



ENVIRONMENTAL STATEMENT

VOLUME 2

APPENDIX 9.3 – OPERATIONAL TRAFFIC

NOISE IMPACT ASSESSMENT

Appendix 9.3: Operational Road Traffic Noise Impact Assessment

Introduction

This Appendix evaluates the potential noise impacts associated with the operation of the proposed development. The assessment is conducted in accordance with the methodology detailed in *DMRB LA111 Noise and Vibration (Revision 2)*. It focuses on comparing the 2040 "Do Minimum" and "Do Something" scenarios to quantify changes in noise levels, thereby illustrating the effects of increased road traffic anticipated to support the development.

Methodology

The Calculation of Road Traffic Noise (CRTN) methodology was employed to calculate the Basic Noise Levels (BNLs, $LA_{10,18h}$ at 10m from the effective source, at a height of 1.5m above local ground level) for each road link under assessment. A notional receptor location was chosen as it provides a consistent basis for assessing changes in road traffic noise levels along each road link.

BNLs were calculated for the following scenarios:

- 2025 Base Year: Baseline traffic conditions.
- 2040 Do-Minimum: Includes traffic growth and committed developments without the proposed development.
- 2040 Do-Something: Includes traffic growth, committed developments, and additional traffic generated by the proposed development.

Traffic volumes, speeds, and vehicle compositions were supplied by WSP (see Table 7.3.1), the transport consultant for this study.

Table 7.3.1: Traffic Flows

Road Name	Ref No	Average speed (kph)	2025 Base Year		2040 Do Minimum		2040 Do Something	
			AAWT 18hr	%HGV	AAWT 18hr	%HGV	AAWT 18hr	%HGV
A627 (M) NB	5	113	40831	5%	64778	5%	64844	5%
A627 (M)SB	6	113	39907	5%	54468	5%	54540	5%
A627 (M) Slattocks Link EB	9	113	13599	5%	26643	5%	26798	5%
A627 (M) Slattocks Link WB	10	113	17782	5%	27736	5%	27900	5%
Bentley Avenue	11	48	379	4%	10815	4%	11614	5%
Whitbrook Way NB	12	48	7595	7%	11238	7%	11386	7%
Whitbrook Way SB	13	48	8236	7%	9346	7%	9553	7%

			2025 Base Year		2040 Do Minimum		2040 Do Something	
A664 Rochdale Road	14	48	31829	2%	38029	2%	38687	5%
A664 Rochdale Road	15	48	17500	3%	29738	3%	29913	5%
A627 (M)	24	113	28821	3.5%	33331	3.5%	33374	5.0%
A627 (M)	25	113	25433	4.2%	30044	4.2%	30079	5.0%

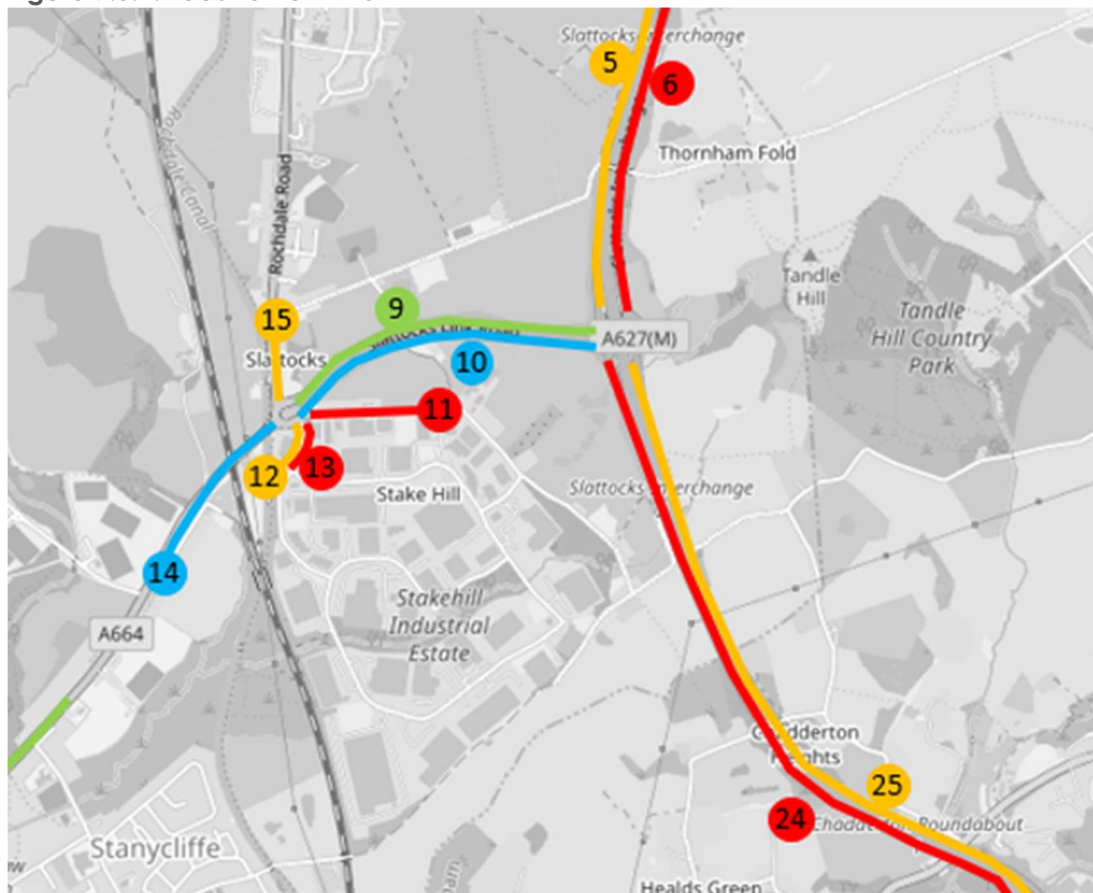
Table 7.3.2 includes a description of where these traffic flows are in relation to the from and to points.

Table 7.3.2: Traffic flow links from/to

Road Name	Ref. No	From	To	Road Class	Direction/2 way
A627 (M)	5	A627(M) Slattocks Interchange	M62 J20	Motorway	NB
A627 (M)	6	M62 J20	A627(M) Slattocks Interchange	Motorway	SB
A627 (M) Slattocks Link	9	Slattocks Roundabout	A627(M) Slattocks Interchange	Motorway	EB
A627 (M) Slattocks Link	10	A627(M) Slattocks Interchange	Slattocks Roundabout	Motorway	WB
Bentley Avenue	11	Bentley Avenue	Bentley Avenue	Local Road	2-way
Whitbrook Way	12	Whitbrook Way	Slattocks Roundabout	Local Road	NB
Whitbrook Way	13	Slattocks Roundabout	Whitbrook Way	Local Road	SB
A664 Rochdale Road	14	A664 Rochdale Road	A664 Rochdale Road	A Road	2-way
A664 Rochdale Road	15	A664 Rochdale Road	A664 Rochdale Road	A Road	2-way
A627 (M)	24	Chadderton Roundabout	A627(M) Slattocks Interchange	Motorway	NB
A627 (M)	25	A627(M) Slattocks Interchange	Chadderton Roundabout	Motorway	SB

Figure 7.3.1 Shows the location of the traffic flow links used in the assessment.

Figure 7.3.1: Location of links



The analysis incorporated the guidance within DMRB LA111 Noise and Vibration (Revision 2) guidance to classify as far as possible the noise impacts based on the magnitude of change:

Table 7.3.3: Classification of Magnitude of Noise Impacts in the Short Term and Long Term

Short Term Noise Change (dB $L_{A10,18h}$)	Magnitude of Impact	Long Term Noise Change (dB $L_{A10,18h}$)	Magnitude of Impact
0	Very Low	<3	Very Low
0.1 to 0.9	Low	3.0 to 4.9	Low
1.0 to 2.9	Medium	5.0 to 9.9	Medium
3.0 to 4.9	High	10+	High

Table 7.3.4 below, reproduced from Table 3.58 of DMRB LA111, outlines the initial assessment of likely significant effects on noise-sensitive buildings:

Table 7.3.4: Likely significant effects

Significance	Short-Term Magnitude of Change
Significant	Major
Significant	Moderate
Not Significant	Minor

Significance	Short-Term Magnitude of Change
Not Significant	Negligible

DMRB LA111 states that the Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Levels (SOAEL) shall be set for all noise-sensitive receptors within the Study Area, for time periods when they are in use. LOAEL and SOAEL considered in this assessment are defined in Table 7.3.5 below, reproduced from Table 3.49.1 of DMRB LA111:

Table 7.3.5: LOAEL and SOAEL Levels

Time Period	LOAEL	SOAEL
Day (06:00 – 24:00)	55 dB $L_{A10,18hr}$ (façade)	68 dB $L_{A10,18hr}$ (façade)
Night (23:00-07:00)	40 dB L_{night} , outside (free-field)	55 dB L_{night} , outside (free-field)

Significance Thresholds

It is considered that a potentially significant noise change occurs when:

- A 1 dB change in noise level in either the short-term or long-term when the resulting noise level exceeds the SOAEL. In the long-term, the noise level must also change by at least 1 dB when comparing the Do-Minimum and Do-Something scenarios to ensure the change is as a result of the proposed scheme as opposed to a change that would happen even if the proposed scheme did not go ahead.
- A 3 dB change in the short-term or 5 dB change in the long-term (i.e., “moderate” change from DMRB LA111) where the resulting noise level is between the LOAEL and SOAEL.
- Where noise levels are below the LOAEL, significant effects are not expected.

Baseline Conditions

BNLs in the 2025 Base Year range from 32 dB to 79 dB, however most relevant to existing and proposed residential receptors are the levels of 44.9 dB at Bentley Avenue to 74.1/75.3 dB at A627 (M) Slattocks Link.

According to CRTN, the methodology is not considered reliable for roads with flows below 1,000 vehicles per 18-hour period (06:00–24:00). This is due to the increased influence of individual vehicle noise events and the reduced averaging effect of continuous traffic, leading to less consistent and less representative noise predictions. For such low-flow scenarios, the model's assumptions and equations may fail to account for the variability in noise emissions caused by sporadic vehicle movements.

For Bentley Avenue, where the predicted traffic flows fall below this threshold during the baseline scenario (341 vehicles over 18 hours), the use of CRTN is inherently less reliable. The methodology itself recommends caution in interpreting the results for such road links. CRTN advises that for roads with very low traffic volumes, alternative methods, such as on-site noise monitoring, should be considered to verify and complement the predicted noise levels.

Given these limitations, the predicted baseline noise level of 44.9 dB $L_{A10,18h}$ for Bentley Avenue should be treated with caution. This value may not fully reflect the true acoustic conditions, particularly if intermittent noise events or background contributions from

surrounding areas play a significant role. During the baseline survey, monitoring position ML4 was overlooking Bentley Avenue and therefore can be a good resource to use for comparison purposes. Unfortunately, during this survey the L_{A10} levels were not measured. However, the measured $L_{Aeq, 24 \text{ hours}}$ was 47.6 dB and based on the relationship proposed by Huybregts and Samuels⁴, the corresponding $L_{A10, 18 \text{ hour}}$ would be 50.8 dB. As such, it is proposed that this number is used to assess the baseline of road traffic noise along Bentley Avenue rather than the CRTN calculated level of 44.9 dB.

Noise Level Predictions

Table 7.3.6: Summary of Predicted Noise Levels and Changes, dB

Road Name	Ref No	2025 Base Year	Road Name	Ref No	2025 Base Year	Road Name
A627 (M) NB	5	78.9	80.9	80.9	+2.0	0
A627 (M)SB	6	78.8	80.1	80.1	+1.4	0
A627 (M) Slattocks Link EB	9	74.1	77.0	77.1	+2.9	0
A627 (M) Slattocks Link WB	10	75.3	77.2	77.2	+2.0	0
Bentley Avenue	11	50.8	65.5	65.8	+15	+0.3
Whitbrook Way NB	12	63.9	65.6	65.7	+1.8	+0.1
Whitbrook Way SB	13	64.3	64.8	64.9	+0.6	+0.1
A664 Rochdale Road	14	70.1	70.9	71.0	+0.9	+0.1
A664 Rochdale Road	15	67.5	69.8	69.9	+2.3	0
A627 (M)	24	77.8	78.5	78.5	+0.7	0

Significance of Impacts

The transport consultants (WSP) have not explicitly stated whether 2040 is the opening year or the future year (i.e. opening year + 15 years). WSP has confirmed that the 2040 Do minimum scenario represents the 2025 baseline traffic flows plus the anticipated traffic growth including committed developments (including all Pfe Sites). They have advised that the 2040 Do Something scenario is the traffic flows in 2040 Do Minimum plus the proposed development trip generation.

⁴ Huybregts and Samuels (1998). New relationships between L_{10} and L_{eq} for road traffic noise. Proceedings of Internoise 1998. November 16 -18th, Christchurch, New Zealand.

The assessment focuses on the differences between the 2040 Do-Minimum and 2040 Do-Something scenarios to determine significance, as these isolate the development's specific contribution to noise impacts. Based on this review the highest predicted increase in noise levels associated with road traffic from the proposed development is +0.3 dB and such an increase is considered negligible (either as a short term or a long term impact) and not significant in EIA terms. No mitigation measures are required for these existing premises as the predicted development's contribution to noise is minimal.
