

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
CROSSING**

**Document 6.3: Environmental Statement
Volume 3 Appendices**

Appendix 13D

**Operational Noise and Vibration Nuisance
Assessment**

Appendix 13D – Operational noise and vibration nuisance assessment

- 13.1.1 Table 13D-1 and Table 13D-2 present respectively the traffic noise nuisance changes for all receptors within the study area and airborne vibration nuisance changes for properties within 40m of roads within the study area, as required by the DMRB HD 213/11.

Table 13D-1 - Traffic Noise Nuisance Changes

Change in noise nuisance level		Do Minimum Opening Year vs Do Minimum Design Year	Do Minimum Opening Year vs Do Something Design Year
		Number of dwellings	Number of dwellings
Increase in noise nuisance level	>0 - <10%	13679	2853
	10 - <20%	0	3755
	20 - <30%	0	4243
	30 - <40%	0	684
	>=40%	0	64
No change	=0%	73	545
Decrease in noise nuisance level	>0 - <10%	9	1617
	10 - <20%	0	0
	20 - <30%	0	0
	30 - <40%	0	0
	>=40%	0	0

- 13.1.2 The assessment in Table 13D-1 above shows that the percentage of people bothered 'very much' or 'quite a lot' by noise as a result of the Scheme has gone up by up to 10% for 2,853 dwellings, by 10% to 20% for 3,755 dwellings, by 20% to 30% for 4,243 dwellings, by 30% to 40% for 684 dwellings and by 40% or more for 64 dwellings. There has been no change in the percentage of people bothered 'very much' or 'quite a lot' by noise for 545 dwellings and a for 1,617, the percentage of people bothered 'very much' or 'quite a lot' has decreased by up to 10% as a result of the Scheme.

13.1.3 However, these results are based on studies undertaken at a sample of sites where the change in nuisance was measured on a 7-point scale judged by people before and after a scheme opened. The results are therefore reflective of a potential perceived change in nuisance, rather than a more objective assessment taking into due account of the actual associated noise level changes. Because it was known that the assessments were focussed on a new road, people may have considered that they were exposed to a perceived noise nuisance greater than that which could reasonably be attributed to the noise level changes occurring. For example, drawing on the survey results a 1 dB change in the short-term gives rise to a 21% increase in the people bothered 'very much' or 'quite a lot'. However in practical terms, such a noise level change would only be observable under laboratory conditions.

13.1.4 It is therefore appropriate that the noise mitigation is driven by the absolute noise level changes, rather than the nuisance assessment.

Table 13D-2 - Traffic Airborne Vibration Nuisance Changes

Change in vibration nuisance level		Do Minimum Opening Year vs Do Minimum Design Year	Do Minimum Opening Year vs Do Something Design Year
		Number of dwellings	Number of dwellings
Increase in vibration nuisance level	>0 - <10%	2552	2554
	10 - <20%	0	6
	20 - <30%	0	0
	30 - <40%	0	0
	>=40%	0	0
No change	=0%	4311	4307
Decrease in vibration nuisance level	>0 - <10%	4	0
	10 - <20%	0	0
	20 - <30%	0	0
	30 - <40%	0	0
	>=40%	0	0

13.1.5 It can be seen from Table 13D-2 that the percentage of people bothered 'very much' or 'quite a lot' by vibration as a result of the Scheme has gone up by up to 10% for 2,554 dwellings and by 10% to 20% for 6 dwellings. There has been no change in the percentage of people

bothered 'very much' or 'quite a lot' by vibration for 4,307 dwellings as a result of the Scheme.

- 13.1.6 The results are based on the same studies as undertaken for noise nuisance; however, the change in vibration nuisance is approximately 10% less than that for noise nuisance. It is therefore appropriate that any vibration mitigation is driven by the absolute vibration level changes, rather than the nuisance assessment.