

A14 Cambridge to Huntingdon improvement scheme

Environmental Statement

Appendices

Appendix 14.5: Operational, noise and vibration assumptions and assessment outputs for the base scheme

Date: December 2014

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1 Introduction

- 1.1.1 This appendix sets out the detailed output information (including noise levels at all sensitive receptors) referred to in *Chapter 14 of the Environmental Statement (ES)* for the base scheme.
- 1.1.2 The information contained in this appendix is used as the basis of the main assessment contained in *Chapter 14 of the ES*. Also contained in this appendix are the full tabulated results for the noise assessments.
- 1.1.3 The assumptions form the basis of the assessment and should be read in conjunction with the methodology given in *Chapter 14 of the ES*.
- 1.1.4 The baseline derivation across the study area is presented in *Appendix 14.2*.
- 1.1.5 The tabulated results of the assessment for noise should be read in conjunction with *Figures 14.1, 14.4 and 14.5*.
- 1.1.6 Details of the mitigated operational noise assessment are given in *Appendix 14.6*.

2 Assumptions








- 2.1.1 Road traffic flows assumed in the noise calculations are presented in Chapter 7 of the ES.
- 2.1.2 The design and construction of the scheme would be carried out in accordance with current standards so that poor road surfaces and sub-grade conditions do not exist when the scheme is open to traffic. The design and construction of the scheme would be undertaken in accordance with the *DMRB HD213/11* (Highways Agency et al., 2011), relevant local authority standards and the *Manual of Contract Documents for Highway Works (MCHW)*, as appropriate. These documents set out the standards and specifications to be met for road design and construction, including, but not limited to, the road foundations, earthworks, bridges and road pavement.
- 2.1.3 The new trunk roads would be provided and maintained to acceptable standards in line with the maintenance requirements for the trunk road network in England.
- 2.1.4 Changes in car technology may lead to lower levels of noise from the scheme than predicted by the *Calculation of Road Traffic Noise (CRTN)* (Department of Transport Welsh Office, 1988) on low speed roads. On higher speed roads, tyre sound dominates and hence the output of *CRTN* continues to be the robust method to estimate the future noise levels caused by the scheme.

3 Assessment of impacts and effects

- 3.1.1 This appendix presents the calculated exposures to operational noise and vibration at sensitive receptors.
- 3.1.2 In the same way as *Chapter 14 of the ES* is set out, the assessment is presented in the following sections:
- Section 1: A1 Alconbury to Brampton Hut.
 - Section 2: A1/A14 Brampton Hut to East Coast Mainline (including East Coast Mainline bridge).
 - Section 3: A14 East Coast mainline railway to Swavesey (not including Swavesey).
 - Section 4: A14 Swavesey to Girton.
 - Section 5: Cambridge Northern bypass. and
 - Section 6: Huntingdon improvements.
- 3.1.3 The assessment for each section is presented as follows:
- residential receptors: direct effects – individual dwellings;
 - residential receptors: direct effects – communities;
 - residential receptors: indirect effects;
 - Important Areas¹;
 - non-residential receptors: direct effects; and
 - non-residential receptors: indirect effects.
- 3.1.4 The following key is used for the reporting *Tables 3.1 to 3.21*:

¹ Defined by the Noise Action Plan for Roads (including Major Roads) published by Defra, 2014)

Legend:Day $L_{pAeq,0700-2300}$ Night $L_{pAeq,2300-0700}$ **Change (long-term) columns:**

	Major beneficial
	Moderate beneficial
	Minor beneficial
	Negligible
	Minor adverse
	Moderate adverse
	Major adverse

Significance criteria columns:

A Adverse effect

BA Beneficial effect



C Community

NA Generally no adverse effect

OS Operational noise

S Significant observed adverse effect

U Unacceptable adverse effect

	Level greater than noise insulation qualification criteria
~	Impacted dwellings where the noise exposure is not significant in terms of government policy and which are either spatially remote from larger defined residential areas, or a small number of dwellings whose impact is not considered to represent the larger defined residential area, or the duration is short and as such the adverse effects are not considered to represent a likely significant effect within the ES.
#	The total scheme level is below the LOAEL or the relevant screening criterion, see <i>Tables 14.5 and 14.9 of Chapter 14.</i>
\$	Change between “Without scheme 2020” and “Total with scheme 2035” is due to the growth in traffic on an existing road independent of the proposed scheme.
&	The noise levels are greater than SOAEL in both the “Without scheme 2020” and the “Total with scheme 2035” scenarios.
&(IA)	The noise levels are greater than SOAEL in both the “Without scheme 2020” and the “Total with scheme 2035” scenarios. The properties are within an Important Area
	Where a cell is highlighted in pink, then a likely significant effect is identified at the referenced community, or individual residential or non-residential receptor.

3.2 Section 1: A1 Alconbury to Brampton Hut

3.2.1 The assessment of airborne noise impacts and effects at residential and non-residential buildings in this section are presented in *Table 3.1* and *Table 3.2*, respectively.

Table 3.1: Operational airborne noise level, impacts and effects at residential receptors – Section 1: A1 Alconbury to Brampton Hut – base scheme

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ² with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
3	Alconbury Hill, Alconbury Weston	51.3	47.0	<20.0	<20.0	53.1	48.2	1.8	1.2	2	NA	-	-	
6	Alconbury Hill, Alconbury Weston	58.2	54.0	<20.0	<20.0	60.1	57.4	1.9	3.4	1	A	-	-	~
8	Alconbury Hill, Alconbury Weston	52.0	49.0	<20.0	<20.0	52.7	49.9	0.7	0.9	2	NA	-	-	
10	Alconbury Hill, Alconbury Weston	54.7	52.0	<20.0	<20.0	54.6	52.3	-0.1	0.3	4	NA	-	-	
40	Rusts Lane, Alconbury	54.5	52.0	30.0	23.9	53.7	51.0	-0.8	-1.0	5	NA	-	-	
47	Rusts Lane, Alconbury	64.1	61.0	41.7	35.0	67.0	63.7	2.9	2.7	1	S	-	No	ON-C01(S)
55	Field Close, Alconbury	58.7	56.0	37.0	30.5	62.1	59.4	3.4	3.4	2	S	-	No	ON-C01(S)
60	Hillfield, Alconbury	55.4	53.0	29.3	23.2	58.4	56.0	3.0	3.0	19	S	-	No	ON-C01(S)
67	Manor Lane, Alconbury	60.2	57.0	37.3	30.8	63.0	60.0	2.8	3.0	11	S	-	No	ON-C01(S)
76	Manor Lane, Alconbury	54.3	52.0	31.3	25.1	56.8	54.5	2.5	2.5	21	NA	-	-	
80	Manor Lane, Alconbury	52.0	50.0	23.0	17.3	54.1	52.0	2.1	2.0	27	NA	-	-	
83	Spinney Lane, Alconbury	52.0	50.0	<20.0	<20.0	54.0	51.8	2.0	1.8	65	NA	-	-	
87	Bramble End, Alconbury	54.2	52.0	31.6	25.4	56.5	54.1	2.3	2.1	44	NA	-	-	
90	Ash End, Alconbury	60.4	57.0	35.1	28.7	62.7	59.2	2.3	2.2	26	S	-	No	ON-C01(S)

² All roads, including scheme roads and changes to other roads (direct and indirect).

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ² with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
102	Beech End, Alconbury	60.1	57.0	35.6	29.3	62.8	60.0	2.7	3.0	17	S	-	No	ON-C01(S)
104	High Street, Alconbury	61.6	58.0	31.1	24.9	63.4	59.7	1.8	1.7	21	S	-	No	ON-C01(S)
107	Frumetty Lane, Alconbury	60.8	58.0	35.7	29.4	63.5	60.7	2.7	2.7	3	S	-	No	ON-C01(S)
112	Maple End, Alconbury	50.4	48.0	28.7	22.7	52.9	50.7	2.5	2.7	20	S	-	No	ON-C01(S)
124	High Street, Alconbury	58.7	52.0	31.2	25.0	59.8	53.2	1.1	1.2	51	NA	-	-	
127	Elm End, Alconbury	51.4	49.0	29.5	23.4	53.4	51.3	2.0	2.3	13	NA	-	-	
141	Beech End, Alconbury	53.2	51.0	28.5	22.5	55.6	53.3	2.4	2.3	22	NA	-	-	
151	Willow End, Alconbury	53.4	50.0	25.0	19.2	55.4	52.6	2.0	2.6	41	S	-	No	ON-C01(S)
154	School Lane, Alconbury	50.8	48.0	<20.0	<20.0	52.5	50.4	1.7	2.4	43	NA	-	-	
175	The Acre, Alconbury	46.2	43.0	32.7	26.5	47.9	45.1	1.7	2.1	16	NA	-	-	
176	Brookside, Alconbury	50.1	48.0	31.3	25.1	52.0	49.7	1.9	1.7	26	NA	-	-	
185	Palmers Lane, Alconbury	57.9	51.0	37.9	31.4	58.6	52.5	0.7	1.5	26	NA	-	-	
188	Great North Road, Alconbury	58.7	56.0	32.8	26.6	61.2	58.4	2.5	2.4	5	S	-	No	ON-C01(S)
194	Great North Road, Alconbury	59.4	54.0	34.1	27.8	60.6	56.3	1.2	2.3	1	NA	-	-	
197	Great North Road, Alconbury	62.5	55.0	38.3	31.8	62.5	54.9	0.0	-0.1	1	NA	-	-	
198	Great North Road, Alconbury	59.8	53.0	36.8	30.3	60.7	54.1	0.9	1.1	59	NA	-	-	
204	Sharps Lane, Alconbury	54.8	52.0	34.1	27.8	57.2	54.7	2.4	2.7	22	S	-	-	
209	Brooklands Lane, Alconbury	63.5	60.0	57.8	50.2	66.1	62.4	2.6	2.4	2	A	-	-	~

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ² with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
235	Mill Road, Little Stukeley	51.9	46.0	43.7	36.9	50.3	45.6	-1.6	-0.4	37	NA	-	-	
240	Low Road, Little Stukeley	53.6	47.0	44.5	37.6	51.1	45.5	-2.5	-1.5	5	NA	-	-	
15001	Ermine Street, Alconbury	48.8	46.0	<20.0	<20.0	48.8	47.0	0.0	1.0	2	NA	-	-	
15921	School Lane, Alconbury	58.2	56.0	26.6	20.7	61.4	58.8	3.2	2.8	4	S	-	No	ON-C01(S)
15922	School Lane, Alconbury	56.6	54.0	32.6	26.4	60.0	57.4	3.4	3.4	4	S	-	No	ON-C01(S)
15923	Field Close, Alconbury	56.4	54.0	30.8	24.7	59.9	57.4	3.5	3.4	4	S	-	No	ON-C01(S)
15924	Field Close, Alconbury	58.4	56.0	34.7	28.4	61.7	59.0	3.3	3.0	6	S	-	No	ON-C01(S)
15925	Field Close, Alconbury	56.5	54.0	29.9	23.9	59.6	57.1	3.1	3.1	5	S	-	No	ON-C01(S)
15926	Field Close, Alconbury	57.0	55.0	28.8	22.8	60.3	57.7	3.3	2.7	10	S	-	No	ON-C01(S)
15927	Field Close, Alconbury	54.8	52.0	32.6	26.4	57.5	55.1	2.7	3.1	18	S	-	No	ON-C01(S)
15928	Manor Lane, Alconbury	55.5	53.0	27.0	21.1	58.2	55.8	2.7	2.8	5	S	-	No	ON-C01(S)
15929	Rusts Lane, Alconbury	63.8	61.0	37.1	30.6	66.5	63.3	2.7	2.3	3	S	-	No	ON-C01(S)
15930	High Street, Alconbury	59.4	57.0	34.9	28.5	62.2	59.5	2.8	2.5	2	S	-	No	ON-C01(S)

Table 3.2: Operational airborne noise level, impacts and effects at non-residential receptors – Section 1: A1 Alconbury to Brampton Hut – base scheme

Assessment location ID	Non-residential receptor (type)	Impact assessment						Significance Criteria			Significant effect code
		Noise Level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total ³ with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
46	Little People Childcare, Little Stukeley (Child nursery)	59.3	52.0	59.3	52.4	0.0	0.4	2	NA	-	
46	Target Construction, Little Stukeley (office)	59.3	52.0	59.3	52.4	0.0	0.4	2	NA	-	
81	Memorial Hall, Alconbury	51.6	49.0	53.6	51.5	2.0	2.5	2	NA	-	
81	Alconbury Pre School, Alconbury (Nursery)	51.6	49.0	53.6	51.5	2.0	2.5	2	NA	-	
215	Research Centre, Woolley Lane (Laboratory)	58.6	52.0	60.7	54.1	2.1	2.1	1	NA	-	
216	Research Centre, Woolley Lane (Laboratory)	53.0	48.0	54.9	49.9	1.9	1.9	1	NA	-	
227	Research Centre, Woolley Lane (Laboratory)	59.6	52.0	61.8	54.4	2.2	2.4	1	NA	-	
1166	St Peter and St Paul Church, Alconbury	49.0	46.0	50.6	48.1	1.6	2.1	1	NA	-	
1167	Alconbury C of E Primary School, Alconbury (School)	51.7	49.0	53.6	51.5	1.9	2.5	1	NA	-	
1168	The Surgery, Alconbury (Medical facility)	51.5	49.0	53.2	51.2	1.7	2.2	1	NA	-	

³ All roads, including scheme roads and changes to other roads (direct and indirect)

Residential receptors: direct effects – individual dwellings

3.2.2 Taking account of the avoidance and mitigation measures integrated into the base scheme, no residential dwellings are predicted to experience noise levels higher than the noise insulation trigger levels as defined in *Noise Insulation Regulations 1975 (as amended)*. As noted in *Appendix 14.3* this is the adopted daytime SOAEL for operational noise. For daytime the trigger level is $63\text{dB}_{\text{LAeq},16\text{hr}}$ ⁴ measured outdoors, which based on the difference between daytime and night-time traffic flows this is equivalent to a night-time trigger level of $55\text{dB}_{\text{LAeq},8\text{hr}}$ (the SOAEL set for night-time operational noise as set out in *Appendix 14.3*).

3.2.3 Therefore there are no significant observed adverse effects (refer to *Appendix 14.3*) identified at individual dwellings in this section.

Residential receptors: direct effects – communities

3.2.4 The avoidance and mitigation measures integrated into the base scheme for this section would avoid airborne noise adverse effects on the majority of receptors and at the majority of the communities at Little Stukeley and Alconbury.

3.2.5 Taking account of the avoidance and mitigation measures integrated into the base scheme, *Figure 14.5* shows the long term $40\text{dB}_{\text{LAeq},8\text{hr}}$ night-time noise level contour from the operation of the scheme. The extent of the $40\text{dB}_{\text{LAeq},8\text{hr}}$ night-time noise level contour is equivalent to, or slightly larger than, the $50\text{dB}_{\text{LAeq},16\text{hr}}$ day-time contour. In general, below these levels adverse effects are not expected.

3.2.6 Above $40\text{dB}_{\text{LAeq},8\text{hr}}$ during the night and $50\text{dB}_{\text{LAeq},16\text{hr}}$ during the day the effect of noise is dependent on the baseline noise levels in that area and the change in noise level (magnitude of effect) brought about by the scheme. The airborne noise impacts and effects predicted for the operation of the scheme are presented on *Figure 14.5*.

3.2.7 The changes in noise levels would be likely to affect the acoustic character of the area such that there would be a perceived change in the quality of life.

3.2.8 In this section no residential communities are predicted to experience noise levels higher than the relevant LOAEL defined in *Appendix 14.3* due to direct road traffic noise from the scheme.

3.2.9 No likely significant adverse direct effects are therefore identified on a community basis in this section.

⁴ $63\text{dB}_{\text{LAeq},0700-2300}$ freefield which is equivalent to $68\text{dB}_{\text{LAeq},0600-2400}$ measured on the façade of a property

Residential receptors: indirect effects – communities

- 3.2.10 At Alconbury approximately 230 properties, located to the west of and close to the A1(M) have been identified as being subject to a minor adverse indirect noise effect, as a result of the increase in road traffic noise associated with the intensification of the section of the A1(M). The affected properties are in the vicinity of Manor Lane, Hillfield, Ash End, Beech End, Maple End, Willow End, School Lane, Sharps Lane, Rusts Lane, High Street, Field Close and Frumetty Lane. These effects would be likely to be considered by the local community as an effect on the acoustic character of the area such that there is a perceived change in the quality of life.
- 3.2.11 Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant adverse effect and is identified as ON-C01(S) on *Figure 14.5*.

Non-residential receptors: direct effects

- 3.2.12 The assessment, reported in *Table 3.2*, has not identified any adverse or beneficial airborne noise impacts on non-residential receptors within this area.

Non-residential receptors: indirect effects

- 3.2.13 The assessment has not identified any adverse or beneficial airborne noise impacts on non-residential receptors within this area.

Important Areas

- 3.2.14 In January 2014 the Department for Environment Food and Rural Affairs (DEFRA) published its *Noise Action Plan: Road (Including Major Roads)* in response to the *Environmental Noise (England) Regulations 2006*, which defines Important Areas.
- 3.2.15 The Highways Agency is required to investigate Important Areas.
- 3.2.16 Several of these Important Areas fall alongside the scheduled works of this scheme. The Highways Agency is investigating and assessing possible noise mitigation at these areas as part of this scheme.
- 3.2.17 One Important Area falls within this section: Highways Agency's ID ref 5153, representing dwellings in north Alconbury which face onto the A1(M).
- 3.2.18 Currently, dwellings in this area experience noise levels that are significant impacts on health and quality of life (i.e. higher than the relevant SOAEL defined in *Appendix 14.3*) and this would remain the case with the base scheme. Consistent with Defra's 2014 Action Plan for Roads, further mitigation is proposed for this location (refer to *section 14.5 of Chapter 14*).

Committed developments

- 3.2.19 Committed developments which are sensitive to noise impacts are displayed on *Figure 14.1*.
- 3.2.20 No sensitive committed developments are subject to any non-negligible noise impacts in this section.

Summary of likely significant effects

3.2.21 A summary of likely significant effects identified in Section 1: A1 Alconbury to Brampton Hut section is presented in *Table 3.3*.

Table 3.3: Summary of operational noise likely significant effects – Section 1: A1 Alconbury to Brampton Hut

Significant effect number (see <i>Figure 14.5</i>)	Source of significant effect	Time of day	Location of details
ON-C01(S)	Airborne noise increase in road traffic noise (indirect)	Day-time and night-time	Approximately 230 dwellings in the vicinity of Manor Lane, Hillfield, Ash End, Beech End, Maple End, Willow End, School Lane, Sharps Lane, Rusts Lane, High Street, Field Close and Frumetty Lane in Alconbury. Predicted increase in noise from road traffic which is likely to cause a minor adverse effect on the acoustic character of the area around the closest properties. No adverse effects on shared open spaces have been identified.

3.3 Section 2: A1/A14 Brampton Hut to East Coast Mainline (including East Coast Mainline bridge)

3.3.1 The assessment of airborne noise impacts and effects at residential and non-residential buildings in this section are presented in *Table 3.4* and *Table 3.5*, respectively.

Table 3.4: Operational airborne noise level, impacts and effects at residential receptors – Section 2: A1/A14 Brampton Hut to East Coast Mainline (including East Coast Mainline bridge) – base scheme

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
251	Thrapston Road, Brampton	54.1	47.0	47.5	40.4	54.2	46.8	0.1	-0.2	1	NA	-	-	
253	Thrapston Road, Ellington	68.0	60.0	67.5	59.3	68.4	60.2	0.4	0.2	2	NA	No &(IA)	-	
257	Great North Road, Brampton	56.2	49.0	63.3	55.4	63.3	55.4	7.1	6.4	1	A	Yes	Yes	
266	Thrapston Road, Brampton	66.0	58.0	51.5	44.2	61.7	53.8	-4.3	-4.2	2	BA	-	No	ON-C02(BA)
274	Dorling Way, Brampton	56.7	49.0	53.7	46.3	55.3	47.8	-1.4	-1.2	44	NA	-	-	
282	Oak Drive, Brampton	66.1	58.0	49.5	42.3	61.8	53.9	-4.3	-4.1	23	BA	-	No	ON-C02(BA)
287	Crane Street, Brampton	57.8	50.0	47.6	40.5	54.3	46.9	-3.5	-3.1	49	BA	-	No	ON-C02(BA)
325	Waterloo Close, Brampton	59.5	52.0	45.7	38.8	57.7	50.0	-1.8	-2.0	36	NA	-	-	
346	Williams Close, Brampton	52.0	45.0	50.4	43.2	51.7	44.5	-0.3	-0.5	62	NA	-	-	
366	Miller Way, Brampton	53.0	46.0	49.4	42.2	53.3	45.9	0.3	-0.1	34	NA	-	-	
384	Miller Way, Brampton	55.5	48.0	45.4	38.4	55.7	48.2	0.2	0.2	76	NA	-	-	
400	Park Road, Brampton	49.4	42.0	52.1	44.8	52.5	45.2	3.1	3.2	4	S	-	Yes	ON-C04(S)
403	The Green, Brampton	51.0	44.0	49.6	42.4	51.8	44.6	0.8	0.6	42	NA	-	-	

⁵ All roads, including scheme roads and changes to other roads (direct and indirect)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
414	West End, Brampton	49.6	42.0	50.5	43.3	51.8	44.6	2.2	2.6	70	NA	-		
422	West End, Brampton	53.7	46.0	50.1	42.9	54.6	47.2	0.9	1.2	25	NA	-	-	
462	Miller Way, Brampton	57.5	50.0	44.6	37.7	57.7	50.0	0.2	0.0	70	NA	-	-	
475	Belle Isle Crescent, Brampton	55.3	48.0	54.1	46.7	54.7	47.3	-0.6	-0.7	40	NA	-	-	
479	Stewart Close, Brampton	51.6	44.0	54.9	47.4	55.1	47.6	3.5	3.6	34	S	-	Yes	ON-C04(S)
487	Belle Isle Crescent, Brampton	51.2	44.0	51.2	43.9	51.7	44.5	0.5	0.5	84	NA	-	-	
516	Elizabethan Way, Brampton	56.0	48.0	58.0	50.4	58.1	50.5	2.1	2.5	11	NA	-	-	
517	Park Road, Brampton	53.7	46.0	54.8	47.3	56.0	48.5	2.3	2.5	1	NA	-	-	
518	Park Road, Brampton	52.8	46.0	54.8	47.3	55.6	48.1	2.8	2.1	1	NA	-	-	~
519	Park Road, Brampton	52.5	45.0	54.7	47.3	55.5	48.0	3.0	3.0	2	NA	-	-	~
520	Grafham Road, Huntingdon	53.0	46.0	57.5	49.9	57.6	50.0	4.6	4.0	1	A	-	-	~
522	Sokemans Way, Brampton	51.5	45.2	55.5	48.0	55.9	48.7	4.4	3.5	10	S	-	Yes	ON-C05(S)
523	Acheson Road, Brampton	49.0	43.1	50.9	43.7	52.1	45.3	3.1	2.2	23	S	-	Yes	ON-C05(S)
525	Buckden Road, Brampton	62.4	54.1	57.7	50.0	62.2	54.4	-0.2	0.3	2	NA	-	-	
528	Brampton Road, Buckden	67.1	59.0	61.4	53.6	61.5	53.7	-5.6	-5.3	1	BA	-	-	~
533	Brampton Road, Buckden	48.3	42.5	59.6	51.8	59.7	52.0	11.4	9.5	1	A	-	-	~

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
885	Brampton Road, Buckden	59.9	52.2	61.7	53.8	61.8	53.9	1.9	1.7	2	NA	-	-	
898	High Street, Brampton	55.0	48.0	43.0	36.2	54.5	47.1	-0.5	-0.9	1	NA	-	-	
899	Cranfield Way, Brampton	54.7	47.0	47.2	40.1	55.6	48.1	0.9	1.1	29	NA	-	-	
901	Thrapston Road, Brampton	61.0	53.0	46.8	39.8	59.4	51.7	-1.6	-1.3	19	NA	-	-	
912	Thrapston Road, Brampton	60.9	53.0	48.6	41.5	59.2	51.5	-1.7	-1.5	1	NA	-	-	
977	Layton Crescent, Brampton	46.5	40.0	50.5	43.3	50.7	43.5	4.2	3.5	91	S	-	Yes	ON-C04(S)
1020	Taylor's Lane, Buckden	68.7	60.0	43.7	36.9	69.6	61.3	0.9	1.3	25	NA	-	-	\$
1023	Beaufort Drive, Buckden	67.1	59.0	45.7	38.7	67.6	59.4	0.5	0.4	47	NA	-	-	
1024	Great North Road, Buckden	70.3	62.0	48.7	41.6	70.9	62.6	0.6	0.6	3	NA	-	-	
1028	Beaufort Drive, Buckden	59.0	51.3	44.3	37.4	59.0	51.5	0.0	0.2	8	NA	-	-	
1029	Silver Street, Buckden	62.9	55.1	48.2	41.1	63.3	55.5	0.4	0.4	12	NA	-	-	
1035	St. Hugh's Road, Buckden	50.5	43.8	45.0	38.1	51.6	45.0	1.1	1.2	20	NA	-	-	
1037	Silver Street, Buckden	58.7	51.3	37.8	31.3	58.3	50.9	-0.4	-0.4	11	NA	-	-	
1040	Silver Street, Buckden	51.7	45.2	43.6	36.7	52.9	46.1	1.2	0.9	7	NA	-	-	
1041	Bishops Way, Buckden	48.2	42.5	45.2	38.3	49.8	43.6	1.6	1.1	18	NA	-	-	
1042	School Lane, Buckden	55.9	48.5	44.9	38.0	56.0	48.8	0.1	0.3	17	NA	-	-	
1045	Aragon Close, Buckden	48.8	42.5	48.3	41.2	51.4	44.8	2.6	2.3	76	NA	-	-	
1046	Church Street, Buckden	63.6	56.1	43.3	36.5	63.3	55.5	-0.3	-0.6	4	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
1048	High Street, Buckden	55.2	47.6	43.6	36.7	56.0	48.8	0.8	1.2	3	NA	-	-	
1049	School Lane, Buckden	53.2	46.8	38.7	32.1	53.8	46.8	0.6	0.0	1	NA	-	-	
1053	Hardwick Lane, Buckden	72.3	64.0	45.3	38.3	73.3	64.8	1.0	0.8	7	NA	-	-	\$
1054	Great North Road, Buckden	71.8	63.0	46.2	39.3	73.1	64.6	1.3	1.6	6	A	-	-	\$
1055	Hardwick Lane, Buckden	56.3	49.4	44.5	37.6	57.1	49.7	0.8	0.3	7	NA	-	-	
1060	Throckmorton Drive, Brampton	51.0	44.5	54.7	47.3	55.1	47.9	4.1	3.4	20	S	-	Yes	ON-C05(S)
1062	Sparrow Close, Brampton	50.9	44.5	53.1	45.7	54.1	47.1	3.2	2.6	9	S	-	Yes	ON-C05(S)
1063	Acheson Road, Brampton	50.2	43.8	50.2	43.0	52.3	45.7	2.1	1.9	22	NA	-	-	
1064	Buckden Road, Brampton	61.7	54.1	50.6	43.4	61.3	53.6	-0.4	-0.5	1	NA	-	-	
1065	South Road, Brampton	61.5	54.1	48.1	41.0	61.1	53.4	-0.4	-0.7	5	NA	-	-	
1066	South Road, Brampton	50.1	43.8	49.3	42.1	51.9	45.2	1.8	1.4	16	NA	-	-	
1067	Park Lane, Brampton	50.1	43.8	48.4	41.3	51.5	44.9	1.4	1.1	5	NA	-	-	
1068	Church Road, Brampton	60.7	53.2	45.4	38.4	60.0	52.4	-0.7	-0.8	5	NA	-	-	
1071	Manchester Road, Brampton	52.5	46.0	48.2	41.1	53.2	46.4	0.7	0.4	2	NA	-	-	
1074	Sparrow Close, Brampton	49.3	43.1	52.3	45.0	53.0	46.1	3.7	3.0	8	S	-	Yes	ON-C05(S)
1077	Montagu Road, Brampton	50.4	43.8	53.0	45.6	53.6	46.6	3.2	2.8	6	S	-	Yes	ON-C05(S)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
1078	Montagu Road, Brampton	49.7	42.0	53.3	45.9	53.5	46.1	3.8	4.1	11	S	-	Yes	ON-C05(S)
1080	Gloucester Road, Brampton	49.8	43.0	53.5	46.1	53.7	46.4	3.9	3.4	2	S	-	Yes	ON-C05(S)
1081	Hanover Court, Brampton	65.1	57.0	46.6	39.6	63.8	55.9	-1.3	-1.1	115	BA	-	-	ON-C02(BA)
1091	Church Road, Brampton	62.4	55.1	45.3	38.3	61.9	54.0	-0.5	-1.1	4	BA	-	-	
1096	Rectory Close, Brampton	66.2	58.1	43.9	37.1	65.6	57.6	-0.6	-0.5	34	BA	-	-	
1097	Huntingdon Road, Brampton	61.6	54.1	38.2	31.7	60.3	52.7	-1.3	-1.4	6	NA	-	-	
1098	Huntingdon Road, Brampton	67.3	59.0	43.1	36.3	66.0	58.1	-1.3	-0.9	19	NA	-	-	
1100	Huntingdon Road, Brampton	53.8	46.8	42.1	35.4	52.0	45.3	-1.8	-1.5	1	NA	-	-	
1101	Huntingdon Road, Brampton	65.2	57.1	41.6	34.9	63.9	56.1	-1.3	-1.0	3	BA	-	-	ON-C03(BA)
1104	Glebe Road, Brampton	65.2	57.0	44.6	37.7	62.6	54.7	-2.6	-2.3	26	BA	-	No	ON-C03(BA)
1114	Lincoln Close, Buckden	52.7	46.0	43.0	36.2	53.4	46.5	0.7	0.5	38	NA	-	-	
1116	Silver Street, Buckden	49.1	43.1	44.0	37.2	50.5	44.1	1.4	1.0	24	NA	-	-	
1117	Great North Road, Buckden	52.2	45.2	52.3	45.0	54.2	47.2	2.0	2.0	3	NA	-	-	
1118	Hansell Road, Brampton	55.9	48.0	57.0	49.4	57.0	49.4	1.1	1.4	18	NA	-	-	
1141	Gloucester Road, Brampton	48.0	42.0	49.7	42.5	50.6	44.2	2.6	2.2	1	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
1144	Sandwich Road, Brampton	50.1	43.0	49.7	42.5	52.0	44.7	1.9	1.7	7	NA	-	-	
1145	Gloucester Road, Brampton	48.2	41.0	51.8	44.6	52.1	44.8	3.9	3.8	7	S	-	Yes	ON-C05(S)
10091	High Street, Buckden	62.7	55.1	41.9	35.2	63.8	55.9	1.1	0.8	23	NA	-	-	\$
10092	High Street, Buckden	61.0	53.2	43.6	36.7	61.7	53.8	0.7	0.6	5	NA	-	-	
10093	High Street, Buckden	61.5	54.1	43.4	36.5	62.0	54.2	0.5	0.1	18	NA	-	-	
10096	West End, Brampton	51.1	44.0	51.3	44.0	51.7	44.5	0.6	0.5	21	NA	-	-	
10097	West End, Brampton	49.6	42.0	50.7	43.5	51.2	43.9	1.6	1.9	17	NA	-	-	
10098	Elizabethan Way, Brampton	50.7	44.0	51.6	44.3	52.0	44.7	1.3	0.7	12	NA	-	-	
10099	Hansell Road, Brampton	56.2	49.0	56.5	49.0	56.6	49.1	0.4	0.1	15	NA	-	-	
15002	Taylor's Lane, Buckden	69.5	61.0	44.1	37.3	70.0	61.8	0.5	0.8	3	NA	-	-	
15003	Taylor's Lane, Buckden	51.6	45.2	43.4	36.5	52.5	45.7	0.9	0.5	4	NA	-	-	
15004	King George Court, Buckden	71.0	63.0	43.5	36.6	71.9	63.5	0.9	0.5	37	NA	-	-	
15005	Perry Road, Buckden	65.2	57.1	41.3	34.6	66.5	58.4	1.3	1.3	9	NA	-	-	\$
15006	Church Street, Buckden	63.1	55.1	43.6	36.7	63.0	55.2	-0.1	0.1	28	NA	-	-	
15007	Church Street, Buckden	63.1	55.1	43.5	36.6	63.0	55.2	-0.1	0.1	25	NA	-	-	
15008	High Street, Buckden	64.8	57.1	43.2	36.4	64.7	56.8	-0.1	-0.3	26	NA	-	-	
15009	Manor Gardens, Buckden	53.6	46.8	43.4	36.5	54.5	47.5	0.9	0.7	60	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15010	Glebe Lane, Buckden	52.2	45.2	42.6	35.8	54.1	47.1	1.9	1.9	111	NA	-	-	
15011	Mill Road, Buckden	63.5	56.1	46.7	39.7	63.5	55.6	0.0	-0.5	47	NA	-	-	
15034	Luck's Lane, Buckden	57.0	49.4	42.8	36.0	58.0	50.6	1.0	1.2	20	NA	-	-	
15036	Lark End, Buckden	51.6	45.2	47.2	40.1	53.3	46.4	1.7	1.2	54	NA	-	-	
15037	The Osiers, Buckden	52.2	45.2	42.3	35.6	55.2	48.0	3.0	2.8	42	NA	-	-	\$
15038	Weir Close, Buckden	48.9	42.5	41.7	35.0	51.4	44.8	2.5	2.3	83	NA	-	-	
15040	Park Road, Buckden	51.5	45.2	48.1	41.0	53.4	46.5	1.9	1.3	11	NA	-	-	
15041	Falcon Way, Buckden	49.7	43.8	47.4	40.3	52.2	45.5	2.5	1.7	35	NA	-	-	
15042	Hunts End Court, Buckden	53.1	46.0	43.5	36.6	54.1	47.1	1.0	1.1	52	NA	-	-	
15043	Mill Road, Buckden	64.3	56.1	45.7	38.8	64.4	56.5	0.1	0.4	28	NA	-	-	
15044	Offord Road, Godmanchester	65.0	57.1	46.5	39.5	65.9	58.0	0.9	0.9	1	NA	-	-	
15095	Wood View, Brampton	65.8	58.0	51.6	44.3	61.7	53.8	-4.1	-4.2	33	BA	-	No	ON-C02(BA)
15907	Belle Isle Crescent, Brampton	51.8	45.0	51.6	44.3	52.2	44.9	0.4	-0.1	48	NA	-	-	
15908	West End, Brampton	52.7	45.0	52.8	45.5	53.1	45.7	0.4	0.7	12	NA	-	-	
15909	Elizabethan Way, Brampton	52.0	45.0	55.7	48.2	55.7	48.2	3.7	3.2	14	S	-	Yes	ON-C04(S)
15910	Flint Close, Brampton	51.1	44.0	55.1	47.6	55.1	47.6	4.0	3.6	19	S	-	Yes	ON-C04(S)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15911	Abbott Close, Brampton	48.4	41.0	51.6	44.3	51.7	44.4	3.3	3.4	28	S	-	Yes	ON-C04(S)
15912	Centenary Way, Brampton	47.6	40.0	50.0	42.8	50.3	43.1	2.7	3.1	25	S	-	Yes	ON-C04(S)
15913	Willow Close, Brampton	47.9	41.0	50.2	43.0	50.7	43.5	2.8	2.5	15	NA	-	-	
15914	Miller Way, Brampton	60.1	52.0	47.0	40.0	61.9	54.1	1.8	2.1	38	NA	-	-	
15915	Grove Lane, Brampton	63.8	56.0	47.0	40.0	64.7	56.7	0.9	0.7	33	NA	-	-	
15916	Mandeville Road, Brampton	49.1	42.0	45.4	38.4	47.7	40.6	-1.4	-1.4	72	NA	-	-	
15917	Ash Court, Brampton	56.2	49.0	49.7	42.5	53.4	46.0	-2.8	-3.0	57	NA	-	-	
15918	Miller Way, Brampton	54.2	47.0	48.7	41.6	55.0	47.5	0.8	0.5	39	NA	-	-	
15919	Sparrow Close, Brampton	54.1	46.8	51.7	44.5	55.3	48.1	1.2	1.3	15	NA	-	-	

Table 3.5: Operational airborne noise level, impacts and effects at non-residential receptors – Section 2: A1/A14 Brampton Hut to East Coast Mainline (including East Coast Mainline bridge) – base scheme

Relevant assessment location ID	Non-residential receptor	Impact assessment						Significance Criteria			
		Noise Level dBL_{pAeq}						Number of Properties	Type of effect	Direct effect?	Significant effect code
		Without scheme 2020		Total ⁶ with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
258	Premier Inn, Brampton (Hotel)	67.2	59.0	62.9	55.0	-4.3	-4	1	BA	Yes	ON-N01 (BA)
331	G B Sewell & Partners, Brampton (Office)	57.8	50.0	55.3	47.8	-2.5	-2.2	1	NA	-	
332	Brampton Surgery, Brampton (Medical)	55.3	48.0	56.1	48.6	0.8	0.6	1	NA	-	
401	Brampton Village & Primary School, Brampton (School)	43.4	36.5	48.3	41.2	4.9	4.7	1	NA	-	#
403	Brampton Methodist Church, Brampton (Church)	51.0	44.0	51.8	44.6	0.8	0.6	1	NA	-	
1038	Dental Surgery, Buckden (Medical)	60.2	52.2	59.8	52.1	-0.4	-0.1	1	NA	-	
1049	Buckden C of E Primary School, Buckden (School)	53.2	46.8	53.8	46.8	0.6	0	1	NA	-	
1081	The Grange Hotel, Brampton (Hotel)	65.1	57.0	63.8	55.9	-1.3	-1.1	1	NA	-	

⁶ All roads, including scheme roads and changes to other roads

Residential receptors: direct effects – individual dwellings

- 3.3.2 Taking account of the avoidance and mitigation measures integrated into the base scheme, three residential buildings (Little Meadow and Woodhatch Farm, Thrapston Road, Ellington; and Rectory Farm, Great North Road, Brampton) represented by assessment locations 253 and 257 are predicted to experience noise levels higher than the relevant significant observed adverse effect levels (SOAEL as defined in *Appendix 14.3*).
- 3.3.3 Rectory Farm, is predicted to experience absolute noise levels and a change in noise level, which is likely to result in a requirement to provide noise insulation as defined in *Noise Insulation Regulations 1975 (as amended)*. The installation of noise insulation would avoid the significant observed adverse effect⁷ that would otherwise occur inside these dwellings.
- 3.3.4 At Little Meadow and Woodhatch Farm, Thrapston Road, Ellington, noise levels are currently above the threshold for a significant observed adverse effect, and taking account of the avoidance and mitigation measures integrated into the base scheme, noise levels would remain a significant observed adverse effect. Given that these receptors fall within an Important Area, further mitigation is considered in *section 14.5 of Chapter 14*.
- 3.3.5 Outdoor areas (e.g. gardens) at all three properties are either protected by walls or screened by the properties and/or residents will continue to have access to relatively quiet, publically accessible amenity space that offsets⁸ any effect.

Residential receptors: direct effects – communities

- 3.3.6 The avoidance and mitigation measures integrated into the base scheme for this section would avoid airborne noise adverse effects on the majority of receptors and at the majority of the communities at Brampton and RAF Brampton.
- 3.3.7 Taking account of the avoidance and mitigation measures integrated into the base scheme, *Figure 14.5* shows the long-term $40\text{dB}_{\text{LAeq},8\text{hr}}$ night-time noise level contour from the operation of the scheme. The extent of the $40\text{dB}_{\text{LAeq},8\text{hr}}$ night-time noise level contour is equivalent to, or slightly larger than, the $50\text{dB}_{\text{LAeq},16\text{hr}}$ day-time contour. In general, below these levels adverse effects are not expected.
- 3.3.8 Above $40\text{dB}_{\text{LAeq},8\text{hr}}$ during the night and $50\text{dB}_{\text{LAeq},16\text{hr}}$ during the day the effect of noise is dependent on the baseline noise levels in that area and the change in noise level (magnitude of effect) brought about by the scheme. The airborne noise impacts and effects predicted for the operation of the scheme are presented on *Figure 14.5*.

⁷ With reference to *Appendix 14.3*.

⁸ With reference to Planning Practice Guidance - Noise (PPG-Noise) (DCLG, 2014)

- 3.3.9 The changes in noise levels are likely to affect the acoustic character of the area such that there is a perceived change in the quality of life. At the west edge of Brampton approximately 220 properties in the vicinity of Stewart Close have been identified as being subject to a minor adverse noise effect, as a result of the increase in road traffic noise with the scheme. These effects are likely to be considered by the local community as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant adverse effect, and is identified as ON-C04(S) on *Figure 14.5*.
- 3.3.10 At RAF Brampton approximately 70 properties have been identified as being subject to a minor adverse noise effect, as a result of the increase in road traffic noise with the scheme. These effects are likely to be considered by the local community as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant adverse effect, and is identified as ON-C05(S) on *Figure 14.5*.

Non-residential receptors: direct effects

- 3.3.11 The results of the assessment of non-residential receptors are summarised in *Table 3.5* and indicate no adverse airborne noise impacts within this area.
- 3.3.12 The assessment has identified a beneficial airborne noise impact at Premier Inn, Brampton Hut represented by receptor reference ID258.

Premier Inn, Brampton Hut

- 3.3.13 A minor beneficial impact has been identified based upon the change in the airborne noise level outside the Premier Inn, Brampton Hut, reference ID258. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.3.14 The hotel is a three storey building, and the windows are believed to be double glazed and some ventilation is provided by opening the windows.
- 3.3.15 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N01 (BA) in *Table 3.5* and *Figure 14.5*. Given the high baseline noise levels at this receptor, the significant beneficial effect is likely to be in terms of reduced risk of sleep disturbance when the windows are open.

Residential receptors: indirect effects – communities

- 3.3.16 At the north edge of Brampton approximately 160 properties in the vicinity of Thrapston Road have been identified as being subject to a minor or moderate beneficial indirect noise effect, as a result of the reduction in road traffic and hence a reduction in noise. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived improvement in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant beneficial effect, and is identified as ON-C02 (BA) on *Figure 14.5*.
- 3.3.17 At the east edge of Brampton approximately 30 properties in the vicinity of Huntingdon Road have been identified as being subject to a minor beneficial indirect noise effect, as a result of the reduction in road traffic and hence a reduction in noise. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived improvement in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant beneficial effect, and is identified as ON-C03 (BA) on *Figure 14.5*.

Non-residential receptors: indirect effects

- 3.3.18 The assessment has not identified any adverse or beneficial airborne noise impacts within this area.

Important Areas

- 3.3.19 In January 2014 DEFRA published its Noise Action Plan: Road (Including Major Roads) in response to the Environmental Noise (England) Regulations 2006, which defines Important Areas.
- 3.3.20 The Highways Agency is required to investigate Important Areas.
- 3.3.21 Several of these Important Areas fall within the study area of this assessment. The Highways Agency is therefore investigating and assessing possible noise mitigation at these locations as part of this scheme.
- 3.3.22 Two Important Areas fall within this section: Important Area reference 5152, which includes two dwellings (Woodhatch Farm and Little Meadow, represented by assessment location 253) and Important Area reference 5151 (including dwellings in north Brampton facing onto the A14 Thrapston Road).
- 3.3.23 At Important Area reference 5152, currently the two dwellings experience, and with the scheme in operation, will continue to experience noise levels that are significant impacts on health and quality of life (i.e. higher than the relevant SOAEL defined in *Appendix 14.3*). Consistent with Defra's 2014 Action Plan for Roads, further mitigation is proposed for this location as discussed at *section 14.5 of Chapter 14*.

- 3.3.24 At Important Area reference 5151, there is an existing noise fence barrier in place between A14 Thrapston Road and the adjacent dwellings.
- 3.3.25 The existing A14 Thrapston Road is significantly de-trafficked as a result of the scheme. A likely significant beneficial effect is identified in this location as a result. For this reason, further enhancement to the noise mitigation measures at this location is not considered further.

Committed developments

- 3.3.26 Committed developments which are sensitive to noise impacts are displayed on *Figure 14.1*.
- 3.3.27 There is one committed development in this section: CD15 (shown on *Figure 14.1*) which includes around 400 proposed dwellings and substantial office and retail space. The vast majority of this committed development's footprint would be subject to negligible noise impacts as a result of the scheme. The extreme south-western portion of its footprint would be subject to minor adverse impacts.

Summary of likely significant effects

- 3.3.28 A summary of likely significant effects identified in Section 2: A1/A14 Brampton Hut to East Coast Mainline on residential and non-residential receptors is presented below in *Tables 3.6 and 3.7* respectively. These effects have been identified as being significant take account of the predicted noise changes, and primarily the number of receptors subject to the changes.

Table 3.6: Summary of likely significant effects on residential receptors, Section 2: A1/A14 Brampton Hut to East Coast Mainline

Significant effect number (see <i>Figure 14.5</i>)	Source of significant effect	Time of day	Location of details
ON-C02(BA)	Airborne noise <u>reduction</u> in road traffic noise (Indirect)	Day-time and night-time	Approximately 160 dwellings in the vicinity of Thrapston Road on the north edge of Brampton. Predicted reduction in noise from road traffic which is likely to cause a minor or moderate beneficial effect on the acoustic character of the area around the closest properties.
ON-C03(BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Day-time and night-time	Approximately 30 dwellings in the vicinity of Huntingdon Road on the east edge of Brampton. Predicted reduction in noise from road traffic which is likely to cause a minor beneficial effect on the acoustic character of the area around the closest properties.

Significant effect number (see <i>Figure14.5</i>)	Source of significant effect	Time of day	Location of details
ON-C04(S)	Airborne noise <u>increase</u> in road traffic noise (direct)	Day-time and night-time	Approximately 220 dwellings in the vicinity of Stewart Close on the west edge of Brampton. Predicted increase in noise from road traffic which is likely to cause a minor adverse effect on the acoustic character of the area around the closest properties. No adverse effects on shared open spaces have been identified.
ON-C05(S)	Airborne noise <u>increase</u> in road traffic noise (direct)	Day-time and night-time	Approximately 70 dwellings in the west edge of RAF Brampton. Predicted increase in noise from road traffic which is likely to cause a minor adverse effect on the acoustic character of the area around the closest properties. No adverse effects on shared open spaces have been identified.

Table 3.7: Summary of likely significant effects on non-residential receptors, Section 2: A1/A14 Brampton Hut to East Coast Mainline

Significant effect number (see <i>Figure14.5</i>)	Type of effect and source	Time of the day	Location and details
ON-N01 (BA)	Minor reduction in the risk that hotel activities would be disturbed by external road traffic noise.	Day and night	Premier Inn, Brampton Hut

3.4 Section 3: A14 East Coast Mainline to Swavesey (not including Swavesey)

3.4.1 The assessment of impacts and effects at residential and non-residential buildings of airborne noise in this section are presented in *Table 3.8* and *Table 3.9*.

Table 3.8: Operational airborne noise level, impacts and effects at residential receptors – Section 3: East Coast Mainline to Swavesey (not including Swavesey) – base scheme

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise Level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
537	High Street, Offord Cluny	58.0	50.3	53.9	46.5	59.9	52.3	1.9	2.0	13	NA	-	-	
539	Offord Road, Godmanchester	67.5	59.0	68.0	59.9	68.0	59.9	0.5	0.9	1	NA	No	-	
540	Offord Road, Godmanchester	64.5	56.1	61.7	53.8	65.4	57.4	0.9	1.3	1	NA	-	-	
544	Silver Street, Godmanchester	46.2	40.8	52.4	45.1	53.1	46.3	6.9	5.5	1	A	-	-	~
545	Silver Street, Godmanchester	44.6	40.0	53.0	45.6	53.5	46.5	8.9	6.5	3	A	-	-	~
546	Lattenbury Hill, Huntingdon	46.4	41.1	50.1	42.9	51.2	44.7	4.8	3.6	1	A	-	-	~
547	London Road, Godmanchester	48.7	42.5	57.1	49.5	57.3	49.9	8.6	7.4	1	A	-	-	~
548	London Road, Godmanchester	55.9	48.5	55.2	47.7	56.5	49.2	0.6	0.7	1	NA	-	-	
549	Offord Road, Godmanchester	54.2	46.8	53.7	46.4	57.0	49.6	2.8	2.8	1	A	-	-	~
555	St. Ives Road, Hilton	57.7	50.3	51.9	44.6	58.7	51.2	1.0	0.9	3	NA	-	-	
560	Fenstanton Road, Hilton	53.1	46.0	58.5	50.9	58.7	51.2	5.6	5.2	3	A	-	-	~
564	Hilton Road, Fenstanton	50.7	44.5	57.3	49.7	57.7	50.3	7.0	5.8	1	S	-	Yes	ON-C06(S)
565	Pear Tree Close, Fenstanton	49.3	43.1	54.8	47.3	55.5	48.2	6.2	5.1	2	S	-	Yes	ON-C06(S)
570	Hilton Road, Fenstanton	57.1	50.0	45.0	38.1	54.8	47.3	-2.3	-2.7	3	BA	-	-	~

⁹ All roads, including scheme roads and changes to other roads

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise Level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
571	West End Road, Fenstanton	51.2	44.5	51.9	44.6	53.6	46.6	2.4	2.1	3	NA	-	-	
574	Cambridge Road, Fenstanton	73.6	65.0	43.7	36.9	69.2	60.9	-4.4	-4.1	2	BA	-	No	ON-C07(BA)
575	Cambridge Road, Fenstanton	62.2	54.0	49.2	42.0	58.3	50.7	-3.9	-3.3	2	BA	-	No	ON-C07(BA)
577	Low Road, Fenstanton	53.7	46.0	47.1	40.1	52.8	45.5	-0.9	-0.5	2	NA	-	-	
578	Hall Green Lane, Fenstanton	56.1	49.0	47.8	40.8	54.8	47.3	-1.3	-1.7	1	NA	-	-	
581	Huntingdon Road, Fenstanton	70.1	62.0	49.4	42.2	65.6	57.5	-4.5	-4.5	22	BA	-	No	ON-C07(BA)
582	High Street, Fenstanton	68.3	60.0	40.9	34.2	68.9	60.7	0.6	0.7	2	NA	-	-	
583	Hilton Road, Fenstanton	74.7	66.0	48.2	41.1	70.2	61.9	-4.5	-4.1	2	BA	-	No	ON-C07(BA)
584	Hilton Road, Fenstanton	70.5	62.0	50.0	42.8	65.7	57.6	-4.8	-4.4	3	BA	-	No	ON-C07(BA)
587	High Street, Fenstanton	60.8	53.0	49.3	42.1	56.7	49.2	-4.1	-3.8	5	BA	-	No	ON-C07(BA)
591	The Gables, Fenstanton	60.0	52.0	44.5	37.6	55.6	48.1	-4.4	-3.9	6	BA	-	No	ON-C07(BA)
592	Conington Road, Fenstanton	53.8	46.0	53.4	46.0	54.9	47.4	1.1	1.4	2	NA	-	-	
593	Conington Road, Fenstanton	62.5	55.0	51.2	43.9	58.9	51.2	-3.6	-3.8	28	BA	-	No	ON-C07(BA)
595	High Street, Fenstanton	68.3	60.0	44.8	37.9	68.8	60.6	0.5	0.6	1	NA	-	-	
596	Conington Road, Fenstanton	58.1	50.0	50.0	42.8	55.4	47.9	-2.7	-2.1	27	NA	-	-	
600	High Street, Fenstanton	69.4	61.0	45.1	38.2	69.7	61.4	0.3	0.4	24	NA	-	-	
601	Chequer Street, Fenstanton	55.8	48.0	44.3	37.4	53.7	46.3	-2.1	-1.7	18	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise Level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
602	Chequer Street, Fenstanton	54.7	47.0	46.9	39.9	52.7	45.4	-2.0	-1.6	13	NA	-	-	
603	Hall Green Lane, Fenstanton	53.2	46.0	47.3	40.2	51.9	44.6	-1.3	-1.4	15	NA	-	-	
608	Bell Lane, Fenstanton	53.2	46.0	46.7	39.7	52.2	44.9	-1.0	-1.1	12	NA	-	-	
609	Bell Lane, Fenstanton	51.7	44.0	46.4	39.4	50.5	43.3	-1.2	-0.7	27	NA	-	-	
610	Cherry Tree Way, Fenstanton	49.7	42.0	44.8	37.9	48.3	41.2	-1.4	-0.8	62	NA	-	-	
611	Church Street, Fenstanton	49.7	43.0	46.1	39.2	49.0	41.9	-0.7	-1.1	33	NA	-	-	
612	Chequer Street, Fenstanton	49.3	42.0	45.6	38.6	48.5	41.4	-0.8	-0.6	35	NA	-	-	
613	Swan Gardens, Fenstanton	64.2	56.0	49.1	41.9	64.6	56.6	0.4	0.6	41	NA	-	-	
614	Simmer Piece, Fenstanton	61.9	54.0	50.4	43.2	60.7	52.9	-1.2	-1.1	30	NA	-	-	
615	Tythe Piece, Fenstanton	52.9	46.0	47.1	40.1	51.4	44.1	-1.5	-1.9	60	NA	-	-	
617	Rookery Place, Fenstanton	53.7	46.0	48.7	41.6	52.8	45.5	-0.9	-0.5	22	NA	-	-	
618	Walnut Tree Crescent, Fenstanton	51.1	44.0	47.3	40.2	50.5	43.3	-0.6	-0.7	17	NA	-	-	
619	Swan Road, Fenstanton	49.8	43.0	45.7	38.7	49.1	41.9	-0.7	-1.1	19	NA	-	-	
620	Lancelot Way, Fenstanton	50.2	43.0	46.4	39.4	49.3	42.1	-0.9	-0.9	82	NA	-	-	
621	Four Acres, Fenstanton	49.4	42.0	46.6	39.6	49.0	41.9	-0.4	-0.1	78	NA	-	-	
627	Cambridge Road, Fenstanton	63.9	56.0	51.2	43.9	61.2	53.4	-2.7	-2.6	51	BA	-	No	ON-C07(BA)
638	Lancelot Way, Fenstanton	51.1	44.0	47.1	40.1	50.1	42.9	-1.0	-1.1	37	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise Level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
642	Rookery Place, Fenstanton	50.8	44.0	46.3	39.3	49.8	42.7	-1.0	-1.3	15	NA	-	-	
648	Middleton Way, Fen Drayton	68.8	61.0	53.4	46.0	65.1	57.1	-3.7	-3.9	5	BA	-	-	~
649	Mill Road, Fen Drayton	48.8	42.0	43.7	36.8	47.2	40.1	-1.6	-1.9	8	NA	-	-	
654	Middleton Way, Fen Drayton	49.6	42.0	46.1	39.2	48.7	41.6	-0.9	-0.4	13	NA	-	-	
655	Elsworth Road, Conington	52.2	45.2	53.1	45.7	55.5	48.3	3.3	3.1	12	A	-	-	~
656	Elsworth Road, Conington	53.9	46.0	57.0	49.4	58.0	50.4	4.1	4.4	2	A	-	-	~
664	Church Street, Fenstanton	48.5	41.0	45.5	38.5	48.1	41.0	-0.4	0.0	15	NA	-	-	
927	High Street, Offord Cluny	65.0	57.1	51.5	44.2	66.1	58.2	1.1	1.1	2	NA	-	-	
928	High Street, Offord Cluny	59.2	51.3	51.7	44.5	60.6	52.9	1.4	1.6	26	NA	-	-	
929	High Street, Conington	49.0	43.1	51.7	44.5	52.7	45.9	3.7	2.8	1	A	-	-	~
936	Low Road, Fenstanton	55.2	48.0	45.9	39.0	53.0	45.6	-2.2	-2.4	1	NA	-	-	
940	The Gables, Fenstanton	58.6	51.0	42.0	35.3	55.9	48.4	-2.7	-2.6	2	BA	-	-	
941	The Gables, Fenstanton	54.7	47.0	46.8	39.8	51.7	44.5	-3.0	-2.5	1	BA	-	-	
942	The Gables, Fenstanton	58.5	51.0	48.9	41.8	55.0	47.5	-3.5	-3.5	1	BA	-	No	ON-C07(BA)
946	Church Leys, Fenstanton	48.6	42.0	46.2	39.3	48.4	41.3	-0.2	-0.7	97	NA	-	-	
947	Church Leys, Fenstanton	47.9	41.0	44.5	37.6	47.2	40.1	-0.7	-0.9	69	NA	-	-	
948	School Lane, Fenstanton	48.5	41.0	45.5	38.5	48.1	41.0	-0.4	0.0	31	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise Level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
992	Tall's Lane, Fenstanton	48.2	41.0	44.7	37.8	47.7	40.6	-0.5	-0.4	2	NA	-	-	
995	Little Moor, Fenstanton	48.4	41.0	45.8	38.9	48.1	41.0	-0.3	0.0	47	NA	-	-	
1007	St. Ives Road, Hilton	57.1	49.4	50.1	42.9	57.9	50.5	0.8	1.1	10	NA	-	-	
1009	St. Ives Road, Hilton	49.5	43.1	51.6	44.3	53.5	46.5	4.0	3.4	1	A	-	-	~
1012	Fenstanton Road, Hilton	50.3	43.8	50.5	43.3	53.3	46.4	3.0	2.6	2	A	-	-	~
1014	Cootes Lane, Fen Drayton	48.6	42.0	44.8	37.9	48.0	41.0	-0.6	-1.0	15	NA	-	-	
1016	Church Street, Fen Drayton	50.1	43.0	50.3	43.1	51.5	44.2	1.4	1.2	8	NA	-	-	
1017	College Farm Court, Fen Drayton	48.0	41.0	47.8	40.8	49.0	41.9	1.0	0.9	44	NA	-	-	
1019	Church Street, Fen Drayton	47.6	40.0	47.0	40.0	48.3	41.2	0.7	1.2	45	NA	-	-	
3001	Pear Tree Close	47.0	40.0	49.9	42.8	51.1	43.8	4.1	3.8	4	A	-	Yes	ON-C06(S)
3002	Pear Tree Close	47.3	40.2	52.7	45.4	53.4	46.0	6.1	5.8	9	A	-	Yes	ON-C06(S)
3003	Pear Tree Close	51.0	43.7	53.7	46.4	54.9	47.4	3.9	3.7	3	A	-	Yes	ON-C06(S)
3004	Pear Tree Close	47.8	40.8	54.6	47.2	55.0	47.5	7.2	6.7	1	A	-	Yes	ON-C06(S)
3006	Pear Tree Close	51.6	44.3	53.3	45.9	54.2	46.8	2.6	2.5	5	NA	-	-	
3007	Pear Tree Close	52.9	45.5	52.5	45.2	54.3	46.9	1.4	1.4	7	NA	-	-	
3008	Pear Tree Close	48.5	41.4	52.6	45.3	53.3	45.9	4.8	4.5	2	A	-	Yes	ON-C06(S)
15045	Oak Tree Road, Fen Drayton	43.9	37.0	42.4	35.6	44.3	37.4	0.4	0.4	15	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise Level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ⁹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15046	Vermuyden Way, Fen Drayton	49.3	42.0	48.3	41.2	49.8	42.7	0.5	0.7	87	NA	-	-	
15047	Cootes Lane, Fen Drayton	54.9	47.0	47.7	40.6	53.3	45.9	-1.6	-1.1	115	NA	-	-	
15932	Hilton Road, Fenstanton	64.4	56.0	45.0	38.1	60.0	52.3	-4.4	-3.7	8	BA	-	No	ON-C07(BA)
15933	Asplin's Lane, Offord Cluny	55.0	52.0	51.9	44.6	56.7	52.7	1.7	0.7	21	NA	-	-	

Table 3.9: Operational airborne noise level, impacts and effects at non-residential receptors – Section 3: East Coast Mainline to Swavesey (not including Swavesey) – base scheme

Assessment location ID	Non-residential receptor	Impact assessment						Significance Criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
573	Stagecoach Ltd, Fenstanton (Office)	70.2	62.0	65.6	57.5	-4.6	-4.5	1	BA	No	ON-N03 (BA)
587	7C High Street, Fenstanton (Office)	60.8	53.0	56.7	49.2	-4.1	-3.8	1	BA	No	ON-N02 (BA)
588	The Gallows Guest House, Fenstanton (Hotel)	69.2	61.0	69.7	61.4	0.5	0.4	1	NA	-	
599	Sycamore Surgery, Fenstanton (Medical)	55.4	48.0	55.4	47.9	0.0	-0.1	1	NA	-	
606	Tudor Hotel, Fenstanton (Hotel)	62.1	54.0	62.3	54.5	0.2	0.5	1	NA	-	
607	Ladybird Day Nursery, Fenstanton (Nursery)	63.0	55.0	63.4	55.5	0.4	0.5	1	NA	-	
617	Accent Property Management, Fenstanton (office)	53.7	46.0	52.8	45.5	-0.9	-0.5	1	NA	-	
991	St Peter and St Paul's Church, Fenstanton (Church)	48.2	41.0	48.0	41.0	-0.2	0.0	1	NA	-	
992	Church, Fenstanton (Church)	48.2	41.0	47.7	40.6	-0.5	-0.4	1	NA	-	
993	Chapel, Fenstanton (Church)	47.3	40.0	46.5	39.5	-0.8	-0.5	1	NA	-	
1015	St Mary's Church, Fen Drayton (Church)	49.3	42.0	50.6	43.4	1.3	1.4	1	NA	-	

Residential receptors: direct effects – individual dwellings

- 3.4.2 Taking account of the avoidance and mitigation measures integrated into the mitigated scheme, one residential dwelling, 7 Offord Road, Godmanchester, represented by assessment location 539, is predicted to experience noise levels higher than the SOAEL level defined in *Appendix 14.3*.
- 3.4.3 At 7 Offord Road, Godmanchester noise levels are currently above the threshold for a significant observed adverse effect, and considering the avoidance and mitigation measures integrated into the base scheme this remains the case. The scheme does not give rise to any material increase in noise levels and the receptors are not located in an Important Area and hence no likely significant observed adverse effect or other likely significant effect has been identified as a result of the scheme and no further mitigation has been considered.
- 3.4.4 Outdoor areas (e.g. gardens) at this property is either protected by walls or screened by the property itself and/or residents will continue to have access to relatively quiet, publically accessible amenity space that offsets¹⁰ any effect.

Residential receptors: direct effects – communities

- 3.4.5 The avoidance and mitigation measures integrated into the base scheme for this section would avoid any significant observed adverse effects and also would minimise any adverse effects on the majority of receptors, and at the majority of the community of Fenstanton.
- 3.4.6 Taking account of the avoidance and mitigation measures integrated into the base scheme, *Figure 14.5* shows the long term $40\text{dB}L_{\text{pAeq},8\text{hr}}$ night-time noise level contour from the operation of the scheme. The extent of the $40\text{dB}L_{\text{pAeq},8\text{hr}}$ night-time noise level contour is equivalent to, or slightly larger than, the $50\text{dB}L_{\text{pAeq},16\text{hr}}$ daytime contour. In general, below these levels adverse effects are not expected.
- 3.4.7 Above $40\text{dB}L_{\text{pAeq},8\text{hr}}$ during the night and $50\text{dB}L_{\text{pAeq},16\text{hr}}$ during the day the effect of noise is dependent on the baseline noise levels in that area and the change in noise level (magnitude of effect) brought about by the scheme. The airborne noise impacts and effects predicted for the operation of the scheme are presented on *Figure 14.5*.

¹⁰ With reference to *Planning Practice Guidance - Noise (PPG-Noise)* (DCLG, 2014)

3.4.8 The changes in noise levels are likely to affect the acoustic character of the area such that there is a perceived change in the quality of life. To the south of Fenstanton approximately 25 properties on or near Pear Tree Close have been identified as being subject to minor or moderate adverse noise impacts, as a result of the road traffic noise associated with the scheme. These impacts are likely to be considered by the local community as an effect on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant adverse effect, and is identified as ON-C06 (S) on *Figure 14.5*.

Non-residential receptors: direct effects

3.4.9 The impacts and effects on non-residential receptors in this section are summarised in *Table 3.9*. The assessment has not identified any adverse or beneficial airborne noise impacts within this area.

Residential receptors: indirect effects – communities

3.4.10 At Fenstanton approximately 130 properties have been identified as being subject to a minor or moderate beneficial indirect noise effect, as a result of the reduction in road traffic noise on the A14. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant beneficial effect, and is identified as ON-C07 (BA) on *Figure 14.5*.

Non-residential receptors: indirect effects

3.4.11 The assessment has identified a beneficial airborne noise impact at Stagecoach Limited, Cambridge Road, Fenstanton and office at 7C High Street, Fenstanton represented by receptors reference 573 and 587.

Stagecoach, Cambridge Road, Fenstanton

3.4.12 A moderate beneficial impact has been identified based upon the change in the airborne noise level outside the Stagecoach offices in Fenstanton, reference 573. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.

3.4.13 The office is a three storey building, and the windows are believed to be single glazed and ventilation is provided by opening the windows.

3.4.14 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N02 (BA) in *Table 3.9* and *Figure 14.5*. This is likely to take the form of a reduction in disruption to office activities from external road traffic noise.

7C High Street, Fenstanton

- 3.4.15 A minor beneficial impact has been identified based upon the change in the airborne noise level outside the office at 7C High Street, Fenstanton currently occupied by MAB General Insurance Services Limited, reference 587. An assessment has been undertaken to determine if this impact would result in a likely significant observed beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.4.16 The office is a one storey building, and the windows are believed to be single glazed and ventilation is provided by opening the windows.
- 3.4.17 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N03 (BA) in *Table 3.9* and *Figure 14.5*. This is likely to take the form of a reduction in disruption to office activities from external road traffic noise.

Important Areas

- 3.4.18 In January 2014 DEFRA published its Noise Action Plan: Road (Including Major Roads) in response to the Environmental Noise (England) Regulations 2006, which defines Important Areas.
- 3.4.19 The Highways Agency is required to investigate Important Areas.
- 3.4.20 Several of these Important Areas fall within the study area of this assessment. The Highways Agency is therefore investigating and assessing possible noise mitigation at these locations as part of this scheme.
- 3.4.21 One Important Area falls within this section: Highways Agency's ID ref 5144, representing dwellings in south-west of Fenstanton alongside the existing A14.
- 3.4.22 At Important Area 5144, there are existing noise fence barriers in place between the existing A14 the adjacent dwellings. The existing A14 is significantly de-trafficked as a result of the project. A significant beneficial effect is identified in this location as a result. For this reason, further enhancement to the noise mitigation at this location is not considered further.

Committed developments

- 3.4.23 Committed developments which are sensitive to noise impacts are displayed on *Figure 14.1*.
- 3.4.24 There are no sensitive committed developments within this section.

Summary of likely significant effects

- 3.4.25 A summary of likely significant effects identified in Section 3: A14 East Coast Mainline to Swavesey on residential and non-residential receptors is presented below in *Tables 3.10* and *3.11* respectively.

Table 3.10: Summary of likely significant effects on residential receptors, Section 3: A14 East Coast Mainline to Swavesey

Significant effect number (see Figure 14.5)	Source of significant effect	Time of day	Location of details
ON-C06 (S)	Airborne noise <u>increase</u> in road traffic noise (direct)	Daytime and night-time	Approximately 25 dwellings in the vicinity of Pear Tree Close, Fenstanton. Predicted increase in noise from road traffic which is likely to cause a moderate adverse effect on the acoustic character of the area around the closest properties. No adverse effects on shared open spaces have been identified.
ON-C07 (BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Daytime and night-time	Approximately 130 dwellings to the south of Fenstanton close to the A14. Predicted reduction in noise from road traffic which is likely to cause a minor or moderate beneficial effect on the acoustic character of the area around the closest properties.

Table 3.11: Summary of likely significant effects on non-residential receptors, Section 3: A14 East Coast Mainline to Swavesey

Significant effect number (see Figure 14.5)	Type of effect and source	Time of the day	Location and details
ON-N02 (BA)	Moderate reduction in the risk that office activities would be disturbed by external road traffic noise. (Indirect).	Day	Stagecoach Ltd, Fenstanton
ON-N03 (BA)	Minor reduction in the risk that office activities would be disturbed by external road traffic noise. (Indirect).	Day	MAB General Insurance Services Ltd, Fenstanton

3.5 Section 4: A14 Swavesey to Girton

3.5.1 The assessment of airborne noise impacts and effects at residential and non-residential buildings in this section is presented in *Table 3.12* and *Table 3.13*.

Table 3.12: Operational airborne noise level, impacts and effects at residential receptors – Section 4: A14 Swavesey to Girton – base scheme

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹¹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
660	Swavesey Road, Fen Drayton	52.3	45.0	52.6	45.3	53.5	46.1	1.2	1.1	3	NA	-	-	
663	Huntingdon Road, Conington	60.6	53.0	62.6	54.7	63.0	55.1	2.4	2.1	1	NA	Yes	-	
678	Anderson Road, Swavesey	58.0	50.0	58.3	50.7	58.3	50.7	0.3	0.7	1	NA	-	-	
681	Tipplers' Road, Swavesey	50.4	43.0	51.4	44.1	51.9	44.6	1.5	1.6	1	NA	-	-	
684	Huntingdon Road, Lolworth	53.2	46.0	54.3	46.9	54.5	47.1	1.3	1.1	1	NA	-	-	
685	Huntingdon Road, Lolworth	58.9	51.0	60.1	52.4	60.2	52.5	1.3	1.5	1	NA	-	-	
686	Huntingdon Road, Lolworth	73.0	64.0	69.4	61.1	69.4	61.1	-3.6	-2.9	1	BA	No &(IA)	-	
691	Robin's Lane, Lolworth	56.2	49.0	54.7	47.3	56.9	49.3	0.7	0.3	10	NA	-	-	
692	Robin's Lane, Lolworth	53.2	46.0	53.6	46.2	54.2	46.8	1.0	0.8	38	NA	-	-	
693	Robin's Lane, Lolworth	55.3	48.0	57.0	49.4	57.1	49.5	1.8	1.5	4	NA	-	-	
694	Bar Road, Lolworth	54.6	47.0	54.7	47.3	58.4	50.8	3.8	3.8	2	A	-	-	~
703	Trafalgar Way, Bar Hill	54.2	47.0	52.9	45.5	55.5	48.0	1.3	1.0	2	NA	-	-	
704	Hanover Close, Bar Hill	50.9	44.0	51.9	44.6	52.1	44.8	1.2	0.8	1	NA	-	-	

¹¹ All roads, including scheme roads and changes to other roads

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹¹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
707	Almond Grove, Bar Hill	61.9	54.0	58.4	50.8	62.5	54.6	0.6	0.6	34	NA	-	-	
717	Foxhollow, Bar Hill	61.0	53.0	60.5	52.7	63.1	55.2	2.1	2.2	7	NA	Yes	-	
725	Gladeside, Bar Hill	53.0	46.0	53.1	45.7	53.9	46.5	0.9	0.5	18	NA	-	-	
727	Gladeside, Bar Hill	51.1	44.0	51.9	44.6	52.2	44.9	1.1	0.9	46	NA	-	-	
728	Foxhollow, Bar Hill	51.9	45.0	53.0	45.6	53.3	45.9	1.4	0.9	41	NA	-	-	
729	Foxhollow, Bar Hill	54.4	47.0	55.5	48.0	55.8	48.3	1.4	1.3	69	NA	-	-	
732	The Brambles, Bar Hill	57.7	50.0	59.8	52.0	59.8	52.1	2.1	2.1	46	NA	-	-	
733	The Fairway, Bar Hill	57.5	50.0	59.1	51.4	59.2	51.5	1.7	1.5	28	NA	-	-	
736	Hollytrees, Bar Hill	52.2	45.0	53.6	46.2	53.7	46.4	1.5	1.4	26	NA	-	-	
737	The Brambles, Bar Hill	54.0	47.0	55.7	48.2	55.7	48.2	1.7	1.2	33	NA	-	-	
738	Hollytrees, Bar Hill	52.0	45.0	53.5	46.1	53.6	46.2	1.6	1.2	36	NA	-	-	
739	The Brambles, Bar Hill	51.7	44.0	53.2	45.8	53.3	45.9	1.6	1.9	65	NA	-	-	
741	Chestnut Rise, Bar Hill	52.7	45.0	54.2	46.8	54.5	47.1	1.8	2.1	65	NA	-	-	
742	Hillcrest, Bar Hill	50.3	43.0	51.7	44.5	52.0	44.7	1.7	1.7	83	NA	-	-	
744	Appletrees, Bar Hill	50.7	44.0	52.1	44.8	52.3	45.0	1.6	1.0	59	NA	-	-	
752	Huntingdon Road, Girton	73.7	65.0	73.5	65.0	73.6	65.1	-0.1	0.1	6	NA	No &(IA)	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹¹ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
753	Huntingdon Road, Girton	64.8	60.0	57.7	50.0	63.5	55.9	-1.3	-4.1	3	BA	-	-	~
754	Huntingdon Road, Girton	72.5	66.0	56.5	49.0	71.6	63.8	-0.9	-2.2	3	BA	-	-	~
756	The Avenue, Madingley	55.4	51.0	53.1	45.7	55.7	49.4	0.3	-1.6	1	NA	-	-	
757	Huntingdon Road, Lolworth	75.2	67.0	75.7	67.1	75.7	67.1	0.5	0.1	2	U	No &(IA)	-	
759	Bar Road, Lolworth	54.9	47.0	55.2	47.7	59.4	51.7	4.5	4.7	3	A	-	-	~
1021	Appletrees, Bar Hill	48.9	42.0	50.2	43.0	50.4	43.2	1.5	1.2	142	NA	-	-	
15048	Rose & Crown Road, Swavesey	51.9	45.0	49.8	42.7	53.1	45.7	1.2	0.7	3	NA	-	-	
15049	Hillcrest, Bar Hill	49.8	43.0	51.3	44.0	51.6	44.3	1.8	1.3	66	NA	-	-	
15050	Partridge Drive, Bar Hill	50.6	43.0	52.1	44.8	52.3	45.0	1.7	2.0	206	NA	-	-	
15051	Oakington Road, Dry Drayton	62.9	55.0	52.4	45.1	63.9	56.0	1.0	1.0	32	NA	-	-	
15052	Dry Drayton Road, Oakington	66.9	59.0	52.2	44.9	67.9	59.8	1.0	0.8	2	NA	-	-	
15935	Huntingdon Road, Lolworth	62.2	54.0	62.3	54.5	62.3	54.5	0.1	0.5	9	NA	No &(IA)	-	
15936	Huntingdon Road, Lolworth	73.0	64.0	73.5	65.0	73.5	65.0	0.5	1.0	2	A	No &(IA)	Yes	~

Table 3.13: Operational airborne noise level, impacts and effects at non- residential receptors – Section 4: A14 Swavesey to Girton – base scheme

Assessment location ID	Non-residential receptor	Impact assessment						Significance criteria			
		Noise Level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	Significant effect code
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
671	Days Inn Hotel, Boxworth (Hotel)	60.8	53.0	62.6	54.7	1.8	1.7	2	NA	-	
671	Regus, Boxworth (Office)	60.8	53.0	62.6	54.7	1.8	1.7	2	NA	-	
676	Bentley Mechanical Services Ltd, Swavesey (Office)	69.3	61.0	68.0	59.9	-1.3	-1.1	1	NA	-	
678	IFG Financial Services, Swavesey (Office)	58.0	50.0	58.3	50.7	0.3	0.7	4	NA	-	
678	Balfour Beatty Ltd, Swavesey (Office)	58.0	50.0	58.3	50.7	0.3	0.7	4	NA	-	
678	Hawkesbury Consulting Ltd, Swavesey (Office)	58.0	50.0	58.3	50.7	0.3	0.7	4	NA	-	
678	Gibbs Denley Insurance Services, Swavesey (Office)	58.0	50.0	58.3	50.7	0.3	0.7	4	NA	-	
695	Hall, Lolworth (Hall)	49.3	42.0	50.4	43.2	1.1	1.2	1	NA	-	
703	Cambridge Building Society, Bar Hill (office)	54.2	47.0	55.5	48.0	1.3	1.0	4	NA	-	
703	Elliott Engineering, Bar Hill (Office)	54.2	47.0	55.5	48.0	1.3	1.0	4	NA	-	
703	Connect Business Systems Ltd, Bar Hill (Office)	54.2	47.0	55.5	48.0	1.3	1.0	4	NA	-	
703	Haart, Bar Hill (Office)	54.2	47.0	55.5	48.0	1.3	1.0	4	NA	-	
704	Infant School, Bar Hill (School)	50.9	44.0	52.1	44.8	1.2	0.8	4	NA	-	
704	Bar Hill Parish Council, Bar Hill (Office)	50.9	44.0	52.1	44.8	1.2	0.8	4	NA	-	
704	Cambridge County Council, Bar Hill (Office)	50.9	44.0	52.1	44.8	1.2	0.8	4	NA	-	

Assessment location ID	Non-residential receptor	Impact assessment						Significance criteria			
		Noise Level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	Significant effect code
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
704	County Primary School, Bar Hill (School)	50.9	44.0	52.1	44.8	1.2	0.8	4	NA	-	
709	Menzies Hotel, Bar Hill	69.1	61.0	68.6	60.4	-0.5	-0.6	1	NA	-	
726	Bar Hill Dental Practice (Medical)	50.5	43.0	51.7	44.5	1.2	1.5	2	NA	-	
726	The Health Centre, Bar Hill (Health club)	50.5	43.0	51.7	44.5	1.2	1.5	2	NA	-	
727	Cambridge County Council, Bar Hill (Office)	51.1	44.0	52.2	44.9	1.1	0.9	1	NA	-	
736	Barry Stone Removals, Bar Hill (Office)	52.2	45.0	53.7	46.4	1.5	1.4	1	NA	-	
745	Dawn Engineering, Bar Hill (Office)	57.2	50.0	59.0	51.3	1.8	1.3	1	NA	-	
746	Hall, Bar Hill (Hall)	58.3	51.0	60.1	52.4	1.8	1.4	1	NA	-	
747	Cambridge City Crematorium, Girton (Crematorium)	65.4	58.0	66.8	58.7	1.4	0.7	1	NA	-	
759	New Close Farm Business Park (Office)	54.9	47.0	59.4	51.7	4.5	4.7	2	S	Yes	ON-N04 (S)
919	Barr Hill Ecumenical Church, Bar Hill (Church)	48.6	42.0	49.9	42.8	1.3	0.8	1	NA	-	
934	All Saints' Church, Lolworth (Church)	54.0	47.0	55.3	47.8	1.3	0.8	1	NA	-	

Residential receptors: direct effects – individual dwellings

- 3.5.2 Taking account of mitigation measures included in the base scheme, the noise levels at the following individual dwellings are predicted to exceed the noise insulation trigger levels defined in *Noise Insulation Regulations 1975 (as amended)*:
- Friesland Farm, Huntingdon, Conington; and
 - Foxhollow, Bar Hill¹².
- 3.5.3 Noise insulation would avoid the significant observed adverse effects (refer to *Table 14.1*) that would otherwise occur inside these dwellings.
- 3.5.4 The existing noise levels at the following individual dwellings are predicted to exceed the threshold for a significant observed adverse effect (refer to *Table 14.1*):
- 1-6 Catchall Farm Cottages¹³, Cambridge (Important Area IA5138);
 - Crouchfield Villa and Westdene at Hackers Fruit Farm, Huntingdon Road, Lolworth (Important Area IA5139); and
 - Rhadegund Cottages, Huntingdon Road, Cambridge (Important Area IA5140).
- 3.5.5 Taking account of the mitigation included in the base scheme, the noise levels would remain a significant observed adverse effect at these locations. Given that these receptors lie within Important Areas (as noted above and later in this subsection), further mitigation is considered in *Appendix 14.6* and *Chapter 14 of the ES*.
- 3.5.6 The scheme moves the carriageways of the A14 away from Hill Farm Cottages resulting in a reduction in noise levels at the property closest to the A14 (no. 1 Hill Farm Cottages). However, the neighbouring receptors at Hill Farm Cottages are subject to a new significant observed adverse effect as a consequence of the scheme. Given that Hill Farm Cottages collectively fall with Important Area IA6114) further mitigation is considered in *Appendix 14.6* and in *Chapter 14 of the ES*.
- 3.5.7 Outdoor areas (e.g. gardens) at these properties are either protected by walls or screened by the properties and/or residents will continue to have access to relatively quiet, publically accessible amenity space that offsets¹⁴ any effect.

Residential receptors: direct effects – communities

- 3.5.8 The avoidance and mitigation measures integrated into the base scheme for this section would avoid airborne noise adverse effects on the majority of receptors.

¹² This takes account of increased traffic on Craft Way.

¹³ The effect reaches and unacceptable adverse effect level at some of these receptors (refer to *Table 14.1 in Chapter 14 of the ES*)

¹⁴ With reference to *Planning Practice Guidance - Noise (PPG-Noise)* (DCLG, 2014)

- 3.5.9 Taking account of the avoidance and mitigation measures integrated into the base scheme, *Figure 14.5* shows the long-term $40\text{dBL}_{\text{pAeq},8\text{hr}}$ night-time noise level contour from the operation of the scheme. The extent of the $40\text{dBL}_{\text{pAeq},8\text{hr}}$ night-time noise level contour is equivalent to, or slightly larger than, the $50\text{dBL}_{\text{pAeq},16\text{hr}}$ day-time contour. In general, below these levels adverse effects are not expected.
- 3.5.10 Above $40\text{dBL}_{\text{pAeq},8\text{hr}}$ during the night and $50\text{dBL}_{\text{pAeq},16\text{hr}}$ during the day the effect of noise is dependent on the baseline noise levels in that area and the change in noise level (magnitude of effect) brought about by the scheme. The airborne noise impacts and effects predicted for the operation of the scheme are presented on *Figure 14.5*.
- 3.5.11 The changes in noise levels are likely to affect the acoustic character of the area such that there is a perceived change in the quality of life.
- 3.5.12 However, no likely significant adverse direct effects identified on a community basis have been identified in this section.

Residential receptors: indirect effects – communities

- 3.5.13 The assessment has not identified any adverse or beneficial indirect airborne noise impacts within this section.

Non-residential receptors: direct effects

- 3.5.14 The assessment has identified adverse airborne noise impacts at New Close Farm Business Park, represented by receptor references 759.

New Close Farm Business Park

- 3.5.15 A moderate adverse impact has been identified based upon the change in the airborne noise level at the business park, reference 759. An assessment has been undertaken to determine if this impact would result in a likely significant adverse noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.5.16 The receptors represent the buildings which constitute the New Close Farm Business Park, which are 1 and 2 storey buildings providing office and industrial units. The windows are believed to be single glazed and ventilation is provided by opening the windows.
- 3.5.17 Further assessment work that has been undertaken confirms the operational noise impact and likely significant adverse noise effect at the office spaces of New Close Farm Business Park, denoted by ON-N04(S) in *Table 3.13* and *Figure 14.5*. This is likely to take the form of increased disturbance of activities inside the office spaces of the buildings when windows are opened for ventilation.

Non-residential receptors: indirect effects

- 3.5.18 The assessment has not identified any adverse or beneficial indirect airborne noise impacts within this section.

Important Areas

- 3.5.19 In January 2014 DEFRA published its *Noise Action Plan: Road (Including Major Roads)* in response to the *Environmental Noise (England) Regulations 2006*, which defines Important Areas.

- 3.5.20 The Highways Agency is required to investigate Important Areas.
- 3.5.21 Several of these Important Areas fall within the study area of this assessment. The Highways Agency is therefore investigating and assessing possible noise mitigation at these locations as part of this scheme.
- 3.5.22 Seven Important Areas falls within this section: Highways Agency's ID ref 5138, 5139, 5140, 5142, 5143, 6113, 6114. From west to east.
- 3.5.23 Important Area ref 5143 and 5142 represent dwellings which are currently derelict. Noise mitigation has not been further considered at these locations.
- 3.5.24 Noise levels at dwellings in the following important areas currently exceed the noise criteria for a significant observed adverse effect (i.e. noise levels higher than the SOAEL defined in *Appendix 14.3*.) and noise levels predicted with the scheme also exceed the criteria. Further mitigation is therefore proposed for these locations:
- Important Area 6114 represents 1-4 Hill Farm Cottages alongside the existing A14 near Bar Hill.
 - Important Area ref 5140 that represents two dwellings
 - Important Area ref 5139, that represents two dwellings where noise levels also are predicted to exceed an unacceptable adverse effect level (as defined in *Appendix 14.3*). Further mitigation for this location would also mitigate road traffic noise to Cambridge Cemetery.
 - Important Area ref 5138 that represents six dwellings (Catch Hall Farm Cottages)
 - Important Area 6113 that represents three dwellings (Grange Farm Cottages) alongside the existing A14.

Committed developments

- 3.5.25 Committed developments which are sensitive to noise impacts are displayed on *Figure 14.1*.
- 3.5.26 There are no sensitive committed developments in this section.

Summary of likely significant effects

- 3.5.27 A summary of likely significant effects identified in Section 4: A14 Swavesey to Girton on non-residential receptors is presented below in *Table 3.14*. There are no likely significant effects identified at residential receptors.

Table 3.14: Likely significant effects identified on non-residential receptors, Section 4: A14 Swavesey to Girton

Significant effect number (see <i>Figure 14.5</i>)	Type of effect and source	Time of the day	Location and details
ON-N04 (S)	Moderate adverse risk that office activities would be disturbed by external road traffic noise (direct).	Day	New Close Business Park

3.6 Section 5: Cambridge Northern bypass

3.6.1 The assessment of impacts and effects of airborne noise at residential and non-residential buildings in this section is presented in *Table 3.15* and *Table 3.16*.

Table 3.15: Operational airborne noise level, impacts and effects on residential receptors – Section 5: Cambridge Northern bypass – base scheme

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
761	Huntingdon Road, Girton	59.3	52.0	60.3	52.6	61.5	54.0	2.2	2.0	2	NA	-	-	
763	Huntingdon Road, Girton	65.3	58.0	52.1	44.8	66.3	59.1	1.0	1.1	6	NA	-	-	~
764	Huntingdon Road, Girton	57.7	54.0	43.5	36.6	58.0	54.1	0.3	0.1	9	NA	-	-	
765	Girton Road, Girton	55.3	50.0	41.3	34.6	56.6	50.4	1.3	0.4	19	NA	-	-	
768	Wellbrook Way, Girton	55.6	48.0	43.2	36.4	56.1	48.8	0.5	0.8	141	NA	-	-	
772	Thornton Way, Girton	53.7	48.0	44.7	37.8	54.0	47.6	0.3	-0.4	38	NA	-	-	
777	Wellbrook Way, Girton	51.7	46.0	39.0	32.4	52.1	46.0	0.4	0.0	78	NA	-	-	
779	Wellbrook Way, Girton	49.6	45.0	38.5	32.0	49.9	45.4	0.3	0.4	109	NA	-	-	
781	Thornton Road, Girton	48.6	43.0	37.0	30.5	49.1	43.3	0.5	0.3	40	NA	-	-	
787	Cambridge Road, Impington	59.8	52.0	56.5	49.0	60.1	52.4	0.3	0.4	1	NA	-	-	
788	Cambridge Road, Impington	59.4	52.0	56.6	49.1	58.5	50.9	-0.9	-1.1	8	NA	-	-	
789	Lone Tree Avenue, Impington	61.0	53.0	58.3	50.7	62.2	54.4	1.2	1.4	7	NA	-	-	
796	Cambridge Road, Impington	57.7	50.0	54.0	46.6	58.7	51.1	1.0	1.1	11	NA	-	-	
797	Chieftain Way, Cambridge	53.3	46.0	54.7	47.3	55.0	47.5	1.7	1.5	75	NA	-	-	

¹⁵ All roads, including scheme roads and changes to other roads

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
798	Engledow Drive, Cambridge	60.5	53.0	61.6	53.7	61.7	53.8	1.2	0.8	30	NA	-	-	
799	Flack End, Cambridge	59.8	52.0	60.5	52.7	60.5	52.7	0.7	0.7	43	NA	-	-	
801	Chieftain Way, Cambridge	59.9	52.0	51.7	44.4	60.3	52.6	0.4	0.6	19	NA	-	-	
802	Central Avenue, Cambridge	52.2	45.0	50.1	42.9	53.3	45.9	1.1	0.9	9	NA	-	-	
803	Central Avenue, Cambridge	61.0	53.0	46.4	39.4	61.3	53.5	0.3	0.5	12	NA	-	-	
804	Topper Street, Cambridge	54.4	47.0	56.7	49.2	56.8	49.2	2.4	2.2	29	NA	-	-	
805	Topper Street, Cambridge	53.6	46.0	55.6	48.1	55.7	48.2	2.1	2.2	30	NA	-	-	
807	Central Avenue, Cambridge	49.4	42.0	50.3	43.1	51.0	43.7	1.6	1.7	94	NA	-	-	
811	Chieftain Way, Cambridge	53.9	46.0	52.4	45.1	55.0	47.5	1.1	1.5	88	NA	-	-	
817	Sweetpea Way, Cambridge	48.0	41.0	46.4	39.4	49.1	41.9	1.1	0.9	140	NA	-	-	
823	Callander Close, Cambridge	50.6	43.0	48.4	41.3	51.6	44.3	1.0	1.3	33	NA	-	-	
825	Caithness Court, Cambridge	48.1	41.0	49.1	41.9	50.0	42.8	1.9	1.8	182	NA	-	-	
828	Minerva Way, Cambridge	47.7	41.0	48.8	41.7	49.7	42.5	2.0	1.5	237	NA	-	-	
832	Neptune Close, Cambridge	47.9	41.0	48.7	41.6	49.9	42.8	2.0	1.8	159	NA	-	-	
843	Caravere Close, Cambridge	64.0	56.0	53.1	45.7	63.3	55.4	-0.7	-0.6	76	NA	-	-	
848	Armitage Way, Cambridge	49.9	43.0	51.0	43.7	51.9	44.6	2.0	1.6	167	NA	-	-	
851	Lone Tree Grove, Impington	53.6	46.0	52.9	45.5	55.0	47.7	1.4	1.7	22	NA	-	-	

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
853	Cambridge Road, Impington	58.1	50.0	52.6	45.3	59.1	51.4	1.0	1.4	5	NA	-	-	
854	Cambridge Road, Impington	59.8	52.0	47.1	40.1	60.9	53.1	1.1	1.1	14	NA	-	-	
855	Cambridge Road, Impington	60.3	53.0	49.0	41.9	61.1	53.3	0.8	0.3	24	NA	-	-	
856	Mill Road, Impington	50.5	43.0	47.7	40.7	51.6	44.5	1.1	1.5	21	NA	-	-	
857	Cooke Walk, Impington	52.8	46.0	48.1	41.0	54.0	46.7	1.2	0.7	10	NA	-	-	
858	Highfield Road, Impington	54.2	47.0	49.7	42.6	55.1	47.7	0.9	0.7	8	NA	-	-	
859	Highfield Road, Impington	50.4	43.0	49.0	41.9	51.8	44.5	1.4	1.5	18	NA	-	-	
860	The Coppice, Impington	55.7	48.0	47.5	40.4	56.3	48.8	0.6	0.8	6	NA	-	-	
863	The Coppice, Impington	68.2	60.0	53.3	45.9	68.4	60.2	0.2	0.2	29	NA	-	-	
865	Burrough Field, Impington	64.5	56.0	53.2	45.8	64.8	56.8	0.3	0.8	25	NA	-	-	
869	St. Vincent's Close, Girton	48.5	43.0	37.0	30.5	49.0	43.0	0.5	0.0	14	NA	-	-	
871	St. Vincent's Close, Girton	53.8	50.0	46.1	39.2	54.0	49.2	0.2	-0.8	14	NA	-	-	
872	St. Vincent's Close, Girton	50.2	45.0	37.7	31.2	50.8	45.2	0.6	0.2	11	NA	-	-	
873	St. Vincent's Close, Girton	52.4	49.0	45.2	38.3	52.7	47.7	0.3	-1.3	22	NA	-	-	
874	Gifford's Close, Girton	51.6	48.0	44.5	37.6	51.9	47.0	0.3	-1.0	21	NA	-	-	
875	Woody Green, Girton	53.4	50.0	47.5	40.4	53.3	48.8	-0.1	-1.2	19	NA	-	-	
876	Cherry Bounds Road, Girton	49.6	44.0	39.3	32.7	50.4	44.4	0.8	0.4	12	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
877	Duck End, Girton	54.5	51.0	48.9	41.8	54.6	50.0	0.1	-1.0	21	NA	-	-	
880	Hicks Lane, Girton	51.3	47.0	41.5	34.8	52.0	46.9	0.7	-0.1	11	NA	-	-	
881	Duck End, Girton	55.6	52.0	49.6	42.4	55.8	51.0	0.2	-1.0	8	NA	-	-	
883	Cambridge Road, Girton	64.2	56.0	42.3	35.6	66.2	58.2	2.0	2.2	40	S	-	-	\$
884	Cherry Bounds Road, Girton	54.8	50.0	46.4	39.4	55.6	49.8	0.8	-0.2	7	NA	-	-	
922	Cambridge Road, Impington	69.4	61.0	50.8	43.6	69.8	61.5	0.4	0.5	1	NA	-	-	
1133	Pepys Terrace, Impington	50.3	43.0	47.1	40.1	51.3	44.0	1.0	1.0	49	NA	-	-	
1134	Cambridge Road, Impington	57.6	50.0	47.3	40.2	58.2	50.6	0.6	0.6	22	NA	-	-	
1135	Milton Road, Cambridge	51.0	44.0	43.9	37.1	51.5	44.2	0.5	0.2	0	NA	-	-	
1136	Milton Road, Cambridge	64.4	56.0	41.5	34.8	64.6	56.6	0.2	0.6	7	NA	-	-	
1137	Walnut Close, Milton	48.7	42.0	41.2	34.5	49.1	41.9	0.4	-0.1	91	NA	-	-	
5626	Cambridge Road, Milton	56.7	49.0	42.6	35.8	56.8	49.2	0.1	0.2	1	NA	-	-	
5627	Cambridge Road, Milton	51.6	44.0	30.5	24.4	51.6	44.3	0.0	0.3	2	NA	-	-	
5628	Cambridge Road, Milton	54.5	47.0	32.3	26.1	54.7	47.3	0.2	0.3	26	NA	-	-	
5630	Cambridge Road, Milton	60.7	53.0	0.0	0.0	61.7	53.8	1.0	0.8	35	NA	-	-	
5631	Cambridge Road, Milton	61.8	54.0	38.6	32.0	62.4	54.6	0.6	0.6	4	NA	-	-	
5632	Cambridge Road, Milton	59.9	52.0	0.0	0.0	60.2	52.5	0.3	0.5	6	NA	-	-	

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5636	The Rowans, Milton	59.5	52.0	24.5	18.7	59.6	51.8	0.1	-0.2	120	NA	-	-	
5642	Cambridge Road, Milton	53.9	46.0	27.8	21.9	54.6	47.2	0.7	1.2	9	NA	-	-	
5649	The Rowans, Milton	51.7	44.0	39.8	33.2	51.7	44.5	0.0	0.5	107	NA	-	-	
5655	The Sycamores, Milton	55.9	48.0	43.8	37.0	56.2	48.7	0.3	0.7	237	NA	-	-	
8001	Girton Road, Girton	65.3	58.0	40.1	33.5	66.5	58.5	1.2	0.5	5	NA	-	-	~
8004	Girton Road, Girton	72.1	64.0	45.9	39.0	72.9	64.5	0.8	0.5	2	NA	-	-	
8010	Huntingdon Road, Girton	62.8	56.0	53.2	45.8	64.0	56.9	1.2	0.9	1	NA	-	-	\$
8014	Weavers Field, Girton	64.8	58.0	49.8	42.7	65.4	57.9	0.6	-0.1	19	NA	-	-	
8017	Weavers Field, Girton	55.6	49.0	38.7	32.1	56.2	49.6	0.6	0.6	44	NA	-	-	
8019	Girton Road, Girton	62.7	55.0	33.9	27.6	64.4	56.5	1.7	1.5	16	NA	-	-	\$
8021	Girton Road, Girton	61.6	54.0	37.9	31.4	63.4	55.7	1.8	1.7	12	NA	-	-	
8023	Pepys Way, Girton	54.1	50.0	44.1	37.3	54.5	49.1	0.4	-0.9	21	NA	-	-	
8026	St. Vincent's Close, Girton	53.7	49.0	44.7	37.8	53.8	49.0	0.1	0.0	11	NA	-	-	
8032	St. Vincent's Close, Girton	57.3	52.0	49.1	41.9	57.2	51.9	-0.1	-0.1	33	NA	-	-	
8034	St. Vincent's Close, Girton	52.6	48.0	42.2	35.5	53.1	47.7	0.5	-0.3	14	NA	-	-	
8039	Pepys Way, Girton	53.2	49.0	43.4	36.5	53.6	48.5	0.4	-0.5	24	NA	-	-	
8044	Cambridge Road, Girton	65.6	58.0	43.7	36.9	67.6	59.6	2.0	1.6	29	NA	-	-	\$

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
8048	Hicks Lane, Girton	64.3	56.0	36.1	29.7	66.3	58.3	2.0	2.3	47	NA	-	-	\$
8049	Hicks Lane, Girton	52.3	47.0	41.3	34.6	53.1	47.5	0.8	0.5	2	NA	-	-	
8052	Girton Road, Girton	63.0	56.0	45.9	39.0	64.7	57.1	1.7	1.1	27	NA	-	-	\$
8053	Wellbrook Way, Girton	59.8	53.0	42.2	35.5	60.3	53.0	0.5	0.0	17	NA	-	-	
8055	Girton Road, Girton	62.5	55.0	38.6	32.0	64.5	56.6	2.0	1.6	2	NA	-	-	\$
10008	Kings Hedges Road, Cambridge	66.1	58.0	66.1	58.1	66.1	58.1	0.0	0.1	30	NA	No &(IA)	-	
10011	Milton Road, Cambridge	57.4	50.0	42.8	36.0	57.8	50.1	0.4	0.1	3	NA	-	-	
10013	Chieftain Way, Cambridge	59.7	52.0	47.8	40.8	59.7	51.9	0.0	-0.1	53	NA	-	-	
10016	Chieftain Way, Cambridge	58.8	51.0	59.4	51.7	59.8	52.1	1.0	1.1	42	NA	-	-	
10018	Sweetpea Way, Cambridge	59.4	52.0	47.0	40.0	59.4	51.7	0.0	-0.3	84	NA	-	-	
10021	Bayford Place, Cambridge	63.8	56.0	46.3	39.3	62.6	54.7	-1.2	-1.3	6	NA	-	-	
10025	Crispin Close, Cambridge	57.4	50.0	49.0	41.9	57.7	50.0	0.3	0.0	17	NA	-	-	
10027	Cowley Road, Cambridge	61.3	54.0	44.5	37.6	61.2	53.4	-0.1	-0.6	3	NA	-	-	
10029	Augustus Close, Cambridge	65.2	57.0	52.3	45.0	65.0	57.0	-0.2	0.0	134	NA	-	-	
10031	Arbury Road, Cambridge	53.2	46.0	43.6	36.7	54.1	46.7	0.9	0.7	12	NA	-	-	
10039	Kirkwood Road, Cambridge	46.9	40.0	46.6	39.6	48.4	41.3	1.5	1.3	132	NA	-	-	

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		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
10041	Ring Fort Road, Cambridge	56.0	48.0	53.3	45.9	57.1	49.5	1.1	1.5	1	NA	-	-	
10042	Chieftain Way, Cambridge	58.1	50.0	59.1	51.4	59.4	51.7	1.3	1.7	31	NA	-	-	
10047	Milton Road, Cambridge	48.2	41.0	38.6	32.0	48.5	41.4	0.3	0.4	2	NA	-	-	
10048	Milton Road, Cambridge	59.3	52.0	61.3	53.5	61.7	53.8	2.4	1.8	1	NA	-	-	
10049	Buchan Street, Cambridge	64.2	56.0	50.0	42.8	63.5	55.5	-0.7	-0.5	16	NA	-	-	~
10053	Cowley Road, Cambridge	54.1	47.0	38.7	32.1	54.5	47.1	0.4	0.1	2	NA	-	-	
10055	Milton Road, Cambridge	54.8	47.0	52.3	45.0	56.0	48.5	1.2	1.5	4	NA	-	-	
10057	Milton Road, Cambridge	49.9	43.0	49.3	42.1	51.4	44.1	1.5	1.1	6	NA	-	-	
10059	Kirkwood Road, Cambridge	65.0	57.0	51.3	44.0	63.8	55.8	-1.2	-1.2	75	NA	-	-	~
10065	Howgate Road, Cambridge	61.9	54.0	51.9	44.6	62.1	54.3	0.2	0.3	30	NA	-	-	
10069	Ellison Close, Cambridge	51.2	44.0	48.3	41.2	52.3	45.0	1.1	1.0	84	NA	-	-	
10070	Cambridge Road, Impington	63.3	55.0	47.7	40.6	63.9	56.0	0.6	1.0	17	NA	-	-	\$
10071	St. Catharine's Square, Cambridge	51.0	44.0	47.0	40.0	52.0	44.7	1.0	0.7	52	NA	-	-	
10072	Neal Drive, Cambridge	56.4	49.0	57.7	50.0	57.8	50.1	1.4	1.1	23	NA	-	-	
10074	Milton Road, Cambridge	49.3	42.0	49.7	42.5	51.1	43.8	1.8	1.8	1	NA	-	-	
10077	Milton Road, Cambridge	55.6	48.0	57.7	50.0	57.9	50.3	2.3	2.3	3	NA	-	-	
10085	Graham Road, Cambridge	59.7	52.0	52.0	44.7	60.0	52.3	0.3	0.3	33	NA	-	-	

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		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15053	Gretton Court, Girton	54.1	51.0	49.6	42.4	54.3	49.5	0.2	-1.5	59	NA	-	-	
15054	High Street, Girton	54.5	51.0	49.3	42.1	54.7	50.1	0.2	-0.9	21	NA	-	-	
15055	Cambridge Road, Girton	61.3	54.0	41.7	35.0	63.2	55.5	1.9	1.5	47	NA	-	-	
15056	Cambridge Road, Girton	66.7	59.0	39.6	32.9	68.7	60.5	2.0	1.5	58	NA	-	-	\$
15057	Cambridge Road, Girton	65.2	57.0	42.5	35.7	67.1	59.0	1.9	2.0	4	NA	-	-	\$
15058	High Street, Girton	65.4	58.0	40.4	33.8	66.2	58.2	0.8	0.2	27	NA	-	-	
15059	Church Lane, Girton	55.2	48.0	43.7	36.9	56.9	49.5	1.7	1.5	27	NA	-	-	
15060	Woodlands Close, Girton	53.8	50.0	49.4	42.2	54.0	49.2	0.2	-0.8	33	NA	-	-	
15061	Church Lane, Girton	51.5	48.0	43.6	36.7	51.9	47.5	0.4	-0.5	30	NA	-	-	
15062	Cambridge Road, Girton	67.0	59.0	38.3	31.8	69.0	60.8	2.0	1.8	18	NA	-	-	\$
15063	High Street, Girton	63.5	56.0	47.0	40.0	64.2	56.4	0.7	0.4	24	NA	-	-	
15064	Dodford Lane, Girton	51.5	48.0	47.1	40.1	51.9	46.6	0.4	-1.4	30	NA	-	-	
15065	Fairway, Girton	51.7	47.0	46.3	39.3	52.4	46.5	0.7	-0.5	54	NA	-	-	
15066	High Street, Girton	63.5	56.0	46.8	39.8	63.9	56.2	0.4	0.2	53	NA	-	-	
15068	Churchfield Court, Girton	54.9	49.0	46.6	39.6	55.6	48.9	0.7	-0.1	28	NA	-	-	
15069	Thornton Road, Girton	50.7	45.0	42.4	35.6	51.1	45.1	0.4	0.1	42	NA	-	-	
15070	Thornton Close, Girton	51.5	46.0	42.7	35.9	51.9	46.0	0.4	0.0	33	NA	-	-	

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15071	Huntingdon Road, Girton	64.7	57.0	39.0	32.4	65.6	57.7	0.9	0.7	8	NA	-	-	
15072	Bandon Road, Girton	66.0	58.0	37.2	30.7	66.7	58.8	0.7	0.8	34	NA	-	-	
15073	Thornton Court, Girton	49.9	46.0	35.2	28.8	50.3	46.6	0.4	0.6	86	NA	-	-	
15074	Girton Road, Girton	61.0	54.0	39.1	32.5	62.7	55.4	1.7	1.4	11	NA	-	-	
15075	Burlton Road, Cambridge	65.7	58.0	41.7	35.0	66.5	58.6	0.8	0.6	27	NA	-	-	
15076	St. Margaret's Road, Girton	49.5	44.0	40.0	33.4	50.1	44.3	0.6	0.3	39	NA	-	-	
15078	Thornton Close, Girton	50.0	46.0	36.4	30.0	50.4	46.4	0.4	0.4	26	NA	-	-	
15079	Huntingdon Road, Girton	64.7	57.0	39.7	33.1	65.6	57.6	0.9	0.6	5	NA	-	-	
15080	Whitehouse Lane, Cambridge	52.8	48.0	41.6	34.8	53.4	48.0	0.6	0.0	8	NA	-	-	
15081	Sackville Close, Cambridge	46.8	40.0	47.2	40.1	48.6	41.5	1.8	1.5	96	NA	-	-	
15082	Lovell Road, Cambridge	47.7	41.0	46.0	39.1	48.9	41.8	1.2	0.8	123	NA	-	-	
15083	Nuns Way, Cambridge	47.7	41.0	48.6	41.5	49.8	42.7	2.1	1.7	280	NA	-	-	
15084	Campkin Road, Cambridge	56.9	49.0	46.0	39.1	57.0	49.4	0.1	0.4	368	NA	-	-	
15085	Gladeside, Cambridge	51.7	44.0	44.2	37.4	52.3	45.0	0.6	1.0	273	NA	-	-	
15086	Milton Road, Cambridge	66.1	58.0	43.7	36.8	66.3	58.2	0.2	0.2	81	NA	-	-	
15087	Cameron Road, Cambridge	62.2	54.0	48.7	41.6	62.5	54.6	0.3	0.6	244	NA	-	-	
15088	Kings Hedges Road, Cambridge	62.2	54.0	45.7	38.7	62.1	54.3	-0.1	0.3	239	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		Scheme roads only 2035		Total ¹⁵ with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15089	Milton Road, Cambridge	66.9	59.0	43.5	36.6	66.7	58.6	-0.2	-0.4	98	NA	-	-	
15090	Milton Road, Cambridge	64.7	57.0	43.8	37.0	64.8	56.8	0.1	-0.2	128	NA	-	-	
15091	Maitland Avenue, Cambridge	51.7	44.0	43.0	36.2	52.1	44.8	0.4	0.8	188	NA	-	-	
15092	Sherbourne Close, Cambridge	52.9	46.0	43.1	36.3	53.2	45.8	0.3	-0.2	254	NA	-	-	
15093	Milton Road, Cambridge	65.1	57.0	43.8	37.0	65.0	57.0	-0.1	0.0	83	NA	-	-	
15094	Ramsden Square, Cambridge	55.2	48.0	44.1	37.3	55.4	47.9	0.2	-0.1	128	NA	-	-	
15937	Girton Road, Girton	69.5	61.0	46.5	39.5	69.8	61.6	0.3	0.6	1	NA	-	-	
15938	Girton Road, Girton	62.7	56.0	46.3	39.3	63.9	56.3	1.2	0.3	4	NA	-	-	\$
15940	Girton Road, Girton	70.9	63.0	41.9	35.2	71.2	62.9	0.3	-0.1	4	NA	-	-	
15941	Lone Tree Avenue, Impington	62.1	54.0	60.8	53.0	63.2	55.3	1.1	1.3	10	NA	Yes	-	
15942	Lone Tree Avenue, Impington	54.8	48.0	53.8	46.4	56.1	48.6	1.3	0.6	12	NA	-	-	

Table 3.16: Operational airborne noise level, impacts and effects at non – residential receptors – Section 5: Cambridge Northern bypass – base scheme

Assessment location ID	Non-residential receptor	Impact assessment						Significance Criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
760	University Of Cambridge, Cambridge (Education)	64.9	57.0	66.4	58.6	1.5	1.6	0	A	-	
768	Managers Office, Girton (Office)	55.6	48.0	56.1	48.8	0.5	0.8	1	NA	-	
794	Holiday Inn, Impington (Hotel)	61.3	54.0	62.6	54.7	1.3	0.7	1	NA	-	
802	The Orchard Community Centre, Cambridge (Community Centre)	52.2	45.0	53.3	45.9	1.1	0.9	1	NA	-	
828	Cambridge Catering, Cambridge (Office)	47.7	41.0	49.7	42.5	2.0	1.5	1	NA	-	
884	Oaklands Nursery, Girton (Nursery)	54.8	50.0	55.6	49.8	0.8	-0.2	1	NA	-	
1135	Cast Recruitment Ltd, Cambridge (Office)	51.0	44.0	51.5	44.2	0.5	0.2	3	NA	-	
1135	Oxygen Healthcare, Cambridge (Medical)	51.0	44.0	51.5	44.2	0.5	0.2	3	NA	-	
1135	The International Education Consultancy Ltd, Cambridge (Office)	51.0	44.0	51.5	44.2	0.5	0.2	3	NA	-	
1136	Cogent Environmental Ltd, Cambridge (Office)	64.4	56.0	64.6	56.6	0.2	0.6	2	A	-	
5626	Excel R8 Learning, Milton (Education)	56.7	49.0	56.8	49.2	0.1	0.2	1	NA	-	
5630	Ormiston Trust, Milton (Office)	60.7	53.0	61.7	53.8	1.0	0.8	1	NA	-	
5631	Milton Precision Engineering, Milton (Office)	61.8	54.0	62.4	54.6	0.6	0.6	1	NA	-	
5642	Veterinary Surgery, Milton (Medical)	53.9	46.0	54.6	47.2	0.7	1.2	1	NA	-	

Assessment location ID	Non-residential receptor	Impact assessment						Significance Criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
5654	Youth Club (Community Centre)	54.9	47.0	55.0	47.5	0.1	0.5	1	NA	-	
8001	Elstree Insurance Services, Girton (Office)	65.3	58.0	66.5	58.5	1.2	0.5	0	S	-	
8024	Doctors Surgery, Girton (Medical)	54.0	49.0	54.5	48.8	0.5	-0.2	1	NA	-	
8025	Hall, Girton (Hall)	53.9	50.0	54.1	49.3	0.2	-0.7	1	NA	-	
8057	Girton College, Cambridge (Education)	53.8	49.0	54.6	48.8	0.8	-0.2	1	NA	-	
10004	Philips Research Laboratories, Cambridge (Research facility)	65.8	58.0	65.9	57.9	0.1	-0.1	1	NA	-	
10011	Hawkins & Associates Ltd, Cambridge (Office)	57.4	50.0	57.8	50.1	0.4	0.1	1	NA	-	
10020	Cambridge Regional College, Cambridge (Education)	64.6	57.0	65.7	57.6	1.1	0.6	0	A	-	
10023	Cambridge Regional College, Cambridge (Education)	54.3	47.0	54.3	46.9	0.0	-0.1	1	NA	-	
10028	Premier Inn, Cambridge (Hotel)	70.5	62.0	71.8	63.4	1.3	1.4	1	A	-	
10030	Meadows Community Centre, Cambridge (Community Centre)	52.5	45.0	53.5	46.1	1.0	1.1	1	NA	-	
10031	St. Laurence's RC School, Cambridge (Education)	53.2	46.0	54.1	46.7	0.9	0.7	1	NA	-	

Assessment location ID	Non-residential receptor	Impact assessment						Significance Criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
10035	Home Office, Cambridge (Office)	62.5	55.0	65.3	57.3	2.8	2.3	1	A	-	See discussion below
10037	Kings Hedges Primary School, Cambridge (Education)	53.9	46.0	54.6	47.2	0.7	1.2	1	NA	-	
10039	Omar Faruque Mosque, Cambridge (Mosque)	46.9	40.0	48.4	41.3	1.5	1.3	1	NA	-	
10053	Anglian Water Authority, Cambridge (Office)	54.1	47.0	54.5	47.1	0.4	0.1	1	NA	-	
10055	Bayer Crop Science Ltd, Cambridge (Research facility)	54.8	47.0	56.0	48.5	1.2	1.5	2	NA	-	
10055	Toshiba Research Ltd, Cambridge (Research facility)	54.8	47.0	56.0	48.5	1.2	1.5	2	NA	-	
10058	H S B C, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	DKKTOA Corporation, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Bridge Partners Plc, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Cambridge Venture Management Ltd, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Anglia Wright Advice, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Eaglecrown Productions Ltd, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	

Assessment location ID	Non-residential receptor	Impact assessment						Significance Criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
10058	PSF Accounting Ltd, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Cogent Environmental Ltd, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Drug Testing Program Management, Cambridge (Office)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10058	Fen Research Ltd, Cambridge (Research facility)	57.2	50.0	57.0	49.4	-0.2	-0.6	10	NA	-	
10059	Kings Hedges Neighbourhood Partnership, Cambridge (Office)	65.0	57.0	63.8	55.8	-1.2	-1.2	1	BA	-	
10065	Chesterton Allotment Society, Cambridge (Office)	61.9	54.0	62.1	54.3	0.2	0.3	1	NA	-	
10077	Oakland Innovation & Information Services, Cambridge (Office)	55.6	48.0	57.9	50.3	2.3	2.3	1	NA	-	
10079	Kodak European Research, Cambridge (Research facility)	44.2	37.0	45.7	38.7	1.5	1.7	1	NA	-	
10082	Health Club, Cambridge (Health club)	46.0	39.0	46.5	39.5	0.5	0.5	2	NA	-	

Residential receptors: direct effects – individual dwellings

- 3.6.2 Taking account of the avoidance and mitigation measures integrated into the base scheme, 10 dwellings on Lone Tree Avenue (5, 7, 9, 11, 15, 15A, 17, 19, 21, 23) (represented by receptor 15941) and 30 residential dwellings at Blackwell Caravan Park (represented by receptor 10008), are already experience and with the scheme are predicted to experience noise levels higher than the significant observed adverse effect level.
- 3.6.3 The properties on Lone Tree Avenue, are predicted to experience absolute noise levels and a change in noise level, which is likely to result in a requirement to provide noise insulation as defined in *Noise Insulation Regulations 1975 (as amended)*. The installation of noise insulation would avoid the significant observed adverse effects that would otherwise occur inside these dwellings.
- 3.6.4 At Blackwell Caravan Park, noise levels are currently above the threshold for a significant observed adverse effect and taking account of the avoidance and mitigation measures integrated into the base scheme, noise levels would remain a significant observed adverse effect. As these properties fall within an Important Area, further mitigation is considered in *Chapter 14 of the ES*.
- 3.6.5 Outdoor areas (e.g. gardens) at all three properties are either protected by walls or screened by the properties and/or residents will continue to have access to relatively quiet, publically accessible amenity space that offsets¹⁶ any effect.

Residential receptors: direct effects – communities

- 3.6.6 The avoidance and mitigation measures integrated into the base scheme for this section would avoid airborne noise adverse effects on the majority of receptors, and at the majority of the communities of:
- Girton;
 - Histon; and
 - Milton.
- 3.6.7 Taking account of the avoidance and mitigation measures integrated into the base scheme, *Figure 14.5* shows the long term $40\text{dB}_{\text{LAeq},8\text{hr}}$ night-time noise level contour from the operation of the scheme. The extent of the $40\text{dB}_{\text{LAeq},8\text{hr}}$ night-time noise level contour is equivalent to, or slightly larger than, the $50\text{dB}_{\text{LAeq},16\text{hr}}$ day-time contour. In general, below these levels adverse effects are not expected.
- 3.6.8 Above $40\text{dB}_{\text{LAeq},8\text{hr}}$ during the night and $50\text{dB}_{\text{LAeq},16\text{hr}}$ during the day the effect of noise is dependent on the baseline noise levels in that area and the change in noise level (magnitude of effect) brought about by the scheme. The airborne noise impacts and effects predicted for the operation of the scheme are presented on *Figure 14.5*. The changes in noise levels are likely to affect the acoustic character of the area such that there is a perceived change in the quality of life.

¹⁶ With reference to Planning Practice Guidance - Noise (PPG-Noise) (DCLG, 2014)

3.6.9 No significant adverse direct effects are identified at communities in this section.

Residential receptors: indirect effects – communities

3.6.10 No significant indirect effects are identified at communities in this section.

Non-residential receptors: direct effects

3.6.11 The assessment of impacts and effects at non-residential receptors for this section is presented in *Table 3.16*.

3.6.12 A minor adverse impact has been identified based upon the change in the airborne noise level on the offices (reference 10035) as a result of the increase in road traffic. An assessment has been undertaken to determine if this impact would result in a likely significant adverse noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.

3.6.13 The building is primarily office accommodation over 3 storeys, the windows are believed to be double glazed and ventilation is provided by an air conditioning system. Considering the use, façade construction and ventilation strategy the internal noise levels within the offices due to road traffic noise are not likely to result in disturbance and therefore a significant effect is not identified at this receptor.

3.6.14 No adverse or beneficial airborne noise impacts have been identified within this area.

Non-residential receptors: indirect effects

3.6.15 The assessment has not identified any adverse or beneficial indirect airborne noise impacts within this area.

Important Areas

3.6.16 In January 2014 DEFRA published its *Noise Action Plan: Road (Including Major Roads)* in response to the *Environmental Noise (England) Regulations 2006*, which defines Important Areas.

3.6.17 The Highways Agency is required to investigate Important Areas.

3.6.18 Several of these Important Areas fall within the study area of this assessment. The Highways Agency is therefore investigating and assessing possible noise mitigation at these locations as part of this scheme.

3.6.19 Four Important Areas fall within this section: Highways Agency's ID ref 5043, 5044, 6109 and 5045

3.6.20 Important Area 5043 represents dwellings in Girton adjacent to the existing A14. There is an existing noise fence barrier to the north of the existing A14 at this location but current and future noise levels remain a significant observed adverse effect (refer to *Appendix 14.3*). Further mitigation is proposed for this location as discussed in *Chapter 14 of the ES*.

- 3.6.21 Important Area 5044 represents four dwellings at Woodhouse Farm. Current and future noise levels remain a significant observed adverse effect (refer to *Appendix 14.3*). Further mitigation is proposed for this location as discussed in *Chapter 14 of the ES*.
- 3.6.22 Important Area 6109 represents dwellings in Impington adjacent to the existing A14. There is an existing noise fence barrier to the north of the existing A14 at this location. Current and future noise levels remain a significant observed adverse effect (refer to *Appendix 14.3*). Further mitigation is proposed for this location as discussed in section 14.5 of the *ES Chapter*.
- 3.6.23 Important Area 5045 represents approximately thirty dwellings at Blackwell Caravan Site which currently exceed the noise criteria for a significant impact on health and quality of life (i.e. noise levels higher than the SOAEL defined in *Appendix 14.3*.) and noise levels predicted with the scheme also exceed the criteria. Further mitigation is proposed for this location.

Committed developments

- 3.6.24 Committed developments which are sensitive to noise impacts are displayed on *Figure 14.1*.
- 3.6.25 There is one committed development in this section which is subject to non-negligible noise impacts: CD7 (shown on *Figure 14.1*) is a proposal for the construction of up to 3,000 dwellings and substantial commercial space. The vast majority of this committed development's footprint would be subject to negligible noise impacts as a result of the scheme: however, the north-eastern part of the site (opposite Girton College) would be subject to minor adverse impacts.

Summary of likely significant effects

- 3.6.26 A summary of likely significant effects identified in Section 5: Cambridge Northern bypass on residential receptors is presented below in *Tables 3.17*. There are no likely significant effects identified on residential or non-residential receptors.

Table 3.17: Summary of likely significant effects on residential receptors, Section 5: Cambridge Northern bypass

Significant effect number (see <i>Figure 14.5</i>)	Source of significant effect	Time of day	Location of details
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3.7 Section 6: Huntingdon improvements

- 3.7.1 The assessment of airborne noise impacts and effects at residential and non-residential buildings in this section are presented in *Table 3.18* and *Table 3.19*.

Table 3.18: Operational airborne noise level, impacts and effects at residential receptors – Section 6: Huntingdon improvements – base scheme

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
264	Ermine Street, Great Stukeley	57.5	50.0	34.2	27.9	53.2	45.8	-4.3	-4.2	1	BA	-	-	~
265	Ermine Street, Great Stukeley	58.5	51.0	29.8	23.8	54.5	47.1	-4.0	-3.9	3	BA	-	-	~
892	Peaks Court, Huntingdon	60.1	52.0	40.7	34.0	60.7	52.9	0.6	0.9	147	NA	-	-	
897	Ashton Gardens, Huntingdon	65.8	58.0	37.6	31.1	65.5	57.4	-0.3	-0.6	65	NA	-		
917	Cow Lane, Godmanchester	61.9	54.0	0.0	0.0	57.0	49.4	-4.9	-4.6	2	BA	-	-	~
944	The Walks North, Huntingdon	61.4	54.0	48.8	41.7	56.8	49.2	-4.6	-4.8	3	BA	-	-	~
951	Old Court Hall, Godmanchester	62.6	55.0	32.1	25.9	61.3	53.5	-1.3	-1.5	151	BA	-	-	ON-C13(BA)
952	The Causeway, Godmanchester	64.8	57.0	37.8	31.3	64.9	56.9	0.1	-0.1	2	NA	-	-	
953	London Road, Godmanchester	63.0	55.0	32.3	26.1	62.2	54.4	-0.8	-0.6	79	NA	-	-	
954	London Street, Godmanchester	61.4	54.1	37.3	30.8	60.2	52.6	-1.2	-1.5	97	NA	-	-	
955	Hartford Road, Huntingdon	68.0	60.0	29.2	23.1	67.8	59.6	-0.2	-0.4	100	NA	-	-	
956	Hartford Road, Huntingdon	61.8	54.0	28.9	22.9	61.4	53.6	-0.4	-0.4	39	NA	-	-	
957	Claytons Way, Huntingdon	51.2	44.0	31.4	25.2	48.2	41.1	-3.0	-2.9	52	NA	-	-	
958	Hartford Road, Huntingdon	60.1	52.0	32.7	26.5	59.6	51.8	-0.5	-0.2	28	NA	-	-	
959	Primrose Lane, Huntingdon	51.0	44.0	34.9	28.5	48.0	41.0	-3.0	-3.0	14	BA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
960	Drivers Avenue, Huntingdon	50.9	44.0	34.3	28.0	47.4	40.3	-3.5	-3.7	66	BA	-	No	ON-C12(BA)
961	Coxons Close, Huntingdon	49.9	43.0	33.6	27.4	47.3	40.2	-2.6	-2.8	60	NA	-	-	
963	Ambury Hill Walk, Huntingdon	49.4	42.0	35.5	29.1	45.4	38.4	-4.0	-3.6	81	BA	-	No	ON-C12(BA)
964	Avenue Road, Huntingdon	62.9	55.0	36.6	30.2	63.4	55.5	0.5	0.5	52	NA	-	-	
965	Brookside, Huntingdon	62.2	54.0	36.2	29.8	61.5	53.6	-0.7	-0.4	64	NA	-	-	
966	Brookside, Huntingdon	66.2	58.0	34.5	28.2	65.8	57.7	-0.4	-0.3	24	NA	-	-	
967	Nursery Road, Huntingdon	65.8	58.0	35.0	28.6	65.7	57.6	-0.1	-0.4	31	NA	-	-	
968	Avenue Road, Huntingdon	62.4	55.0	35.0	28.6	63.1	55.2	0.7	0.2	77	NA	-	-	
969	Alberta Crescent, Huntingdon	51.9	45.0	32.7	26.5	51.2	43.9	-0.7	-1.1	47	NA	-	-	
983	Hartford Road, Huntingdon	65.5	57.0	30.8	24.7	65.3	57.3	-0.2	0.3	1	NA	-	-	
984	Ashton Gardens, Huntingdon	55.5	48.0	37.0	30.5	54.7	47.3	-0.8	-0.7	71	NA	-	-	
985	Lammas Gardens, Huntingdon	50.8	44.0	36.2	29.8	49.2	42.0	-1.6	-2.0	41	NA	-	-	
988	St. Peter's Road, Huntingdon	51.7	44.0	34.5	28.2	50.6	43.4	-1.1	-0.6	1	NA	-	-	
989	West Street, Godmanchester	68.4	60.0	34.0	27.7	69.3	61.0	0.9	1.0	13	NA	-	-	
1111	Bromholme Lane, Brampton	55.4	48.5	38.6	32.0	53.9	46.9	-1.5	-1.6	4	NA	-	-	
1148	Bushey Close, Huntingdon	48.5	41.0	33.6	27.4	45.1	38.2	-3.4	-2.8	73	BA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
1149	St. Peter's Road, Huntingdon	51.7	44.0	37.7	31.2	48.3	41.2	-3.4	-2.8	21	BA	-	-	
1151	St. Peter's Road, Huntingdon	59.0	51.0	36.8	30.3	60.0	52.3	1.0	1.3	1	NA	-	-	
5007	Stukeley Road, Huntingdon	65.8	58.0	38.6	32.0	67.1	59.0	1.3	1.0	31	NA	-	-	
5012	Goodliff Close, Huntingdon	51.5	44.0	34.3	28.0	51.7	44.4	0.2	0.4	28	NA	-	-	
5014	Stukeley Road, Huntingdon	66.6	58.0	37.1	30.6	67.9	59.8	1.3	1.8	3	NA	-	-	\$
5017	Stukeley Road, Huntingdon	58.2	51.0	37.3	30.8	59.0	51.3	0.8	0.3	3	NA	-	-	
5020	Devoke Close, Huntingdon	56.9	49.0	39.8	33.2	58.2	50.6	1.3	1.6	5	NA	-	-	\$
5022	Stukeley Road, Huntingdon	63.1	55.0	28.0	22.1	64.4	56.4	1.3	1.4	5	NA	-	-	
5030	Rydal Close, Huntingdon	56.7	49.0	31.5	25.3	57.8	50.1	1.1	1.1	31	NA	-	-	
5031	Rydal Close, Huntingdon	54.1	47.0	35.8	29.4	54.3	46.9	0.2	-0.1	18	NA	-	-	
5042	St. Peter's Road, Huntingdon	60.7	53.0	32.6	26.4	62.0	54.2	1.3	1.2	19	NA	-	-	
5043	St. Peter's Road, Huntingdon	63.9	56.0	38.6	32.0	65.3	57.3	1.4	1.3	16	NA	-	-	
5045	St. Peter's Road, Huntingdon	61.0	53.0	40.3	33.7	62.0	54.2	1.0	1.2	35	NA	-	-	
5051	Ermine Street, Huntingdon	62.8	55.0	37.5	31.0	64.7	56.7	1.9	1.7	34	NA	-	-	\$
5052	Ermine Street, Huntingdon	66.6	58.0	30.1	24.0	68.2	60.0	1.6	2.0	32	NA	-	-	\$
5054	Ermine Street, Huntingdon	66.5	58.0	35.9	29.5	68.1	59.9	1.6	1.9	9	NA	-	-	\$
5056	Sayer Street, Huntingdon	53.6	46.0	38.3	31.8	52.6	45.3	-1.0	-0.7	47	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5058	Sayer Street, Huntingdon	57.2	50.0	45.7	38.7	53.5	46.1	-3.7	-3.9	25	BA	-	No	ON-C12(BA)
5059	Cromwell Walk, Huntingdon	64.9	57.0	39.2	32.6	64.7	56.7	-0.2	-0.3	50	NA	-	-	
5061	High Street, Huntingdon	65.7	58.0	36.9	30.4	65.5	57.4	-0.2	-0.6	5	NA	-	-	
5064	Great Northern Street, Huntingdon	55.0	48.0	38.2	31.7	55.0	47.5	0.0	-0.5	13	NA	-	-	
5065	Great Northern Street, Huntingdon	52.9	46.0	38.4	31.9	51.0	43.7	-1.9	-2.3	37	NA	-	-	
5066	Alder Drive, Huntingdon	50.4	43.0	38.1	31.6	45.7	38.8	-4.7	-4.2	32	BA	-	No	ON-C12(BA)
5067	Alder Drive, Huntingdon	49.7	42.0	36.7	30.2	45.3	38.3	-4.4	-3.7	70	BA	-	No	ON-C12(BA)
5068	Rowan Close, Huntingdon	52.1	45.0	37.6	31.1	51.1	43.8	-1.0	-1.2	28	NA	-	-	
5077	Ashton Gardens, Huntingdon	64.3	56.0	35.9	29.5	64.0	56.1	-0.3	0.1	35	NA	-	-	
5082	High Street, Huntingdon	53.3	46.0	35.9	29.5	52.5	45.2	-0.8	-0.8	9	NA	-	-	
5083	St. John's Street, Huntingdon	65.9	58.0	40.3	33.7	65.6	57.5	-0.3	-0.5	94	NA	-	-	
5105	Nursery Road, Huntingdon	66.4	58.0	35.7	29.4	66.1	58.1	-0.3	0.1	23	NA	-	-	
5106	Nursery Road, Huntingdon	63.3	55.0	29.8	23.8	63.1	55.2	-0.2	0.2	121	NA	-	-	
5115	Prince's Street, Huntingdon	49.3	42.0	35.4	29.0	49.1	41.9	-0.2	-0.1	1	NA	-	-	
5118	George Street, Huntingdon	65.5	57.0	41.6	34.9	65.1	57.1	-0.4	0.1	129	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5121	St. Mary's Street, Huntingdon	56.2	49.0	44.1	37.3	51.3	44.0	-4.9	-5.0	39	BA	-	No	ON-C12(BA)
5130	Castle Hill, Huntingdon	61.4	54.0	49.5	42.3	55.7	48.2	-5.7	-5.8	3	BA	-	No	ON-C12(BA)
5135	Castle Hill, Huntingdon	66.1	58.0	50.3	43.1	60.3	52.6	-5.8	-5.4	8	BA	-	No	ON-C12(BA)
5140	Castle Hill Lane, Huntingdon	66.4	58.0	31.4	25.2	64.5	56.5	-1.9	-1.5	36	BA	-	No	ON-C12(BA)
5152	Hartford Road, Huntingdon	52.5	45.0	36.1	29.7	50.6	43.4	-1.9	-1.6	26	NA	-	-	
5161	Ouse Walk, Huntingdon	58.4	51.0	33.9	27.6	57.9	50.3	-0.5	-0.7	4	NA	-	-	
5165	Hartford Road, Huntingdon	59.2	52.0	34.6	28.3	58.5	50.9	-0.7	-1.1	18	NA	-	-	
5169	Temple Close, Huntingdon	64.7	57.0	32.9	26.6	64.2	56.3	-0.5	-0.7	38	NA	-		
5188	Ouse Walk, Huntingdon	60.2	52.0	31.2	25.0	60.2	52.5	0.0	0.5	115	NA	-		
5191	Temple Close, Huntingdon	59.6	52.0	27.6	21.7	59.5	51.8	-0.1	-0.2	85	NA	-		
5197	High Street, Huntingdon	55.7	48.0	34.2	27.9	53.6	46.2	-2.1	-1.8	57	NA	-		
5210	St. John's Street, Huntingdon	65.8	58.0	38.5	32.0	65.4	57.3	-0.4	-0.7	64	NA	-		
5218	Walden Road, Huntingdon	63.7	56.0	40.4	33.8	63.2	55.3	-0.5	-0.7	66	NA	-		

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5219	Walden Grove, Huntingdon	63.9	56.0	54.1	46.7	55.3	47.8	-8.6	-8.2	0	BA	-	No	ON-C12(BA)
5222	Brampton Road, Huntingdon	66.7	59.0	50.2	43.0	65.0	57.0	-1.7	-2.0	6	BA	-	No	ON-C12(BA)
5223	Brampton Road, Huntingdon	67.7	60.0	59.6	51.8	60.3	52.6	-7.4	-7.4	78	BA	-	No	ON-C12(BA)
5225	Brampton Road, Huntingdon	67.5	59.0	44.1	37.3	65.8	57.7	-1.7	-1.3	9	BA	-	No	ON-C12(BA)
5231	The Walks North, Huntingdon	66.8	59.0	35.7	29.4	65.5	57.4	-1.3	-1.6	2	BA	-	No	ON-C12(BA)
5246	Buttermere, Huntingdon	51.1	44.0	33.8	27.5	49.9	42.8	-1.2	-1.2	45	NA	-	-	
5253	Buttermere, Huntingdon	54.1	47.0	27.3	21.3	54.0	46.6	-0.1	-0.4	20	NA	-	-	
5259	Salon Way, Huntingdon	60.1	52.0	31.4	25.2	60.6	52.8	0.5	0.8	26	NA	-	-	
5263	Whinfall Close, Huntingdon	62.1	54.0	23.4	17.6	62.6	54.7	0.5	0.7	20	NA	-	-	
5272	Overwater Close, Huntingdon	60.5	53.0	25.9	20.1	59.9	52.2	-0.6	-0.8	39	NA	-	-	
5277	Lindeth Close, Huntingdon	54.0	47.0	25.6	19.7	53.4	46.0	-0.6	-1.0	23	NA	-	-	
5288	Greendale, Huntingdon	56.5	49.0	28.4	22.4	51.6	44.3	-4.9	-4.7	21	BA	-	No	ON-C11(BA)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5296	Provence Road, Huntingdon	54.7	47.0	34.2	27.9	50.4	43.2	-4.3	-3.8	19	BA	-	No	ON-C11(BA)
5302	Provence Road, Huntingdon	53.8	46.0	33.9	27.6	49.7	42.6	-4.1	-3.4	42	BA	-	No	ON-C11(BA)
5303	Brigland Close, Huntingdon	50.5	43.0	33.6	27.4	47.0	40.0	-3.5	-3.0	17	BA	-	-	~
5306	Bassenthwaite, Huntingdon	51.6	44.0	27.7	21.8	49.6	42.4	-2.0	-1.6	30	NA	-	-	
5311	Salon Way, Huntingdon	53.4	46.0	31.2	25.0	52.9	45.5	-0.5	-0.5	54	NA	-	-	
5316	Orthwaite, Huntingdon	68.3	60.0	35.6	29.3	61.6	53.7	-6.7	-6.3	61	BA	-	No	ON-C11(BA)
5320	Orthwaite, Huntingdon	57.9	50.0	33.4	27.1	52.5	45.2	-5.4	-4.8	35	BA	-	No	ON-C11(BA)
5335	Seathwaite, Huntingdon	68.2	60.0	37.9	31.4	61.0	53.2	-7.2	-6.8	23	BA	-	No	ON-C11(BA)
5338	Orthwaite, Huntingdon	52.6	45.0	34.5	28.2	46.9	39.9	-5.7	-5.1	14	BA	-	No	ON-C11(BA)
5340	Wertheim Way, Huntingdon	55.5	48.0	28.5	22.5	55.0	47.5	-0.5	-0.5	51	NA	-	-	
5354	Ennerdale Close, Huntingdon	54.6	47.0	30.4	24.3	53.3	45.9	-1.3	-1.1	28	NA	-	-	
5362	Seathwaite, Huntingdon	54.9	47.0	36.9	30.4	49.0	41.9	-5.9	-5.1	22	BA	-	No	ON-C11(BA)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5366	Wertheim Way, Huntingdon	53.8	46.0	37.9	31.4	51.1	43.8	-2.7	-2.2	53	BA	-	No	ON-C11(BA)
5370	Wertheim Way, Huntingdon	53.7	46.0	39.3	32.7	50.9	43.7	-2.8	-2.3	69	BA	-	No	ON-C11(BA)
5374	Lake Way, Huntingdon	55.4	48.0	41.8	35.1	56.5	49.0	1.1	1.0	50	NA	-	-	
5385	Skeggles Close, Huntingdon	65.2	57.0	49.0	41.9	58.4	50.8	-6.8	-6.2	32	BA	-	No	ON-C11(BA)
5388	Levers Water, Huntingdon	65.3	57.0	54.1	46.7	58.5	50.9	-6.8	-6.1	68	BA	-	No	ON-C11(BA)
5395	Percy Green Place, Huntingdon	62.2	54.0	54.0	46.6	55.0	47.5	-7.2	-6.5	114	BA	-	No	ON-C11(BA)
5398	Blea Water, Huntingdon	52.9	46.0	38.8	32.2	47.6	40.5	-5.3	-5.5	36	BA	-	No	ON-C11(BA)
5399	Crummock Water, Huntingdon	59.3	52.0	46.8	39.8	59.8	52.0	0.5	0.0	75	NA	-	-	
5401	Hinchingbrooke Road, Brampton	58.4	51.0	47.5	40.4	52.5	45.2	-5.9	-5.8	76	BA	-	No	ON-C10(BA)
5407	Scholars Avenue, Huntingdon	63.0	55.0	57.4	49.8	62.8	54.9	-0.2	-0.1	50	NA	-	-	
5413	Scholars Avenue, Huntingdon	58.0	50.0	46.5	39.5	57.8	50.1	-0.2	0.1	29	NA	-	-	

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5417	Mill Common, Huntingdon	63.5	56.0	56.0	48.5	56.8	49.2	-6.7	-6.8	8	BA	-	No	ON-C12(BA)
5419	Mill Common, Huntingdon	69.3	61.0	60.6	52.8	60.8	53.0	-8.5	-8.0	6	BA	-	No	ON-C12(BA)
5420	Mill Common, Huntingdon	52.9	46.0	43.0	36.2	44.7	37.8	-8.2	-8.2	7	BA	-	No	ON-C12(BA)
5422	Waters Meet, Huntingdon	53.9	46.0	33.5	27.2	49.0	41.9	-4.9	-4.1	24	BA	-	No	ON-C12(BA)
5426	Mill Common, Huntingdon	63.6	56.0	46.0	39.1	55.6	48.1	-8.0	-7.9	8	BA	-	No	ON-C12(BA)
5429	Bridge Place, Godmanchester	69.4	61.0	37.2	30.7	67.2	59.0	-2.2	-2.0	93	BA	-	No	ON-C12(BA)
5430	Brampton Road, Huntingdon	55.6	48.0	51.0	43.7	55.9	48.4	0.3	0.4	1	NA	-	-	
5431	Brampton Road, Huntingdon	60.0	52.0	59.3	51.6	60.4	52.7	0.4	0.7	1	NA	-	-	
5432	Dyson Close, Huntingdon	51.9	45.0	29.0	23.0	47.7	40.7	-4.2	-4.3	43	BA	-	No	ON-C09(BA)
5433	Christie Drive, Huntingdon	51.7	44.0	31.4	25.2	47.7	40.7	-4.0	-3.3	67	BA	-	No	ON-C09(BA)
5436	The Glades, Huntingdon	51.3	44.0	32.1	25.9	47.1	40.1	-4.2	-3.9	22	BA	-	No	ON-C09(BA)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5441	Parkway, Huntingdon	59.5	52.0	36.6	30.2	60.1	52.4	0.6	0.4	2	NA	-	-	
5442	Christie Drive, Huntingdon	61.6	54.0	36.6	30.2	61.9	54.1	0.3	0.1	14	NA	-	-	
5446	Woodlands, Huntingdon	51.2	44.0	35.6	29.3	47.1	40.1	-4.1	-3.9	18	BA	-	No	ON-C09(BA)
5448	The Glades, Huntingdon	55.2	48.0	40.7	34.0	51.2	43.9	-4.0	-4.1	90	BA	-	No	ON-C09(BA)
5451	The Shrubbery, Huntingdon	52.5	45.0	35.4	29.0	48.3	41.2	-4.2	-3.8	57	BA	-	No	ON-C09(BA)
5452	Bliss Close, Huntingdon	65.8	58.0	39.2	32.6	61.5	53.6	-4.3	-4.4	31	BA	-	No	ON-C09(BA)
5458	The Shrubbery, Huntingdon	53.2	46.0	34.1	27.8	48.9	41.8	-4.3	-4.2	100	BA	-	No	ON-C09(BA)
5463	Dyson Close, Huntingdon	59.8	52.0	28.5	22.5	56.0	48.5	-3.8	-3.5	19	BA	-	No	ON-C09(BA)
5466	Parkway, Huntingdon	53.9	46.0	33.6	27.3	51.4	44.1	-2.5	-1.9	96	NA	-	-	
5476	The Avenue, Godmanchester	63.0	55.0	26.3	20.4	58.7	51.0	-4.3	-4.0	6	BA	-	No	ON-C13(BA)
5477	The Avenue, Godmanchester	60.9	53.0	26.5	20.6	56.6	49.1	-4.3	-3.9	3	BA	-	No	ON-C13(BA)

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5482	Pavilion Close, Godmanchester	62.5	55.0	24.1	18.4	58.0	50.4	-4.5	-4.6	57	BA	-	No	ON-C13(BA)
5485	Park Lane, Godmanchester	54.6	47.0	30.5	24.4	50.6	43.4	-4.0	-3.6	20	BA	-	No	ON-C13(BA)
5492	Post Street, Godmanchester	68.7	60.0	26.9	21.0	67.1	59.0	-1.6	-1.0	34	BA	-	No	ON-C13(BA)
5498	Cambridge Street, Godmanchester,	52.4	45.0	30.3	24.2	48.7	41.6	-3.7	-3.4	25	BA	-	No	ON-C13(BA)
5501	Post Street, Godmanchester	69.0	61.0	28.2	22.2	67.4	59.2	-1.6	-1.8	9	BA	-	No	ON-C13(BA)
5511	Fox Grove, Godmanchester	57.1	50.0	28.4	22.4	52.7	45.4	-4.4	-4.6	48	BA	-	No	ON-C13(BA)
5516	Rectory Gardens, Godmanchester	69.7	61.0	26.1	20.3	65.0	57.0	-4.7	-4.0	5	BA	-	No	ON-C13(BA)
5517	Rectory Gardens, Godmanchester	67.6	59.0	18.2	12.8	63.1	55.2	-4.5	-3.8	75	BA	-	No	ON-C13(BA)
5518	Fox Grove, Godmanchester	59.6	52.0	26.5	20.6	55.1	47.6	-4.5	-4.4	7	BA	-	No	ON-C13(BA)
5527	Cambridge Road, Godmanchester	69.7	61.0	24.5	18.7	64.4	56.4	-5.3	-4.6	4	BA	-	No	ON-C13(BA)

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5537	East Chadley Lane, Godmanchester	54.0	47.0	29.2	23.1	49.8	42.7	-4.2	-4.3	56	BA	-	No	ON-C13(BA)
5544	Cambridge Street, Godmanchester	65.2	57.0	28.2	22.2	64.0	56.1	-1.2	-0.9	174	NA	-	-	
5549	The Stiles, Godmanchester	48.7	42.0	35.6	29.3	45.7	38.7	-3.0	-3.3	178	BA	-	No	ON-C13(BA)
5554	Tudor Road, Godmanchester	57.4	50.0	29.4	23.3	56.3	48.8	-1.1	-1.2	72	NA	-	-	
5559	Field Walk, Godmanchester	54.5	47.0	34.3	28.0	53.7	46.4	-0.8	-0.6	285	NA	-	-	
5563	Cambridge Road, Godmanchester	66.7	59.0	23.3	17.6	62.6	54.7	-4.1	-4.3	40	BA	-	No	ON-C13(BA)
5566	Cambridge Road, Godmanchester	66.6	58.0	23.7	18.0	62.1	54.3	-4.5	-3.7	32	BA	-	No	ON-C13(BA)
5570	Kisby Avenue, Godmanchester	60.0	52.0	24.3	18.5	55.1	47.6	-4.9	-4.4	23	BA	-	No	ON-C13(BA)
5571	Kisby Avenue, Godmanchester	56.9	49.0	23.9	18.2	53.3	45.9	-3.6	-3.1	89	BA	-	No	ON-C13(BA)
5576	Ravenshoe, Godmanchester	60.3	53.0	34.6	28.3	58.8	51.1	-1.5	-1.9	91	NA	-	-	
5579	Dove House Close, Godmanchester	55.2	48.0	30.5	24.4	54.2	46.8	-1.0	-1.2	36	NA	-	-	

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5595	White Hart Lane, Godmanchester	53.4	46.0	26.6	20.7	48.9	41.8	-4.5	-4.2	92	BA	-	No	ON-C13(BA)
5598	Cow Lane, Godmanchester	57.7	50.0	0.0	0.0	53.7	46.4	-4.0	-3.6	1	BA	-	-	~
5600	Cambridge Road, Godmanchester	72.0	64.0	18.6	13.1	67.8	59.6	-4.2	-4.4	1	BA	-	-	~
5603	Cambridge Road, Hemingford Grey	73.2	65.0	42.0	35.3	68.4	60.2	-4.8	-4.8	1	BA	-	-	~
5605	Rideaway, Hemingford Abbots, Huntingdon	55.9	48.0	0.0	0.0	54.0	46.6	-1.9	-1.4	1	NA	-	-	
5609	Cambridge Road, Hemingford Abbots	73.6	65.0	43.0	36.2	68.7	60.5	-4.9	-4.5	1	BA	-	-	~
5612	New Road, Hemingford Abbots	61.8	54.0	44.3	37.4	58.7	51.0	-3.1	-3.0	1	BA	-	-	~
5614	Grove Lane, Hemingford Grey	59.8	52.0	48.5	41.4	56.0	48.5	-3.8	-3.5	2	BA	-	-	~
5615	Cambridge Road, Hemingford Grey	65.9	58.0	47.4	40.3	61.9	54.1	-4.0	-3.9	1	BA	-	-	~
5616	Gore Tree Road, Hemingford Grey	57.9	50.0	40.4	33.8	59.6	51.8	1.7	1.8	1	NA	-	-	
5617	Cambridge Road, Hemingford Grey	73.1	65.0	37.0	30.5	68.1	59.9	-5.0	-5.1	2	BA	-	-	~
5619	Cambridge Road, Hemingford Grey	65.8	58.0	49.1	41.9	61.5	53.6	-4.3	-4.4	1	BA	-	-	~

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		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
5621	Cambridge Road, Hemingford Grey	56.7	49.0	51.1	43.8	55.0	47.5	-1.7	-1.5	2	NA	-	-	
5638	Wertheim Way, Huntingdon	53.7	46.0	33.6	27.4	51.5	44.2	-2.2	-1.8	56	NA	-	-	
15012	St. Margarets Way, Stukeley Meadows Industrial Estate, Huntingdon	48.0	41.0	34.8	28.4	44.0	37.2	-4.0	-3.8	9	BA	-	-	~
15014	Queens Drive, Huntingdon	49.9	43.0	32.4	26.2	47.8	40.8	-2.1	-2.2	71	NA	-	-	
15015	London Road, Godmanchester	65.2	57.1	31.0	24.8	64.3	56.5	-0.9	-0.6	57	NA	-	-	
15016	Croftfield Road, Godmanchester	49.8	43.0	31.4	25.2	46.4	39.4	-3.4	-3.6	29	BA	-	No	ON-C13(BA)
15017	Lions Cross, Godmanchester	51.1	44.0	33.4	27.1	48.5	41.4	-2.6	-2.6	25	BA	-	-	
15018	Parcell Walk, Godmanchester	58.0	50.3	43.8	37.0	57.9	50.5	-0.1	0.2	114	NA	-	-	
15019	Stokes Drive, Godmanchester	52.3	46.0	44.7	37.8	52.0	45.3	-0.3	-0.7	62	NA	-	-	
15020	Stokes Drive, Godmanchester	53.5	46.8	45.0	38.1	52.6	45.8	-0.9	-1.0	74	NA	-	-	
15021	London Road, Godmanchester	60.3	52.2	38.4	31.9	60.0	52.4	-0.3	0.2	35	NA	-	-	
15022	London Road, Godmanchester	64.5	56.1	37.1	30.6	64.3	56.5	-0.2	0.4	34	NA	-	-	
15023	Hudpool, Godmanchester	51.2	44.5	45.5	38.5	50.8	44.3	-0.4	-0.2	108	NA	-	-	
15024	Crowhill, Godmanchester	59.8	52.2	44.8	37.9	59.5	51.9	-0.3	-0.3	103	NA	-	-	

Assessment location ID	Area represented	Impact assessment								Significance criteria				
		Noise level dBL _{pAeq}								Number of residential	Type of effect	Noise Insulation?	Direct effect?	Significant effect code
		Without scheme 2020		With scheme (scheme roads only) 2035		Total with scheme 2035		Change (long-term)						
		Day	Night	Day	Night	Day	Night	Day	Night					
15025	London Road, Godmanchester	63.4	56.1	38.6	32.0	62.9	55.1	-0.5	-1.0	19	NA	-	-	
15026	Roman Way, Godmanchester	59.0	51.0	41.7	35.0	60.7	52.9	1.7	1.9	60	NA	-	-	
15029	Grainger Avenue, Godmanchester	50.9	44.5	40.0	33.4	49.3	43.1	-1.6	-1.4	108	NA	-	-	
15030	Malconiddlemiss View, Godmanchester	50.9	44.5	43.8	37.0	50.6	44.2	-0.3	-0.3	35	NA	-	-	
15031	Bergamont Close, Godmanchester	52.4	46.0	44.2	37.4	52.1	45.3	-0.3	-0.7	40	NA	-	-	
15032	Golden Rod, Godmanchester	52.1	45.2	44.3	37.4	51.8	45.1	-0.3	-0.1	80	NA	-	-	
15033	London Road, Godmanchester	50.7	44.0	40.3	33.7	48.3	41.2	-2.4	-2.8	1	NA	-	-	
15931	Meadow Way, Godmanchester	65.5	57.0	24.3	18.5	64.4	56.4	-1.1	-0.6	23	NA	-	-	
15950	London Road, Godmanchester	56.4	49.4	45.3	38.3	55.7	48.5	-0.7	-0.9	1	NA	-	-	

Note 1 - See "Section 6: Huntingdon Improvement: Residential receptors: indirect effects – communities" for discussion.

Table 3.19: Operational airborne noise level, impacts and effects at non- residential receptors – Section 6: Huntingdon improvements – base scheme

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
891	Ambulance Station, Brampton (Medical)	54.2	47.0	53.6	46.2	-0.6	-0.8	2	NA	-	
891	Hinchingbrooke Hospital, Hinchingbrooke (Medical)	54.2	47.0	53.6	46.2	-0.6	-0.8	2	NA	-	
893	Nursery, Huntingdon (Nursery)	56.7	49.0	52.6	45.3	-4.1	-3.7	1	BA	No	ON-N07 (BA)
950	Roman Gate Surgery, Godmanchester (Medical)	64.6	57.0	63.7	55.7	-0.9	-1.3	1	BA	-	
952	Clarence House Nursery, Godmanchester (Nursery)	64.8	57.0	64.9	56.9	0.1	-0.1	1	NA	-	
962	Ambury Road Day Centre, Huntingdon (Nursery)	50.0	43.0	48.1	41.0	-1.9	-2.0	5	NA	-	
962	Huntingdon Junior School, Huntingdon (Education)	50.0	43.0	48.1	41.0	-1.9	-2.0	5	NA	-	
962	Hearing Support Unit, Huntingdon (Office)	50.0	43.0	48.1	41.0	-1.9	-2.0	5	NA	-	
967	Priority Fields Medical Centre, Huntingdon (Medical)	65.8	58.0	65.7	57.6	-0.1	-0.4	2	NA	-	
967	Doctors Surgery, Huntingdon (Medical)	65.8	58.0	65.7	57.6	-0.1	-0.4	2	NA	-	
968	Chapel, Huntingdon (Church)	62.4	55.0	63.1	55.2	0.7	0.2	1	NA	-	
983	St Michael's Church, Huntingdon (Church)	65.5	57.0	65.3	57.3	-0.2	0.3	1	NA	-	
986	Huntingdon Community Centre, Huntingdon (Community Centre)	51.7	44.0	50.2	43.0	-1.5	-1.0	1	NA	-	
987	Mother Goose Corner Nursery, Huntingdon (Nursery)	49.9	43.0	47.8	40.8	-2.1	-2.2	1	NA	-	

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
988	St. Peter's School, Huntingdon (Education)	51.7	44.0	50.6	43.4	-1.1	-0.6	1	NA	-	
989	Farm Hall Ltd, Godmanchester (Office)	68.4	60.0	69.3	61.0	0.9	1.0	1	NA	-	
1111	The Environment Agency, Brampton (Office)	55.4	48.5	53.9	46.9	-1.5	-1.6	1	NA	-	
5004	The George Hotel, Huntingdon (Hotel)	57.1	50.0	55.6	48.1	-1.5	-1.9	1	NA	-	
5013	Stukeley Meadows Primary School (Education)	53.2	46.0	47.0	40.0	-6.2	-6.0	1	BA	No	ON-N08 (BA)
5014	Conservative Association, Huntingdon (Office)	66.6	58.0	67.9	59.8	1.3	1.8	1	A	-	
5017	A B Joinery, Huntingdon (Office)	58.2	51.0	59.0	51.3	0.8	0.3	1	NA	-	
5043	Huntingdon & Godmanchester Indoor Bowls Club (Sports facility)	63.9	56.0	65.3	57.3	1.4	1.3	1	A	-	
5062	Montagu Working Men's Club, Huntingdon (Community hall)	49.6	42.0	47.1	40.1	-2.5	-1.9	1	NA	-	
5073	Huntingdon Masonic Hall (Community hall)	49.7	42.0	46.2	39.3	-3.5	-2.7	1	BA	-	#
5082	Space Gallery, Huntingdon (Gallery)	53.3	46.0	52.5	45.2	-0.8	-0.8	5	NA	-	
5082	Natwest, Huntingdon (Office)	53.3	46.0	52.5	45.2	-0.8	-0.8	5	NA	-	
5082	Interaction Recruitment, Huntingdon (Office)	53.3	46.0	52.5	45.2	-0.8	-0.8	5	NA	-	
5082	Technical Personnel Ltd, Huntingdon (Office)	53.3	46.0	52.5	45.2	-0.8	-0.8	5	NA	-	
5082	First Choice Recruitment, Huntingdon (Office)	53.3	46.0	52.5	45.2	-0.8	-0.8	5	NA	-	

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
5083	Lightning Recruitment, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Thomas Morris Estate Agents, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Meridian Business Support, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Kirton Construction Ltd, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Peter Lane & Partners, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Peter Lane Lettings, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Muir Group Housing Association Ltd (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Positive Solutions, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	Positive Solutions, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5083	British Telecom, Huntingdon (Office)	65.9	58.0	65.6	57.5	-0.3	-0.5	10	NA	-	
5092	Huntingdonshire Community Church (Church)	50.7	44.0	48.9	41.8	-1.8	-2.2	1	NA	-	
5102	All Saints' Church, Huntingdon (Church)	46.6	40.0	43.2	36.4	-3.4	-3.6	1	BA	-	#
5106	Chequer's Court, Huntingdon (Office)	63.3	55.0	63.1	55.2	-0.2	0.2	10	NA	-	
5115	Task Force, Huntingdon (Office)	49.3	42.0	49.1	41.9	-0.2	-0.1	2	NA	-	
5115	Market Inn, Huntingdon (Hotel)	49.3	42.0	49.1	41.9	-0.2	-0.1	2	NA	-	
5117	Addaction, Huntingdon (Medical)	51.7	44.0	47.2	40.1	-4.5	-3.9	1	BA	-	#

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
5118	County Council offices, Huntingdon (Office)	65.5	57.0	65.1	57.1	-0.4	0.1	5	NA	-	
5121	High Street, Huntingdon (Office)	56.2	49.0	51.3	44.0	-4.9	-5.0	10	BA	-	#
5130	Huntingdonshire District Council, Huntingdon (Office)	61.4	54.0	55.7	48.2	-5.7	-5.8	1	S	No	ON-N10 (BA)
5147	Commemoration Hall, Huntingdon (Community Hall)	53.7	46.0	47.7	40.6	-6.0	-5.4	1	BA	No	ON-N10 (BA)
5152	Hartford Road, Huntingdon (Office)	52.5	45.0	50.6	43.4	-1.9	-1.6	2	NA	-	
5161	Cambridgeshire Fire & Rescue Service, Huntingdon (Fire Station)	58.4	51.0	57.9	50.3	-0.5	-0.7	2	NA	-	
5161	Oak Foundation, Huntingdon (Office)	58.4	51.0	57.9	50.3	-0.5	-0.7	2	NA	-	
5163	Purvis Marine Boatyard, Huntingdon (Marina)	56.9	49.0	55.2	47.7	-1.7	-1.3	2	NA	-	
5163	Huntingdon Boat Club, Huntingdon (Community Hall)	56.9	49.0	55.2	47.7	-1.7	-1.3	2	NA	-	
5176	Various businesses, Huntingdon (Office)	48.0	41.0	43.2	36.4	-4.8	-4.6	3	BA	-	#
5197	Huntingdon Mencap Society, Huntingdon (Office)	55.7	48.0	53.6	46.2	-2.1	-1.8	3	NA	-	
5197	Horizon I T Consulting Services Ltd, Huntingdon (Office)	55.7	48.0	53.6	46.2	-2.1	-1.8	3	NA	-	
5202	Old Bridge Hotel, Huntingdon (Hotel)	67.0	59.0	65.1	57.1	-1.9	-1.9	1	BA	-	
5207	High Street, Huntingdon (Office)	46.7	40.0	42.1	35.4	-4.6	-4.6	2	BA	-	#
5208	St Mary's Church, Huntingdon (Church)	52.6	45.0	47.7	40.7	-4.9	-4.3	1	BA	No	ON-N10 (BA)

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
5210	Cambridgeshire County Council, Huntingdon (Office)	65.8	58.0	65.4	57.3	-0.4	-0.7	5	BA	-	
5210	Cromwell Veterinary Group, Huntingdon (Medical)	65.8	58.0	65.4	57.3	-0.4	-0.7	5	BA	-	
5210	Cambridgeshire Constabulary, Huntingdon (Office)	65.8	58.0	65.4	57.3	-0.4	-0.7	5	BA	-	
5214	Cromwell Museum, Huntingdon (Museum)	47.9	41.0	44.0	37.2	-3.9	-3.8	1	BA	-	#
5215	Just Learning, Huntingdon (Education)	67.6	59.0	67.2	59.0	-0.4	0.0	2	NA	-	
5215	Mymar Training, Huntingdon (Office)	67.6	59.0	67.2	59.0	-0.4	0.0	2	NA	-	
5222	Dental Surgery, Huntingdon (Medical)	66.7	59.0	65.0	57.0	-1.7	-2.0	1	BA	-	
5226	Wensleydale Dental Practice, Huntingdon (Medical)	61.8	54.0	54.1	46.7	-7.7	-7.3	0	BA	No	ON-N10 (BA)
5234	Huntingdon & Peterborough Federation Of Women's Institute, Huntingdon (Office)	56.8	49.0	51.5	44.2	-5.3	-4.8	1	BA	-	#
5235	Huntingdon Spiritualist Church, Huntingdon (Church)	66.5	58.0	64.8	56.8	-1.7	-1.2	1	S	-	
5400	Hinchingbrooke Hospital, Huntingdon (Medical)	57.9	50.0	51.8	44.6	-6.1	-5.4	1	BA	No	ON-N09 (BA)
5403	Cambridgeshire Constabulary, Huntingdon (Office)	56.1	49.0	61.0	53.2	4.9	4.2	1	A	Yes	ON-N05 (S)
5405	Cambridgeshire Fire & Rescue Service, Huntingdon (Fire station)	63.2	55.0	57.9	50.3	-5.3	-4.7	1	BA	No	ON-N06 (BA)
5429	Select Travel, Huntingdon (Office)	69.4	61.0	67.2	59.0	-2.2	-2.0	1	BA	-	
5430	Hinchingbrooke School, Huntingdon (Education)	55.6	48.0	55.9	48.4	0.3	0.4	1	NA	-	

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
5440	The Forensic Science Service, Hinchingsbrooke (Office)	53.3	46.0	52.6	45.3	-0.7	-0.7	2	NA	-	
5440	Forensic Science Lab, Huntingdon (Research Lab)	53.3	46.0	52.6	45.3	-0.7	-0.7	2	NA	-	
5441	Cromwell Park Primary School (Education)	59.5	52.0	60.1	52.4	0.6	0.4	1	NA	-	
5464	Just Learning Nursery, Hinchingsbrooke Business Park (Nursery)	58.8	51.0	55.6	48.1	-3.2	-2.9	1	BA	No	ON-N07 (BA)
5469	Hinchingsbrooke Business Park (Office)	61.8	54.0	55.6	48.1	-6.2	-5.9	3	BA	No	ON-N07 (BA)
5470	Hinchingsbrooke Business Park (Office)	59.5	52.0	58.5	50.9	-1.0	-1.1	1	NA	-	
5471	Hinchingsbrooke Business Park (Office)	68.8	61.0	61.8	53.9	-7.0	-7.1	1	BA	No	ON-N07 (BA)
5473	The Huntingdon Marriott Hotel (Hotel)	68.8	61.0	64.6	56.6	-4.2	-4.4	1	BA	No	ON-N07 (BA)
5486	Godmanchester Primary School (Education)	52.1	45.0	48.3	41.2	-3.8	-3.8	1	BA	-	#
5497	Godmanchester Baptist Church (Church)	54.8	47.0	50.4	43.2	-4.4	-3.8	1	BA	No	ON-N11 (BA)
5501	Godmanchester Town Council (Office)	69.0	61.0	67.4	59.2	-1.6	-1.8	1	BA	-	
5537	Jacowe Joinery, Godmanchester (Office)	54.0	47.0	49.8	42.7	-4.2	-4.3	1	BA	-	#
5538	Huntingdon Community Centre (Community Centre)	54.1	47.0	49.9	42.8	-4.2	-4.2	1	BA	No	ON-N11 (BA)
5549	Godmanchester Comrades Club (Office)	48.7	42.0	45.7	38.7	-3.0	-3.3	2	BA	-	#
5549	Gatehouse Estates Property Management Ltd, Godmanchester (Office)	48.7	42.0	45.7	38.7	-3.0	-3.3	2	BA	-	#

Assessment location ID	Receptor type	Impact assessment						Significance criteria			Significant effect code
		Noise level dBL _{pAeq}						Number of properties	Type of effect	Direct effect?	
		Without scheme 2020		Total with scheme 2035		Change (long-term)					
		Day	Night	Day	Night	Day	Night				
5559	The Exhibition, Godmanchester (Office)	54.5	47.0	53.7	46.4	-0.8	-0.6	1	NA	-	
5591	Cardinal Park, Godmanchester (Office)	69.4	61.0	64.0	56.1	-5.4	-4.9	1	BA	No	ON-N12 (BA)
5592	Smith & Nephew Healthcare Ltd, Godmanchester (Office)	55.8	48.0	51.8	44.6	-4.0	-3.4	1	BA	-	#
5593	Benchmark Services Ltd, Godmanchester (Office)	54.6	47.0	49.6	42.4	-5.0	-4.6	1	BA	-	#
5603	T P Golf Management, Hemingford Abbots (Office)	73.2	65.0	68.4	60.2	-4.8	-4.8	1	BA	No	ON-N13 (BA)
5606	Hemingford Nursery School (Nursery)	56.8	49.0	52.5	45.2	-4.3	-3.8	1	BA	No	ON-N13 (BA)

Residential receptors: direct effects – individual dwellings

- 3.7.2 Taking account of the avoidance and mitigation measures integrated into the mitigated scheme, no residential dwellings are predicted to experience a significant impact on health and quality of life (i.e. noise levels higher than the relevant significant observed adverse effect level defined in *Appendix 14.3*), as a result of the proposed scheme.
- 3.7.3 Therefore no significant observed adverse direct effects are identified at individual dwellings in this section

Residential receptors: direct effects – communities

- 3.7.4 In this section there are no adverse effects on health or quality of life on residential communities predicted to arise directly from the scheme.
- 3.7.5 Therefore no likely significant adverse direct effects are identified at communities in this section.

Residential receptors: indirect effects – communities

- 3.7.6 At the western periphery of Stukeley Meadows approximately 450 properties have been identified as being subject to a minor or moderate beneficial indirect noise effect, as a result of the reduction in road traffic and hence noise on the A14 through Huntingdon. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant beneficial effect, and is identified as ON-C09 (BA) on *Figure 14.5*.
- 3.7.7 At the north-west edge of Hinchingsbrooke approximately 80 properties have been identified as being subject to a moderate beneficial indirect noise effect, as a result of the reduction in road traffic and hence noise on the A14 through Huntingdon. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant beneficial effect, and is identified as ON-C10 (BA) on *Figure 14.5*.
- 3.7.8 At Stukeley Meadows approximately 600 properties have been identified as being subject to a minor, moderate or major beneficial indirect noise effect, as a result of the reduction in road traffic and hence noise on the A14 through Huntingdon. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant effect, and is identified as ON-C11 (BA) on *Figure 14.5*.

- 3.7.9 At the western edge of Huntingdon town centre, on Ermine Street and Stukeley Road approximately 80 properties have been identified as being subject to a minor adverse indirect noise effect. The increase in road traffic noise at these locations is not as a result of the scheme, but through natural growth in road traffic flow between 2020 and 2035. Considering the source of the impact the effect at these dwellings is not considered significant.
- 3.7.10 At the centre of Huntingdon in the vicinity of Castle Hill, Prince's Street, Alder Drive and Sayer Street approximately 600 properties have been identified as being subject to a minor, moderate or major beneficial indirect noise effect, as a result of the reduction in road traffic and hence noise on the A14 through Huntingdon. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, the overall this is considered to be a likely significant effect, and is identified as ON-C12 (BA) on *Figure 14.5*.
- 3.7.11 The northern part of Godmanchester approximately 800 properties in the vicinity of the A14 have been identified as being subject to a minor or moderate beneficial indirect noise effect, as a result of the reduction in road traffic and hence noise on the A14. These effects are likely to be considered by the local community as beneficial effects on the acoustic character of the area such that there is a perceived change in the quality of life. Considering the impact on the noise amenity outside the dwellings, the number of impacts and the grouping of impacts, and the current baseline noise levels, overall this is considered to be a likely significant effect, and is identified as ON-C13 (BA) on *Figure 14.5*.

Non-residential receptors: direct effects

- 3.7.12 The results of the assessment on non-residential buildings are presented in *Table 3.19*. The assessment has identified adverse airborne noise impacts at Cambridgeshire Constabulary Headquarters, represented by receptor references 5403.
- 3.7.13 The assessment has identified beneficial airborne noise impacts at the Cambridgeshire Fire and Rescue Service, represented by receptor references 5405.

Cambridgeshire Constabulary Headquarters

- 3.7.14 A moderate adverse impact has been identified based upon the change in the airborne noise level on the offices, reference 5403. The change in airborne noise level is as a result of the introduction of a new road to the rear of the Cambridgeshire Constabulary Headquarters. An assessment has been undertaken to determine if this impact would result in a likely significant adverse noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.7.15 The building is primarily office accommodation over 3 storeys, the windows are believed to be double glazed and ventilation is provided by opening the windows.

- 3.7.16 Further assessment has confirmed the operational noise impact and likely significant adverse noise effect at the on the northern façade of the Cambridgeshire Constabulary Headquarters, denoted by ON-N05(S) in *Table 3.19* and *Figure 14.5*. This may take the form of the disturbance of activities inside the office spaces of the building.

Non-residential receptors: indirect effects

- 3.7.17 The assessment has identified beneficial indirect airborne noise impacts at non-residential receptors / areas:

- Cambridgeshire Fire and Rescue Service;
- Hinchingsbrooke Business Park;
- Stukeley Meadows Primary School;
- Hinchingsbrooke Hospital;
- Central Huntingdon;
- Godmanchester;
- Cardinal Park; and,
- Hemingford.

Cambridgeshire Fire and Rescue Service

- 3.7.18 A moderate beneficial impact has been identified based upon the change in the airborne noise level outside the Cambridgeshire Fire and Rescue Service fire station, reference 5405. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor using the significance criteria detailed in *Appendix 14.3*.

- 3.7.19 The fire station is a three storey building, and the windows are believed to be double glazed and ventilation is provided by opening the windows.

- 3.7.20 Further assessment work has confirmed the operational noise impact and likely significant beneficial noise effect, denoted by ON-N06(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption to sleep disturbance during the night-time and office activities during the daytime due to external road traffic noise.

Hinchingsbrooke Business Park

- 3.7.21 Minor and moderate beneficial impacts have been identified based upon the change in the airborne noise level at the Hinchingsbrooke Business Park, reference 893, 5464, 5469, 5471 and 5473. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*. The business park includes The Huntingdon Marriott Hotel, two nurseries and offices.

3.7.22 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N07(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in reported sleep disturbance during the night-time at the hotel and internal activities during the daytime at all buildings, due to external road traffic noise.

Stukeley Meadows Primary School

3.7.23 A moderate beneficial impact has been identified based upon the change in the airborne noise level outside the Stukeley Meadow Primary School, reference 5013. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.

3.7.24 The school is a single storey building, and the windows are believed to be double glazed and ventilation is provided by opening the windows.

3.7.25 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N08(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption to internal and external school activities due to external road traffic noise.

Hinchingbrooke Hospital

3.7.26 A moderate beneficial impact has been identified based upon the change in the airborne noise level outside the Hinchingbrooke Hospital, reference 5400. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.

3.7.27 The hospital is a two or three single storey collection of buildings, and the windows are believed to be generally double glazed and ventilation is provided to some areas by opening the windows.

3.7.28 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N09(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption to internal and external activities due to external road traffic noise.

Central Huntingdon

3.7.29 Minor and moderate beneficial impacts have been identified based upon the change in the airborne noise level at the non-residential receptors in the centre of Huntingdon, represented by receptor reference 5130, 5147, 5208, 5214, 5226 and 5234. These receptors represent the following:

- St Mary's Church;
- Commemoration Hall;
- Wensleydale Dental Practice, George Street;

- Huntingdon District Council offices, Pathfinder House, Castle Hill; and
 - Cambridgeshire County Council offices, Centenary House.
- 3.7.30 An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.7.31 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N10(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption of internal activities during the daytime at all buildings, due to external road traffic noise.

Godmanchester

- 3.7.32 Minor beneficial impacts have been identified based upon the change in the airborne noise level at the non-residential receptors in the centre of Huntingdon, represented by receptor reference 5497 and 5538. These receptors represent the following:
- Godmanchester Baptist Church; and,
 - Godmanchester community centre
- 3.7.33 An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.7.34 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N11(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption of internal activities during the day-time at all buildings, due to external road traffic noise.

Cardinal Park

- 3.7.35 A moderate beneficial impact has been identified based upon the change in the airborne noise level outside the offices within Cardinal Park, reference 5592 and 5593. An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at this non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.7.36 The business units are occupied by Smith and Nephew Healthcare Limited and Benchmark Services Limited, and the units are 2 storey industrial buildings, and the windows are believed to be double glazed and ventilation is provided by opening the windows.
- 3.7.37 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N12(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption to internal office activities due to external road traffic noise.

Hemingford

- 3.7.38 Minor and major beneficial impacts have been identified based upon the change in the airborne noise level outside the Hemingford Nursery School and T P Golf Management offices references 5603 and 5606.
- 3.7.39 An assessment has been undertaken to determine if this impact would result in a likely significant beneficial noise effect at these non-residential receptor, using the significance criteria detailed in *Appendix 14.3*.
- 3.7.40 The nursery school and office are single storey buildings, and the windows are believed to be double glazed with ventilation provided by opening the windows.
- 3.7.41 Further assessment work that has been undertaken confirms the operational noise impact and likely significant beneficial noise effect, denoted by ON-N13(BA) in *Table 3.19* and *Figure 14.5*. This may take the form of a reduction in disruption to internal and external activities due to external road traffic noise.

Important Areas

- 3.7.42 In January 2014 DEFRA published its *Noise Action Plan: Road (Including Major Roads)* in response to the *Environmental Noise (England) Regulations 2006*, which defines Important Areas.
- 3.7.43 The Highways Agency is required to investigate Important Areas.
- 3.7.44 Several of these Important Areas fall within the study area for this assessment. The Highways Agency is therefore investigating and assessing possible noise mitigation at these locations as part of the scheme.
- 3.7.45 Ten Important Areas fall within this section: Highways Agency's ID refs 5150, 6116, 6185, 12131, 5149, 6115, 5147, 11743, 5146 and 11744. All of the above Important Areas are alongside the existing A14, which would be significantly de-trafficked as part of the scheme, resulting in reductions in noise levels. For this reason, no further mitigation is considered for these Important Areas.

Committed developments

- 3.7.46 Committed developments which are sensitive to noise impacts are displayed on *Figure 14.1*.
- 3.7.47 Committed developments CD1, CD4, CD16 and CD17 would be subject to minor to moderate beneficial impacts as a result of the scheme.
- 3.7.48 CD18 would be subject to minor adverse impacts as a result of the scheme.

Summary of likely significant effects

- 3.7.49 A summary of likely significant effects identified in Section 6: Huntingdon improvements on residential and non-residential receptors is presented below in *Tables 3.20* and *3.21* respectively.

Table 3.20: Summary of likely significant effects on residential receptors, Section 6: Huntingdon improvements

Significant effect number (see Figure 14.5)	Source of significant effect	Time of day	Location of details
ON-C09(BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Day-time and night-time	Approximately 450 dwellings on the western periphery of Hinchingsbrooke. Predicted reduction in noise from road traffic which is likely to cause a minor or moderate beneficial effect on the acoustic character of the area around the closest properties. This is also identified as an Important Area.
ON-C10(BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Day-time and night-time	Approximately 80 dwellings to the east of Hinchingsbrooke Hospital close to the existing A14. Predicted reduction in noise from road traffic which is likely to cause a minor or moderate beneficial effect on the acoustic character of the area around the closest properties.
ON-C11(BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Day-time and night-time	Approximately 600 dwellings at Stukeley Meadows close to the existing A14. Predicted reduction in noise from road traffic which is likely to cause a minor, moderate or major beneficial effect on the acoustic character of the area around the closest properties.
ON-C12(BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Day-time and night-time	Approximately 600 dwellings in the centre of Huntingdon on Castle Hill, Prince's Street, Alder Drive and Sayer Street. Predicted reduction in noise from road traffic which is likely to cause a minor, moderate or major beneficial effect on the acoustic character of the area around the closest properties.
ON-C13(BA)	Airborne noise <u>reduction</u> in road traffic noise (indirect)	Day-time and night-time	Approximately 800 dwellings in northern Godmanchester. Predicted reduction in noise from road traffic which is likely to cause a minor or moderate beneficial effect on the acoustic character of the area around the closest properties.

Table 3.21: Summary of likely significant effects on non-residential receptors, Section 6: Huntingdon improvements

Significant effect number (see Figure 14.5)	Type of effect and source	Time of the day	Location and details
ON-N05 (S)	Increase in road traffic noise (direct)	Day	Cambridgeshire Constabulary Headquarters: Moderate adverse risk of disturbance of office activities due to increase in external road traffic noise.
ON-N06 (BA)	Decrease in road traffic noise (indirect)	Day	Cambridgeshire Fire and Rescue Service: Moderate reduction in the risk that office activities would be disturbed by external road traffic noise.
	Decrease in road traffic noise (indirect)	Night	Cambridgeshire Fire and Rescue Service: Moderate reduction in the risk that sleep would be disturbed by external road traffic noise.
ON-N07 (BA)	Decrease in road traffic noise (indirect)	Day	Hinchingbrooke Business Park: Minor and moderate reduction in the risk that internal activities would be disturbed by external road traffic noise levels.
	Decrease in road traffic noise (indirect)	Night	Huntingdon Marriott Hotel: Minor reduction in the risk that sleep would be disturbed by external road traffic noise.
ON-N08 (BA)	Decrease in road traffic noise (indirect)	Day	Stukeley Meadow Primary School: Moderate reduction in the risk that educational activities would be disturbed by external road traffic noise.
ON-N09 (BA)	Decrease in road traffic noise (indirect)	Day	Hinchingbrooke Hospital: Moderate reduction in the risk that internal activities would be disturbed by external road traffic noise.
	Decrease in road traffic noise (indirect)	Night	Hinchingbrooke Hospital: Moderate reduction in the risk that sleep would be disturbed by external road traffic noise.
ON-N10 (BA)	Decrease in road traffic noise (indirect)	Day	Central Huntingdon: Moderate reduction in the risk of internal activities being disturbed by external road traffic noise.
ON-N11 (BA)	Decrease in road traffic noise (indirect)	Day	Godmanchester Baptist Church and Community Centre: Minor reduction in the risk that internal activities would be disturbed by external road traffic noise.

Significant effect number (see <i>Figure 14.5</i>)	Type of effect and source	Time of the day	Location and details
ON-N12 (BA)	Decrease in road traffic noise (indirect)	Day	Cardinal Park: Moderate reduction in the risk that internal activities would be disturbed by external road traffic noise.
ON-N13 (BA)	Decrease in road traffic noise (indirect)	Day	Hemingford: Minor and moderate reduction in the risk that activities would be disturbed by external road traffic noise.

4 Summary outputs as defined in DMRB

4.1 Noise change summary tables

4.1.1 *Table 4.1* provides the reporting table for natural traffic growth without the scheme and shows correspondingly small increases in noise levels that would occur.

Table 4.1: Long-term traffic noise reporting table out (*DMRB Table A1.2*)

Project/option:		A14 Cambridge to Huntingdon improvement scheme - Natural growth without scheme (rounded to the nearest 10)		
Scenario/comparison:		Do-minimum 2020 and do-minimum 2035		
Change in noise level		Day-time		Night-time
		Number of dwellings	Number of other sensitive receptors	Number of dwellings
Increase in noise level, $L_{pA10,18hr}$	0.1 - 2.9	20,210	310	8,630
	3 - 4.9	0	0	120
	5 - 9.9	0	0	0
	10 +	0	0	0
No change	0	1,080	20	12,970
Decrease in noise level, $L_{pA10,18hr}$	0.1 - 2.9	430	10	10
	3 - 4.9	0	0	0
	5 - 9.9	0	0	0
	10 +	0	0	0

4.1.2 Based on the noise modelling results, *Tables 4.2 and 4.3* give a summary of noise level changes at dwellings and other sensitive receptors in the short and long term across the entire study area with the scheme. The noise change bands shown in each table correspond to the *DMRB* classification of magnitude of impact at each receptor shown in *Chapter 14 of the ES: Tables 14.6 and 14.7*.

4.1.3 In general, the majority of properties would be subject to a decrease in traffic noise in the short and long-term.

4.1.4 Most 'other' sensitive receptors (using the *DMRB* terminology for non-residential receptors) have negligible impacts in the short and long-term.

Table 4.2: Short-term traffic noise reporting table (DMRB Table A1.1)

Project/option:		A14 Cambridge to Huntingdon improvement scheme – Base (rounded to the nearest 10)	
Scenario/comparison:		Do-minimum 2020 and do-something 2020	
Change in noise level		Day-time	
		Number of dwellings	Number of other sensitive receptors
Increase in noise level, $L_{pA10,18hr}$	0.1 - 0.9	4,750	70
	1.0 - 2.9	3,910	30
	3 - 4.9	390	0
	5 +	70	0
No Change		0	10
Decrease in noise level, $L_{pA10,18hr}$	0.1 - 0.9	4,100	70
	1 - 2.9	4,070	90
	3 - 4.9	2,130	30
	5 +	1,210	30

Table 4.3: Long-term traffic noise reporting table with scheme (DMRB Table A1.2)

Project/option:		A14 Cambridge to Huntingdon improvement scheme – Base (rounded to the nearest 10)			
Scenario/comparison:		Do-minimum 2020 and do-something 2035			
Change in noise level		Day-time		Night-time	
		Number of dwellings	Number of other sensitive receptors	Number of dwellings	
Increase in noise level, $L_{pA10,18hr}$	0.1 - 2.9	11,000	130	10,670	
	3 - 4.9	590	0	420	
	5 - 9.9	70	0	10	
	10 +	10	0	0	
No Change		0	480	0	600
Decrease in noise level, $L_{pA10,18hr}$	0.1 - 2.9	6,640	140	7,300	
	3 - 4.9	2,090	30	1,980	
	5 - 9.9	850	30	740	
	10 +	10	0	0	

Nuisance assessment

- 4.1.5 As part of the *DMRB* detailed assessment, noise nuisance and airborne vibration nuisance reporting tables must be provided. Nuisance level is presented as the percentage of people bothered by traffic noise. The method of calculating nuisance level is described in the *DMRB*. The tables show the change in the percentage of people bothered by traffic noise at dwellings for the 'do-minimum' and 'do-something' scenarios and are presented for the scheme in *Table 4.4* (for noise) and *Table 4.5* (for airborne vibration).
- 4.1.6 In the 'do-minimum' column of *Tables 4.4 and 4.5* the nuisance level represents the change in percentage of people bothered by steady state traffic noise calculated for do-minimum opening and future years. In the do-something column the nuisance level is the greatest change in percentage of people bothered by traffic noise relating to either: the change in steady state noise levels between the do-minimum opening and do-something future years; or the short-term change in noise levels between do-minimum and do-something opening scenarios.

Noise nuisance

- 4.1.7 *Table 4.4* gives the change in percentage of people bothered by traffic noise at all dwellings within the study area for do-minimum and do-something scenarios.
- 4.1.8 For the do-minimum scenario the majority of dwellings are shown to have an increase in nuisance level of less than 10%, corresponding with the generally small increases in traffic flows between opening and future years. There are only 4 dwellings with a decrease in nuisance level. There are no dwellings with a change in nuisance level greater than a 10% increase or decrease.
- 4.1.9 In the do-something scenario there is a considerable number of dwellings with increases in nuisance of over 10%. This includes 3285 dwellings with increases between 10% and 20%; 4324 dwellings between 20% and 30% and 453 dwellings with increases greater than 40%. The category for decrease in nuisance levels of less than 10% has the greatest number of dwellings.
- 4.1.10 The majority of the dwellings showing the higher increases in nuisance level in the do-something scenario are located close to the new alignment where increases in noise level are predicted. The do-something scenario also shows more dwellings than do-minimum with a decrease in nuisance level. The majority the dwelling with decreased nuisance are likely to be located close to the route that would be detrunked, where significant decreases in noise are predicted.

Table 4.4: Traffic noise nuisance reporting table

Project/option:		A14 Cambridge to Huntingdon improvement scheme – Base (rounded to the nearest 10)	
Scenario/comparison:		Do-minimum 2020 and do-something 2035	
Change in noise level		Do-minimum	Do-something
		Number of dwellings	Number of dwellings
Increase in nuisance level	< 10%	6,590	1,930
	10 < 20%	0	3,290
	20 < 30%	0	4,320
	30 < 40%	0	450
	> 40%	0	10
No Change		15,130	4,510
Decrease in nuisance level	< 10%	0	6,800
	10 < 20%	0	390
	20 < 30%	0	40
	30 < 40%	0	0
	> 40%	0	0

Airborne vibration nuisance

- 4.1.11 *DMRB* notes that the relationship between the percentage of people bothered very much or quite a lot by airborne vibration is similar to that for noise nuisance, but the percentage of people bothered by vibration is 10% lower at all exposure levels. *DMRB* also notes that traffic induced vibration affects a very small percentage of people at exposure levels below 58dB_{L_{pA10}} and therefore 0% should be assumed in these cases.
- 4.1.12 *Table 4.5* gives the change in percentage of people bothered by airborne vibration at all dwellings within the study area for do-minimum and do-something scenarios. In accordance with the *DMRB* guidance, airborne vibration nuisance is only considered for dwellings in the study area within 40m of a road.
- 4.1.13 For the do-minimum scenario all dwellings are shown to have no change in nuisance level. In the do-something scenario the majority of dwellings have no change in nuisance levels. There are a number of dwellings with increases in nuisance of over 10% including 695 dwellings with increases between 20 and 30%.
- 4.1.14 The do-something scenario shows more dwellings with increases in nuisance level of higher than 10%. The majority of these dwelling are likely to be located close to the new alignment where increases in noise level are predicted. The do-something scenario also shows more dwellings with a decrease in nuisance level, which are principally due to the de-trunking.

Table 4.5: Traffic airborne vibration nuisance reporting table (DMRB Table A1.4)

Project/option:		A14 Cambridge to Huntingdon improvement scheme – Base (rounded to the nearest 10)	
Scenario/comparison:		Do-minimum 2020 and do-something 2035	
Change in noise level		Do-minimum	Do-something
		Number of dwellings	Number of dwellings
Increase in nuisance level	< 10%	0	750
	10 < 20%	0	700
	20 < 30%	0	0
	30 < 40%	0	0
	> 40%	0	0
No change	0%	21,720	19,900
Decrease in nuisance level	< 10%	0	270
	10 < 20%	0	110
	20 < 30%	0	0
	30 < 40%	0	0
	> 40%	0	0

Assessment of affected routes beyond the calculation area

4.1.15 Table 4.6 gives the basic noise level (BNL) changes of affected routes beyond the study area where an increase in BNL, either short term or long term is predicted as a result of the scheme.

Table 4.6: Basic noise level changes for affected route beyond the operational noise study area where an increase is identified

Road name	No. of dwellings	Change in basic noise level of roads (dB(A))	
		Short term	Long term
Thrapston Road	11	+2.0	+1.6
High Street	30	+1.8	+1.3
Swallowbush Road	93	+1.3	+0.6
Rewongs Way	22	+1.0	+0.3
Elsworth Road	8	+1.0	-0.3

4.1.16 An increase in the short term basic noise level of up to 2 dB(A) is predicted as a result of the proposed scheme, this corresponds to negligible adverse impact, which does not represent a significant effect.

5 Groundborne vibration assessment

- 5.1.1 Groundborne vibration significant effects are considered highly unlikely. This is because, in accordance with highway construction standards including *Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 700 Road pavements – general* (Highways Agency, 2009), the surface of the proposed upgraded roads would be smooth with no surface irregularities of sufficient size to generate significant levels of groundborne vibration. It is a requirement of the specification for new highways that the new road surfaces would be free of significant discontinuities. The size of irregularities necessary to cause perceptible groundborne vibration is only expected in 'exceptional circumstances' as discussed in *Chapter 14 of the ES*. It is considered that no such exceptional circumstances would arise from operation of the scheme.

6 Summary of potential noise insulation regulations qualifiers

6.1.1 *Table 6.1* lists the dwellings which could potentially qualify for noise insulation due to operational noise from the scheme.

Table 6.1: Summary of potential noise insulation qualifiers

Section	Assessment location ID	Number of dwellings	Addresses
Section 2: A1/A14 Brampton Hut to East Coast mainline railway	257	1	Rectory Farm, Great North Road, Brampton
Section 4: A14 Swavesey to Girton	663	1	Friesland Farm, Huntingdon, Conington
	717	7	Foxhollow, Bar Hill
Section 5: Cambridge Northern Bypass	15,941	10	5, 7, 9, 11, 15, 15A, 17, 19, 21, 23 Lone Tree Avenue, Impington, Cambridge

7 Bibliography

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Highways Agency (2009). Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 700 Road pavements – general.