

Appendix A17.6: Residual Noise Impacts

Introduction

- 1.1.1 As stated in paragraph 17.6.2 of Chapter 17 (Noise and Vibration), DMRB Noise and Vibration requires that a full assessment be undertaken of the residual noise impacts where noise mitigation is included. Accordingly, this appendix provides the residual noise impacts with the proposed mitigation measures as outlined in Chapter 17 (Noise and Vibration) Section 17.5 (Mitigation).
- 1.1.2 This appendix follows the same format as Section 17.4 (Potential Impacts) of Chapter 17 (Noise and Vibration) and it is recommended this be read in conjunction with the main chapter in order to fully appreciate the residual noise impacts.
- 1.1.3 It should be noted that if there is no difference between the predicted residual noise impacts and the predicted noise levels presented in Section 17.4 (Potential Impacts) then they have been omitted from this appendix.

Sample NSR Locations

- 1.1.4 As a result of the proposed additional NSR specific mitigation there is no difference between the predicted noise levels in Section 17.4 (Potential Impacts) and the residual noise impacts at any Sample NSR.

Summary Tables for all NSR within 600m Calculation Area

Do-Minimum Scenario in the Baseline Year vs Do-Something Scenario in the Baseline Year (Short-term Assessment)

- 1.1.5 With regard to the DMRB Noise and Vibration summary tables for all NSR within the calculation area, the additional NSR specific mitigation has resulted in changes to the predicted noise levels at certain NSR and therefore these are reported in full. For ease of reference where changes have occurred the cells in the tables has been highlighted.
- 1.1.6 The magnitude of residual noise impacts at all dwellings and other NSR within the 600m calculation area for the DM 2026 scenario versus the DS 2026 (with mitigation) scenario, for the daytime period at ground and first floor are presented in Table 1.

Table 1: Summary – DM 2026 vs. DS 2026 – Day (with NSR Specific Mitigation)

Change in Noise Level $L_{A10,18h}$ dB	Magnitude of Impact	Ground Floor		First Floor		
		No. of Dwellings	No. of Other Sensitive Receptors	No. of Dwellings	No. of Other Sensitive Receptors	
Increase (Adverse) in Noise Level	0.1 - 0.9	130	5	129	5	
	1.0 – 2.9	54	10	42	8	
	3.0 – 4.9	1	0	1	0	
	5.0 +	0	0	0	0	
No Change	0	No Change	11	1	9	3
Decrease (Beneficial) in Noise Level	0.1 – 0.9	112	23	129	23	
	1.0 – 2.9	19	0	17	0	
	3.0 – 4.9	1	0	2	0	
	5.0 +	1	0	0	0	

Do-Minimum Scenario in the Baseline Year vs Do-Something Scenario in the Future Assessment Year (Long-term Assessment)

1.1.7 In the long-term assessment with the scheme there is predicted to be no difference between the residual and operational noise impacts. This is because by 2041 it is assumed that all sections of the A9 outwith the proposed scheme will be surfaced with LNRS.

Health and Educational Establishments

1.1.8 As a result of the proposed additional NSR specific mitigation there is no difference between the predicted noise levels in Section 17.4 (Potential Impacts) and the residual noise impacts at any Health and Education NSR.

Noise Nuisance

1.1.9 The DM 2026 scenario versus the DM 2041 scenario and the DM 2026 scenario versus the DS 2041 scenario, with additional NSR specific mitigation, have been determined, and are summarised in Table 2 to illustrate the residual noise nuisance impacts (based on maximum façade noise levels). Furthermore, where a change has occurred this has been highlighted in Table 2.

Table 2: Summary of Traffic Noise Nuisance (with NSR Specific Mitigation)

Change in Traffic Induced Noise Nuisance		Number of Dwellings			
		Ground Floor		First Floor	
		DM2026 vs DM2041	DM2026 vs DS2041	DM2026 vs DM2041	DM2026 vs DS2041
Increase (Adverse) in Noise Nuisance	< 10%	4	18	4	30
	10 < 20%	0	110	0	96
	20 < 30%	0	61	0	51
	30 < 40%	0	1	0	1
	> 40%	0	0	0	0
No Change	0%	80	50	40	46
Decrease (Beneficial) in Noise Nuisance	< 10%	245	89	285	105
	10 < 20%	0	0	0	0
	20 < 30%	0	0	0	0
	30 < 40%	0	0	0	0
	> 40%	0	0	0	0

Vibration Nuisance

1.1.10 As a result of the NSR specific mitigation, the predicted DMRB Noise and Vibration defined airborne vibration nuisance has also changed when compared without mitigation.

1.1.11 The predicted DMRB Noise and Vibration defined airborne vibration nuisance for the DM 2026 scenario versus the DM 2041 scenario, and the DM 2026 scenario versus the DS 2041 scenario, with additional NSR specific mitigation, have been determined and are summarised in Table 3. This table includes predictions for all properties that are within 40m of all modelled roads with a predicted noise level greater than 58.0dB $L_{A10,18h}$. Furthermore, where a change has occurred this has been highlighted in Table 3.

Table 3: Summary of Traffic Induced Airborne Vibration Nuisance (with NSR Specific Mitigation)

Change in Traffic Induced Airborne Vibration Nuisance		Number of Dwellings			
		Ground Floor		First Floor	
		DM2026 vs DM2041	DM2026 vs DS2041	DM2026 vs DM2041	DM2026 vs DS2041
Increase (Adverse) in Vibration Nuisance	< 10%	3	2	4	3
	10 < 20%	0	27	0	28
	20 < 30%	0	13	0	13
	30 < 40%	0	0	0	0
	> 40%	0	0	0	0
No Change	0%	66	27	62	23
Decrease (Beneficial) in Vibration Nuisance	< 10%	1	1	4	3
	10 < 20%	0	0	0	0
	20 < 30%	0	0	0	0
	30 < 40%	0	0	0	0
	> 40%	0	0	0	0