TRANSPORT SCOTLAND
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Draft Transport Noise Action Plan (TNAP) 2024 to 2028

Working Together to Create Better Places

December 2025

Contents

Foreword

Transport is a fundamental part of our everyday lives in Scotland, it supports everyone, whether for journeys to work or school, trips for recreation, or supporting industry and tourism. Correspondingly transport noise is an environmental problem with around 1.4 million people exposed to transport noise levels that could impact their health, and general wellbeing, and we are committed to managing this.

The National Transport Strategy sets out a vision for a transport system that meets everyone's needs, respects our environment, and contributes to health, wellbeing, and sustainable economic growth. This includes our commitment to investing in efficient and sustainable transport which minimise emissions and consumption of resources and energy.

With these principles at the forefront, the Transport Noise Action Plan (TNAP) 2024 to 2028 sets out a range of, direct and indirect, actions we will take during the next 4 years, to reduce the impact of transport noise, building on the work we have taken forward in previous years.

The TNAP for Scotland brings together information on the population exposure to higher levels of environmental noise in major road and rail routes supporting the identification of Candidate Noise Management Areas (CNMA) to enable management of environmental noise in the areas most affected. It sets out the actions that will be taken by TS to work with stakeholders and the public to address transport noise related issues on major road and rail routes and ensure environmental noise consideration across wider Transport plans and strategies.

Publication of the TNAP 2024-2028 reaffirms Transport Scotland's commitment to minimising the impact of transport noise on the people of Scotland. We will continue to ensure noise management is integral to all transport related activities, across the spectrum of design, construction, and maintenance, collaborating with partner organisations to reduce noise levels in the most impacted areas through targeted action.

Alison Irvine
Transport Scotland
Chief Executive

Executive Summary

This document sets out the TNAP for Scotland, which aims to directly manage and, where practicable, reduce the effects of transport noise from Scotland's trunk roads, major roads, and rail corridors, and to work with all transport providers to shape, focus, and deliver transport policy to manage noise.

The preparation of a TNAP is a requirement of The Environmental Noise (Scotland) Regulations 2006. Transport Scotland and partners have produced this TNAP to update and replace the Transportation Noise Action Plan (TNAP) 2019 to 2023.

Transport Scotland is the national transport agency for Scotland, delivering the Scottish Government's vision for transport. Our vision is for a sustainable, inclusive, and accessible transport system helping deliver a healthier, and more prosperous Scotland for communities, businesses, and visitors. Prioritising the management of transport noise is a key component in protecting our environment, improving wellbeing, and developing a sustainable economy.

Although the noise generated by transport cannot be eliminated, we are conscious that it is important to reach a balance that allows growth in a sustainable manner, whilst also enhancing the economic and social benefits to Scotland. We have reviewed our previous action plan and introduced updates and enhancements to our current actions to build upon the progress we have made over the past five years, working proactively and in collaboration with a variety of stakeholders and local communities.

We believe this TNAP demonstrates our commitment and the importance that Transport Scotland places on the issue of noise and our aim to minimise the impact of noise from our transport sources as far as reasonably practicable.

1 Introduction

1.1 Noise Definition

Environmental noise has been defined as “unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity.” (European Union, June 2002)

1.2 Noise and Health

Noise may negatively impact an individual’s health, affecting quality of life through sleep disturbance, cardiovascular and metabolic issues, and cognitive impairment in children (European Agency, June 2025)

Noise can also have economic impacts by potentially affecting tourism, learning, studying, and workplace productivity. According to the World Health Organisation (WHO), noise is one of the top environmental risks to health (World Health Organisation, 2018).

Transport noise is the biggest source of environmental noise in Scotland, with around 1.4 million people exposed to potentially unhealthy noise levels.

A variety of health problems can be associated with noise. For example, heart disease derived from exposure to daytime traffic noise costs approximately £1.2 Billion per annum (DEFRA, 2008), and sleep disturbance is one of the most common consequences of noise pollution. Noise is also an equity issue, with evidence showing low-income communities worldwide are most likely to be exposed to unacceptable levels of noise (World Health Organisation, October 2023). In addition, people affected by poverty live in disproportionately large numbers on busy main roads and often do not have the choice of moving away.

1.3 The European Directive on Environmental Noise

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

- To determine the noise exposure of the population through noise mapping.
- To make information available on environmental noise to the public

- To establish Action Plans, based on the mapping results, to reduce noise levels where necessary, and to preserve environmental noise quality where it is good. END does not set limit values, nor does it prescribe Action Plan measures (these remain at the discretion of the competent authority).

1.4 Legal Context in Scotland

In October 2006 the END was transposed into The Environmental Noise (Scotland) Regulations 2006, and these were further amended by The Environmental Noise (Scotland) Amendment Regulations 2018 to allow adoption of the new Common Noise Assessment Methods in Europe (CNOSSOS-EU) methodology.

The END legislation requires the strategic noise mapping, and related action plan process to be completed every 5-years on a rolling cycle. Since 2006 there have been four cycles, commonly known as rounds, of the END legislation, including the current round underway. Each round required a separate action plan for Major Roads and Railways, Agglomerations, and Major Airports. To increase the areas modelled for each round, the legislation included more intense movement limits, and area definitions. Major roads and Major railways are defined by vehicles passages per year. Major roads are mainly trunk roads however they include some local roads. The detailed Action Plan scope requirements for each round are shown in **Table 1 –** Action Plan Scope Requirements for END Rounds below.

Table 1 – Action Plan Scope Requirements for END Rounds

Action Plan Type	Round 1	Round 2 and Round 3	Round 4
Major roads	> 6,000,000 Vehicle passages per year	> 3,000,000 Vehicle passages per year	As Rounds 2 and 3 (SG mapped all roads)
Major Railways	> 60,000 Train passages per year	> 30,000 Train passages per year	As Rounds 2 and 3 (SG mapped all railways)
Agglomerations	>250,000 population and 500 people per km^2	>100,000 population and 500 people per km^2	>100,000 population and 500 people per km^2
Airports	> 50,000 air traffic movements per year	> 50,000 air traffic movements per year	> 50,000 air traffic movements per year

The Scottish Noise Action Plans describe how the Scottish Government has worked with stakeholders in identifying options for noise management and provides detail on how those actions will be delivered. The history of the TNAP is detailed in **Table 2 –** History of TNAPs below.

Table 2 – History of TNAPs

Round	Mapping Complete	Plan Published	Delivery Period	Action Plan
1	2007	2008	2008 to 2012	Transport Noise Action Plan (TNAP) 2008 to 2012
2	2012	31 July 2014	2013 to 2018	Transport Noise action Plan (TNAP) 2013 to 2018
3	2017	5 December 2018	2019 to 2023	Transport Noise action Plan (TNAP) 2019 to 2023

Round 4 of the noise mapping was due to be completed in 2022 and was required to describe the noise situation in 2021, with the related action plans due for publication in 2023. Delays in developing the noise maps, with a resultant impact on the development of the TNAP, occurred due to a number of factors, including significant changes in the calculation methods resulting in a more complex procurement process for noise mapping. However, work on transport noise management has continued during 2024 and 2025 and the modelling for round 4 will enable future noise maps to be created more efficiently, and has the potential to deliver future benefits in resource and costs savings.

1.5 Scope of the TNAP

The Round 4 mapping is now complete, and this Draft TNAP 2024 to 2028 is one of the set of five Scottish Noise Action Plans covering the areas described in **Table 3 –** Scottish Noise Action Plan Details below.

Table 3 – Scottish Noise Action Plan Details

Noise Action Plan	Areas
Transport	All major roads, all trunk roads, all rail routes, and transport policy
Agglomerations	All urban areas with population greater than 100,000, and with population density greater than 500 people per km^2 (Aberdeen, Dundee, Edinburgh, Falkirk, and Glasgow)
Aberdeen Airport	Aberdeen Airport.
Edinburgh Airport	Edinburgh Airport.
Glasgow Airport	Glasgow Airport.

1.6 Strategic Noise Mapping and Action Planning

Strategic noise maps for the Environmental Noise Directive (END) round 4 (for a 2021 base year) have been produced on behalf of the Scottish Government by Noise Consultants Limited (NCL).

The development of the model, its calculation, and analysis was undertaken using a Noise Modelling System (NMS) to deliver calculations of the noise level on a 10 metre grid, at a height of 4 metre above local ground level, for a range of sources and noise types, as required by the Regulations. The outputs from the model can be found on the Scotland's Noise website, where noise maps have been produced to show a geographical representation of noise levels across the entirety of Scotland for 2021, showing areas where people are exposed to high levels of environmental noise.

The noise model takes account of the requirements of the new modelling methodology introduced into law since the previous round of mapping. It uses advances in data and technology to calculate noise exposure levels with a higher level of accuracy and coverage than ever before based on information such as traffic flow, road type, and road surface data. No actual noise measurements were taken in the production of the strategic maps, as the regulations require mapping to be conducted by means of modelling according to a specific method. This is because sound levels can vary significantly based on factors including weather conditions or the time of day or year, introducing a level of uncertainty into the result. This is averaged out as part of the modelling process.

As a result, mapping data - although useful in helping identify priority areas for investigation - does not necessarily represent an exact picture of the current situation on the ground at any given locality on any given day.

For END round 4 the Scottish Government went beyond the minimum requirements in the Regulations and chose to include all road and rail sources major and non-major, as defined in **Table 1 –** Action Plan Scope Requirements for END Rounds earlier.

The total lengths of major road and rail noise source are shown in **Table 4 –** Round 4 total sources mapped below.

Table 4 – Round 4 total sources mapped

Source Type (as defined in **Table 1 –** Action Plan Scope Requirements for END Rounds)	Length
Major Road	2,932 km
Rail	1,357 km

Details of the noise bands used in the strategic noise mapping, and the number of people exposed to the noise levels within these bands, are shown **in Table 5 –** Noise Bands Decibel (dB) used in mapping and **Table 6 –** People exposed in Noise Bands Decibel (dB) below respectively. The bands, relate to yearly average noise levels, and were chosen to reflect thresholds of increasing public health concern and to align with EU environmental standards for noise exposure.

Table 5 – Noise Bands Decibel (dB) used in mapping

Background	END Noise Bands (yearly average dB)				
	55-59	60-64	65-69	70-74	≥75
Annoyance	Minimal	Noticeable	High	Severe	Extreme
Typical traffic conditions	Suburban arterial road, moderate flow	Urban route, acceleration	Single carriageway trunk road,	Motorway or Bypass,	Motorway or bypass with significant freight

The metrics used to measure noise within the noise bands include Lden, and L night. These were chosen to reflect cumulative human exposure to environmental noise, and its health impacts, especially annoyance and sleep impacts, across different times of day. The day–evening–night noise level, or Lden, is a 2002 European standard to express noise level over an entire day. It imposes a penalty on sound levels during evening and night. Lnight focusses solely on nighttime exposure, and directly ties to sleep disturbance and health risks.

Table 6 – People exposed in Noise Bands Decibel (dB)

Noise Type	Noise Source	People Exposed to Noise in Noise Bands (dB)					
		55-59	60-64	65-69	70-74	≥ 75	Total
Lden	Major roads	119,400	73,800	54,400	18,300	2,700	268,600
	Major railways	46,600	24,300	7,900	2,000	300	81,100

	Total	166,000	98,100	62,300	20,300	3,000	**349,700**
Lnight	Major roads	91,400	60,900	31,100	5,600	600	189,600
	Major railways	30,800	11,500	2,600	400	0	45,300
	Total	122,200	72,400	33,700	6,000	600	**234,900**

A list of the number of people exposed to noise levels within the noise bands for each round of END for road and rail are shown in **Table 7 –** Population exposure from major roads and **Table 8 –** Population exposure from major rail below respectively. These figures are cumulative, and relate to the END requirements noted in **Table 1 –** Action Plan Scope Requirements for END Rounds.

Table 7 – Population exposure from major roads in Rounds 1 to 3

END Round	Lden (dB)			Lnight (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
1	191,000	44,600	1,600	115,900	20,200	100
2	201,200	60,300	600	153,200	15,600	0
3	260,700	68,400	300	182,200	16,800	0

Table 8 – Population exposure from major rail in Rounds 1 to 3

END Round	Lden (dB)			Lnight (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
1	20,500	5,700	100	14,300	3,300	0
2	37,700	13,500	2,800	32,100	12,500	1,200
3	39,200	9,300	300	29,900	5,200	200

A list of the number of people exposed to noise levels within the noise bands for round 4 of END for road and rail are shown in **Table 9 –** Population exposure from major roads in Round 4 and **Table 10 –** Population exposure from major rail **Table 8 –** Population exposure from major railbelow respectively.

Table 9 – Population exposure from major roads in Round 4

END Round	Lden (dB)			Lnight (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
4	268,600	75,400	2,700	189,600	37,300	600

Table 10 – Population exposure from major rail in Round 4

END Round	Lden (dB)			Lnight (dB)		
	> = 55	> = 65	> = 75	> = 50	> = 60	> = 70
4	81,100	10,200	2,300	45,300	3,000	0

2 Transport Noise in Scotland

2.1 Background

Transport Scotland works in partnership with stakeholders and operating companies across Scotland to manage a comprehensive, multi-modal transport network that helps keep the country connected. Annual budgets for the 2025-26 financial year support the operation and maintenance of the current system, provision of new infrastructure, and management of the environmental noise impact of Scotland's trunk road and rail network. A map of Scotland's Key Transport Infrastructure is provided in **Appendix A**

The National Transport Strategy sets out the long term vision for Scotland's transport system, to have "a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors."

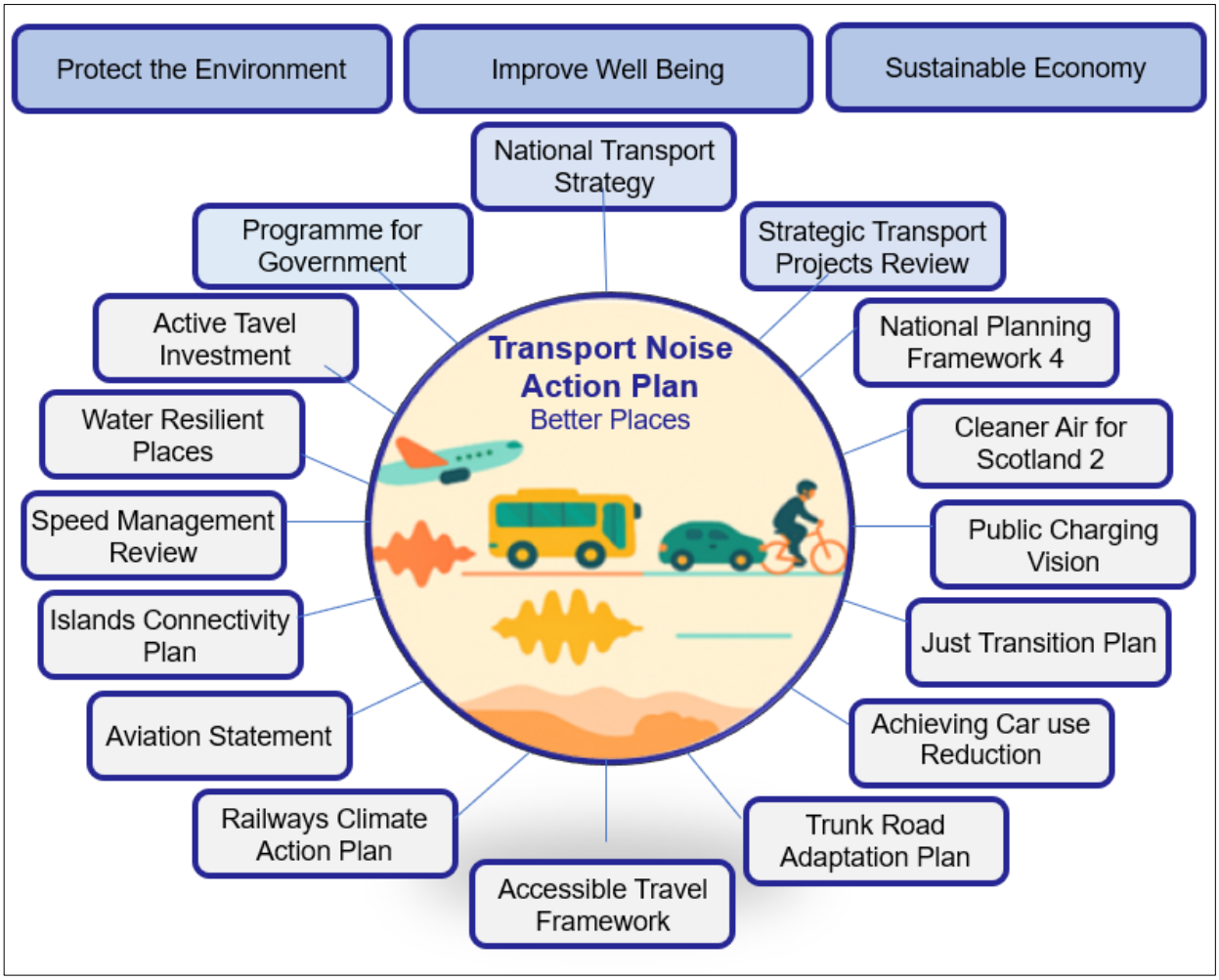
The National Transport Strategy Fourth Delivery Plan sets out Transport Scotland's key delivery commitments that will be undertaken prior to the end of 2025. This TNAP is one of the key commitments and will support the following National Transport Strategy priorities;

- Contribute to health, wellbeing, and sustainable economic growth.
- Management of transport noise.
- Respect our environment.

To maximise the benefits from action to improve the transport noise environment, it is essential that we build on the linkages with other key government policies and strategies across transport, climate change, health, environment, planning, energy and land use, and partner with a wider range of all organisations, and professions.

Across a range of transport policy commitments, Transport Scotland have embedded the need to manage and where possible reduce the impact of transport related noise. These are set out in **Image 1** below;

Image 1 – Strategic Policy Links to Transport Noise



2.2 Roads Noise

Transport Scotland leads the strategic management of Scotland's road network, overseeing trunk roads, and working with partners to deliver the NTS priorities and objectives. This includes maintaining, upgrading, and monitoring the trunk road network, while also providing national oversight of transport investment to deliver the priorities of the National Transport Strategy and deliver a more prosperous Scotland for communities, businesses and visitors.

Transport Scotland aims to ensure road construction schemes are designed and constructed to minimise the impact of noise, using high standards of environmental mitigation, wherever reasonably practicable.

2.3 Railway Noise

The management of the railway industry in Scotland involves collaborating with multiple stakeholders, with various roles and responsibilities, working together in partnership. The Scotland's Railway partnership is a dynamic collaboration of Government and rail industry partners, including organisations and suppliers across the rail industry in Scotland, working together to deliver a safe, timely and high-quality railway across Scotland.

Scotland's railway infrastructure, including the delivery of major infrastructure projects and general maintenance, is managed by Network Rail, and Transport Scotland is responsible for Scotland's rail policy and delivery, including the following.

- Developing rail policy and strategic planning.
- Delivering major projects alongside industry partners.
- Promoting and investing in the development of sustainable rail freight.
- Managing economic regulation of the railways, and monitoring and advising on the affordability of the rail programme.

For any location, there are a wide range of measures that can be implemented to provide improved management of the railway noise and/or noise reduction. A summary of these are noted in **Table 11** – Rail Noise Management Measures below.

Table 11 – Rail Noise Management Measures

Measure	Details
Control of noise at source	Includes railway vehicle emission limit values and track maintenance techniques.
Planning controls	Through the operation of the national and local transport and land use planning system.
Compensation and insulation	In the case of new, additional, or altered works, these measures include noise barriers and facade insulation.

The Our Scotland's Railway Climate Action Plan 2024 to 2029, authored by Scotland's Railway a group made up of around 150 different organisations and suppliers from across the rail industry in Scotland, noted noise complaints have been reduced by decreasing noise at work sites, and better informing communities about potential disturbance. The Action Plan commits to continuing these efforts with an aim to further reduce the rail noise and nuisance footprint, and deliver local environmental and social benefits.

3 Transport Noise Actions Review

3.1 Progress during 2019 to 2024

All direct and indirect transport noise management objectives were progressed during the TNAP 2019 to 2024 delivery period, and these are detailed in **Table 12** – Progress on TNAP 2019 to 2024 objectives and actions below. A series of specific case studies are included in **Appendix B** – Case Studies

Table 12 – Progress on TNAP 2019 to 2024 objectives and actions

#	Summarised Objective	Delivery
1	Manage the exposure to noise in NMAs (4 Actions).	Noise barriers were constructed at five prioritised locations, and design was completed for two further locations. Quiet road surfacing material was the default choice for NMA locations, and potential noise management interventions were considered as part of handling noise complaints.
2	Incorporate a commitment to mitigate environmental emissions, into Transport Scotland Corporate and Annual Business Plans (4 Actions).	A commitment to ensure our policies, projects, and interventions manage noise emissions was included in Page 18 of the Transport Scotland Corporate Plan 2017-2020, and a TNAP Delivery Group was formed to assess key issues on TNAP delivery and noise management.. The Corporate Plan 2021-2024 also included a commitment to have a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities
3	Ensure all Transport Scotland policies and proposals, consider and facilitate noise management.	Significant work has progressed on embedding noise management in policies and proposals. This includes the National Transport Strategy (Fourth Delivery Plan, December 2024) commitment to the development and delivery of the Transportation Noise Action plan, and the National Planning Framework 4 confirmation development proposals likely to raise unacceptable noise issues will not be supported.
4	Promote new channels of communication to stakeholders that encourage a learning environment (3 Actions)	During 2024, Transport Scotland worked closely with key Stakeholders to launch a new Webinar Series on Noise and Health for transport, noise, policy and health professionals working on projects linked to Scotland. This area will be developed in the next TNAP cycle.
5	Improve the tools available for Noise Assessment (4 Actions)	We supported the commissioning of work on the collaborative development of modelling and mapping to describe the noise exposure in Scotland for 2021. The work was completed in early 2024 as part of the fourth

#	Summarised Objective	Delivery
		Round of noise mapping for Scotland, under the Environmental Noise (Scotland) Regulations 2006. We have investigated the detail of a CPX survey of roads in Scotland, and a trial of noise cameras.

3.2 COVID-19

Transport and travel habits in Scotland were profoundly affected by the Covid-19 pandemic, with restrictions on travel and daily activity in place for large parts of 2020 and some of 2021.

The unprecedented impact of the COVID–19 outbreak resulted in necessary changes to priorities across government and local authority partners. The pausing or slowing down of actions relating to the TNAP action delivery was a pragmatic response to the emergency.

4 Action Plan Prioritisation Process

4.1 Background

The Environmental Noise (Scotland) Regulations 2006 require noise action plans to meet the following key objectives.

- **Prevent and reduce environmental noise** where necessary, and in particular where exposure levels can induce harmful effects on human health.
- **Preserve environmental noise quality** where it is good.
- **Manage noise issues and effects**, including noise reduction if necessary.
- **Aim to protect Quiet Areas** against an increase in noise.
- **Apply to the Most Important Areas** as established by strategic noise maps.

4.2 Identification of Noise Management Areas (NMA)

The strategic noise mapping noted earlier in ,**Strategic Noise** Mapping and Action Planning and the related population exposure, provide the basis for identifying areas where the above objectives can be prioritised, and delivered, under the TNAP, and where noise management efforts can be focused, and effective. These areas are referred to as Noise Management Areas (NMAs), and Quiet Areas (QAs),

The identification of NMAs followed a three stage process as noted in the **Table 13** – Stages of NMA identification below.

Table 13 – Stages of NMA identification

#	Stage	Details
1	Identify Noise Areas	Define areas exposed to environmental noise which may be harmful to human health, as indicated by international guidance. Levels chosen for road and rail and number of people exposed are shown in **Table 14** – Stage 2 Process Candidate Noise Management (CNMA) Outcomes below.
2	Identify Noise Management Areas	These are a subset of Noise Areas, where the health effects are highest, determined through a consideration of noise exposure levels and the number of people exposed to noise. They have been defined using a heatmap density criterion of people highly annoyed to identify the top 3% of the area of Scotland.
3	Choose Noise Management Areas	This involves a selection of Noise Management Areas identified during the implementation of the TNAP.

Stage 1 involves an assessment of the strategic noise modelling to identify areas where people were experiencing noise above the WHO Environmental Noise Guidelines for the European Regions values, 54 dB L_{den} (rail) and 53 dB L_{den} (road). These are defined as **Noise** Areas.

Stage 2 involves an assessment of the areas identified in Stage 1 to determine locations where the health effects are highest, determined through a consideration of noise exposure levels and the number of people exposed to noise.

Stage 3 involves choosing a series of NMA to be managed during the period of the TNAP. These will be chosen by the TNAP delivery group based on cost benefit ratio and policy alignment.

The outcomes of the stage 2 process was determined using Geographical Information Systems (GIS) software, which created a heatmap, identifying areas with higher concentrations of people "highly annoyed," as set out in the WHO guidelines, linked above. Information on the make up of the proposed Candidate Noise Management Areas (CNMA) is listed in **Table 14** – Stage 2 Process Candidate Noise Management (CNMA) Outcomes below.

Table 14 – Stage 2 Process Candidate Noise Management (CNMA) Outcomes

Source	Total CNMA	Total Population	Highly Annoyed (HA) Population	HA Threshold Used (people per 100 m2)
Road	158	70,209	12,378	34
Rail	16	4,895	1,013	39

A validation and prioritisation process will be undertaken during the implementation of the TNAP to determine which CNMA areas should be considered first as Noise Management Areas.

Validation will include an assessment of each CNMA to determine any significant changes from the modelling data, and define these as NMA. The prioritisation process will evaluate each NMA and rank these in terms of deliverability.

5 Transport Noise Actions for 2024 to 2028

5.1 Collaborative Approach

Managing transport noise is essential to improving health and wellbeing. The TNAP 2025 to 2029 options for managing noise were developed using the Source, Pathway, Receptor, Consequence model (SPRC).

Appraisal of possible measures, and related actions, to manage noise began with assessing the Source (where the noise originated), the Pathway (how the noise travels through the environment), the Receptor of the noise pollution (who or what could be affected), and Consequence (what is the impact on health).

Using this model, alongside an appraisal of work successfully undertaken to date, the policy interventions and activity available to manage noise, a selection of typical noise management opportunities noted in **Table 15** – Examples of SPRC Noise Measures. below were appraised to determine those that would be most effective and deliverable.

Table 15 – Examples of SPRC Noise Measures.

Management at Source (S)	Management of Pathway (P)	Management at Receptor (R)	Assessment of Consequence (C)
• Modal shift to quieter forms of transport. • Reduction of nuisance noise behaviour. • Research and development into quieter vehicles. • Road surface development.	• Noise barriers. • Planning regulations.	• Monitoring. • Noise. insulation • Soundscape. • Well-designed developments.	• Health impact assessment. • Stakeholder engagement. • Targets.

5.2 Objectives and Actions

Using the methodologies, software and approaches set out in this document, Transport Scotland have committed to the following objectives and actions, in **Table 16** –TNAP Actions for 2024 to 2028 below, which will be delivered through the TNAP from 2024 to 2028;

Table 16 –TNAP Actions for 2024 to 2028

#	Action	Year				
		2024	2025	2026	2027	2028
Objective 1: We will improve the consideration of environmental noise management within all stages of transport planning, design, construction, and maintenance.						
1a	Transport Scotland will promote environment noise management through the major road and rail corridors working with stakeholders to support a collaborative approach to noise management.	•	•	•	•	•
1b	Transport Scotland will, working closely with Trunk Road and Rail stakeholders, prepare for the next round of noise mapping, considering data needs and engaging with wider impacted groups		•	•		
Objective 2: On a prioritised basis we will continue to manage the exposure to environmental noise in NMAs.						
2a	Transport Scotland will assess all major road and rail Candidate Noise Management Areas (CNMAs) and to identify NMAs and develop appropriate interventions on a prioritised basis.		•	•		
2b	Transport Scotland will work with stakeholders to implement, specific measures to support noise management in prioritised NMAs		•	•	•	•
2c	Transport Scotland will ensure that noise management interventions are built in to existing maintenance and improvement programmes where practical.		•	•	•	•
Objective 3: We will work with partners and the public to reduce potential exposure to environmental noise and increase awareness of noise control measures and action.						
3a	Transport Scotland will continue to provide information to the public in relation to Transport noise action on the Transport Scotland webpage, signposting stakeholders and those affected by transport noise to support resources.	•	•	•	•	•
3b	Transport Scotland will provide guidance and advice to individuals affected by Transport Noise, working with partners agencies to advocate mitigation of impacts where possible.	•	•	•	•	•

#	Action	Year				
		2024	2025	2026	2027	2028
3c	Transport Scotland will continue collaboration with key stakeholders across the public, private, and academic sectors to understand and utilise new methods of noise management and prevention to advocate their use with partner organisations.	•	•	•	•	•

5.3 Reporting Progress

Transport Scotland will document progress against the commitments set out above and will published updates on the Noise section of the Transport Scotland website.

6 Governance of the TNAP

6.1 Competent Authority

The Scottish Government and its agencies, acting on behalf of the Scottish Ministers, are the competent authorities charged with delivering the obligations of the Environmental Noise (Scotland) Regulations 2006.

6.2 TNAP Steering Group

Transport Scotland have established a TNAP steering group who will oversee the delivery of action under this plan. This group will provide multi-organisational commitment to and delivery of noise management action.

6.3 TNAP Delivery Group

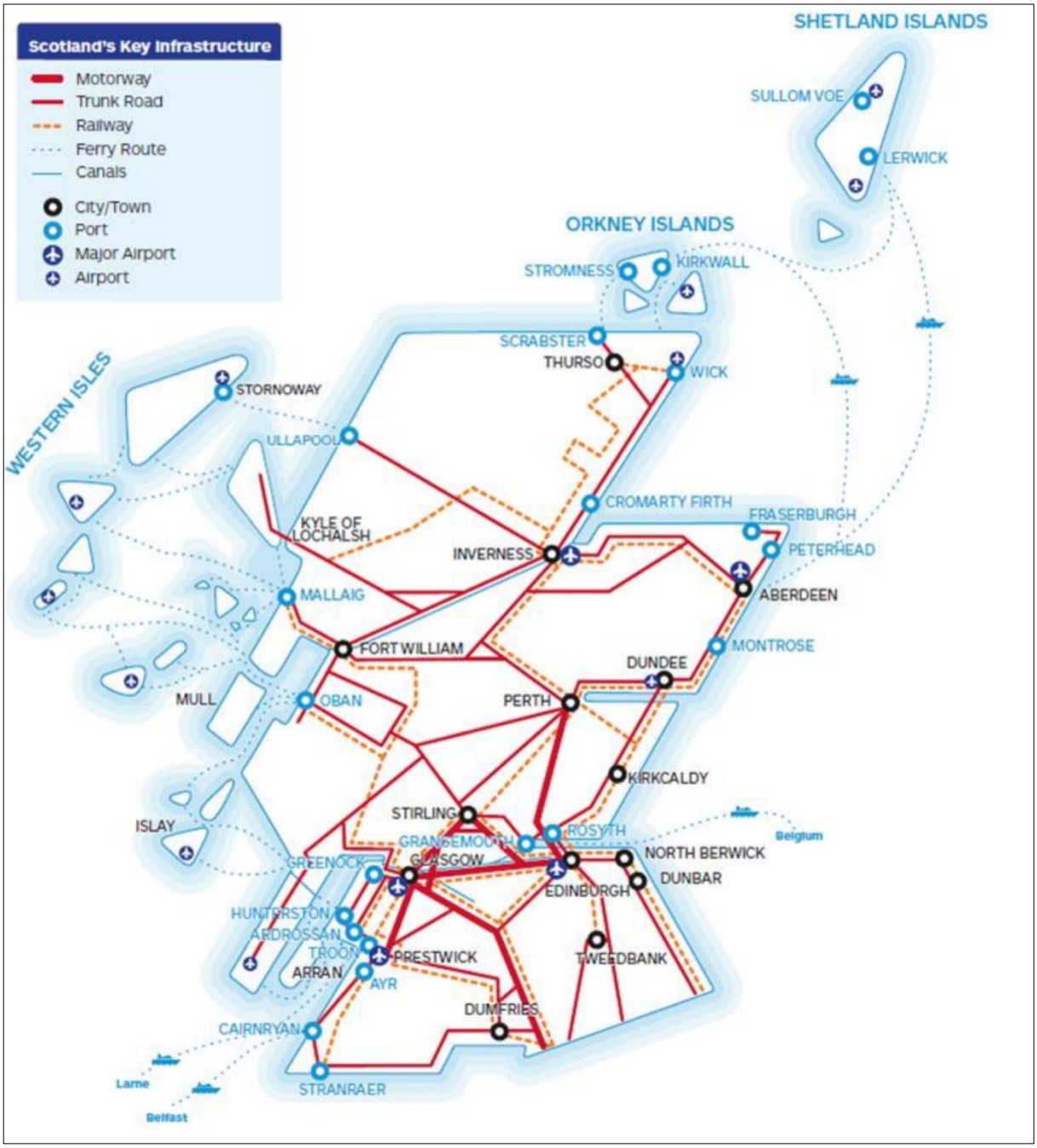
Transport Scotland has formed a TNAP delivery group, which includes representation from Operating Companies, to consider, agree and report on the following.

- Governance, including the production of the TNAP, and other strategic documents required as part of fulfilling obligations under the TNAP.
- Reporting, including works carried out under commitments in the TNAP.
- Forward planning, including establishing short, medium and long term objectives as part of the TNAP.
- Identify opportunities to collaborate with stakeholders and communicate on progress to the TNAP Steering Group.

Appendix A – Scotland's Key Transport Infrastructure

Image 2 – Scotland's Key Transport Infrastructure

The image below highlights Scotland's Key Transport Infrastructure, including motorways, trunk roads, rail, ferries, canals, ports, and airports. Transport Scotland manages a comprehensive, multi-modal transport network that helps keep Scotland connected, and supports commerce, work, learning, leisure. and tourism for the country.



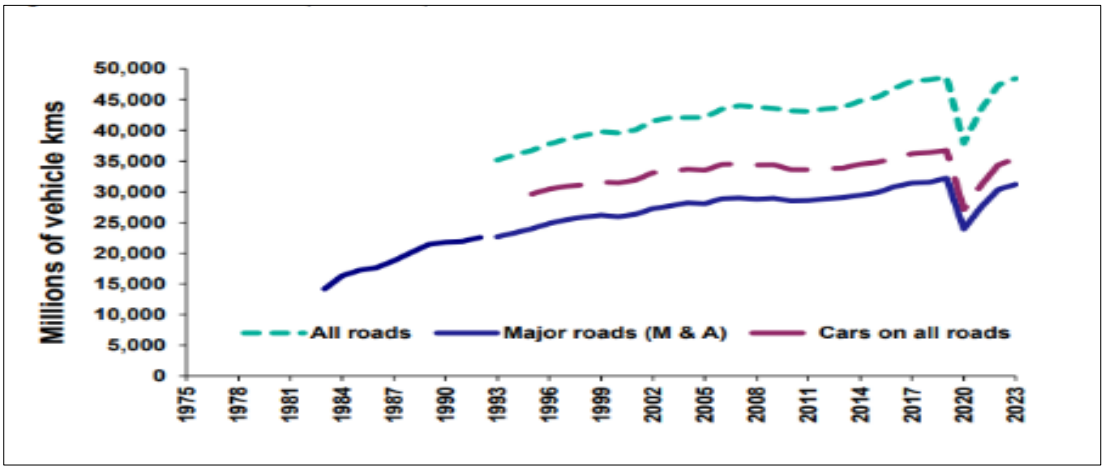
Appendix B – Case Studies

Case Study 1 – Modal Shift background

During 2019 to 2024 a wide range of Transport Policies with the ability to influence Transport Noise were developed and implemented. These are summarised in Image 1. Key background related to the modal shift to facilitate noise management, as noted in Action 3a, of the TNAP 2029 to 2023, are as follows.

- In 2023-24, public transport journeys rose by 15%, with 451 million public transport journeys made by either bus, rail, air, or ferry. This compares with the 392 million public transport journeys recorded in 2022-23.
- The number of bus journeys increased by 12% in 2023-24 compared to 2022-23. However, this was still 7% lower than pre-pandemic journeys in 2019-20.
- Rail journeys showed an increase of 27% over the year 2023-24. However, this was still 16% lower than in 2019-20. In the years immediately prior to the pandemic rail use had been steadily increasing.
- Air passengers increased by 21% between 2022 and 2023, but are still down by around 10% compared with 2019. Air passenger numbers had increased by 28% in the ten years prior to the pandemic. Ferry passenger numbers showed an increase of 4% in 2023, but were still down 7% compared to 2019. Road traffic also rose in 2023-24. Overall road traffic increased by 2%, and has now returned to 99% of pre-pandemic levels. Car traffic increased by 3% in 2023-24 and is now 4% below pre-pandemic levels. Prior to the pandemic, road traffic had been following a steadily increasing trend with total road traffic increasing by 10% in the 10 years up to 2019.
- During the pandemic cycling was one of the few transport types to demonstrate an increase in traffic volume. Despite decreases in the years since, cycling on the road network was estimated to be 10% higher in 2023-24 compared with 2019-20.

Image 3 – Road traffic



Case Study 2 – Pathway Intervention of Noise Barriers.

During 2019 to 2024 a series of pilot noise barrier locations were identified, and a detailed consultation, design, and construction was completed. The findings of this work is currently under review to evaluate future interventions linked to wider policy alignment and a Soundscape based approach. The noise barriers completed to date are listed on **Table 17** –Noise barriers completed to date below.

Table 17 –Noise barriers completed to date

Route	Scheme
A92	Newport on Tay
M9	Polmont
M9	Stirling
M80	Castlecary
M876	Bonnybridge

Details of before and after assessment of pilot noise barriers. Include before and after monitoring results, cost, benefit, suggestion for future barrier appraisal, and types to explore. A typical example is shown in the image below.

Image 4 – TNAP Noise Barrier installed on M80 at Castlecary

Case Study 3 – Source intervention, quieter surface, and monitoring

Transport Scotland consider the use of quieter road surfacing material when designing routine maintenance schemes in CNMA locations, and apply these where appropriate.

Opportunities for noise management interventions are considered as part of handling noise complaints, and examples include reviewing the maintenance regime, appraising traffic flows, and assessing any long-term planning opportunities. This approach is supported by the development of a noise complaints handling flowchart.

Noise management has been appraised in detail on major schemes including the A720 Sheriffhall, the A9, and the M8, M73, M74 DBFO.

We have developed an innovative before and after monitoring test to evaluate the benefits of different types of quieter surface and we are using the results to improve material choice. We also instructed Atkins Limited to review the noise reduction performance of TS2010, a type of Stone Mastic Asphalt (SMA) road surface. A literature review was undertaken of relevant research and the TS2010 noise performance test report. Example cost benefit case studies have been modelled and the content of the following report summarises the findings. The work is summarised in the TS2010 Noise Reduction Performance Review - Initial Assessment | Transport Scotland

Appendix C – Candidate Noise Management Areas

Table 18 – Summary of Candidate Noise Management Areas below summarises the details of the Candidate Noise Management Areas developed following the Action Plan Prioritisation Process noted in Section 4.

Table 18 – Summary of Candidate Noise Management Areas

Agglomeration	Local Authority	Road	Rail	Total
Aberdeen	Aberdeen City	3	0	3
Dundee	Dundee City	8	0	8
Edinburgh	City of Edinburgh	52	3	55
Falkirk	Falkirk	1	0	1
Glasgow	East Renfrewshire	1	0	1
	South Lanarkshire	1	0	1
	Glasow City	81	13	94
Outwith	East Lothian	1	0	1
	Fife	1	0	1
	Inverclyde	1	0	1
	Perth and Kinross	1	0	1
	South Lanarkshire	2	0	2
	Stirling	2	0	2
	West Lothian	3	0	3
	TOTAL	**158**	**16**	**174**

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List of Acronyms and Abbreviations

Acronym or Abbreviation	Description
CPX	Close Proximity Method
CNMA	Candidate Noise Management Area
CNOSSOS EU	Common Noise Assessment Methods in Europe
dB	Decibel
DBFO	Design Build Finance Operate
END	Environmental Noise Directive
HA	The Highly Annoyed harmful effect
Lden	The day-evening-night level. An indicator for overall annoyance based upon annual average A-weighted long-term sound over 24 hours. It includes a 5 dB(A) penalty for evening noise (19:00-23:00) and a 10 dB(A) penalty for night-time noise (23:00-07:00)
Lnight	The night level. A noise indicator for sleep disturbance based upon annual average A-weighted long-term sound over the night-time period (23:00-07:00)
NCL	Noise Consultants Limited
NIP	Noise Inspection Panel
NISR	The Noise Insulation Scotland Regulations
NMA	Noise Management Area
NMS	Noise Modelling System
OC	Operating Company
OS	Ordnance Survey
PAN	Planning Advice Note
RTP	Regional Transport Partnerships
RTPI	Royal Town Planning Institute
SCOTS	Scottish Collaboration of Transportation Specialists
SG	Scottish Government
SNMSG	Scottish Noise Mapping Steering Group
SPRC	Source Pathway Receptor Consequence
SPS	Source Prioritisation Score
SRRB	Scottish Roads Research Board
STAG	Scottish Transport Appraisal Guidance
TNAP	Transport Noise Action Plan
WHO	World Health Organisation

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