

Noise Pollution

A strategy for managing noise at Avanti West Coast

October, 2023

AVANTI
WEST COAST



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01 Executive Summary

In its sustainability strategy 'Our Responsible Plan', Avanti West Coast recognises that noise from its operations can have a major impact on our customers, our colleagues and our communities¹. Similarly, in its Sustainable Rail Blueprint, the Rail Safety and Standards Board ('RSSB'), contains a Flagship Goal of a Quieter Railway: A railway that manages noise and vibration to protect the health and wellbeing of its colleagues, customers and local communities.

This strategy sets out how we will monitor and manage environmental noise (including from train warning horns) in line with both Our Responsible Plan and the Sustainable Rail Blueprint.

It should be noted from the outset that noise pollution is not as significant an issue for Avanti West Coast, as compared to other environmental areas like decarbonisation, energy management or waste and circular economy management. We receive very low rates of complaints from customers and local residents about noise pollution (six complaints from April 2022 until October 2023). The introduction of class 805 and 807 trains from 2023 will also significantly reduce noise from trains, as they are compliant with the National Technical Specification Notice: Rolling Stock – Noise and will significantly reduce diesel operation.

This strategy therefore takes a proportional approach to managing noise and avoids escalating theoretical issues that do not exist in practice. We will assess any changes to operations that may give rise to future noise issues, such as changes to timetables and vegetation management. This position will be regularly reviewed and should it change, the strategy will be amended accordingly.

This strategy has also been developed in line with guidance from the RSSB and in consultation with Network Rail.

¹ Our Responsible Plan, p.38 available: <https://www.avantiwestcoast.co.uk/about-us/sustainability>

02 Introduction

Railways bring a range of positive economic, social and environmental impacts. Railways are important economic generators, providing jobs, encouraging investment and promoting tourism. They can also have unintended negative impacts on the communities that live and work close to the railway line and stations. One of these impacts is environmental noise and vibration.

Noise and vibration are an unavoidable consequence of operating and maintaining the railway. Defined as unwanted sound in the Noise Policy Statement for England (NPSE), noise affects health and quality of life of our customers, neighbours and colleagues. Vibration can cause harm to people and damage to buildings. As stated in the Sustainable Rail Blueprint, both noise and vibration can adversely impact local businesses, social infrastructure, heritage assets and biodiversity. Creating a healthy and positive sound environment appropriate to the location is a necessity.

Managing noise and vibration, limiting and, where possible, reducing their negative impact is acknowledged in our sustainability strategy, Our Responsible Plan. In doing so, we aim to deliver a tangible contribution to Sustainable Rail Blueprint, Flagship Goal 6: A Quieter Railway. As a responsible neighbour and employer, we also play a role in the lives of our communities. By managing noise and vibration we expect to deliver positive social value, levelling up, provision of sustainable mobility, connectivity and economic development on our network.

The purpose of this document is to comply with the requirements of the Noise Action Plan: Railways (2019) and Noise Action Plan: Agglomerations (2019). The objectives, approach and deliverables of this Strategy are guided by the requirements of the Noise Policy Statement for England (2010) and these Noise Action Plans under the Environmental Noise (England) Regulations 2006.

Measures we are already taking to effectively manage noise and vibration:

1. Introduction of new class 805 (diesel and electric hybrid) and 807 (fully electric) trains, which will gradually replace class 221 diesel fleet. These new trains are compliant with the National Technical Specification Notice: Rolling Stock – Noise and will significantly reduce noise from our fleet;
2. We have an idling policy in place that is designed to reduce noise and air quality impacts from our fleet. This is well understood and complied with;
3. All train warning horns are maintained to the standards applicable at the time of build for volume and tone;
4. We receive extremely low numbers of complaints from customers and residents (six cases from April 2022 until October 2023) about noise from our operations and have a well-resourced complaints procedure to manage these complaints.

03 Objectives

The overarching objective of this Management Strategy is to manage noise and vibration to protect health, wellbeing and quality of life for our customers, neighbours and colleagues, as well as protecting biodiversity and local heritage. The vision is by the end of this decade to establish the noise impact (footprint) of the railway and to monitor and report on its changes, driving the noise footprint to become smaller with time. "Shrinkage" of the noise impact footprint is the validation of the fact that our operations have become quieter.

To continue to provide effective management, we identify four clusters of recipients of noise and vibration. Each form a Strategic Focus Area with the corresponding objectives.

Strategic focus areas

Recipients of noise and vibration	What we aim to achieve by managing noise and vibration
Customers	<p>Strategic aim: Noise management continues to contribute to improved customer experience and attracts growth.</p> <p>Minimum requirement: Improve customer experience on our trains and in our stations, increase ridership, improve accessibility for persons with hearing impairment and sensitivity to noise, and generate growth opportunities.</p>
Colleagues	<p>Strategic aim: Noise management continues to contribute to an improved and inclusive working environment.</p> <p>Minimum requirement: Continue to ensure safety and improved working environment, on trains, and at stations.</p>
Neighbours	<p>Strategic aim: The adverse effects of noise on local communities are minimised.</p> <p>Medium term requirement: Promote and protect the quality of life, social infrastructure and businesses by:</p> <ol style="list-style-type: none"> Reducing significant adverse effects of noise on health and quality of life; Mitigating and minimising adverse effects on health and quality of life; Protecting and preserving urban areas where the environmental noise levels are low.
Biodiversity and heritage assets	Protecting and preserving the quiet areas in accordance with relevant biodiversity and heritage strategies.

Approach to achieving the objectives: network-specific action plans

Annual action plans will be developed to ensure we achieve the objective of managing noise and vibration.

The transformation to a quieter railway is expected to be gradual and will take time. This Strategy covers the initial 1-3 year transition period, but also provides a long-term outlook up to 7 years. The Strategy is intended as a live document that will be updated annually to reflect progress of the action plans and achievement of the targets.

04 Scope

This Strategy addresses our whole operating network and applies to managing noise from Avanti's operations. Reference to "noise" within this paper signifies "environmental airborne and ground-borne noise and vibration".

More specifically:

1. Environmental airborne noise emitted by rolling stock (including train warning horns) and other equipment used by Avanti or its sub-contractors;
2. Environmental ground-borne noise and vibration emitted by rolling stock and other equipment used by Avanti or its subcontractors; and
3. Noise in and around the 16 stations where Avanti is the Station Facility Owner.

Limitations:

This strategy applies to the activities which Avanti carries out under its operating licence. Avanti is not currently a Depot Facility Owner and nor does it manage stabling sites and yards. Therefore, managing noise at any of these locations is outside the scope of this strategy, although we will collaborate with the relevant manager to support them to manage noise and to identify opportunities to further reduce noise resulting from our rolling stock.

The scope of this Strategy also does not include mitigation plans or other actions related to any new infrastructure or planned permanent changes to its infrastructure. Where these changes take place, we will review our Strategy and update it as relevant in consultation with the Department for Transport. This Strategy also does not apply to any maintenance, renewals or other activities carried out by Network Rail.

Rolling stock interior noise and noise at work are not in scope of the Strategy.

05 Actions and Targets

Very short term (Phase 1) – T+6 months

This strategy will take effect from 31 October 2023 ('T'). The focus during phase 1 is to review current governance and documentation around noise pollution management and strengthen this where necessary. Actions that will be implemented in the first six months from introduction include:

1. Review the need for an internal noise policy.
2. Continue monitor implementation of our idling policy.
3. Review governance around noise management.
4. Define the annual budget for noise management.
5. Define actions for FY25 and prepare a basic Action Plan.
6. Review complaints management policy for noise and vibration related complaints, including analysing information on noise-related complaints.
7. Identify opportunities to work with our supply chain partners to develop noise management.
8. Continue to work with internal terms to identify any upcoming policy changes, operational developments or external developments that may impact on noise and vibration management. Where any changes are identified that will impact on neighbours and local communities, we will appropriately engage with these stakeholders through our Corporate Affairs department.

We will also identify any agglomerations (an urban area with a population in excess of 100,000 persons and a population density equal to or greater than 500 people per square km) where noise might be a particular issue.

Short term (Phase 2) – 6-18 months

This stage leads towards a better understanding of the operational environment. Targets and actions will be determined following completion of actions at phase 1, but may include a better understanding of and mapping of risks and vulnerable areas on our network, ongoing analysis of rolling stock noise performance and sector collaboration and preparation of annual action plans.

Following from the identification of noise agglomerations in phase 1, in phase 2, we will identify any Noise Important Areas (NIAs) and Local Hotspots (LHs), again where noise may be an issue.

Short to medium term (Phase 3) – 19-30 months

This stage seeks to build to an advance level of understanding in the operational environment and the beginning of detailed Noise Action Plans if relevant and appropriate. Actions may include ongoing preparation of annual action plans, setting and reporting on KPIs and metrics; and targets for measuring and monitoring noise and noise levels.

Medium term (Phase 4) – T 31-48 months

This stage will see progression of Noise Action Plans and their ongoing review to minimise noise emission. Any noise measuring at specific locations that has taken place can now be used to derive mitigation or containment schemes. We will review whether to monitor noise on a semi-permanent or permanent basis, and how to contribute to establishing the noise contours (footprint) of the railway. We will also consider how to include noise mitigation schemes in the business cases with quantification of financial and other effects.

Long term (Phase 5) – T 61+ months

In this phase, the aim is that measuring and monitoring of noise is business as usual, technology and equipment is deployed where needed to produce noise data, deployment of rolling stock is optimised, infrastructure maintenance is supported by the industry collaboration and reputational standing of the railway in relation to noise management can be tested with the general public. Targets will be set as appropriate.

06 Governance around noise management

Avanti has an established 'Our Planet' Environment Management System (EMS) accredited to ISO 14001 and ISO 50001. This strategy will be managed through the EMS in accordance with the roles and responsibilities of stakeholders in the EMS. The Environment Leadership Group will have overall responsibility for this strategy, with any escalations direct to the Board. This strategy will be reviewed annually by the Environment Leadership Group.

Complaints management is governed by Avanti's Complaint's Handling Procedure, which applies to all environmental noise and vibration related complaints. Complaints of this nature are dealt with on a case by case basis, due to the very low level of complaints received, with only two in FY23 and four in FY24, of which only two were related to our operations. Depending on the nature of the complaint, we will escalate to the relevant internal stakeholder or direct to Network Rail. All complaints are managed and tracked through our internal management processes. As set out above, this process will be reviewed in phase 1 to make sure it is as appropriate as possible.

We will provide reports and statistics as reasonably requested from external partners, in particular the Department for Transport and the Rail Safety and Standards Board.

Aspects of our operations where noise could be a potential issue include stations (this will be analysed in phase 2), level crossings, rolling stock (as noted above, rolling stock has been identified as low-risk for noise pollution) and vulnerable areas (these will be identified in phase 2).

07 Emission of noise and vibration

Sources of noise and vibration that will be covered by this strategy include the following:

- Wheel-rail interface
- Pantograph-wire interaction
- Rolling noise
- Engine noise
- Train Warning Horns
- Stationary Noise
- Station Announcements

08 Approach to management of noise and vibration

Our approach to noise and vibration management is based on the Hierarchy of Noise and Vibration Response model as shown in the image below. Whether responding to specific complaints or proactively identifying areas for improvement, the Hierarchy model guides us in ranking potential actions by their effectiveness. Through its application, we derive a series of actions tailored to each unique noise or vibration issue. These actions, along with their associated timescales, constitute our operator-specific Noise Action Plans (NAPs) targeted for completion in phase 4.

Hierarchy of noise response

PRINCIPLES OF SUSTAINABLE DEVELOPMENT		
MOST EFFECTIVE	ELIMINATION	Remove the source of noise, redesign, modify Avoid using noise equipment, relocate noisy activity away from the neighbours Automate tasks that involve handling noisy parts, materials and products Buy Quiet equipment
	SUBSTITUTION	Replace noisy equipment or activity with a quieter one (lower power, speed, pressure, force, temperature, amperage, noise, volume) (often in combination with a change in procurement or hire policy)
	ENGINEERING CONTROLS	Address noise by design (design-out) at source Install natural or man-made barriers, screens, enclosures, dampers Use noise-absorbent materials and products Carry out regular maintenance
LEAST EFFECTIVE	ADMINISTRATIVE CONTROLS AND PROCEDURES	Establish, enforce or change operating policies and procedures, introduce operating restrictions and voluntary measures, provide systems that increase awareness of potential hazards, provide training, advance warnings and information, enforce land-use planning and mitigation
	PROTECTIVE EQUIPMENT	Provide equipment that can be worn by individuals to protect from or reduce exposure to noise
	ACCEPTANCE	Accept noise levels as given Provide justification of acceptance

We will continue to collaborate with partners within and outside the rail industry to successfully manage noise and vibration, including but not limited to our supply chain partners, the DfT, the RSSB, other TOCs and local authorities.

09 Long-term outlook

In delivering our ambition to become a quieter railway our commitment is to manage and where possible reduce our noise impacts. We expect a number of activities to contribute to meeting the goals of this version of the Strategy and also its future iterations. These activities may include (and only where relevant):

1. On-going modernisation of the fleet through the introduction of class 801 and 802 trains, which endeavour to implement the newest noise reduction technologies;
2. Investigation and appropriate implementation of effective noise abatement procedures;
3. Design and management of the railway operations to minimise adverse noise impacts and, where appropriate, to maximise relief for residents;
4. Continuous improvement of voluntary measures, especially for reducing the impact of night operations;
5. Enhanced monitoring, reporting and management of all ground- and air-borne noise emissions;
6. Clear and transparent engagement with community groups and industry stakeholders to achieve collaborative and beneficial improvements;
7. Promotion of a research agenda that enhances our understanding of the impacts of railway operation and the effectiveness of the interventions used to reduce noise impacts.

10 Review of the Strategy

Frequency of Strategy Updates

The Noise Management Strategy will be reviewed annually and undergo a comprehensive review every 3 years, but in any case coinciding with the publication of the Strategic Noise Mapping by Defra. This ensures the Strategy stays aligned with national standards and reflects the most current data.

Significant changes

In instances of significant changes to railway operations – such as changes to train service commitments, or construction of new infrastructure – this Strategy will be reviewed and updated within 6 months of the change. The amendments will address the implications of these changes on noise levels and any mitigating measures that need to be considered.

Stakeholder Consultation

Before the updated Strategy is formally issued, a draft will be submitted to the Department of Transport for discussion and approval. This step ensures that the revisions align with both regulatory requirements and broader transport policy objectives.

Reports on the development of and actions under this Strategy will be provided to the Environment Leadership Group on a quarterly basis.

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