

Growing Baldock

Environmental Statement Volume 2: Figures & Appendices

Chapter 5: Noise

Appendix 5.3 Supporting Data

APPENDIX 5.3 - SUPPORTING DATA

Road Traffic Assessment

- 5.3.1 The assessment of development led road traffic noise has been undertaken in accordance with CRTN, and using the impact magnitude criteria set out in Table 5.5 of the Noise and Vibration Chapter. The assessment relies upon the predicted traffic data which has been provided by ITP by Haskoning via email on 30th July 2025. The data has been provided as an 18hr AAWT with HGV %, and road speeds and has been input into the computer noise model created in SoundPLAN v9.1. The results of the noise model calculations have been used to assess the potential impact at each receptor.
- 5.3.2 The proposed development includes a new road through the development which links North Road to the A505 junction to the east of Baldock. Changes are also proposed to Bygrave Road so that it is not used as a cut-through for development traffic.
- 5.3.3 The link road through the development and the changes to Bygrave Road have the potential to increase or decrease road traffic noise at receptors, as detailed in this assessment.
- 5.3.4 In addition, the 'with development' traffic modelling scenarios also include the effects of the dwellings associated with the development itself.
- 5.3.5 The results of the computer noise model are shown below in Table 5.3.1 and Table 5.3.2, and are presented graphically on Figures 5.3 and 5.4 in Appendix 5.5.

Table 5.3.1 - Change in Noise due to Development Led Traffic – 2033

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2033
		Scenario 1 – 2025 Base Model	Scenario 3 – 2033 Reference Model	Scenario 4 – 2033 Reference Model + Development	
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	52.2	52.5	52.7	+0.2
ESR2	The Firs, Royston Road, Bygrave, Baldock. SG7 6QY	62.6	62.9	62.9	+0.0
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	71.5	71.8	72.0	+0.2
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	49.2	49.5	50.5	+1.0
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.0	49.3	49.7	+0.4
ESR6	6 Bygrave Road, Bygrave, Baldock. SG7 5DS	49.0	49.4	50.0	+0.6

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2033
		Scenario 1 – 2025 Base Model	Scenario 3 – 2033 Reference Model	Scenario 4 – 2033 Reference Model + Development	
ESR7	Freeland Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.3	49.6	50.3	+0.7
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.1	49.4	49.8	+0.4
ESR9A (Existing)	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	48.5	48.8	49.5	+0.7
ESR9B (New)		48.2	48.5	48.9	+0.4
ESR9C (New)		48.1	48.4	49.3	+0.9
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	47.1	47.4	48.0	+0.6
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	69.0	69.3	68.7	-0.6
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	74.4	74.8	74.2	-0.6
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	66.6	66.9	66.3	-0.6
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	71.3	71.6	71.0	-0.6
ESR15	5 Station Road, Clothall Common, Baldock. SG7 5BU	72.1	72.5	71.8	-0.7
ESR16	Imperial Place, Station Road, Clothall Common, Baldock. SG7 5FE	73.7	74.0	73.3	-0.7
ESR17	Clothall Corner, Baldock. SG7 6FN	71.0	71.3	71.3	+0.0
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	69.3	69.7	68.2	-1.5

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2033
		Scenario 1 – 2025 Base Model	Scenario 3 – 2033 Reference Model	Scenario 4 – 2033 Reference Model + Development	
ESR19	Clothall, Baldock. SG7 6RB	67.2	67.5	67.3	-0.2
ESR20	Homestead, Clothall, Baldock. SG7 6RB	62.0	62.3	61.4	-0.9
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	69.8	70.1	70.4	+0.3
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	68.9	69.2	69.5	+0.3
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	71.1	71.4	71.5	+0.1
ESR24	The Old Town Hall, High Street, Clothall Common, Baldock. SG7 6AR	76.6	76.9	77.1	+0.2
ESR25	1 Whitehorse Street, Clothall Common, Baldock. SG7 5AD	75.1	75.4	75.7	+0.3
ESR26	75 Mansfield Road, Jubilee Industrial Centre, Baldock. SG7 6ED	43.8	44.1	44.3	+0.2

Table 5.3.2 - Change in Noise due to Development Led Traffic – 2040

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2040
		Scenario 1 – 2025 Base Model	Scenario 5 – 2040 Reference Model	Scenario 7 – 2040 Reference Model + Development + Schools	
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	52.2	52.3	53.3	+1.0
ESR2	The Firs, Royston Road, Bygrave,	62.6	62.7	62.8	+0.1

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2040
		Scenario 1 – 2025 Base Model	Scenario 5 – 2040 Reference Model	Scenario 7 – 2040 Reference Model + Development + Schools	
	Baldock. SG7 6QY				
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	71.5	71.7	70.9	-0.8
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	49.2	49.3	54	+4.7
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.0	49.1	51.2	+2.1
ESR6	6 Bygrave Road, Bygrave, Baldock. SG7 5DS	49.0	49.2	52	+2.8
ESR7	Freeland Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.3	49.4	51.3	+1.9
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.1	49.2	50.7	+1.5
ESR9A (Existing)	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	48.5	48.6	49.3	+0.7
ESR9B (New)		48.2	48.4	48.5	+0.1
ESR9C (New)		48.1	48.2	49.6	+1.4
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	47.1	47.3	48.8	+1.5
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	69.0	69.2	66.2	-3.0
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	74.4	74.6	72.2	-2.4

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2040
		Scenario 1 – 2025 Base Model	Scenario 5 – 2040 Reference Model	Scenario 7 – 2040 Reference Model + Development + Schools	
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	66.6	66.8	63.8	-3.0
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	71.3	71.5	68.5	-3.0
ESR15	5 Station Road, Clothall Common, Baldock. SG7 5BU	72.1	72.3	69.3	-3.0
ESR16	Imperial Place, Station Road, Clothall Common, Baldock. SG7 5FE	73.7	73.8	70.9	-2.9
ESR17	Clothall Corner, Baldock. SG7 6FN	71.0	71.2	71.9	+0.7
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	69.3	69.5	68.1	-1.4
ESR19	Clothall, Baldock. SG7 6RB	67.2	67.3	67.2	-0.1
ESR20	Homestead, Clothall, Baldock. SG7 6RB	62.0	62.1	61.3	-0.8
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	69.8	69.9	70.9	+1.0
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	68.9	69.0	70.1	+1.1
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	71.1	71.3	71.5	+0.2
ESR24	The Old Town Hall, High Street, Clothall Common, Baldock. SG7 6AR	76.6	76.7	77.3	+0.6
ESR25	1 Whitehorse Street, Clothall Common,	75.1	75.2	76.1	+0.9

Receptor		Road Traffic Noise Level ($L_{A10,18hr}$ (dB))			Change in Noise in 2040
		Scenario 1 – 2025 Base Model	Scenario 5 – 2040 Reference Model	Scenario 7 – 2040 Reference Model + Development + Schools	
	Baldock. SG7 5AD				
ESR26	75 Mansfield Road, Jubilee Industrial Centre, Baldock. SG7 6ED	43.8	44.0	44.4	+0.4

5.3.6 An assessment of the significance of the potential effects relating to development led road traffic is presented in Table 5.3.3 below.

Table 5.3.3 - Development Led Traffic – Impact Assessment

Receptor		Receptor Sensitivity	Largest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	Medium	1.0	Small	Minor	Not Significant
ESR2	The Firs, Royston Road, Bygrave, Baldock. SG7 6QY	Medium	0.1	Negligible	Negligible	Not Significant
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	Medium	0.2	Negligible	Negligible	Not Significant
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	4.7	Moderate	Moderate	Not Significant
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	2.1	Small	Minor	Not Significant
ESR6	6 Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	2.8	Small	Minor	Not Significant
ESR7	Freeland Farm, Bygrave Road,	Medium	1.9	Small	Minor	Not Significant

Receptor		Receptor Sensitivity	Largest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
	Bygrave, Baldock. SG7 5DS					
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	1.5	Small	Minor	Not Significant
ESR9 A (Existing)	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	0.7	Small	Minor	Not Significant
ESR9 B (New)		Medium	0.4	Small	Minor	Not Significant
ESR9 C (New)		Medium	1.4	Small	Minor	Not Significant
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	Medium	1.5	Small	Minor	Not Significant
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	Medium	-0.6	Negligible	Negligible	Not Significant
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	Medium	-0.6	Negligible	Negligible	Not Significant
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	Medium	-0.6	Negligible	Negligible	Not Significant
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	Medium	-0.6	Negligible	Negligible	Not Significant
ESR15	5 Station Road, Clothall Common, Baldock. SG7 5BU	Medium	-0.7	Negligible	Negligible	Not Significant
ESR16	Imperial Place, Station Road,	Medium	-0.7	Negligible	Negligible	Not Significant

Receptor		Receptor Sensitivity	Largest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
	Clothall Common, Baldock. SG7 5FE					
ESR17	Clothall Corner, Baldock. SG7 6FN	Medium	0.7	Negligible	Negligible	Not Significant
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	Medium	-1.4	Negligible	Negligible	Not Significant
ESR19	Clothall, Baldock. SG7 6RB	Medium	-0.1	Negligible	Negligible	Not Significant
ESR20	Homestead, Clothall, Baldock. SG7 6RB	Medium	-0.8	Negligible	Negligible	Not Significant
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	Medium	1.0	Small	Minor	Not Significant
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	Medium	1.1	Small	Minor	Not Significant
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	Medium	0.2	Negligible	Negligible	Not Significant
ESR24	The Old Town Hall, High Street, Clothall Common, Baldock. SG7 6AR	Medium	0.6	Negligible	Negligible	Not Significant
ESR25	1 Whitehorse Street, Clothall Common, Baldock. SG7 5AD	Medium	0.9	Negligible	Negligible	Not Significant
ESR26	75 Mansfield Road, Jubilee Industrial Centre,	Medium	0.4	Negligible	Negligible	Not Significant

Receptor	Receptor Sensitivity	Largest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
Baldock. SG7 6ED					

5.3.7 As described in Table 5.3.3 each of the existing noise sensitive receptors has a medium sensitivity, and the impact magnitude is **Negligible** for all receptors, with the exception of ESR4, where the impact is **Moderate Adverse**. The potential effect of development led road traffic is an effect which is between **Negligible** and **Moderate** which is not significant.

Details of the Noise Modelling

5.3.8 In order to calculate noise impacts associated with the proposed development, a 3D sound model has been built using SoundPLAN v9.1 sound modelling software.

5.3.9 The model predicts sound levels under light down-wind conditions based on hemispherical sound propagation with corrections for atmospheric absorption, ground effects, screening and directivity based on the procedure detailed in *ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors Part 2: Engineering method for the prediction of sound pressure levels outdoors* (ISO9613) [i].

5.3.10 The model has been created using the inputs presented in Table 5.3.4:

Table 5.3.4 - Noise Model Inputs

Noise Source	Source Type	Source Power Level	Quantity	On-Time
A507 Clothall Road	Line	86dB(A) Daytime / 79dB(A) Night-time	1	100%
A507 North Road	Line	80dB(A) Daytime / 74dB(A) Night-time	1	100%
B656 Royston Road	Line	77dB(A) Daytime / 70dB(A) Night-time	1	100%
A505	Line	95dB(A) Daytime / 90dB(A) Night-time	1	100%
A1(M)	Line	86dB(A) Daytime / 83dB(A) Night-time	2	100%
London to Cambridge Railway Line	Line	86dB(A) Daytime / 81dB(A) Night-time	1	100%
Site road through BA1	Road	As per traffic data from TA		

5.3.11 The following assumptions have been incorporated into the noise model:

- the topography of the site and the surrounding area has been obtained from Department for Environment Food & Rural Affairs (DEFRA) 1 m LIDAR data (2022).
- the effect of screening from solid structures (buildings) has been incorporated into the modelling process by importing OS Open Data shape file data into the model.

- the ground types in the model has been set to:
- Soft (G=0.6).
- Hard (G=0).

5.3.12 Calibration of the noise model has been carried out by locating receptor points in the model at the same positions as the noise monitoring locations. The calibration results are presented in Table 5.3.5.

Table 5.3.5 – Noise Model Calibration

Noise Monitoring Location	Measured Levels, dB			Noise Model Results, dB		
	Daytime L _{Aeq,16Hr}	Night-time L _{Aeq,8Hr}	Night-time L _{AFmax}	Daytime L _{Aeq,16Hr}	Night-time L _{Aeq,8Hr}	Night-time L _{AFmax}
LT1	63	57	84	63	57	84
LT2	65	59	81	65	60	81
LT3	62	55	75	62	55	75
LT4	72	65	89	72	65	89
LT5	76	70	87	76	70	87

5.3.13 The presented in Table 5.3.5 show that the model and measured data are very well aligned so the model can be relied upon to provide indicative noise propagation results for the site. However, for land parcel BA3, it has been identified that the computer noise model overpredicts the noise level on the site, and so an alternative methodology has been used for this part of the site. This alternative approach is discussed in Appendix 5.4.