The residential property at Quinton's Orchard is located within the Lowest Observable Adverse Effect Level (LOAEL) during the railway operation, albeit subject to a large noise change. The Noise Policy for England guidance advises that where properties are located within Lowest Observable Adverse Effect Level, consideration should be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise.

In response to Mr and Mrs Froggatt's request for an earthwork bund adjacent to their property to mitigate the operational noise effects of the scheme, HS2 considered a number of options, including the cost/benefit of track side mitigation in the form of a noise fence barrier.

A trackside 4m high noise fence barrier 150m in length has been looked at.

The assessment concluded, however, that the proposed length of the barrier would be insufficient to reduce the noise at the façade of the property closest to the scheme significantly. It would be unlikely to change the current predicted noise level at the façade of the property, and would not change Lowest Observable Adverse Effect Level. The cost of a 4m high, 150m long noise fence barrier is estimated to be £268,100.

Where topography is not a factor and the track is at grade or in shallow cutting, a noise fence barrier requires a comparatively large length in order to mitigate noise at the midpoint. This is due to how sound propagates along a linear noise source.

Consequently, a noise fence barrier 3m in height but 600m in length has also been considered.

The introduction of a 3m high noise fence barrier 600m in length would reduce the noise at the façade of the property closest to the scheme by approximately 4dB, but it would not remove the Lowest Observable Adverse Effect Level, or reduce the operational noise change at the property significantly. The cost of a 3m high, 600m long noise fence barrier to achieve this limited noise reduction is estimated to be £741,000.

In accordance with its noise policy set out in HS2 Information Paper E9: Control of airborne noise, during the detailed design of the scheme the nominated undertaker will take all reasonable steps to design and construct, operate and maintain the operational railway so that the combined airborne noise from these sources, predicted in all reasonably foreseeable circumstances, does not exceed the lowest observed adverse effect levels.