Hard Ings Road Keighley – 'Before' and 'After' Noise Calculations

1. Introduction

Using traffic figures supplied by Bradford MDC for peak hour flows in 2017 both with and without the proposed road improvements on Hard Ings Road, together with growth factors for Bradford provided by Leeds City Council's traffic data collection team, 18-hour noise levels were calculated to assess the likely change in these due to the implementation of the scheme.

2. Methodology

The following peak hour traffic flows were supplied by Bradford Metropolitan District Council's Department of Regeneration, showing eastbound (EB) and westbound (WB) flows in both the Do Nothing (DN) and Do Something (DS) scenarios.

EB	**Year 2014**		**Year 2017**		**Year 2026**	
	DN	**DS**	**DN**	**DS**	**DN**	**DS**
AM	1120	1183	1143	1235	1184	1381
PM	963	1038	983	1081	1013	1211
WB	**DN**	**DS**	**DN**	**DS**	**DN**	**DS**
AM	1359	1357	1422	1418	1502	1548
PM	1218	1232	1257	1276	1308	1377

The 2-way 'DN' and 'DS' flows for the proposed opening year of 2017 were each factored-up to 18 hour flows (by multiplying the combined peak hour flows by 6.61) and the results used to calculate Basic Noise Levels (BNLs) using the methodology embodied in the Department of Transport Welsh Office publication 'Calculation of Road Traffic Noise'.

3. Results

L_{A10} 18-hour Basic Noise Levels Hard Ings Road 2017 (dB)	
'Do Nothing' (without scheme)	72.9
'Do Something' (with scheme)	73.1

3.1 Assumptions in calculations

- *8% HGVs in both scenarios*
- *0.5% gradient*
- *50 km/h*
- *Noise source = 3.5m from nearside kerbline*

4. Discussion

The calculation exercise indicates that as a result of the proposed scheme L_{10} 18 hour Basic Noise Levels (6 am to midnight) will increase by 0.2 dB(A) – an imperceptible change.
It should be noted that no account has been taken in the calculations of any increase in speed of traffic using the road following its widening (as this is an unknown quantity), and similarly the calculation process was unable to factor in any change in noise levels due to the proposed introduction of a signalised junction at Lawkholme Lane – although past measurements conducted by this Department have tended to show that such features have little effect on L_{A10} values. Although the proposal is to widen the carriageway such that the centre line moves *away* from the nearest housing (Lawkholme Lane/Caledonia Road area), CRTN still assumes that the noise source line remains in the same place.

5. Conclusions

The road traffic noise calculation exercise based on the supplied 'before' and 'after' peak hour flows for the opening year, suggests that there will only be an imperceptible increase in L_{10}(18 hour) noise levels at the nearest residential properties as a consequence of the proposed road improvements.

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