

**ERM responses to NSoA Representations – comments by Brian Hemsworth
26 April 2015**

In the following paragraphs I refer to the correspondence letters sent to ERM following their pre application consultation on the draft Noise Scheme of Assessment (dNSoA), together with the written responses ERM gave to correspondents. These documents were made available to me via the Council's lead case officer (Environmental Health) David Stevens.

1. Prediction Methodology

A number of comments referred to the prediction methodology used in the dNSoA.

In 1996 the "Noise Insulation Regulations for Railways" came into force. A prediction methodology "Calculation of Railway Noise 1995" was developed at the same time by an Expert Group of the Department of Transport, to accompany the Regulations. This was introduced as the compulsory prediction model for assessing entitlement to insulation under the Regulations and that is still its position. It has also become the UK standard railway noise prediction model since then. It is a well proven method and is an integral part of UK noise legislation. As such it is widely used by the noise industry for the prediction of environmental noise from railways in the UK.

2. WHO Noise Guidelines

Some comments refer to WHO Noise Guidelines which contain lower noise level targets than in the *Noise and Vibration Mitigation Policy (NVMP)*. It must be remembered that the former are "Guidelines" and only have force if they have been adopted as part of national or local policy. This is not the case in the UK. In this case they can only be treated as design thresholds if required by an Oxford CC policy. As far as I am aware, this is not the case. In contrast, the latter contains targets which have been upheld at Public Inquiry and are given force through condition 19.

In my opinion this project has used noise decision triggers which are consistent with those in other railway projects and follow general Environmental Impact Assessment (EIA) principles and procedures.

3. Insulation Policy and Barrier design.

Criticism has been made of the lack of detail in the NSoA on the insulation package and barrier design.

3.1 The Specification for Statutory Noise Insulation is defined in the Appendix to the Regulations in terms of window performance and ventilation design (if required).

The details are therefore part of the Regulations.

3.2 The ERM replies to correspondents state "where non – statutory noise insulation is going to be offered to individual residents, the intention is to follow the technical guidance set out in the Noise Insulation Regulations..... This includes applying the definition of eligible buildings etc. The noise insulation to

be offered will follow the specifications for insulation work set out in Schedule 1 to the Regulations.”

The detail of non – statutory noise insulation is defined in the Regulations. It would help if the above statement was contained in the relevant section of the Noise SoA NR should be asked to confirm their intentions in this respect.

3.3 The acoustic performance of noise barriers is controlled (a) by the height of the top of the barrier above the line of sight between the source and the receiver. The higher the barrier top is above the line of sight the greater the potential noise reduction (b) for barriers close to the railway it is important to minimise the reflection of sound waves between the barrier and the side of the vehicle. One way that this is achieved for vertical barriers is for the side of the barriers nearest the railway to have an acoustically absorbent lining. This will usually be part of the specification if a simple vertical barrier is proposed. (c) the performance of the barrier can be limited by the transmission of sound through the barrier and therefore is controlled by specifying a minimum surface density for the barrier. (The actual minimum density will depend on the barrier reduction required, the higher the performance the heavier the barrier that is required. Calculation of Railway Noise 1995 gives the relationship between the minimum surface density and the required barrier correction – normally a closed boarded wooden fence will have surface density of approximately 10kg/m² which is heavy enough to give a maximum barrier potential of approximately -17 dBA.

I would expect the detailed design specification of the proposed barriers to be part of the submission to tendering process which, in line with Condition 19)13) would follow NSoA approval.

4. Statutory Noise Insulation

Regulation 6 allows discretionary power for sound insulation to be offered where the noise triggers are not reached but where the façade is contiguous with an eligible façade or is part of a series of contiguous facades where the triggers are reached.

NR should be asked to confirm their intention. A statement is required concerning the application of this clause to non – statutory noise Insulation.

5. Process for identifying properties eligible for sound insulation

5.1 Statutory Noise Insulation

Regulation 9 contains the process and timescales whereby the Responsible Authority prepares a map or list of every eligible building. This should be published and made available within 6 months of the works being opened to traffic and the appeals procedure commences with the publication of that information.

It is not necessary for this to be in the Noise SoA but a more comprehensive statement of the process required by the Regulations should be published.

5.2 Non – Statutory Noise Insulation

A step by Step process, with time scales, should be in the NSoA or confirmed in writing by ERM/NR.

6. Reference to Figure 5.1

A number of ERM responses refer to the data in Figure 5.1. and some are more accurate than others. For example:

“Figure 5.1 of the SoA presents the residual noise levels at your property with the noise barrier that will be installed. This shows that the installation of the noise barrier will enable the noise from the Order Scheme to be mitigated in accordance with the principles and standards of the Noise Mitigation Policy”
This is incomplete since there are a number of decision levels in the policy

For more accurate responses ERM could either replace the 2nd sentence with:
“The residual noise levels at your property, with a barrier, are predicted to meet the criteria set out in the noise and Vibration Policy for further mitigation and your property therefore qualifies for non – statutory noise insulation subject to verification in Section 5.2.3 of the SoA.”

Or replace it all with:

“Figure 5.1 of the SoA presents the residual noise levels at your property with the noise barrier that will be installed. This shows that the installation of the noise barrier will enable the noise from the Order Scheme to be mitigated in accordance with the principles and standards of the Noise Mitigation Policy without the need for noise insulation”
whichever is appropriate

Both of these responses have been used in certain cases but not consistently

7. Protection of Gardens

The Noise and Vibration Mitigation Policy is consistent with UK Noise Policy which deals with internal noise only. Assessment of gardens should only be included if it is part of Oxford CC planning policy

8. Wheel Dampers

The use of wheel and rail dampers alone does not necessarily reduce total rolling noise which is a combination of wheel noise (controlled by wheel dampers) and track noise (controlled by rail dampers)

Rail dampers reduce track radiated noise but do not affect wheel radiated noise and will only cause a noticeable reduction in total rolling noise if rail radiated noise totally dominates the unmitigated noise climate. However one merit of rail damper use is that any reduction is a local effect and can be applied only where required

Conversely wheel dampers only reduce wheel radiated noise but do not reduce track radiated noise. Also, for them to be effective even for reducing wheel noise at a specific site they would have to be fitted to every wheel of every vehicle

passing that site. This is unlikely to be accepted by national operators since they would be applied even to vehicles that would never use the line.

Generally, in the UK track radiated noise is greater than wheel radiated noise and when applied in isolation, their effect has been measurable but minimal and unlikely to be noticeable by a wayside observer.

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