Our approach to noise and vibration

Protecting the environment is a fundamental part of our decision making and you can read more about our approach to the environment at:

www.eastwestrail.co.uk/consultation2024

This factsheet provides more detail on noise and vibration and how we'll assess potential impacts.

Our approach to noise and vibration

We are committed to working hard to mitigate and manage potential impacts and minimise the risk of disruption for people during both construction and operation of the railway.

One of our **Environmental Sustainability Strategy** pillars is to build a railway that:

"protects the health and wellbeing of our communities, customers and colleagues."

Our proposals will comply with the Noise Policy Statement for England. This policy aims to:

- Avoid significant adverse impacts on health and quality of life.
- Mitigate and minimise adverse impacts on health and quality of life.
- Where possible, contribute to the improvement of health and quality of life.

We are at the early stages of undertaking a detailed assessment of the noise and vibration impacts that may arise due to construction activities and later, from the operation of East West Rail trains, stations and other facilities. This assessment will help to shape the design and inform how potential noise and vibration impacts, at all stages, can best be controlled.

Initial information about potential noise and vibration impacts is set out in the **Environmental Update Report** published as part of this non-statutory consultation.

More detailed preliminary results of our assessment work will be included in the Preliminary Environmental Information Report that will be published at the statutory consultation. The full results will then be set out in the Environmental Statement that will be submitted as part of the Development Consent Order application.

What is noise and vibration?

Noise is generally described as unwanted sound. The concept of unwanted sound is complex and subjective. The thresholds at which sound becomes noise are influenced by the types of source, receiver and context.

Sound is measured in decibels (dB). Every 10dB increase is about double the loudness. A 3dB change is the minimum perceptible under normal conditions and corresponds with a doubling in the number of noise sources, e.g. doubling the number of vehicles using a given road.

Noise is typically generated by construction activities such as demolition, roadworks or earthworks, where machinery and breaking of hard surfaces is involved. During operation, train movements, the operation of maintenance facilities and changes in traffic will generate noise.

Vibration is generated by construction activity such as piling and tunneling and, during operation, by train movements.

The assessment of noise and vibration arising from our proposals will be based on accepted standards and guidelines to identify significant effects. The potential for significant effects will be considered in terms of disturbance to building occupants, disruption of activities within receptors (such as laboratories) and the onset of cosmetic or structural damage to buildings or sensitive structures. Appropriate thresholds and criteria will be adopted to assess predicted levels of vibration in accordance with the latest guidance and standards, or bespoke criteria as required.

Understanding noise and vibration impacts

To assess and evaluate impacts, we must understand the existing noise and vibration levels so that we can describe the changes in noise and vibration caused by the project.

Baseline surveys will be undertaken at locations to represent typical noise and vibration characteristics, as well as at locations where there may be a significant change in noise or vibration due to our proposals.

To understand potential impacts, we will make use of industry-leading computer modelling to simulate potential noise and vibration levels along the route, considering both construction and operational activities.

These predictions will be undertaken throughout the design process so that mitigation measures can be developed and tested, and the outputs of our modelling will also support the assessments of impacts on communities and ecological habitats.

Based on early assessment work, we have identified the areas where noise mitigation may be required along the railway. You can read more about this in the **Consultation Document, Technical Report** and **Environmental Update Report.**

Mitigating construction noise and vibration impacts

Once construction starts, we will follow the measures set out in the Code of Construction Practice. A draft of this document will be submitted as part of the DCO application. The Code of Construction Practice will include where appropriate the following:

- **Construction methods –** The selection of quieter or lower vibration construction methods and equipment.
- **On-site mitigation –** Use of temporary acoustic screening.
- **Programming of works –** Scheduling of noisier works for less sensitive times of day.
- **Off-site manufacturing –** The manufacture of components off-site before installation, where possible.
- **Off-site mitigation –** Implementation of a noise insulation and temporary rehousing for those that qualify under the guidance laid out in British Standard (BS) 5228.

Mitigating operational noise and vibration impacts

There are several design and other considerations that would have a bearing on operational noise and vibration from the project. These include:

- **Low-impact route alignment –** we are seeking to develop a railway that avoids tight corners and gradients as far as reasonably practicable, as this would help to minimise noise impacts during operation. We are also aiming to keep the track low in the landscape where possible as this helps reduce the spread of noise.
- **Screening –** in areas where further noise reduction is needed, we would propose screening using the landscape, earthworks or acoustic barriers.
- **Track design –** the design of the track itself and the alignment and level of the railway affect the characteristics of noise and vibration from passing trains. Measures that use mass, stiffness and damping within the track components can be applied to mitigate the noise and vibration emissions from the track.
- **Train fleet –** the procurement of railway vehicles would be informed by several factors, including noise and vibration.
- **Structure design –** we would seek to reduce noise (as well as other negative impacts such as light pollution) in the way we locate and design new structures that either give rise to noise and vibration or otherwise affect its transmission. This would include East West Rail facilities, such as stations, realigned roads and other structures.
- **Noise insulation –** where other forms of mitigation have been considered but noise disturbance above trigger levels remains, we will provide noise insulation measures in line with the relevant Noise Insulation Regulations (Noise Insulation Regulations (Railways and Other Guided Transport Systems) 1996).