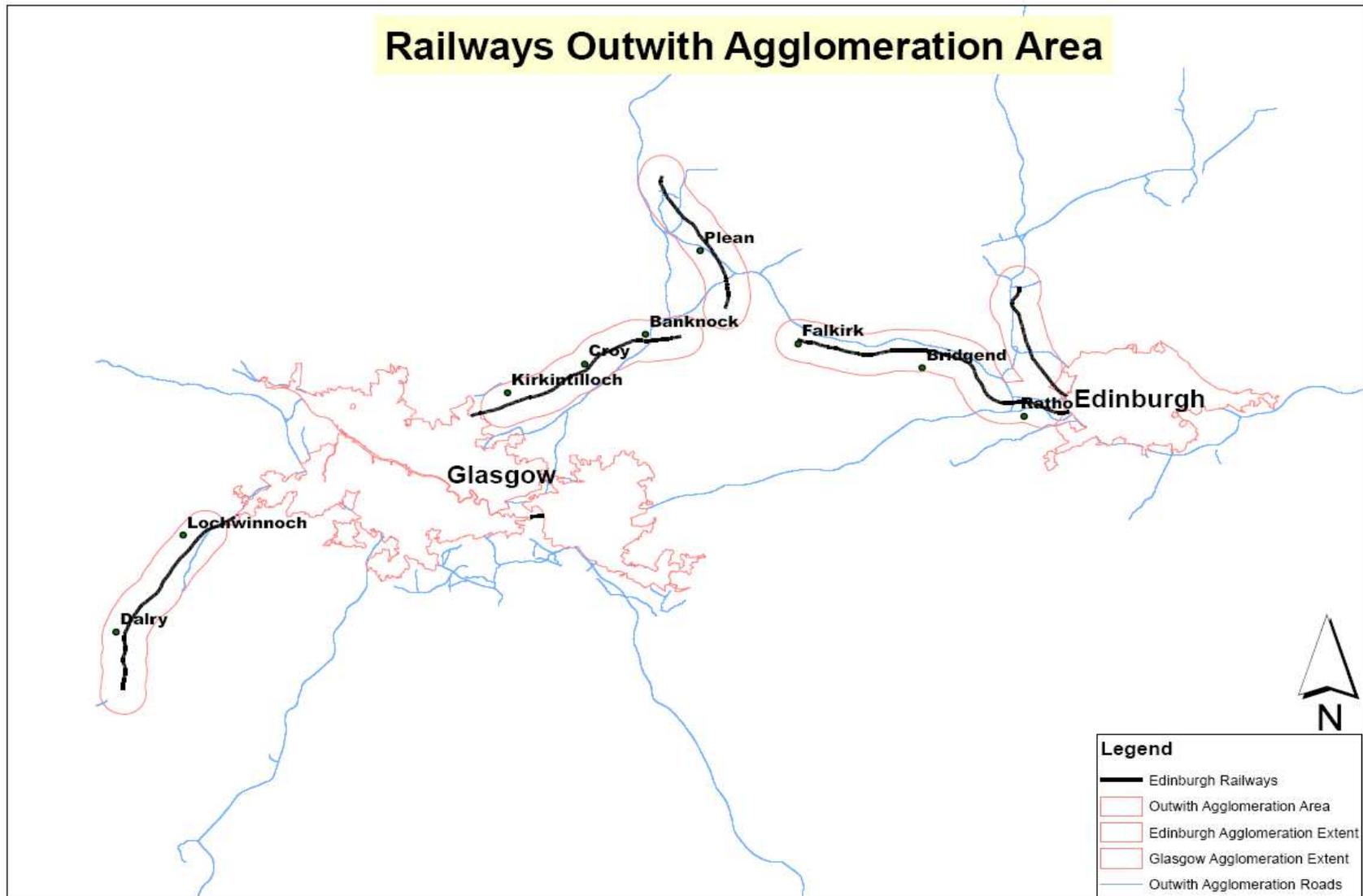
- Edinburgh Modelled Railways
- Edinburgh Modelled Roads
- Edinburgh Administrative
- Edinburgh Agglomeration

APPENDICE 3



APPENDICE 4

Railways Outwith Agglomeration Area



APPENDICE 5

ENVIRONMENTAL REPORT

The following approach may be helpful for identifying the potential cumulative effects of the NAPs across the SEA issues/topics:

SEA topic	Part of NAPs / Alternative (e.g. policy 1-8)								Potential cumulative impact of NAPs
	Speed	Night Time restrictions	Road Traffic Calming	Noise Barriers	Road Surfacing	Road Traffic Management	Aircraft	Train Wagons	
Improve human health	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protect, maintain and where appropriate, enhance biodiversity.	-	-	-	✗	-	-	-	-	✗
Protect, maintain and where appropriate, enhance landscape & townscape character.	✓	✓	✗	✗	✓	✓	✓	✓	✓
Protect, maintain and enhance air quality	✓/✗	✗	-	-	-	✓/✗	-	-	✓/✗
Reduce Greenhouse gas emissions.	✓	-	-	-	-	✓/✗	-	-	✓/✗
Interrelationship	✓	✓	✓/✗	✗	✓	✓/✗	✓	✓	✓/✗
Cumulative effects on SEA topic can be identified by 'reading across'									

In the example above, each part of the NAP has a positive overall impact (reading 'down') except for quiet traffic calming and noise barriers, but the policies cumulatively have a significant positive effect on improving human health and protect, maintain and, where appropriate, enhance landscape & townscape character (reading 'across'). Where policies have negative effects, it is good practice to review to see whether they cannot be changed so as to reduce their joint effect. Negative and positive effects should not be assumed to cancel each other out.

✓ = positive, ✗ = negative and - = neutral effect