

A417 Missing Link

Preliminary Environmental Information Report

Chapter 11 Noise and Vibration - Appendices

28 September 2020

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Appendix 11.1
Glossary of Acoustic Terminology

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1 Glossary of acoustic terminology

Sound pressure level

- 1.1.1 The sound power emitted by a source results in tiny pressure fluctuations in the air, which are heard as sound. These pressure fluctuations are measured in Pascals. Audible sound pressures range from approximately 2×10^{-5} Pascals up to 20 Pascals. This represents a large range of sound pressures over which we can hear.
- 1.1.2 This large range of values is most conveniently handled mathematically by using a logarithmic measurement scale, to produce much more convenient ways of expressing sound pressures. The resulting parameter is called the 'sound pressure level' (L_p) and the associated measurement unit is called the decibel (dB). As the decibel is a logarithmic ratio, the laws of logarithmic addition and subtraction apply to any summation of sound pressure levels. For most purposes, the following rules will suffice:

dB Addition

If the levels to be added differ by:	the total is equal to the larger level plus:	example:
0 or 1dB	3dB	45dB+45dB = 48dB
2 or 3	2dB	68dB+70dB = 72dB
4 to 9	1dB	21dB+13dB = 22dB
10 and over	0dB	59dB+70dB = 70dB

dB Subtraction

If the levels to be subtracted differ by:	The total is equal to the larger level minus:	example:
10dB or more	0dB	70dB-58dB = 70dB
6 to 9	1	43dB-36dB = 42dB
5 or 4	2	94dB-90dB = 92dB
3	3	94dB-91dB = 91dB
2	(5)*	94dB-92dB = 89dB
1	(7)*	17dB-16dB = 10dB

* approximately

dB(A)

- 1.1.3 The unit used to define a weighted sound pressure level, which correlates well with the subjective response to sound. Similar to the non-linear response of the human ear to noise levels, the ear also has a non-linear response to the frequency content of sound. The frequency response of the human ear is less sensitive to low and very high frequencies than it is to those in the range 500Hz to 4kHz. The 'A' weighting filter is therefore used, which mimics the ear's frequency-dependant characteristics.
- 1.1.4 In some statistical descriptors the 'A' weighting forms part of a subscript, such as L_{pA10} , L_{pA90} , and L_{pAeq} for the 'A' weighted equivalent continuous noise level.

Equivalent continuous sound level

- 1.1.5 An index for the assessment of overall noise exposure is the equivalent continuous sound level, L_{pAeq} . This is a notional steady level which would, over a given period of time, deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating levels can be described in terms of a single figure level.

Frequency

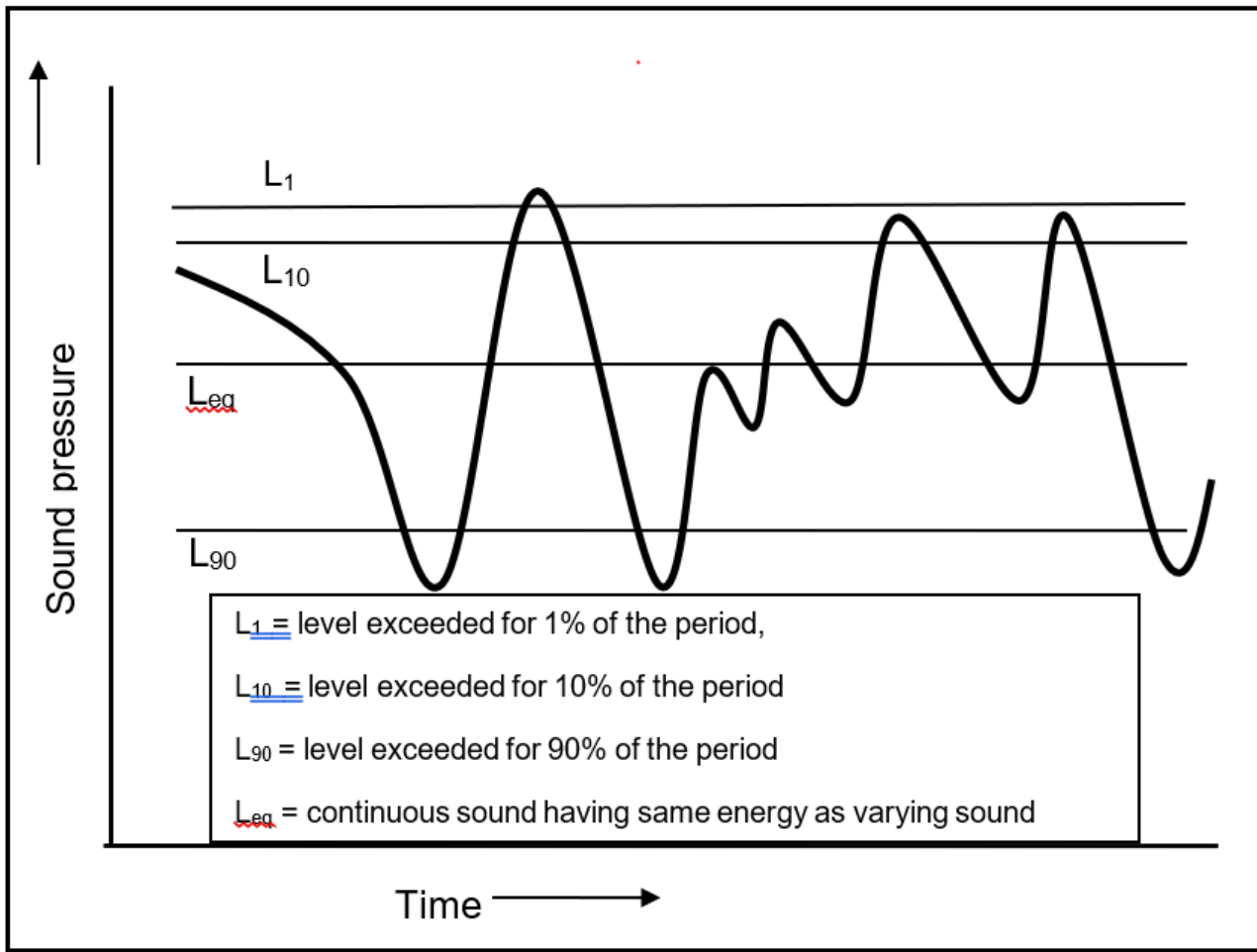
- 1.1.6 Frequency is the rate of repetition of a sound wave. The subjective equivalent in music is pitch. The unit of frequency is the hertz (Hz), which is identical to cycles per second. A 1000Hz is often denoted as 1kHz, e.g. 2kHz = 2000Hz. Human hearing ranges approximately from 20Hz to 20kHz. For design purposes the octave bands between 63Hz to 8kHz are generally used. The most commonly used frequency bands are octave bands, in which the mid frequency of each band is twice that of the band below it. For more detailed analysis, each octave band may be split into three one-third octave bands or narrow frequency bands.

Maximum noise level

- 1.1.7 The maximum noise level identified during a measurement period. Experimental data has shown that the human ear does not generally register the full loudness of transient sound events of less than 125ms duration and fast time weighting (F) has an exponential time constant of 125ms which reflects the ear's response. Slow time weighting (S) has an exponential time constant of 1s and is used to allow more accurate estimation of the average sound level on a visual display.
- 1.1.8 The maximum level measured with fast time weighting is denoted as $L_{pAmax, F}$. The maximum level measured with slow time weighting is denoted $L_{pAmax, S}$.

Fluctuating sound levels and statistical noise percentiles

- 1.1.9 For levels of noise that vary widely with time, for example road traffic noise, it is necessary to employ an index which allows for this variation. For instance, the L_{pA10} , the level exceeded for 10% of the time period under consideration, and can be used for the assessment of road traffic noise (note that L_{pAeq} is used for assessing traffic noise). As further examples of percentiles, although not generally used for traffic noise assessment, the L_{pA90} , the level exceeded for 90% of the time, is often used to represent the background noise level. The L_{pA1} , the level exceeded for 1% of the time, is representative of the maximum levels recorded during the sample period. The figure below illustrates the comparisons between each percentile;



1.1.10 A weighted statistical noise levels are denoted L_{pA10} , dB_{LpA90} etc. The reference time period (T) is normally included, e.g. $dB_{LpA10, 5min}$ or $dB_{LpA90, 8hr}$.

Table 1.1 Typical noise levels

Noise Level, dB(A)	Example
130	Threshold of pain
120	Jet aircraft take-off at 100m
110	Chain saw at 1m
100	Inside disco
90	Heavy lorries at 5m
80	Kerbside of busy street
70	Loud radio (in typical domestic room)
60	Office or restaurant
50	Domestic fan heater at 1m
40	Living room
30	Theatre
20	Remote countryside on still night

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Appendix 11.2
Baseline noise survey results

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1 Baseline noise survey report

1.1 Survey locations

1.1.1 The baseline noise survey locations were chosen within the noise study area at a range of distances from both the existing and proposed A417 highways, and are considered to be representative of local residential properties, and other noise sensitive locations (including PRowWs). The survey locations are shown on Figure 11.1 (Study area, sensitive receptors and baseline assessment noise contour map (2024)) of Chapter 11 Noise and Vibration.

1.2 Measurement methodology

1.2.1 At each measurement location, the following A-weighted broadband noise measurements were taken, using a 'Fast' (0.125s) weighted time constant:

- L_{pAeq} , L_{pA10} , L_{pA90} , L_{pAmax} .

Note: For additional information on noise measurement metrics described in the above paragraph, please refer to Noise and Vibration Appendix 11.1

1.2.2 The sound level meters were mounted onto tripods, with the microphones set at approximately 1.5m above local ground level. All measurements were taken under acoustically free-field conditions, except where otherwise stated. An appropriate windshield (as supplied by the manufacturer) was fitted to the microphones throughout the measurement periods, to minimise wind-induced noise.

1.2.3 Attended measurements were undertaken at repeated intervals during the daytime hours between 10:00hrs and 17:00hrs. Each measurement period was between 5 and 15 minutes in duration, at each location, dependent upon conditions at the measurement location. In each case, the time period was appropriate to provide a good representation of the typical noise conditions at each measurement location.

1.3 Instrumentation

1.3.1 The sound level meters and microphones used for the survey are all Class 1, conforming to BS EN 61672-1:2013. All Arup instrumentation is calibrated annually by accredited calibration laboratories, and has full traceable calibration to both to both national and international standards, together with traceable records. Calibration certificates can be provided upon request. On-site calibration checks were conducted before and after each series of measurements. No significant drift in calibration level was recorded throughout each of the survey periods. The monitoring equipment used is described in Table 1.1.

Table 1.1 Measurement instrumentation

Date	Description	Serial Number	Item Type
03/09/2019 - 05/09/2019	Rion NA-28 SLM Kit A (AAcG)	00301365	SLM
03/09/2019 - 05/09/2019	Rion UC-59	91399	Microphones

03/09/2019 - 05/09/2019	Rion NH-23	01963	Miscellaneous
03/09/2019 - 05/09/2019	Rion NC-74	34304657	Calibrator
06/11/2019 - 07/11/2019	Norsonic 140	1403429	Sound level meter
06/11/2019 - 07/11/2019	Norsonic 1209	12625	Preamplifier
06/11/2019 - 07/11/2019	Norsonic 1225	98521	Microphone
06/11/2019 - 07/11/2019	RION NC74	35173564	Calibrator

2 Measurement results

2.1 Attended measurements

2.1.1 Survey measurement locations are shown on Figure 11.1 (Study area, sensitive receptors and baseline assessment noise contour map (2024)) of Chapter 11 - Noise and Vibration.

2.2 L1

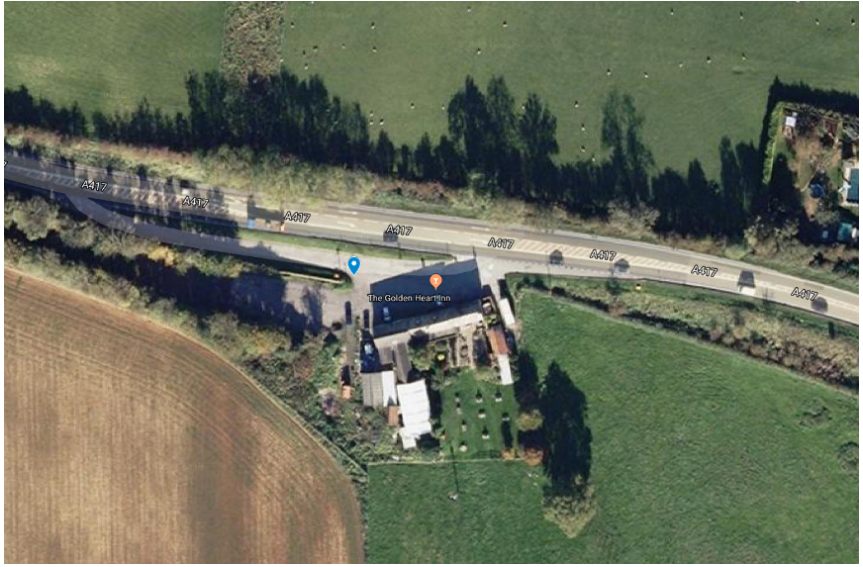
<p>Location description: The Golden Heart Inn (near to A417 Cowley Junction)</p> <p>Measurement duration: Tue 03/09/2019 10:09 to Tue 03/09/2019 12:24</p> <p>Weather conditions: Wind direction: North Summary: Breeze with occasional gusts.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: A417 dominant. Continuous traffic.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.1 Measured sound pressure levels at L1

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
03/09/2019	10:09	00:15:00	64.6	72.1	75.0	84.6	
03/09/2019	11:09	00:15:00	63.3	70.6	73.5	82.1	
03/09/2019	12:09	00:15:00	63.8	71.1	73.8	83.2	

2.3 L2

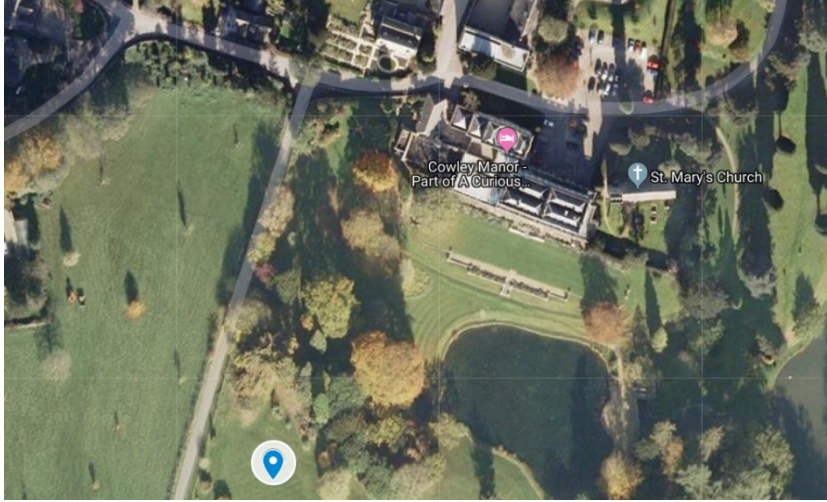
<p>Location description: Cowley Village</p> <p>Measurement duration: Wed 06/11/2019 12:49 to Wed 06/11/2019 15:31</p> <p>Weather conditions: Wind direction: East Summary: Light breeze, 1.5m/s average wind speed. Light rain.</p> <p>Personnel: Laura McLeod and Holly Cowperthwaite</p>	<p>Environment and observations: A417 audible, generally dominant. Occasional noise from aircraft and activity from shooting ground.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.2 Measured sound pressure levels at L2

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
06/11/2019	12:49	00:05:00	41.2	44.9	44.8	61.7	A417 dominant. Occasional activity from shooting ground.
06/11/2019	12:54	00:05:00	44.1	56.8	56.5	74.5	
06/11/2019	12:59	00:05:00	41.3	44.7	46.7	61.8	Occasional aircraft. Light breeze with 1.5m/s average wind speed.
06/11/2019	14:07	00:05:00	41.4	54.6	58.3	70.4	Light drizzle. Road traffic noise still dominant. Wind approximately 1m/s. Occasional aircraft and activity from shooting ground.
06/11/2019	14:12	00:05:00	42.2	50.6	55.1	64.8	
06/11/2019	14:17	00:05:00	42.8	49.8	53.7	64.4	
06/11/2019	15:16	00:05:00	41.5	43.5	48.2	60.5	Light easterly wind, gusts up to 1.5m/s. Road traffic noise still dominant. Distant siren.
06/11/2019	15:21	00:05:00	41.3	50.4	45.4	52.2	
06/11/2019	15:26	00:05:00	42.5	53.1	52.4	69.5	

2.4 L3

<p>Location description: North Birdlip - gated access driveway, just off the B407, north of Birdlip</p> <p>Measurement duration: Tue 03/09/2019 10:40 to Tue 03/09/2019 12:55</p> <p>Weather conditions: Wind direction: North Summary: Very little wind, occasional breeze.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: Facing further section of A417 to NW. Occasional traffic on B4070.</p>
	
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Table 2.3 Measured sound pressure levels at L3

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
03/09/2019	10:40	00:15:00	42.9	53.6	58.1	71.0	
03/09/2019	11:40	00:15:00	41.9	55.1	59.1	73.6	
03/09/2019	12:40	00:15:00	42.3	54.5	59.2	69.6	

2.5 L4



<p>Location description: Barrow Wake Car Park</p> <p>Measurement duration: Tue 03/09/2019 14:13 to Tue 03/09/2019 14:28</p> <p>Weather conditions: Wind direction: Summary: Fairly strong wind periodically.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: A417 very clearly audible, both nearby (SE) and from the further section of road to the W. Various cars entering and leaving the car park, driving over a cattle grid.</p>
	
	<p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>

Table 2.4 Measured sound pressure levels at L4

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
03/09/2019	14:13	00:15:00	57.0	59.5	61.5	68.5	

2.6 L5

<p>Location description: Near Crickly Hill Car Park – top of the hill</p> <p>Measurement duration: Tue 03/09/2019 14:43 to Tue 03/09/2019 14:53</p> <p>Weather conditions: Wind direction: North Summary: Fairly strong wind.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: Noise climate dominated by A417.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Measurements were aborted at this location due to wind conditions.

2.7 L6

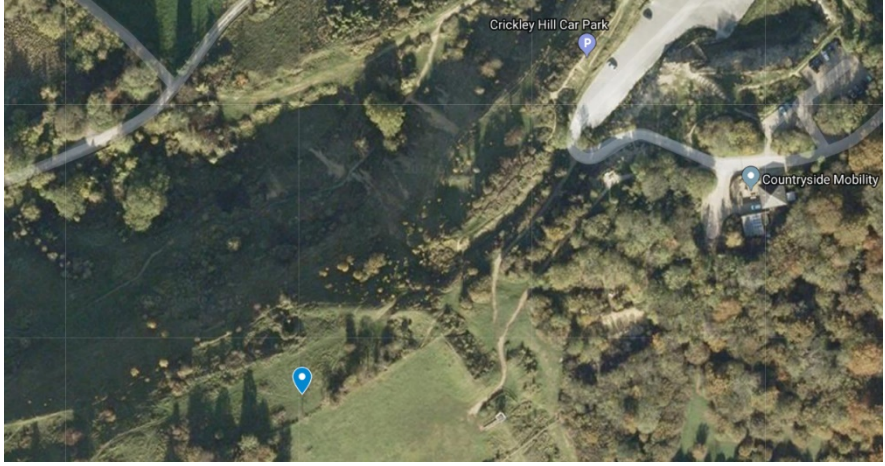
<p>Location description: Crickley Hill Country Park</p> <p>Measurement duration: Thurs 07/11/2019 10:27 to Thurs 07/11/2019 13:30</p> <p>Weather conditions: Wind direction: East Very light wind at 1m/s with occasional gusts of up to 3.8m/s</p> <p>Personnel: Laura McLeod and Holly Cowperthwaite</p>	<p>Environment and observations: A417 dominant. Occasional aircraft and pedestrians passing.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.5 Measured noise levels at L6

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
07/11/2019	10:27	00:05:00	46.6	47.8	48.9	51.4	A417 dominant noise source. Aircraft passbys. Helicopter noise at 11.01, activity from shooting ground at 11.30. Pedestrians passing at 12.49, 12.51 and 13.27.
07/11/2019	10:32	00:05:00	47.3	48.8	50.2	56.9	
07/11/2019	10:37	00:05:00	47.4	49.2	50.6	54.3	
07/11/2019	10:42	00:05:00	47.9	53.1	53.8	67.3	
07/11/2019	10:47	00:05:00	47.8	49.1	50.2	52.0	
07/11/2019	10:52	00:05:00	46.4	47.8	49.0	51.7	
07/11/2019	10:58	00:05:00	46.7	49.5	51.2	62.9	
07/11/2019	11:03	00:05:00	44.7	49.0	51.8	61.1	
07/11/2019	11:08	00:05:00	45.3	46.8	47.9	52.6	
07/11/2019	11:13	00:05:00	46.5	48.0	49.3	53.7	
07/11/2019	11:18	00:05:00	45.9	47.3	48.5	52.9	
07/11/2019	11:23	00:05:00	45.7	47.7	49.1	52.9	
07/11/2019	11:28	00:05:00	45.7	47.5	48.8	56.3	
07/11/2019	11:33	00:05:00	45.9	47.6	48.9	54.6	
07/11/2019	11:38	00:05:00	45.4	46.9	48.2	50.8	
07/11/2019	11:43	00:05:00	46.2	48.0	49.5	51.9	
07/11/2019	11:48	00:05:00	45.7	47.4	48.8	53.8	
07/11/2019	11:53	00:05:00	46.2	48.6	50.3	63.0	
07/11/2019	11:58	00:05:00	45.5	46.7	47.8	50.5	
07/11/2019	12:03	00:05:00	44.5	46.7	48.2	53.6	
07/11/2019	12:08	00:05:00	46.2	48.0	49.4	56.0	
07/11/2019	12:14	00:05:00	46.0	47.9	49.4	57.6	
07/11/2019	12:19	00:05:00	45.7	47.0	48.2	50.8	
07/11/2019	12:24	00:05:00	45.5	47.9	49.4	58.9	
07/11/2019	12:29	00:05:00	46.2	47.8	49.1	54.1	
07/11/2019	12:34	00:05:00	46.7	48.2	49.5	56.2	

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
07/11/2019	12:39	00:05:00	46.4	47.8	49.1	51.7	
07/11/2019	12:44	00:05:00	46.2	47.9	49.2	53.0	
07/11/2019	12:49	00:05:00	46.2	48.6	49.7	72.4	
07/11/2019	12:54	00:05:00	46.5	48.5	50.1	55.0	
07/11/2019	12:59	00:05:00	46.7	48.5	50.0	54.1	
07/11/2019	13:04	00:05:00	46.3	48.5	50.0	60.7	
07/11/2019	13:09	00:05:00	46.5	49.3	51.5	61.8	
07/11/2019	13:14	00:05:00	45.7	47.3	48.7	52.2	
07/11/2019	13:19	00:05:00	46.3	48.2	49.5	51.6	
07/11/2019	13:25	00:05:00	46.4	48.2	49.6	52.7	

2.8 L7


<p>Location description: Entrance of Rushwood Kennels & Cattery</p> <p>Measurement duration: Tue 04/09/2019 10:17 to Tue 04/09/2019 12:47</p> <p>Weather conditions: Wind direction: Variable Summary: Light breeze.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: Leaves rustling, birds, A417 clearly audible in background. 30 vehicles passed by between 10:01 and end of measurement.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.6 Measured sound pressure levels at L7

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
04/09/2019	10:17	00:15:00	48.9	51.5	53.2	69.5	
04/09/2019	10:32	00:15:00	48.1	50.7	52.3	64.0	
04/09/2019	10:47	00:15:00	47.5	50.9	52.6	68.3	
04/09/2019	11:02	00:15:00	47.7	50.4	52.5	59.8	
04/09/2019	11:17	00:15:00	47.8	50.2	51.7	61.9	
04/09/2019	11:32	00:15:00	48.2	51.0	52.0	68.2	
04/09/2019	11:47	00:15:00	47.1	50.9	51.6	68.5	
04/09/2019	12:02	00:15:00	47.6	50.6	52.5	62.6	
04/09/2019	12:17	00:15:00	48.0	50.7	52.5	62.3	
04/09/2019	12:32	00:15:00	47.8	50.3	52.2	57.6	

2.9 L8


<p>Location description: Stockwell (approx. middle of village)</p> <p>Measurement duration: Tue 04/09/2019 14:00 to Tue 04/09/2019 16:15</p> <p>Weather conditions: Wind direction: East Summary: light breeze, with gusts.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: Opposite farmyard. Farmer was collecting hay, so coming back and forth in tractor with trailer. Various other noise events related to farm, passing cars, but mostly calm.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.7 Measured sound pressure levels at L8

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
04/09/2019	14:00	00:15:00	46.7	49.0	51.1	63.7	
04/09/2019	15:00	00:15:00	47.5	54.5	55.2	78.3	
04/09/2019	16:00	00:15:00	47.7	53.8	55.9	68.4	

2.10 L9

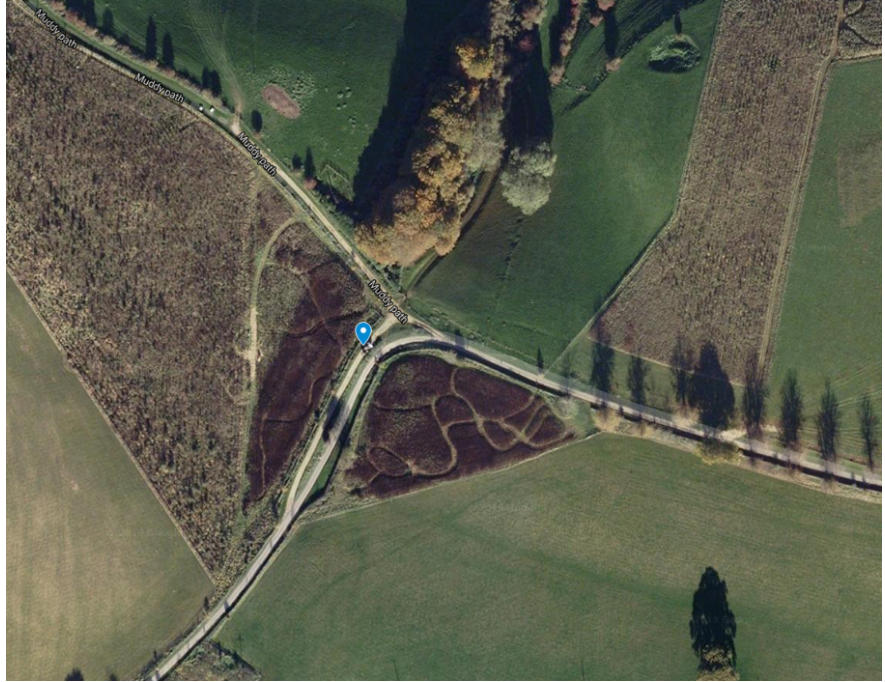
<p>Location description: At corner of lane intersection with 'Muddy Path' PRow</p> <p>Measurement duration: Tue 04/09/2019 14:25 to Tue 04/09/2019 16:44</p> <p>Weather conditions: Wind direction: Northeast/east Summary: Light breeze with gusts.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: Birds, leaves rustling, A417 clearly audible.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.8 Measured sound pressure levels at L9

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
04/09/2019	14:25	00:15:00	42.9	45.5	47.1	62.4	
04/09/2019	15:29	00:15:00	43.5	48.2	49.2	66.5	
04/09/2019	16:29	00:15:00	44.1	50.0	51.6	70.5	Significantly more passing vehicles than first two 15m periods.

2.11 L10



<p>Location description: Coberley Village</p> <p>Measurement duration: Wed 06/11/2019 13:34 to Wed 06/11/2019 13:51</p> <p>Weather conditions: Wind direction: East Summary: Very light breeze, maximum wind speeds of 1m/s. Light drizzle.</p> <p>Personnel: Laura McLeod and Holly Cowperthwaite</p>	<p>Environment and observations: Road traffic noise audible, A417 dominant. Occasional noise from aircraft, pedestrians and birds.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.9 Measured noise levels at L10

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
06/11/2019	13:34	00:05:00	38.9	43.1	45.7	61.1	A417 traffic noise dominant.
06/11/2019	13:39	00:05:00	37.5	40.5	42.3	50.4	Aircraft overhead. Birdsong.
06/11/2019	13:46	00:05:00	38.3	41.0	41.6	59.1	
06/11/2019	14:44	00:05:00	39.6	42.9	44.0	64.7	Road traffic noise dominant.
06/11/2019	14:49	00:05:00	39.6	41.9	43.3	54.1	Distant aircraft overhead.
06/11/2019	14:54	00:05:00	40.4	42.5	44.0	52.3	
06/11/2019	15:44	00:05:00	39.9	41.3	42.5	50.0	Road traffic noise dominant.
06/11/2019	15:49	00:05:00	38.8	41.9	43.7	51.8	Birdsong very noticeable.
06/11/2019	15:54	00:05:00	40.2	44.6	47.9	60.6	Pedestrian noise.

2.12 L11

<p>Location description: Gloucestershire Way, Cowley Footpath No.1 – PRoW</p> <p>Measurement duration: Thu 05/09/19 10:43 to Thu 05/09/19 12:43</p> <p>Weather conditions: Wind direction: Southeast Summary: Light breeze.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: Tree/hedge rustling, A417 clearly audible, mostly dominant.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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A.1.1.1

Table 2.10 Measured sound pressure levels at L11

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
05/09/2019	10:43	00:15:00	48.6	51.3	53.3	64.1	
05/09/2019	10:58	00:15:00	48.8	51.2	52.9	62.0	
05/09/2019	11:13	00:15:00	49.0	51.9	53.7	67.2	
05/09/2019	11:28	00:15:00	49.9	52.7	54.7	65.2	
05/09/2019	11:43	00:15:00	46.7	52.4	53.5	72.1	
05/09/2019	11:58	00:15:00	46.8	50.7	53.6	59.6	
05/09/2019	12:13	00:15:00	49.6	52.3	54.3	60.7	
05/09/2019	12:28	00:15:00	49.3	51.9	53.8	60.8	

2.13 L12


<p>Location description:</p> <p>Measurement duration: Wed 06/11/2019 16:37 to Wed 06/11/2019 15:59</p> <p>Weather Conditions: Wind direction: East Summary: Calm conditions with occasional gusts up to 0.8m/s.</p> <p>Personnel: Laura McLeod and Holly Cowperthwaite</p>	<p>Environment and observations: A417 dominant. Paused for traffic passbys on the Barn Junction.</p>
	
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Table 2.11 Measured noise levels at L12

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
06/11/2019	16:37	00:05:00	46.1	47.3	48.3	52.9	A417 road traffic noise dominant. Dogs barking from kennels in the distance.
06/11/2019	16:42	00:05:00	45.9	52.0	48.7	73.4	
06/11/2019	16:49	00:05:00	46.4	47.8	49.0	53.0	

2.14 L13


<p>Location description: Cowley Footpath No.22 - ProW</p> <p>Measurement duration: Thu 05/09/19 14:01 to Thu 05/09/19 17:01</p> <p>Weather Conditions: Wind direction: East Summary: Fairly still. Occasional breeze.</p> <p>Personnel: Henry Cook</p>	<p>Environment and observations: A417 dominant.</p>  <p>Imagery©2019 CNES / Airbus, Getmapping plc, infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2019</p>
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Table 2.12 Measured sound pressure levels at L13

Date	Time [hh:mm:ss]		Sound pressure level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L ₉₀	L _{eq}	L ₁₀	L _{max}	
05/09/2019	14:01	00:15:00	46.2	48.2	50.0	55.1	
05/09/2019	14:16	00:15:00	46.1	48.0	49.6	54.2	
05/09/2019	14:31	00:15:00	46.0	48.4	50.3	56.6	
05/09/2019	14:46	00:15:00	43.7	47.9	50.1	63.5	
05/09/2019	15:01	00:15:00	44.8	47.5	49.4	56.2	
05/09/2019	15:16	00:15:00	45.4	48.4	50.6	60.1	
05/09/2019	15:31	00:15:00	44.1	48.2	50.1	60.6	
05/09/2019	15:46	00:15:00	46.0	48.3	50.2	58.3	
05/09/2019	16:01	00:15:00	45.1	47.4	49.4	60.3	
05/09/2019	16:16	00:15:00	45.5	48.1	49.8	58.2	
05/09/2019	16:31	00:15:00	46.4	48.4	49.9	55.7	
05/09/2019	16:46	00:15:00	46.3	52.6	50.7	70.9	

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Appendix 11.3
Construction Plant Machinery

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1 Construction plant machinery

- 1.1.1 The type and number of construction plant and the intensity and duration of the construction processes in Table 1-1 and Table 1-2 has been based on the available construction planning information and data taken from similar highway construction works.
- 1.1.2 The assumptions are based on key noisy construction plant and activities that would be used across the proposed scheme. These are considered suitable to represent the types and scale of works and associated impacts for the A417 scheme assessment.

Table 1-1 Construction stages and assumed plant required for daytime processes

Stage	Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time ^{1,2}	
1	Site clearance & tree & vegetation removal	Grubbing of existing structures	Tracked excavator	106	BS5228 Table C 2-3	2	60
		Vegetation clearance	Chain saw	114	BS522 Table D 2-14	2	25
		Transportation of material	Dump truck (Tipping fill)	107	BS5228 Table C 2-30	4	50
2	Boundary fence	Fence post hole drilling	Petrol driven auger	100	Stihl – BT 130 Petrol Earth Auger Technical data	1	25
		Wheeled backhoe loader	Wheeled backhoe loader	96	BS5228 Table C 2-8	1	50
3	Topsoil strip	Topsoil strip	Bulldozer	111	BS5228 Table C 5-15	3	60
		Spoil transportation	Tracked excavator	106	BS5228 Table C 2-3	1	75
		Transporting material	Dump truck (tipping fill)	107	BS5228 Table C 2-30	3	75
4	Excavation of cuttings	Cutting	Tracked excavator	106	BS5228 Table C 2-3	2	60
		Cutting	Excavator mounted rock breaker	121	BS5228 Table C 9-11	2	80

Stage		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time ^{1,2}
		Cutting	Articulated dump truck (Empty)	116	BS5228 Table C 6-16	4	75
5	Drainage	Trenches, ponds, lifting pipes, backfilling with stone	Tracked excavator	106	BS5228 Table C 2-3	3	75
		Earthworks	Dump truck (tipping fill)	107	BS5228 Table C 2-30	2	50
		Transporting material	Tipper lorry	107	BS5228 Table C 8-20	2	50
6	Subbase	Earthworks	Dump truck (tipping fill)	107	BS5228 Table C 2-30	2	50
		Transporting material	Tipper lorry	107	BS5228 Table C 8-20	2	50
		Ground compaction	Grader	112	BS5228 Table D 3-75	2	75
7	Surface water channel	Trenching	Wheeled backhoe loader	97	BS5228 Table C 4-66	2	80
		Transporting material	Dump truck (tipping fill)	107	BS5228 Table C 2-30	2	50
8	Pavement / surfacing	Road surfacing	Asphalt paver (+ tipper lorry)	105	BSS522 Table C 5-31	1	80
		Transporting material	Lorry	108	BS5228 Table C 2-34	2	50
		Road surfacing	Road roller	108	BS5228 Table C 5-19	2	50
		Road surfacing	Dump truck	109	BSS522 Table D 3-52	2	50
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	2	25

Stage		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time ^{1,2}
9	Earthworks (minor)	Earthworks	Tracked excavator	106	BS5228 Table C 2-3	1	60
		Earthworks	Articulated dump truck (empty)	116	BS5228 Table C 6-16	1	75
		Transporting material	Tipper lorry	107	BS5228 Table C 8-20	1	50
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	1	50
10	Earthworks (major)	Earthworks	Tracked excavator	106	BS5228 Table C 2-3	2	60
		Earthworks	Articulated dump truck (Empty)	116	BS5228 Table C 6-16	2	75
		Earthworks	Bulldozer	111	BS5228 Table C 5-15	2	80
		Transporting material	Tipper lorry	107	BS5228 Table C 8-20	2	50
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	2	50
11	Structures	Pumping concrete	Lorry mounted concrete pump	118	BS522 Table D 6-31	3	20
		Pumping concrete / assembling / welding / assembling form work / transporting material / lifting beams	Tracked crane	109	BS522 Table D 6-18	3	20
		Grinding steel	Angle grinder	108	BS5228 Table C 4-93	3	25
		Hand tools	Hand tools	107	Estimated	3	25

Stage		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time ^{1,2}
		Concrete mixing	Large lorry concrete mixer	105	BS5228 Table C 4-21	2	25
		Rock drilling – to represent soil nailing	Hand-held pneumatic rock drill	118	BS5228 Table D 7-68	1	25
		Augured piles	Crane mounted auger	107	BS5228 Table C 3-16	1	25
12	Stone crushing	Stone crushing	Tracked semi-mobile crusher	118	BS5228 Table C 9-14	1	80
		Stone crushing	Screen stockpiler	109	BS5228 Table C 10-14	1	80
13	Shab Hill Junction piling	Augured piles	Crane mounted auger	107	BS5228 Table C 3-16	3	80
14	Removal of current A417	Planer	Road planer	110	BS5228 Table C 5-7	1	80

Note 1: The on-time is an estimate of the percentage per hour that plant would be expected to be operational for over the proposed ten hour working day. No further adjustment has been made to compare with the 12 hour assessment period thresholds assumed in BS5228 Table E.1 thus presenting a worst-case assessment.

Note 2: On-time has been corrected as per BS 5228 Annex F, Section 2.4 in the calculations to account for plant working in a localized area close to receptors.

Table 1-2 Construction stages and assumed plant required for night-time processes

Stage		Construction Activity	Plant	Sound Power (dBA)	Reference	Number of plant items	% On-time ²
1	Traffic Management works	Road roller	Road roller	108	BS5228 Table C 5-19	1	100
		Wheeled excavator	Wheeled excavator	94	BS5228 Table C 4-10	1	100
		Dumper	Dumper	104	BS5228 Table C 4-3	1	100
		Lorry with lifting boom	Lorry with lifting boom	105	BS5228 Table C 4-53	1	100
		Generator for lighting	Diesel generator	93	BS5228 Table C 4-87	1	100

Note 2: On-time has been corrected as per BS 5228 Annex F, Section 2.4 in the calculations to account for plant working in a localized area close to receptors.

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Appendix 11.4
Assessment Locations and Noise Prediction Results

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1 Assessment locations and noise prediction results

1.1 Operational noise level tables: Impacts and effects at receptors

- 1.1.1 The tables in this section show, for each assessment location, the predicted operational noise levels for the baseline scenario without scheme (2024), the contribution from the scheme only in the future assessment year (2039), and the scheme and existing local roads (2039). The tables also show the predicted change in noise level in 2039.
- 1.1.2 Table 1.1 shows either one or two long-term results for each dwelling. Firstly, the noise impact on the façade with the greatest magnitude of change, i.e. the façade with the largest increase or the largest noise reduction. A second result may be shown if there is a different façade at the same dwelling with a noise level that is greater than the SOAEL. This is only reported if the result greater than SOAEL is not for the same facade as that with the greatest magnitude of change. The purpose of this is to ensure that the largest noise change is reported, as well as identifying any facades exceeding the SOAEL. Table 1.2 shows non-residential receptors some of which refer to outdoor amenity areas, rather than buildings.

Table 1.1 Residential receptor noise results

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
4 Springfield Cottages, GL4 8JH	43.5	36.9	37.6	31.6	43.3	36.8	38.3	32.3	-5.9	-5.3	-5.2	-4.6	N	-	-	-	-	-
1 Church Cottages, GL4 8JH	45.6	38.8	38.3	32.3	45.5	38.7	38.9	32.8	-7.3	-6.5	-6.7	-6	N	-	-	-	-	-
The Cottage, Green Dragon Inn, Cockleford, Cowley, GL53 9NW	48.5	41.4	47.1	40.2	48.6	41.5	45.9	39.1	-1.4	-1.2	-2.6	-2.3	S	-	-	-	-	-
7 Field View Lane, Witcombe, Gloucester, GL3 4XB	46.3	39.4	46	39.2	46.7	39.8	46.5	39.6	-0.3	-0.2	0.2	0.2	E	-	-	-	-	-
9 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	41.2	34.9	40.1	33.9	42	35.6	40.6	34.3	-1.1	-1	-0.6	-0.6	SW	-	-	-	-	-
Haroldstone Lodge, Badgeworth, Cheltenham, GL3 4UQ	53.2	45.7	57.4	49.4	53.5	45.9	58.0	50	4.2	3.7	4.8	4.3	E	-	-	-	-	-
20 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	39.3	33.1	37.7	31.7	40.3	34	38.3	32.3	-1.6	-1.4	-1	-0.8	S	-	-	-	-	-
2 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	43	36.5	40.5	34.2	44.2	37.6	41.2	34.9	-2.5	-2.3	-1.8	-1.6	S	-	-	-	-	-
Sunnyside Cottage, Witcombe, Cheltenham, GL3 4UG	52.1	44.7	51.8	44.4	52.5	45	52.4	44.9	-0.3	-0.3	0.3	0.2	SW	-	-	-	-	-
Holly Brae, Crickley Hill, Witcombe, Gloucester, GL3 4UF	60.5	52.2	59.7	51.5	60.8	52.5	60.2	52	-0.8	-0.7	-0.3	-0.2	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
The Dower House, Birdlip Hill, Witcombe, Gloucester, GL3 4SL	59.7	51.5	56.1	48.3	61	52.7	57.1	49.2	-3.6	-3.2	-2.6	-2.3	SW	-	-	-	-	-
4 Ivy Lodge Barns, GL4 8JH	48.1	41.1	45.4	38.6	48.7	41.6	46	39.2	-2.7	-2.5	-2.1	-1.9	E	-	-	-	-	-
25 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	44.5	37.8	42.9	36.4	45.5	38.7	43.4	36.8	-1.6	-1.4	-1.1	-1	SW	-	-	-	-	-
4 Witcombe Court, Badgeworth, Tewkesbury, GL3 4UA	47.5	40.5	44.5	37.8	47.9	40.9	45	38.3	-3	-2.7	-2.5	-2.2	SE	-	-	-	-	-
Capri, Witcombe, Cheltenham, GL3 4UG	51.5	44.1	51.1	43.8	51.8	44.4	51.7	44.3	-0.4	-0.3	0.2	0.2	SE	-	-	-	-	-
3 Witcombe Court, Badgeworth, Tewkesbury, GL3 4UA	47.5	40.5	44.5	37.8	47.9	40.9	45	38.3	-3	-2.7	-2.5	-2.2	SE	-	-	-	-	-
5 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	40.4	34.1	39	32.9	41.4	35	39.5	33.3	-1.4	-1.2	-0.9	-0.8	SW	-	-	-	-	-
The Cot, Green Lane, Little Witcombe, Gloucester, GL3 4TX	44.7	38	44.1	37.5	45.2	38.5	44.6	37.9	-0.6	-0.5	-0.1	-0.1	S	-	-	-	-	-
Kimberley Villa, GL4 8JH	60	51.8	58	50	61.1	52.8	58.7	50.6	-2	-1.8	-1.3	-1.2	S	-	-	-	-	-
Barn, Hill Farm, Witcombe, Gloucester, GL3 4SL	52	44.6	48.6	41.5	53.2	45.7	49.4	42.2	-3.4	-3.1	-2.6	-2.4	SE	-	-	-	-	-
Little Witcombe Court Park, 19 Witcombe, Gloucester, GL3 4TZ	45	38.3	44	37.4	45.6	38.8	44.6	37.9	-1	-0.9	-0.4	-0.4	SE	-	-	-	-	-
Holly Brae, Badgeworth, Tewkesbury, GL3 4UF	60.5	52.2	59.7	51.5	60.8	52.5	60.2	52	-0.8	-0.7	-0.3	-0.2	E	-	-	-	-	-
1 Witcombe Court, Badgeworth, Tewkesbury, GL3 4UA	53.2	45.7	52.2	44.8	53.5	45.9	52.7	45.2	-1	-0.9	-0.5	-0.5	SE	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Pike Cottage, Witcombe, Cheltenham, GL3 4UB	57.9	49.9	58.3	50.2	58.3	50.2	58.8	50.7	0.4	0.3	0.9	0.8	W	-	-	-	-	-
2 Witcombe Court, Badgeworth, Tewkesbury, GL3 4UA	47.5	40.5	44.5	37.8	47.9	40.9	45	38.3	-3	-2.7	-2.5	-2.2	SE	-	-	-	-	-
Glengarry, Dog Lane, Witcombe, Cheltenham, GL3 4UG	45.3	38.5	44.9	38.2	45.6	38.8	45.5	38.7	-0.4	-0.3	0.2	0.2	E	-	-	-	-	-
Crickley Lodge Cottages, 2 Badgeworth, Cheltenham, GL3 4UQ	43.8	37.2	43.5	36.9	44.1	37.5	44.2	37.6	-0.3	-0.3	0.4	0.4	N	-	-	-	-	-
The Paddocks, 23 Witcombe, Gloucester, GL3 4TZ	45.7	38.9	43.8	37.2	46.7	39.8	44.4	37.7	-1.9	-1.7	-1.3	-1.2	SW	-	-	-	-	-
Alexander And Angell Farms Ltd, Badgeworth, Tewkesbury, GL3 4TU	47.6	40.6	47	40.1	48	41	47.5	40.5	-0.6	-0.5	-0.1	-0.1	NE	-	-	-	-	-
21 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	44.2	37.6	42.4	35.9	45.2	38.5	43	36.5	-1.8	-1.7	-1.2	-1.1	SW	-	-	-	-	-
1 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	43.2	36.7	41.5	35.1	44.1	37.5	42.1	35.7	-1.7	-1.6	-1.1	-1	SW	-	-	-	-	-
The Coach House, Witcombe Court, Badgeworth, Tewkesbury, GL3 4UA	52	44.6	51.1	43.8	52.4	44.9	51.6	44.2	-0.9	-0.8	-0.4	-0.4	NE	-	-	-	-	-
Crickley Hill Farm Cottage, Witcombe, Gloucester, GL3 4UF	63.4	54.8	65	56.3	63.8	55.2	65.6	56.8	1.6	1.5	2.2	2	NE	65.3	56.5	65.9	57.1	NW
3 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	39.8	33.6	38.3	32.3	40.7	34.4	38.8	32.7	-1.5	-1.3	-1	-0.9	SW	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
11 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	41.6	35.2	40.5	34.2	42.4	35.9	41.1	34.8	-1.1	-1	-0.5	-0.4	SW	-	-	-	-	-
17 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	39.5	33.3	38.1	32.1	40.4	34.1	38.7	32.6	-1.4	-1.2	-0.8	-0.7	SW	-	-	-	-	-
18 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	39.3	33.1	37.8	31.8	40.2	34	38.4	32.3	-1.5	-1.3	-0.9	-0.8	SW	-	-	-	-	-
Barn Marklands, Badgeworth, Tewkesbury, GL3 4TU	47.7	40.7	48	41	48.1	41.1	48.5	41.4	0.3	0.3	0.8	0.7	SE	-	-	-	-	-
16 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	42.7	36.2	41.3	34.9	43.6	37	41.9	35.5	-1.4	-1.3	-0.8	-0.7	SW	-	-	-	-	-
The Lodge, Birdlip, Gloucester, GL4 8JN	46.9	40	46.3	39.4	47.6	40.6	46.9	40.0	-0.6	-0.6	0	0	W	63.4	54.8	63.9	55.3	E
Highridge, Birdlip, Gloucester, GL4 8JN	51	43.7	47.6	40.6	52.2	44.8	48.4	41.3	-3.4	-3.1	-2.6	-2.4	W	-	-	-	-	-
Knapp House, Witcombe, Gloucester, GL3 4SJ	62.8	54.3	59.2	51.1	64.1	55.5	60.2	52	-3.6	-3.2	-2.6	-2.3	SW	-	-	-	-	-
22 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	44.1	37.5	42.4	35.9	45.1	38.4	42.9	36.4	-1.7	-1.6	-1.2	-1.1	SW	-	-	-	-	-
Southwood House, Dog Lane, Witcombe, Cheltenham, GL3 4UG	48.3	41.2	48	41	48.7	41.6	48.5	41.4	-0.3	-0.2	0.2	0.2	SE	-	-	-	-	-
The Paddocks, 22 Witcombe, Gloucester, GL3 4TZ	44.1	37.5	42.4	35.9	45.1	38.4	42.9	36.4	-1.7	-1.6	-1.2	-1.1	SW	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		(short term)	(long term)	(short term)	(long term)	
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
6a, Little Witcombe Court Park, 6 Green Lane, Witcombe, Gloucester, GL3 4TZ	44.8	38.1	42	35.6	46	39.2	42.8	36.3	-2.8	-2.5	-2	-1.8	S	-	-	-	-	-
10 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	46.4	39.5	44.1	37.5	47.5	40.5	44.8	38.1	-2.3	-2	-1.6	-1.4	SW	-	-	-	-	-
23 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	45.7	38.9	43.8	37.2	46.7	39.8	44.4	37.7	-1.9	-1.7	-1.3	-1.2	SW	-	-	-	-	-
Little Witcombe Court Park, 24 Witcombe, Gloucester, GL3 4TZ	44.7	38	44.1	37.5	45.3	38.5	44.7	38.0	-0.6	-0.5	0	0	SE	-	-	-	-	-
Witcombe Court, Badgeworth, Tewkesbury, GL3 4UA	47.5	40.5	44.5	37.8	47.9	40.9	45	38.3	-3	-2.7	-2.5	-2.2	SE	-	-	-	-	-
Crickley Hill Farm, Crickley Hill, Witcombe, Gloucester, GL3 4UF	63.4	54.8	65	56.3	63.8	55.2	65.6	56.8	1.6	1.5	2.2	2	NE	65.3	56.5	65.9	57.1	NW
7 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	39.2	33.1	37.8	31.8	40	33.8	38.3	32.3	-1.4	-1.3	-0.9	-0.8	SW	-	-	-	-	-
8 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	46.5	39.6	44.1	37.5	47.7	40.7	44.8	38.1	-2.4	-2.1	-1.7	-1.5	SW	-	-	-	-	-
6 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	44.9	38.2	42.3	35.8	46	39.2	43	36.5	-2.6	-2.4	-1.9	-1.7	SW	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
4 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	45.6	38.8	43.1	36.6	46.7	39.8	43.8	37.2	-2.5	-2.2	-1.8	-1.6	S	-	-	-	-	-
12 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	41.9	35.5	39.8	33.6	43	36.5	40.5	34.2	-2.1	-1.9	-1.4	-1.3	SE	-	-	-	-	-
5a, Little Witcombe Court Park, 5 Green Lane, Witcombe, Gloucester, GL3 4TZ	39.7	33.5	38.5	32.4	40.5	34.2	39	32.9	-1.2	-1.1	-0.7	-0.6	SW	-	-	-	-	-
Witcombe Court Farm, Little Witcombe, Badgeworth, Tewkesbury, GL3 4TU	48.2	41.2	48.6	41.5	48.6	41.5	49.1	42	0.4	0.3	0.9	0.8	SE	-	-	-	-	-
The Flat, The Willows, Witcombe, Gloucester, GL3 4UQ	56.3	48.4	59.7	51.5	56.6	48.7	60.3	52.1	3.4	3.1	4	3.7	W	63.3	54.8	63.9	55.3	S
Shab Hill Barn, Shab Hill, GL4 8JX	35.2	29.5	48.5	41.4	35.4	29.6	49.3	42.1	13.3	11.9	14.1	12.6	NE	-	-	-	-	-
Birdlip Farm House, GL4 8JH	46.4	39.5	39.2	33.1	46.2	39.4	39.9	33.7	-7.2	-6.4	-6.5	-5.8	E	-	-	-	-	-
Flat Willows, Witcombe, Gloucester, GL3 4UQ	56.3	48.4	59.7	51.5	56.6	48.7	60.3	52.1	3.4	3.1	4	3.7	W	63.3	54.8	63.9	55.3	S
The Willows, Crickley Hill, Witcombe, Gloucester, GL3 4UQ	56.3	48.4	59.7	51.5	56.6	48.7	60.3	52.1	3.4	3.1	4	3.7	W	63.3	54.8	63.9	55.3	S
The Spinney, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	50.3	43	53.9	46.3	50.7	43.4	54.5	46.8	3.6	3.3	4.2	3.8	N	62.4	53.9	63.1	54.6	E
Half Acre, Crickley Hill, Witcombe, Gloucester, GL3 4UQ	55.3	47.5	58.3	50.2	55.6	47.8	58.9	50.8	3	2.7	3.6	3.3	W	64.4	55.7	65.1	56.4	S
School House, GL53 9QZ	33.6	28	35.4	29.6	33.2	27.7	36.1	30.3	1.8	1.6	2.5	2.3	S	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
1 North Terrace, GL53 9QZ	39.3	33.1	37.7	31.7	39.6	33.4	38	32	-1.6	-1.4	-1.3	-1.1	E	-	-	-	-	-
Hill Covert, GL53 9NJ	35.1	29.4	37.3	31.3	24.2	19.6	37.9	31.9	2.2	1.9	2.8	2.5	NW	-	-	-	-	-
4 North Terrace, GL53 9QZ	37.7	31.7	36.3	30.4	38.1	32.1	36.5	30.6	-1.4	-1.3	-1.2	-1.1	E	-	-	-	-	-
Ham Mead, GL53 9RA	41.9	35.5	40.3	34	42.3	35.8	40.6	34.3	-1.6	-1.5	-1.3	-1.2	NE	-	-	-	-	-
2 Manor Barn, GL53 9QT	36.1	30.3	37.2	31.3	35.9	30.1	37.8	31.8	1.1	1	1.7	1.5	N	-	-	-	-	-
1 Oxford Cottages, GL53 9QX	71.9	62.5	70.6	61.3	72.2	62.8	71.5	62.1	-1.3	-1.2	-0.4	-0.4	S	-	-	-	-	-
Purdey House, Hawcote Hill, Cirencester Road, GL4 8JL	58.0	50.0	40.3	34	58	50	40.9	34.6	-17.7	-16	-17.1	-15.4	N	-	-	-	-	-
Highclere, Cirencester Road, GL4 8JL	61.7	53.3	41.5	35.1	61.6	53.2	42.1	35.7	-20.2	-18.2	-19.6	-17.6	N	-	-	-	-	-
2 Church Cottages, GL4 8JH	45.6	38.8	38.3	32.3	45.5	38.7	38.9	32.8	-7.3	-6.5	-6.7	-6	N	-	-	-	-	-
Rose Cottage, Cirencester Road, GL4 8JL	57.3	49.3	37.8	31.8	57.3	49.3	38.4	32.3	-19.5	-17.5	-18.9	-17	W	-	-	-	-	-
Ivy Cottage, The Common, GL4 8LB	46.4	39.5	41.9	35.5	46.5	39.6	42.5	36	-4.5	-4	-3.9	-3.5	NW	-	-	-	-	-
Kellands Farm, GL4 8JH	49.6	42.4	39.3	33.1	49.5	42.3	39.9	33.7	-10.3	-9.3	-9.7	-8.7	E	-	-	-	-	-
3 Springfield Cottages, GL4 8JH	43.7	37.1	38.2	32.2	43.5	36.9	38.9	32.8	-5.5	-4.9	-4.8	-4.3	N	-	-	-	-	-
2 Stockwell Cottages, Stockwell, GL4 8JZ	43.1	36.6	36.3	30.4	42.9	36.4	36.8	30.9	-6.8	-6.2	-6.3	-5.7	W	-	-	-	-	-
The Muzzards, The Common, GL4 8LB	48.2	41.2	39.5	33.3	48.2	41.2	40	33.8	-8.7	-7.9	-8.2	-7.4	N	-	-	-	-	-
Pheasants Keep, Hawcote Hill, Cirencester Road, GL4 8JL	56.7	48.8	40.2	34	56.7	48.8	40.9	34.6	-16.5	-14.8	-15.8	-14.2	N	-	-	-	-	-
1 Springfield Cottages, GL4 8JH	43.9	37.3	38.5	32.4	43.7	37.1	39.1	33	-5.4	-4.9	-4.8	-4.3	N	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
The Rise, Stockwell, GL4 8JZ	47.5	40.5	40.6	34.3	47.1	40.2	41.2	34.9	-6.9	-6.2	-6.3	-5.6	W	-	-	-	-	-
2 Springfield Cottages, GL4 8JH	43.4	36.8	38.2	32.2	43.2	36.7	38.8	32.7	-5.2	-4.6	-4.6	-4.1	N	-	-	-	-	-
Bath Place, GL4 8JH	46.6	39.7	39.8	33.6	46.5	39.6	40.4	34.1	-6.8	-6.1	-6.2	-5.6	N	-	-	-	-	-
Church View Bungalow, GL4 8LH	44.2	37.6	37.1	31.2	44.2	37.6	37.6	31.6	-7.1	-6.4	-6.6	-6	NW	-	-	-	-	-
Old Chapel Cottage, GL4 8JH	46.3	39.4	39.6	33.4	46.2	39.4	40.2	34	-6.7	-6	-6.1	-5.4	N	-	-	-	-	-
3 Stockwell Cottages, Stockwell, GL4 8JZ	36.9	31	43.4	36.8	35.1	29.4	44	37.4	6.5	5.8	7.1	6.4	N	-	-	-	-	-
Common Cottage, The Common, GL4 8LB	42.2	35.8	37.1	31.2	42.1	35.7	37.7	31.7	-5.1	-4.6	-4.5	-4.1	SW	-	-	-	-	-
Michaelmas House, GL4 8JH	47.4	40.4	40	33.8	47.3	40.3	40.7	34.4	-7.4	-6.6	-6.7	-6	N	-	-	-	-	-
Birdlip Cottage, GL4 8JH	46.1	39.3	40.8	34.5	46	39.2	41.4	35	-5.3	-4.8	-4.7	-4.3	N	-	-	-	-	-
Welwyn, Cirencester Road, GL4 8JL	54.6	46.9	38.3	32.3	54.5	46.8	38.9	32.8	-16.3	-14.6	-15.7	-14.1	NE	-	-	-	-	-
Dell Barn, GL4 8JH	43.5	36.9	37.9	31.9	43.3	36.8	38.5	32.4	-5.6	-5	-5	-4.5	N	-	-	-	-	-
Ermin Cottage, GL4 8JH	47.1	40.2	40.5	34.2	47.3	40.3	41.2	34.9	-6.6	-6	-5.9	-5.3	N	-	-	-	-	-
1 Stockwell Cottages, Stockwell, GL4 8JZ	44.1	37.5	40.1	33.9	43.7	37.1	40.7	34.4	-4	-3.6	-3.4	-3.1	SW	-	-	-	-	-
Birdlip View, Cirencester Road, GL4 8JL	52.7	45.2	35.6	29.8	52.6	45.1	36.1	30.3	-17.1	-15.4	-16.6	-14.9	W	-	-	-	-	-
Leaside, Nettleton, GL4 8LA	66.3	57.5	42	35.6	66.3	57.5	42.6	36.1	-24.3	-21.9	-23.7	-21.4	S	-	-	-	-	-
3 Church Cottages, GL4 8JH	45.6	38.8	38.3	32.3	45.5	38.7	38.9	32.8	-7.3	-6.5	-6.7	-6	N	-	-	-	-	-
The Old Pyke House, Cirencester Road, GL4 8JL	57.4	49.4	38.5	32.4	57.3	49.3	39.2	33.1	-18.9	-17	-18.2	-16.3	N	-	-	-	-	-
Castle Hill Cottage, Nettleton, GL4 8LA	72.9	63.4	47.5	40.5	72.9	63.4	48.1	41.1	-25.4	-22.9	-24.8	-22.3	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day		Night	Day	Night		
5 Springfield Cottages, GL4 8JH	46.4	39.5	38.1	32.1	46.3	39.4	38.7	32.6	-8.3	-7.4	-7.7	-6.9	E	-	-	-	-	-
Birdlip Farm Barn, GL4 8JH	47.2	40.3	38.3	32.3	47.1	40.2	38.9	32.8	-8.9	-8	-8.3	-7.5	E	-	-	-	-	-
Birdlip House, GL4 8JH	49.0	41.9	39.1	33	49	41.9	39.7	33.5	-9.9	-8.9	-9.3	-8.4	E	-	-	-	-	-
Kimsbury Cottage, GL4 8JH	46.2	39.4	40.6	34.3	46.1	39.3	41.2	34.9	-5.6	-5.1	-5	-4.5	N	-	-	-	-	-
Hawcote House, Hawcote Hill, Cirencester Road, GL4 8JL	57.3	49.3	40.8	34.5	57.2	49.3	41.4	35	-16.5	-14.8	-15.9	-14.3	N	-	-	-	-	-
The Granary, The Common, GL4 8LB	49.6	42.4	48.1	41.1	49.9	42.7	48.7	41.6	-1.5	-1.3	-0.9	-0.8	N	-	-	-	-	-
Woodside, Nettleton, GL4 8LA	65.0	56.3	41.3	34.9	65	56.3	41.9	35.5	-23.7	-21.4	-23.1	-20.8	S	-	-	-	-	-
The Cottage Catchbar, Cirencester Road, GL4 8JL	56.9	49.0	38.7	32.6	56.9	49	39.3	33.1	-18.2	-16.4	-17.6	-15.9	W	-	-	-	-	-
Hemits Corner, The Common, GL4 8LB	43.2	36.7	39	32.9	43.1	36.6	39.6	33.4	-4.2	-3.8	-3.6	-3.3	W	-	-	-	-	-
Hillcot, Cirencester Road, GL4 8JL	54.7	47	38.6	32.5	54.6	46.9	39.2	33.1	-16.1	-14.5	-15.5	-13.9	SE	-	-	-	-	-
Watercombe, The Common, GL4 8LB	43.8	37.2	39.6	33.4	43.7	37.1	40.1	33.9	-4.2	-3.8	-3.7	-3.3	W	-	-	-	-	-
1 Keepers Cottages, Cowley Wood, GL53 9PF	35.5	29.7	37.8	31.8	35	29.3	38.4	32.3	2.3	2.1	2.9	2.6	W	-	-	-	-	-
Highgate, GL53 9PE	50.9	43.6	52	44.6	51.4	44	52.5	45	1.1	1	1.6	1.4	SW	-	-	-	-	-
Highgate Farm, GL53 9PG	58.3	50.2	59.9	51.7	58.8	50.7	60.5	52.2	1.6	1.5	2.2	2	SW	-	-	-	-	-
Highgate House, GL53 9PE	38.8	32.7	40.8	34.5	39.1	33	41.4	35	2	1.8	2.6	2.3	NE	-	-	-	-	-
2 Keepers Cottages, Cowley Wood, GL53 9PF	39.5	33.3	41.1	34.8	39.5	33.3	41.6	35.2	1.6	1.5	2.1	1.9	S	-	-	-	-	-
Hardings Barn, Cowley Wood, GL53 9PF	33.5	27.9	36.4	30.5	32.5	27	36.9	31	2.9	2.6	3.4	3.1	S	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Pixwold, Cockleford, GL53 9NW	62.7	54.2	60.5	52.2	62.8	54.3	57.8	49.8	-2.2	-2	-4.9	-4.4	W	-	-	-	-	-
Flat, The Green Dragon, Cockleford, Cowley, GL53 9NW	59.5	51.3	57.6	49.6	59.6	51.4	55.5	47.7	-1.9	-1.7	-4	-3.6	W	-	-	-	-	-
Hawthorn House, GL4 8JH	43.8	37.2	40	33.8	43.8	37.2	40.7	34.4	-3.8	-3.4	-3.1	-2.8	E	62.5	54	63.2	54.7	W
Knapp Cottage, Birdlip Hill, Witcombe, Gloucester, GL3 4SL	51	43.7	47.8	40.8	52.3	44.8	48.6	41.5	-3.2	-2.9	-2.4	-2.2	SE	-	-	-	-	-
The Knapp, Witcombe, Gloucester, GL3 4SL	62.9	54.4	59.3	51.1	64.2	55.6	60.3	52.1	-3.6	-3.3	-2.6	-2.3	SW	-	-	-	-	-
Cedarwood House, GL4 8JH	43.8	37.2	40.4	34.1	43.8	37.2	41.1	34.8	-3.4	-3.1	-2.7	-2.4	E	-	-	-	-	-
8 Ivy Lodge Barns, GL4 8JH	46.7	39.8	44.3	37.6	47.6	40.6	44.9	38.2	-2.4	-2.2	-1.8	-1.6	N	-	-	-	-	-
Kingfisher House, GL4 8JH	51.0	43.7	49.2	42.1	51.7	44.3	49.9	42.7	-1.8	-1.6	-1.1	-1	N	-	-	-	-	-
27 Field View Lane, Witcombe, Gloucester, GL3 4XB	47.4	40.4	46.5	39.6	47.8	40.8	47	40.1	-0.9	-0.8	-0.4	-0.3	E	-	-	-	-	-
23 Field View Lane, Witcombe, Gloucester, GL3 4XB	54.6	46.9	54.7	47	55	47.3	55.2	47.5	0.1	0.1	0.6	0.6	S	-	-	-	-	-
Crickley Court, Crickley Hill, Witcombe, Gloucester, GL3 4UF	66.2	57.4	63.2	54.7	66.5	57.6	63.8	55.2	-3	-2.7	-2.4	-2.2	SW	-	-	-	-	-
Cotswold House, Dog Lane, Witcombe, Cheltenham, GL3 4UG	43.3	36.8	44.1	37.5	43.7	37.1	44.7	38	0.8	0.7	1.4	1.2	E	-	-	-	-	-
Court Cottage, Badgeworth, Tewkesbury, GL3 4UA	43.8	37.2	43.2	36.7	44.3	37.6	43.7	37.1	-0.6	-0.5	-0.1	-0.1	SE	-	-	-	-	-
6 Field View Lane, Witcombe, Gloucester, GL3 4XB	46.8	39.9	46.6	39.7	47.2	40.3	47.1	40.2	-0.2	-0.2	0.3	0.3	SW	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		(short term)	(long term)	(short term)	(long term)	
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
The Holt, Dog Lane, Witcombe, Cheltenham, GL3 4UG	53.5	45.9	53	45.5	53.8	46.2	53.6	46	-0.5	-0.4	0.1	0.1	SW	-	-	-	-	-
29 Field View Lane, Witcombe, Gloucester, GL3 4XB	50.7	43.4	50.3	43	51	43.7	50.8	43.5	-0.4	-0.4	0.1	0.1	E	-	-	-	-	-
Maidensworth, GL4 8JH	45.3	38.5	42.6	36.1	45.5	38.7	43.3	36.8	-2.7	-2.4	-2	-1.7	E	-	-	-	-	-
Robin House, GL4 8JH	47.1	40.2	44.8	38.1	47.6	40.6	45.4	38.6	-2.3	-2.1	-1.7	-1.6	E	-	-	-	-	-
Ridge Cottage, Stroud Road, Birdlip, Gloucester, GL4 8JN	52.5	45	49.2	42.1	53.8	46.2	50	42.8	-3.3	-2.9	-2.5	-2.2	W	-	-	-	-	-
Gillsland Cottage, Stroud Road, GL4 8JN	58.4	50.3	58.9	50.8	58.7	50.6	59.4	51.2	0.5	0.5	1	0.9	N	66.2	57.4	66.7	57.8	E
Cottage-On-Ridge, Stroud Road, GL4 8JN	66.5	57.6	66.9	58	66.8	57.9	67.4	58.4	0.4	0.4	0.9	0.8	E	-	-	-	-	-
Beechmount, GL4 8JH	42.1	35.7	39.4	33.2	42.1	35.7	40	33.8	-2.7	-2.5	-2.1	-1.9	E	-	-	-	-	-
7 Ivy Lodge Barns, GL4 8JH	51.5	44.1	52.2	44.8	51.8	44.4	52.7	45.2	0.7	0.7	1.2	1.1	E	67	58.1	67.5	58.5	W
8 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	47.6	40.6	47.4	40.4	47.9	40.9	47.9	40.9	-0.2	-0.2	0.3	0.3	SE	-	-	-	-	-
2 Field View Lane, Witcombe, Gloucester, GL3 4XB	50.5	43.2	50.4	43.1	50.9	43.6	50.9	43.6	-0.1	-0.1	0.4	0.4	S	-	-	-	-	-
1 Crickley Cottages, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	49.5	42.3	53.8	46.2	49.8	42.6	54.4	46.7	4.3	3.9	4.9	4.4	E	-	-	-	-	-
Crickley Hall, Crickley Hill, Witcombe, Gloucester, GL3 4UQ	52.2	44.8	55.2	47.5	52.6	45.1	55.8	48	3	2.7	3.6	3.2	E	-	-	-	-	-
Leafield Cottage, Green Lane, Witcombe, Gloucester, GL3 4TX	42.7	36.2	40.7	34.4	43.6	37	41.3	34.9	-2	-1.8	-1.4	-1.3	S	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		(short term)	(long term)	(short term)	(long term)	
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
3 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	43.7	37.1	43.4	36.8	44	37.4	44.0	37.4	-0.3	-0.3	0.3	0.3	NE	-	-	-	-	-
The Bungalow, Oakland Farm, Dog Lane, Witcombe, Cheltenham, GL3 4UG	41.7	35.3	41.2	34.9	42.1	35.7	41.8	35.4	-0.5	-0.4	0.1	0.1	E	-	-	-	-	-
Ridgeway, Dog Lane, Witcombe, Cheltenham, GL3 4UG	49.2	42.1	48.8	41.7	49.5	42.3	49.3	42.1	-0.4	-0.4	0.1	0	SE	-	-	-	-	-
Ground Floor Flat, Southwood House, Witcombe, Cheltenham, GL3 4UG	44.3	37.6	44.6	37.9	44.6	37.9	45.2	38.5	0.3	0.3	0.9	0.9	NE	-	-	-	-	-
25 Field View Lane, Witcombe, Gloucester, GL3 4XB	50.4	43.1	50.1	42.9	50.8	43.5	50.6	43.3	-0.3	-0.2	0.2	0.2	SE	-	-	-	-	-
Rannoch, Green Lane, Little Witcombe, Gloucester, GL3 4TX	45.7	38.9	44.7	38	46.2	39.4	45.2	38.5	-1	-0.9	-0.5	-0.4	SE	-	-	-	-	-
The Lodge, Stroud Road, GL4 8JN	61.4	53.3	61.8	53.6	61.6	53.5	62.4	54.2	0.4	0.3	1.0	0.9	-	-	-	-	-	-
Old Stores, GL4 8JH	42.1	35.7	38.2	32.2	41.9	35.5	38.8	32.7	-3.9	-3.5	-3.3	-3	E	-	-	-	-	-
1 Ivy Lodge Barns, GL4 8JH	50.6	43.3	48.9	41.8	51.6	44.2	49.5	42.3	-1.7	-1.5	-1.1	-1	W	-	-	-	-	-
Knapp Lodge, Birdlip Hill, Witcombe, Gloucester, GL3 4SL	50.9	43.6	47.5	40.5	52.2	44.8	48.3	41.2	-3.4	-3.1	-2.6	-2.4	SW	-	-	-	-	-
The Bull Pen, 11 Ivy Lodge Barns, GL4 8JH	42.9	36.4	41.5	35.1	43.5	36.9	42.1	35.7	-1.4	-1.3	-0.8	-0.7	N	-	-	-	-	-
High Ridge, Stroud Road, GL4 8JN	52.6	45.1	53.2	45.7	52.8	45.3	53.7	46.1	0.6	0.6	1.1	1	N	-	-	-	-	-
Staff House, Corner Cottage, GL4 8JH	63.7	55.1	61.8	53.4	64.6	55.9	62.5	54	-1.9	-1.7	-1.2	-1.1	E	-	-	-	-	-
Berrywood House, GL4 8JH	43.9	37.3	39.9	33.7	43.9	37.3	40.6	34.3	-4	-3.6	-3.3	-3	N	62.4	53.9	63.1	54.6	W

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
6 Ridgeway Close, GL4 8BN	43.7	37.1	40.2	34	43.7	37.1	40.8	34.5	-3.5	-3.1	-2.9	-2.6	E	-	-	-	-	-
Black Horse Ridge, Stroud Road, Birdlip, Gloucester, GL4 8JN	57.9	49.9	54.2	46.6	59.1	51	55.2	47.5	-3.7	-3.3	-2.7	-2.4	W	64.3	55.7	64.9	56.2	E
Rosewood House, GL4 8JH	53.7	46.1	51.8	44.4	54.6	46.9	52.5	45	-1.9	-1.7	-1.2	-1.1	N	-	-	-	-	-
5 Ivy Lodge Barns, GL4 8JH	50.3	43	47.5	40.5	50.6	43.3	48.1	41.1	-2.8	-2.5	-2.2	-1.9	E	-	-	-	-	-
Higher Ground, GL4 8JH	40.3	34.0	37.7	31.7	40.2	34	38.4	32.3	-2.6	-2.3	-1.9	-1.7	W	-	-	-	-	-
Kingshead House, GL4 8JH	61.8	53.4	59.6	51.4	62.8	54.3	60.3	52.1	-2.2	-2	-1.5	-1.3	E	-	-	-	-	-
2 Ivy Lodge Barns, GL4 8JH	52.5	45	50.3	43	53.5	45.9	50.9	43.6	-2.2	-2	-1.6	-1.4	E	-	-	-	-	-
Willow House, GL4 8JH	44.3	37.6	40.1	33.9	44.3	37.6	40.8	34.5	-4.2	-3.7	-3.5	-3.1	E	62.4	53.9	63.1	54.6	W
Mockingbird House, GL4 8JH	43.8	37.2	40.2	34	43.8	37.2	40.8	34.5	-3.6	-3.2	-3	-2.7	E	62.3	53.9	63	54.5	W
3 Field View Lane, Witcombe, Gloucester, GL3 4XB	52.0	44.6	52.2	44.8	52.4	44.9	52.7	45.2	0.2	0.2	0.7	0.6	W	-	-	-	-	-
6 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	52.8	45.3	53.2	45.7	53.2	45.7	53.7	46.1	0.4	0.4	0.9	0.8	SW	-	-	-	-	-
Yew Tree Cottage, Little Witcombe, Gloucester, GL3 3QU	46.8	39.9	45.2	38.5	47.3	40.3	45.7	38.9	-1.6	-1.4	-1.1	-1	S	-	-	-	-	-
Clair De Lune, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	45.2	38.5	45.5	38.7	45.6	38.8	45.9	39.1	0.3	0.2	0.7	0.6	NW	-	-	-	-	-
Gleneagles, Dog Lane, Witcombe, Cheltenham, GL3 4UG	45.8	39	46.5	39.6	46.1	39.3	47	40.1	0.7	0.6	1.2	1.1	NE	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Ingleside, Dog Lane, Witcombe, Cheltenham, GL3 4UG	47.3	40.3	48.8	41.7	47.7	40.7	49.4	42.2	1.5	1.4	2.1	1.9	NE	-	-	-	-	-
Marklands, Green Lane, Little Witcombe, Gloucester, GL3 4TX	41.4	35	40.4	34.1	42.1	35.7	40.9	34.6	-1	-0.9	-0.5	-0.4	S	-	-	-	-	-
28 Field View Lane, Witcombe, Gloucester, GL3 4XB	49.4	42.2	49.1	42	49.7	42.5	49.6	42.4	-0.3	-0.2	0.2	0.2	E	-	-	-	-	-
9 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	48.6	41.5	48.9	41.8	48.9	41.8	49.4	42.2	0.3	0.3	0.8	0.7	SE	-	-	-	-	-
The Gables, Little Witcombe, Gloucester, GL3 4SW	47.7	40.7	47.1	40.2	48.1	41.1	47.6	40.6	-0.6	-0.5	-0.1	-0.1	SE	-	-	-	-	-
Chandlers, Little Witcombe, Badgeworth, Tewkesbury, GL3 4TU	45.9	39.1	43.9	37.3	46.3	39.4	44.4	37.7	-2	-1.8	-1.5	-1.4	S	-	-	-	-	-
5 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	46.2	39.4	46.0	39.2	46.5	39.6	46.6	39.7	-0.2	-0.2	0.4	0.3	NE	-	-	-	-	-
24 Field View Lane, Witcombe, Gloucester, GL3 4XB	53.3	45.7	53.5	45.9	53.7	46.1	54.0	46.4	0.2	0.2	0.7	0.7	SW	-	-	-	-	-
5 Field View Lane, Witcombe, Gloucester, GL3 4XB	47.6	40.6	47.3	40.3	48	41	47.8	40.8	-0.3	-0.3	0.2	0.2	SE	-	-	-	-	-
1 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	43.1	36.6	42.8	36.3	43.5	36.9	43.3	36.8	-0.3	-0.3	0.2	0.2	NE	-	-	-	-	-
Rowan Cottage, Dog Lane, Witcombe, Cheltenham, GL3 4UG	43.2	36.7	43.9	37.3	43.5	36.9	44.5	37.8	0.7	0.6	1.3	1.1	NE	-	-	-	-	-
4 Field View Lane, Witcombe, Gloucester, GL3 4XB	48	41	47.8	40.8	48.4	41.3	48.4	41.3	-0.2	-0.2	0.4	0.3	SE	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
1 Field View Lane, Witcombe, Gloucester, GL3 4XB	54.5	46.8	54.8	47.1	54.9	47.2	55.3	47.5	0.3	0.3	0.8	0.7	W	-	-	-	-	-
Overley, Green Lane, Witcombe, Gloucester, GL3 4TX	42.3	35.8	41	34.7	43.1	36.6	41.6	35.2	-1.3	-1.1	-0.7	-0.6	S	-	-	-	-	-
7 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	44.9	38.2	45.2	38.5	45.3	38.5	45.6	38.8	0.3	0.3	0.7	0.6	NW	-	-	-	-	-
Uplands, Dog Lane, Witcombe, Cheltenham, GL3 4UG	43.5	36.9	43.8	37.2	43.9	37.3	44.2	37.6	0.3	0.3	0.7	0.7	N	-	-	-	-	-
Old Chestnut Cottage, Green Lane, Little Witcombe, Gloucester, GL3 4TX	40.9	34.6	39.6	33.4	41.5	35.1	40.1	33.9	-1.3	-1.2	-0.8	-0.7	S	-	-	-	-	-
Tophers Cottage, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	52.1	44.7	55.4	47.6	52.4	44.9	56.1	48.3	3.3	2.9	4	3.6	SE	-	-	-	-	-
Haroldstone House, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	55.6	47.8	59.1	51	55.9	48.1	59.7	51.5	3.5	3.2	4.1	3.7	SE	-	-	-	-	-
Copperfield, Green Lane, Little Witcombe, Gloucester, GL3 4TX	48.9	41.8	48.5	41.4	49.3	42.1	49	41.9	-0.4	-0.4	0.1	0.1	N	-	-	-	-	-
White Towers, Dog Lane, Witcombe, Cheltenham, GL3 4UG	51.9	44.5	55.1	47.4	52.2	44.8	55.8	48	3.2	2.9	3.9	3.5	NE	-	-	-	-	-
10 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	48.9	41.8	49.1	42	49.3	42.1	49.6	42.4	0.2	0.2	0.7	0.6	W	-	-	-	-	-
The Tarry, Dog Lane, Witcombe, Cheltenham, GL3 4UG	45.2	38.5	44.9	38.2	45.6	38.8	45.5	38.7	-0.3	-0.3	0.3	0.2	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
32 Field View Lane, Witcombe, Gloucester, GL3 4XB	49.8	42.6	49.1	42	50.2	43	49.6	42.4	-0.7	-0.6	-0.2	-0.2	NE	-	-	-	-	-
26 Field View Lane, Witcombe, Gloucester, GL3 4XB	51.2	43.9	51	43.7	51.5	44.1	51.5	44.1	-0.2	-0.2	0.3	0.2	S	-	-	-	-	-
Timbers, Green Lane, Witcombe, Gloucester, GL3 4TX	48.5	41.4	47.5	40.5	48.9	41.8	48	41	-1	-0.9	-0.5	-0.4	E	-	-	-	-	-
Ivy Lodge, GL4 8JH	43.5	36.9	41.2	34.9	43.9	37.3	41.8	35.4	-2.3	-2	-1.7	-1.5	S	-	-	-	-	-
3 Ivy Lodge Barns, GL4 8JH	50.7	43.4	48.2	41.2	51.7	44.3	48.8	41.7	-2.5	-2.2	-1.9	-1.7	E	-	-	-	-	-
10 Ivy Lodge Barns, GL4 8JH	43	36.5	40	33.8	43.2	36.7	40.6	34.3	-3	-2.7	-2.4	-2.2	E	-	-	-	-	-
Corner Cottage, GL4 8JH	63.7	55.1	61.8	53.4	64.6	55.9	62.5	54	-1.9	-1.7	-1.2	-1.1	E	-	-	-	-	-
Ivy Cottage, GL4 8JH	55.9	48.1	53.8	46.2	57	49.1	54.5	46.8	-2.1	-1.9	-1.4	-1.3	E	-	-	-	-	-
9 Ivy Lodge Barns, GL4 8JH	41.2	34.9	38.3	32.3	41.4	35	38.9	32.8	-2.9	-2.6	-2.3	-2.1	E	-	-	-	-	-
Chestnut House, GL4 8JH	44.3	37.6	39.9	33.7	44.3	37.6	40.6	34.3	-4.4	-3.9	-3.7	-3.3	E	62.3	53.9	63	54.5	W
6 Ivy Lodge Barns, GL4 8JH	53.5	45.9	52.6	45.1	53.9	46.3	53.1	45.6	-0.9	-0.8	-0.4	-0.3	E	64.6	55.9	65.1	56.4	W
George Cottage, GL4 8JH	60	51.8	58	50	61.1	52.8	58.7	50.6	-2	-1.8	-1.3	-1.2	S	-	-	-	-	-
Long Acre Barn, GL4 8JH	58.1	50.1	56.3	48.4	59	50.9	57	49.1	-1.8	-1.7	-1.1	-1	N	-	-	-	-	-
Primrose Cottage, Green Lane, Little Witcombe, Gloucester, GL3 4TX	41.5	35.1	40.3	34	42.2	35.8	40.8	34.5	-1.2	-1.1	-0.7	-0.6	S	-	-	-	-	-
2 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	43.3	36.8	43	36.5	43.7	37.1	43.5	36.9	-0.3	-0.3	0.2	0.1	NE	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
3 Crickley Cottages, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	51.9	44.5	55	47.3	52.2	44.8	55.6	47.8	3.1	2.8	3.7	3.3	S	-	-	-	-	-
Stonehaven, Green Lane, Little Witcombe, Gloucester, GL3 4TX	48.7	41.6	48.3	41.2	49.1	42	48.8	41.7	-0.4	-0.4	0.1	0.1	N	-	-	-	-	-
The Retreat, Green Lane, Witcombe, Gloucester, GL3 4TX	46	39.2	44.9	38.2	46.4	39.5	45.5	38.7	-1.1	-1	-0.5	-0.5	S	-	-	-	-	-
Peak View Farm, Green Lane, Witcombe, Gloucester, GL3 4TX	41.5	35.1	40.1	33.9	42.4	35.9	40.6	34.3	-1.4	-1.2	-0.9	-0.8	W	-	-	-	-	-
Bramble Cottage, Dog Lane, Witcombe, Cheltenham, GL3 4UG	52.3	44.8	54.4	46.7	52.6	45.1	55.0	47.3	2.1	1.9	2.7	2.5	NE	-	-	-	-	-
30 Field View Lane, Witcombe, Gloucester, GL3 4XB	50.4	43.1	49.8	42.6	50.8	43.5	50.3	43	-0.6	-0.5	-0.1	-0.1	S	-	-	-	-	-
Lowbands, Green Lane, Little Witcombe, Gloucester, GL3 4TX	42.7	36.2	43.6	37	43.2	36.7	44.2	37.6	0.9	0.8	1.5	1.4	E	-	-	-	-	-
Witcombe Court Lodge, Witcombe, Gloucester, GL3 4UA	50	42.8	48.5	41.4	50.4	43.1	49	41.9	-1.5	-1.4	-1	-0.9	S	-	-	-	-	-
2 Crickley Cottages, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	52	44.6	55.1	47.4	52.3	44.8	55.8	48	3.1	2.8	3.8	3.4	S	-	-	-	-	-
Yew Tree Cottage, Green Lane, Witcombe, Gloucester, GL3 4TX	45.5	38.7	45.4	38.6	46	39.2	45.9	39.1	-0.1	-0.1	0.4	0.4	W	-	-	-	-	-
The Crest, Dog Lane, Witcombe, Cheltenham, GL3 4UG	52.5	45	52	44.6	52.8	45.3	52.5	45.0	-0.5	-0.4	0	0	SE	-	-	-	-	-
Spring Orchard, Crickley Hill, Witcombe, Gloucester, GL3 4UF	56.2	48.4	55.7	47.9	56.5	48.6	56.2	48.4	-0.5	-0.5	0	0	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Meadow Bank, Green Lane, Witcombe, Gloucester, GL3 4TX	41	34.7	40.2	34	41.7	35.3	40.6	34.3	-0.8	-0.7	-0.4	-0.4	SE	-	-	-	-	-
Sunnybank Cottage, Dog Lane, Witcombe, Cheltenham, GL3 4UG	48.5	41.4	47.7	40.7	48.8	41.7	48.3	41.2	-0.8	-0.7	-0.2	-0.2	NW	-	-	-	-	-
Court Farm, Little Witcombe, Badgeworth, Tewkesbury, GL3 4TU	42.3	35.8	41.3	34.9	42.9	36.4	41.8	35.4	-1	-0.9	-0.5	-0.4	S	-	-	-	-	-
Little Witcombe House, Little Witcombe, Badgeworth, Tewkesbury, GL3 4TU	48.1	41.1	47	40.1	48.5	41.4	47.5	40.5	-1.1	-1	-0.6	-0.6	E	-	-	-	-	-
The Bungalow Oakland Farm, Witcombe, Cheltenham, GL3 4UG	48.7	41.6	48.4	41.3	49	41.9	48.9	41.8	-0.3	-0.3	0.2	0.2	W	-	-	-	-	-
Yew Tree Cottage, Crickley Hill, Witcombe, Gloucester, GL3 4UQ	47.9	40.9	52.2	44.8	48.2	41.2	52.9	45.4	4.3	3.9	5	4.5	E	-	-	-	-	-
Badgers End, Dog Lane, Witcombe, Cheltenham, GL3 4UG	48.7	41.6	48.5	41.4	49.1	42	49.0	41.9	-0.2	-0.2	0.3	0.3	W	-	-	-	-	-
31 Field View Lane, Witcombe, Gloucester, GL3 4XB	49.9	42.7	49.2	42.1	50.3	43	49.7	42.5	-0.7	-0.6	-0.2	-0.2	E	-	-	-	-	-
24 Little Wicombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	44.3	37.6	42.5	36	45.4	38.6	43.1	36.6	-1.8	-1.6	-1.2	-1	SW	-	-	-	-	-
The Kneelings, Dog Lane, Witcombe, Cheltenham, GL3 4UG	46.5	39.6	46.7	39.8	46.9	40	47.2	40.3	0.2	0.2	0.7	0.7	NW	-	-	-	-	-
Fairholme, Green Lane, Witcombe, Gloucester, GL3 4TY	44.1	37.5	41.4	35	45.3	38.5	42.1	35.7	-2.7	-2.5	-2	-1.8	S	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Chestnut Cottage, Green Lane, Little Witcombe, Gloucester, GL3 4TX	43.4	36.8	42.6	36.1	43.8	37.2	43	36.5	-0.8	-0.7	-0.4	-0.3	N	-	-	-	-	-
19 Little Witcombe Court Park, Green Lane, Witcombe, Gloucester, GL3 4TZ	39.3	33.1	37.8	31.8	40.3	34	38.4	32.3	-1.5	-1.3	-0.9	-0.8	SW	-	-	-	-	-
4 Poppy Meadow Close, Witcombe, Gloucester, GL3 4XG	53.8	46.2	54	46.4	54.2	46.6	54.5	46.8	0.2	0.2	0.7	0.6	SW	-	-	-	-	-
Haroldstone Cottage, Crickley Hill, Badgeworth, Cheltenham, GL3 4UQ	49.7	42.5	51.4	44	50.1	42.9	52	44.6	1.7	1.5	2.3	2.1	NW	-	-	-	-	-
Pool House, GL4 8JH	45.8	39	39.5	33.3	45.7	38.9	40.1	33.9	-6.3	-5.7	-5.7	-5.1	N	-	-	-	-	-
The Forge, GL4 8JH	45	38.3	39	32.9	44.9	38.2	39.7	33.5	-6	-5.4	-5.3	-4.8	N	-	-	-	-	-
Madison Cottage, GL4 8JH	42.6	36.1	38.1	32.1	42.3	35.8	38.8	32.7	-4.5	-4	-3.8	-3.4	E	-	-	-	-	-
Stockwell Cottage, Stockwell, GL4 8JZ	37.4	31.4	42.6	36.1	35.5	29.7	43.2	36.7	5.2	4.7	5.8	5.3	N	-	-	-	-	-
Holdene, GL4 8JH	44.5	37.8	39.9	33.7	44.3	37.6	40.6	34.3	-4.6	-4.1	-3.9	-3.5	N	-	-	-	-	-
Apartment 2, Partridge House, GL4 8JH	43.1	36.6	39.1	33	42.8	36.3	39.8	33.6	-4	-3.6	-3.3	-3	E	-	-	-	-	-
Stockwell Farm Barn, Stockwell, GL4 8JZ	34.7	29	42.7	36.2	34.8	29.1	43.3	36.8	8	7.2	8.6	7.8	N	-	-	-	-	-
Highcroft, GL4 8JH	47.4	40.4	44.2	37.6	47.8	40.8	44.9	38.2	-3.2	-2.8	-2.5	-2.2	N	-	-	-	-	-
Buckingham House, GL4 8JH	54	46.4	50.8	43.5	54.6	46.9	51.5	44.1	-3.2	-2.9	-2.5	-2.3	E	62.7	54.2	63.3	54.8	W
Skyfall House, GL4 8JH	47.0	40.1	42.8	36.3	47	40.1	43.5	36.9	-4.2	-3.8	-3.5	-3.2	E	-	-	-	-	-
Cotswold Cottage, GL4 8JH	47.1	40.2	39.9	33.7	47	40.1	40.6	34.3	-7.2	-6.5	-6.5	-5.9	N	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
4 Stockwell Cottages, Stockwell, GL4 8JZ	44.1	37.5	38.5	32.4	43.8	37.2	39	32.9	-5.6	-5.1	-5.1	-4.6	S	-	-	-	-	-
Dooneen, 3 Birdlip Farm, GL4 8JH	41.3	34.9	38.2	32.2	41.2	34.9	38.9	32.8	-3.1	-2.7	-2.4	-2.1	S	-	-	-	-	-
Ground Floor, The Willows, Badgeworth, Cheltenham, GL3 4UQ	49.8	42.6	52.8	45.3	50.2	43	53.4	45.8	3	2.7	3.6	3.2	N	-	-	-	-	-
4 Ridgeway Close, GL4 8BN	43	36.5	39.8	33.6	42.7	36.2	40.5	34.2	-3.2	-2.9	-2.5	-2.3	E	-	-	-	-	-
Beverley Cottage, GL4 8JH	46.5	39.6	39.2	33.1	46.4	39.5	39.8	33.6	-7.3	-6.5	-6.7	-6	E	-	-	-	-	-
Welcome Cottage, GL4 8JH	46.5	39.6	38.9	32.8	46.4	39.5	39.5	33.3	-7.6	-6.8	-7	-6.3	E	-	-	-	-	-
Stockwell Farm, Stockwell, GL4 8JZ	35	29.3	42.1	35.7	35.1	29.4	42.7	36.2	7.1	6.4	7.7	6.9	E	-	-	-	-	-
Apartment 1, Partridge House, GL4 8JH	43.1	36.6	39.1	33	42.8	36.3	39.8	33.6	-4	-3.6	-3.3	-3	E	-	-	-	-	-
6 Birdlip Farm, GL4 8JH	46.5	39.6	40.4	34.1	46.4	39.5	41	34.7	-6.1	-5.5	-5.5	-4.9	E	-	-	-	-	-
The Haybarn, Birdlip Farm, GL4 8JH	44.7	38	39.2	33.1	44.4	37.7	39.8	33.6	-5.5	-4.9	-4.9	-4.4	E	-	-	-	-	-
Elmwood House, GL4 8JH	43.1	36.6	38.9	32.8	42.9	36.4	39.5	33.3	-4.2	-3.8	-3.6	-3.3	E	-	-	-	-	-
April Cottage, GL4 8JH	50.5	43.2	39.8	33.6	50.4	43.1	40.5	34.2	-10.7	-9.6	-10	-9	E	-	-	-	-	-
Barrow Wake House, Shab Hill, GL4 8JX	52.4	44.9	43.5	36.9	52.7	45.2	44.2	37.6	-8.9	-8	-8.2	-7.3	S	-	-	-	-	-
5 Ridgeway Close, GL4 8BN	42.7	36.2	39.4	33.2	42.5	36	40	33.8	-3.3	-3	-2.7	-2.4	E	-	-	-	-	-
Badgers Barn, GL4 8JH	44.3	37.6	38.8	32.7	44.1	37.5	39.4	33.2	-5.5	-4.9	-4.9	-4.4	E	-	-	-	-	-
Springfield Bungalow, GL4 8JH	47.5	40.5	39.2	33.1	47.4	40.4	39.8	33.6	-8.3	-7.4	-7.7	-6.9	N	-	-	-	-	-
Stockwell Barn A, Stockwell, Birdlip, GL4 8JZ	41.8	35.4	44.5	37.8	41.5	35.1	45.1	38.4	2.7	2.4	3.3	3	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Fern Cottage, GL4 8JH	41.8	35.4	38.2	32.2	41.6	35.2	38.8	32.7	-3.6	-3.2	-3	-2.7	E	-	-	-	-	-
5 Birdlip Farm, GL4 8JH	45.6	38.8	39.8	33.6	45.6	38.8	40.4	34.1	-5.8	-5.2	-5.2	-4.7	N	-	-	-	-	-
2 Ridgeway Close, GL4 8BN	41.5	35.1	38.5	32.4	41.5	35.1	39.1	33	-3	-2.7	-2.4	-2.1	SE	-	-	-	-	-
M J Partridge Ltd, Greywalls, GL4 8JH	46.8	39.9	43.8	37.2	47.2	40.3	44.5	37.8	-3	-2.7	-2.3	-2.1	N	-	-	-	-	-
Clare Cottage, GL4 8JH	47.8	40.8	39.1	33	47.6	40.6	39.7	33.5	-8.7	-7.8	-8.1	-7.3	E	-	-	-	-	-
The Haven, GL4 8JH	41.2	34.9	37.8	31.8	40.8	34.5	38.5	32.4	-3.4	-3.1	-2.7	-2.5	E	-	-	-	-	-
4 Birdlip Farm, GL4 8JH	44.8	38.1	40.9	34.6	44.7	38	41.5	35.1	-3.9	-3.5	-3.3	-3	E	-	-	-	-	-
Eaton Cottage, GL4 8JH	45.1	38.4	39.4	33.2	44.9	38.2	40.1	33.9	-5.7	-5.2	-5	-4.5	E	-	-	-	-	-
Birdlip Villa, GL4 8JH	45.8	39	39.0	32.9	45.7	38.9	39.6	33.4	-6.8	-6.1	-6.2	-5.6	N	-	-	-	-	-
3 Ridgeway Close, GL4 8BN	42.6	36.1	39.8	33.6	42.4	35.9	40.4	34.1	-2.8	-2.5	-2.2	-2	E	-	-	-	-	-
The Nest, Birdlip Farm, GL4 8JH	49.1	42	45.3	38.5	49.2	42.1	46.0	39.2	-3.8	-3.5	-3.1	-2.8	N	-	-	-	-	-
Applegarth, GL4 8JH	47	40.1	40.2	34	46.9	40	40.8	34.5	-6.8	-6.1	-6.2	-5.6	E	-	-	-	-	-
1 Air Balloon Cottages, Crickley Hill, GL4 8JY	74.7	65	64.5	55.8	75	65.3	65.1	56.4	-10.2	-9.2	-9.6	-8.6	SE	-	-	-	-	-
Shab Hill Farm, Shab Hill, GL4 8JX	37.7	31.7	50.2	43	37.9	31.9	50.9	43.6	12.5	11.3	13.2	11.9	NE	-	-	-	-	-
Crickley Ridge, Crickley Hill, GL4 8JY	59.3	51.1	50.6	43.3	59.7	51.5	51.2	43.9	-8.7	-7.8	-8.1	-7.2	SW	-	-	-	-	-
Top Flat, The Willows, Badgeworth, Cheltenham, GL3 4UQ	48.5	41.4	51.9	44.5	48.8	41.7	52.6	45.1	3.4	3.1	4.1	3.7	N	-	-	-	-	-
Grove Lodge, Crickley Hill, Witcombe, Gloucester, GL3 4UH	52.9	45.4	53.8	46.2	53.2	45.7	54.4	46.7	0.9	0.8	1.5	1.3	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Four Winds, 1 Shab Hill, GL4 8JX	61.9	53.5	45.9	39.1	62.3	53.9	46.6	39.7	-16.0	-14.4	-15.3	-13.8	SW	-	-	-	-	-
Beech House, GL4 8JH	43.2	36.7	39.1	33	43	36.5	39.7	33.5	-4.1	-3.7	-3.5	-3.2	E	-	-	-	-	-
Garden House, GL4 8JH	41.3	34.9	38.7	32.6	41.3	34.9	39.3	33.1	-2.6	-2.3	-2	-1.8	S	-	-	-	-	-
Devon House, GL4 8JH	60.5	52.2	58.5	50.4	61.3	53	59.2	51.1	-2	-1.8	-1.3	-1.1	N	-	-	-	-	-
1 Ridgeway Close, GL4 8BN	44.5	37.8	40.5	34.2	44.6	37.9	41.1	34.8	-4	-3.6	-3.4	-3	NE	-	-	-	-	-
7 Birdlip Farm, GL4 8JH	46.7	39.8	39.5	33.3	46.6	39.7	40.1	33.9	-7.2	-6.5	-6.6	-5.9	E	-	-	-	-	-
Oakridge House, GL4 8JH	39.1	33	36.9	31	38.9	32.8	37.6	31.6	-2.2	-2	-1.5	-1.4	W	-	-	-	-	-
Cuckoopen Barn Farm, Shab Hill, South Hill, Coberley, GL4 8JX	37	31.1	42.6	36.1	29.9	24.7	43.3	36.8	5.6	5	6.3	5.7	W	-	-	-	-	-
Fernbank, Crickley Hill, Witcombe, Gloucester, GL3 4UQ	70.8	61.5	63.9	55.3	71.1	61.8	64.6	55.9	-6.9	-6.2	-6.2	-5.6	SW	65.8	57.0	66.4	57.5	SE
Haroldstone Lodge, Crickley Hill, Witcombe, Gloucester, GL3 4UQ	51.7	44.3	55.1	47.4	52	44.6	55.8	48	3.4	3.1	4.1	3.7	N	-	-	-	-	-
2 Air Balloon Cottages, Crickley Hill, GL4 8JY	73.3	63.8	63.5	54.9	73.6	64	64.2	55.6	-9.8	-8.9	-9.1	-8.2	SE	-	-	-	-	-
Halfacres, Badgeworth, Cheltenham, GL3 4UQ	56.6	48.7	58.6	50.5	56.9	49	59.3	51.1	2	1.8	2.7	2.4	N	63.3	54.8	64	55.4	E
The Willows, Badgeworth, Cheltenham, GL3 4UQ	56.3	48.4	59.7	51.5	56.6	48.7	60.3	52.1	3.4	3.1	4	3.7	W	63.3	54.8	63.9	55.3	S
Walnut Cottage, GL53 9NN	31.3	25.9	34	28.4	24.3	19.6	34.6	28.9	2.7	2.5	3.3	3	W	-	-	-	-	-
Rectory Cottage, GL53 9NJ	32	26.6	33.9	28.3	22.1	17.7	34.5	28.8	1.9	1.7	2.5	2.2	W	-	-	-	-	-
Hunters Hill, GL53 9NJ	44.4	37.7	42.8	36.3	44.5	37.8	43.1	36.6	-1.6	-1.4	-1.3	-1.1	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Hillbarn Cottage, GL53 9NJ	38.4	32.3	43.5	36.9	19.9	15.7	44.2	37.6	5.1	4.6	5.8	5.3	NW	-	-	-	-	-
Scrags Folly, GL53 9NN	29.8	24.6	32.1	26.7	24.7	20	32.7	27.2	2.3	2.1	2.9	2.6	N	-	-	-	-	-
1 Manor Farm Cottage, GL53 9NN	30.1	24.9	32.4	26.9	25.8	21	33	27.5	2.3	2	2.9	2.6	N	-	-	-	-	-
Manor Barn, GL53 9NJ	30.3	25	32.8	27.3	25.5	20.7	33.3	27.7	2.5	2.3	3	2.7	W	-	-	-	-	-
Jubilee Cottage, GL53 9NN	33.7	28.1	34.8	29.1	24.6	19.9	35.4	29.6	1.1	1	1.7	1.5	W	-	-	-	-	-
The Carriage House, GL53 9NJ	45.1	38.4	43.4	36.8	45.4	38.6	43.9	37.3	-1.7	-1.6	-1.2	-1.1	E	-	-	-	-	-
Red House, GL53 9NJ	41.5	35.1	40.1	33.9	41.3	34.9	40.6	34.3	-1.4	-1.2	-0.9	-0.8	N	-	-	-	-	-
Old Granary, GL53 9NJ	31.1	25.8	33.6	28	17	13.1	34.1	28.5	2.5	2.2	3	2.7	S	-	-	-	-	-
1 Close Barn, Coberley Road, GL53 9QY	32.6	27.1	35	29.3	31.5	26.1	35.6	29.8	2.4	2.2	3	2.7	W	-	-	-	-	-
Coberley Court, GL53 9RA	40.3	34	39	32.9	40.6	34.3	39.4	33.2	-1.3	-1.1	-0.9	-0.8	NE	-	-	-	-	-
2 Close Barn, Coberley Road, GL53 9QY	42.1	35.7	40.5	34.2	42.5	36	40.7	34.4	-1.6	-1.5	-1.4	-1.3	E	-	-	-	-	-
3 The Hamblins, GL53 9QZ	41.2	34.9	39.8	33.6	41.5	35.1	40.3	34	-1.4	-1.3	-0.9	-0.9	E	-	-	-	-	-
Bookers, Coberley Road, GL53 9QY	46.2	39.4	44.9	38.2	46.1	39.3	45.8	39	-1.3	-1.2	-0.4	-0.4	N	-	-	-	-	-
Rosebank, GL53 9QZ	40.4	34.1	38.7	32.6	40.7	34.4	38.8	32.7	-1.7	-1.5	-1.6	-1.4	NE	-	-	-	-	-
Fern Cottage, GL53 9QZ	39.9	33.7	39	32.9	40.1	33.9	39.7	33.5	-0.9	-0.8	-0.2	-0.2	N	-	-	-	-	-
Close Cottage, Coberley Road, GL53 9QY	31.4	26	34.4	28.7	29.8	24.6	35	29.3	3	2.7	3.6	3.3	S	-	-	-	-	-
Westerleigh Cottage, GL53 9NN	31.4	26	34	28.4	24	19.4	34.6	28.9	2.6	2.4	3.2	2.9	W	-	-	-	-	-
1 Rose Cottage, GL53 9NN	39.7	33.5	38.3	32.3	39.3	33.1	38.6	32.5	-1.4	-1.2	-1.1	-1	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Cross Cottage, 1 GL53 9NN	35.7	30.2	35.4	29.9	35	29.5	35.2	29.7	-0.3	-0.3	-0.5	-0.5	-	-	-	-	-	-
Larkfield, GL53 9NN	31.1	25.8	33.4	27.8	26.5	21.6	34	28.4	2.3	2	2.9	2.6	W	-	-	-	-	-
The Cottage, GL53 9NJ	39.3	33.1	37.7	31.7	39.1	33	38.2	32.2	-1.6	-1.4	-1.1	-0.9	E	-	-	-	-	-
2 Rose Cottage, GL53 9NN	31	25.7	33.9	28.3	22.6	18.1	34.5	28.8	2.9	2.6	3.5	3.1	W	-	-	-	-	-
The Laurels, GL53 9NJ	45.7	38.9	44	37.4	45.9	39.1	44.5	37.8	-1.7	-1.5	-1.2	-1.1	E	-	-	-	-	-
The Old Rectory, GL53 9NN	33.2	27.7	34.6	28.9	25.1	20.4	35.2	29.5	1.4	1.2	2	1.8	W	-	-	-	-	-
Perryway Cottage, GL53 9NN	42.0	35.6	40.6	34.3	42	35.6	40.9	34.6	-1.4	-1.3	-1.1	-1	NE	-	-	-	-	-
The Old School, GL53 9NN	30.1	24.9	31.7	26.3	27	22.1	32.2	26.8	1.6	1.4	2.1	1.9	N	-	-	-	-	-
Pound Cottage, GL53 9NJ	32.3	26.8	34.2	28.6	19.3	15.1	34.8	29.1	1.9	1.8	2.5	2.3	W	-	-	-	-	-
Old Well House, GL53 9NJ	31.9	26.5	34.1	28.5	17.8	13.8	34.7	29	2.2	2	2.8	2.5	SW	-	-	-	-	-
4 The Hamblins, GL53 9QZ	43.2	36.7	41.9	35.5	43.4	36.8	42.6	36.1	-1.3	-1.2	-0.6	-0.6	N	-	-	-	-	-
Stoneleigh, 4 The Green, GL53 9QZ	38.8	32.7	37.6	31.6	39.1	33	38.2	32.2	-1.2	-1.1	-0.6	-0.5	E	-	-	-	-	-
Coberley Mill, GL53 9NH	43.6	37	41.9	35.5	43.9	37.3	41.9	35.5	-1.7	-1.5	-1.7	-1.5	E	-	-	-	-	-
Royal Cottage, GL53 9QZ	39.7	33.5	38.5	32.4	40	33.8	39.0	32.9	-1.2	-1.1	-0.7	-0.6	NE	-	-	-	-	-
Dowmans Farm, Coberley Road, GL53 9QY	38.8	32.7	37.3	31.3	37.3	31.3	37.5	31.5	-1.5	-1.4	-1.3	-1.2	E	-	-	-	-	-
Primrose Cottage, 1 The Green, GL53 9QZ	38.7	32.6	37.6	31.6	38.9	32.8	38.4	32.3	-1.1	-1	-0.3	-0.3	N	-	-	-	-	-
Coberley Court Cottage, GL53 9RA	46.0	39.2	44.2	37.6	46.4	39.5	44.2	37.6	-1.8	-1.6	-1.8	-1.6	NE	-	-	-	-	-
Post Office, The Old Post Office, GL53 9QZ	41.8	35.4	40.1	33.9	42.1	35.7	40.3	34	-1.7	-1.5	-1.5	-1.4	NE	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
2 North Terrace, GL53 9QZ	40.4	34.1	38.9	32.8	40.7	34.4	39.1	33	-1.5	-1.3	-1.3	-1.1	E	-	-	-	-	-
Close Farm House, Coberley Road, GL53 9QY	38.5	32.4	37	31.1	38.8	32.7	37.1	31.2	-1.5	-1.3	-1.4	-1.2	S	-	-	-	-	-
Hill View, GL53 9QZ	34.5	28.8	35.5	29.7	34.3	28.6	36.2	30.4	1	0.9	1.7	1.6	NW	-	-	-	-	-
The Cottage, GL53 9QZ	39.6	33.4	37.9	31.9	39.9	33.7	38	32	-1.7	-1.5	-1.6	-1.4	E	-	-	-	-	-
Brook Cottage, GL53 9QZ	38	32	36.4	30.5	38.4	32.3	36.7	30.8	-1.6	-1.5	-1.3	-1.2	S	-	-	-	-	-
Over The Way, Royal Cottage, GL53 9QZ	39.7	33.5	38.5	32.4	40	33.8	39.0	32.9	-1.2	-1.1	-0.7	-0.6	NE	-	-	-	-	-
Fenny Cottage, GL53 9NJ	32.9	27.4	34	28.4	30.3	25	34.5	28.8	1.1	1	1.6	1.4	W	-	-	-	-	-
Manor Farm, GL53 9NN	30.5	25.2	32.9	27.4	25.1	20.4	33.5	27.9	2.4	2.2	3	2.7	SW	-	-	-	-	-
Green Gables, GL53 9NJ	43.1	36.6	41.6	35.2	42.9	36.4	42.2	35.8	-1.5	-1.4	-0.9	-0.8	N	-	-	-	-	-
Walnuts, The Walled Garden, GL53 9NJ	29.4	24.2	32.2	26.8	26	21.2	32.8	27.3	2.8	2.6	3.4	3.1	S	-	-	-	-	-
Hill Barn, GL53 9NJ	37.6	31.6	41.5	35.1	23.1	18.6	42.2	35.8	3.9	3.5	4.6	4.2	W	-	-	-	-	-
White Gates, GL53 9NN	41.2	34.9	40	33.8	40.7	34.4	40.4	34.1	-1.2	-1.1	-0.8	-0.8	N	-	-	-	-	-
2 Cross Cottage, GL53 9NN	40.9	34.6	39.5	33.3	40.8	34.5	39.8	33.6	-1.4	-1.3	-1.1	-1	NE	-	-	-	-	-
Manor House, GL53 9NJ	31.1	25.8	33.4	27.8	27.6	22.6	33.9	28.3	2.3	2	2.8	2.5	S	-	-	-	-	-
Langtree, GL53 9NJ	46.3	39.4	45.1	38.4	46.7	39.8	45.1	38.4	-1.2	-1	-1.2	-1	NE	-	-	-	-	-
Greystone House, GL53 9NJ	39.1	33	37.9	31.9	39	32.9	37.9	31.9	-1.2	-1.1	-1.2	-1.1	E	-	-	-	-	-
Jesmond Cottage, GL53 9NJ	32.1	26.7	33.9	28.3	14.9	11.2	34.5	28.8	1.8	1.6	2.4	2.1	W	-	-	-	-	-
Chestnut Cottage, GL53 9NJ	38.4	32.3	43.6	37	20.1	15.9	44.2	37.6	5.2	4.7	5.8	5.3	SW	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Nothill, GL53 9NJ	33.7	28.1	35.9	30.1	25.3	20.5	36.5	30.6	2.2	2	2.8	2.5	S	-	-	-	-	-
Spring Barn, GL53 9NJ	29.3	24.1	31.6	26.2	13.3	9.7	32.2	26.8	2.3	2.1	2.9	2.7	E	-	-	-	-	-
The Old Rectory, GL53 9QZ	43	36.5	41.3	34.9	43.4	36.8	41.3	34.9	-1.7	-1.6	-1.7	-1.6	E	-	-	-	-	-
Yew Tree Cottage, GL53 9QZ	38.5	32.4	37	31.1	38.8	32.7	37.2	31.3	-1.5	-1.3	-1.3	-1.1	E	-	-	-	-	-
2 The Hamblins, GL53 9QZ	43.5	36.9	42.3	35.8	43.8	37.2	42.9	36.4	-1.2	-1.1	-0.6	-0.5	N	-	-	-	-	-
Moles Corner, GL53 9NJ	30.4	25.1	32.7	27.2	24.6	19.9	33.3	27.7	2.3	2.1	2.9	2.6	W	-	-	-	-	-
Orchard House, GL53 9NJ	33.7	28.4	33.5	28.2	32.8	27.5	33.8	28.4	-0.2	-0.2	0.1	0	-	-	-	-	-	-
Appletree Cottage, GL53 9NN	31.5	26.1	33.9	28.3	25.1	20.4	34.5	28.8	2.4	2.2	3	2.7	SW	-	-	-	-	-
Copperfields, GL53 9NJ	43.7	37.1	42.1	35.7	43.6	37	42.7	36.2	-1.6	-1.4	-1	-0.9	N	-	-	-	-	-
2 Manor Farm Cottage, GL53 9NN	30.1	24.9	32.4	26.9	25.8	21	33	27.5	2.3	2	2.9	2.6	N	-	-	-	-	-
The Malt House, GL53 9NJ	31.8	26.4	33.7	28.1	28.6	23.5	34	28.4	1.9	1.7	2.2	2	W	-	-	-	-	-
Bakers Farm, GL53 9NJ	33.0	27.5	34.5	28.8	19.8	15.6	35.1	29.4	1.5	1.3	2.1	1.9	W	-	-	-	-	-
New Rectory, GL53 9NJ	44.1	37.5	42.5	36	44.3	37.6	43	36.5	-1.6	-1.5	-1.1	-1	E	-	-	-	-	-
The Coach House, GL53 9NJ	31.1	25.8	33.6	28	19.6	15.4	34.2	28.6	2.5	2.2	3.1	2.8	S	-	-	-	-	-
Willow House, GL53 9NJ	29.8	24.6	32.2	26.8	21.2	16.9	32.8	27.3	2.4	2.2	3	2.7	SW	-	-	-	-	-
Hamblins Cottage, GL53 9QZ	41.1	34.8	39.7	33.5	41.3	34.9	40.1	33.9	-1.4	-1.3	-1	-0.9	E	-	-	-	-	-
Chapel Cottage, GL53 9QZ	39.4	33.2	37.7	31.7	39.7	33.5	37.8	31.8	-1.7	-1.5	-1.6	-1.4	E	-	-	-	-	-
6 The Hamblins, GL53 9QZ	42.1	35.7	40.9	34.6	42.3	35.8	41.6	35.2	-1.2	-1.1	-0.5	-0.5	N	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
	Day	Night	Day	Night	Day	Night	Day	Night	(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
3 North Terrace, GL53 9QZ	40.5	34.2	39	32.9	40.8	34.5	39.2	33.1	-1.5	-1.3	-1.3	-1.1	E	-	-	-	-	-
Spring Well Barn, Coberley Road, GL53 9QY	42.5	36	41.3	34.9	42.7	36.2	42	35.6	-1.2	-1.1	-0.5	-0.4	NE	-	-	-	-	-
1 The Hamblins, GL53 9QZ	43.1	36.6	41.6	35.2	43.5	36.9	41.8	35.4	-1.5	-1.4	-1.3	-1.2	E	-	-	-	-	-
The Bungalow, Coberley Road, GL53 9QY	41	34.7	39.5	33.3	41.2	34.9	39.9	33.7	-1.5	-1.4	-1.1	-1	E	-	-	-	-	-
2 The Green, GL53 9QZ	36.9	31	35.8	30	37.1	31.2	36.6	30.7	-1.1	-1	-0.3	-0.3	N	-	-	-	-	-
Rose Cottage, GL53 9QZ	39.8	33.6	38.1	32.1	40.2	34	38.2	32.2	-1.7	-1.5	-1.6	-1.4	E	-	-	-	-	-
The Villa, GL53 9QZ	41.4	35	39.8	33.6	41.8	35.4	40	33.8	-1.6	-1.4	-1.4	-1.2	E	-	-	-	-	-
5 The Hamblins, GL53 9QZ	43.2	36.7	42	35.6	43.5	36.9	42.7	36.2	-1.2	-1.1	-0.5	-0.5	N	-	-	-	-	-
Charlies Cottage, GL53 9QZ	41.9	35.5	40.6	34.3	42.1	35.7	41.2	34.9	-1.3	-1.2	-0.7	-0.6	N	-	-	-	-	-
1 Close Farm Cottages, Coberley Road, GL53 9QY	42.4	35.9	41.1	34.8	42.7	36.2	41.8	35.4	-1.3	-1.1	-0.6	-0.5	N	-	-	-	-	-
3 The Green, GL53 9QZ	36.9	31	35.7	29.9	37.1	31.2	36.4	30.5	-1.2	-1.1	-0.5	-0.5	N	-	-	-	-	-
North Park Farm, GL53 9NJ	53.1	45.6	51.1	43.8	53.2	45.7	51.5	44.1	-2	-1.8	-1.6	-1.5	E	-	-	-	-	-
Elmcott, Witcombe, Cheltenham, GL3 4UG	45.7	38.9	45.5	38.7	46.1	39.3	46.0	39.2	-0.2	-0.2	0.3	0.3	SW	-	-	-	-	-
Elmcot, Dog Lane, Witcombe, Cheltenham, GL3 4UG	45.7	38.9	45.5	38.7	46.1	39.3	46.0	39.2	-0.2	-0.2	0.3	0.3	SW	-	-	-	-	-
Oak Cottage, Dog Lane, Witcombe, Cheltenham, GL3 4UG	39.8	33.6	39.4	33.2	40.1	33.9	39.9	33.7	-0.4	-0.4	0.1	0.1	NE	-	-	-	-	-
The Farmhouse, Oakland Farm, Dog Lane, Witcombe, Cheltenham, GL3 4UG	44.9	38.2	44.3	37.6	45.3	38.5	44.9	38.2	-0.6	-0.6	0	0	E	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
Ivy Cottage, Dog Lane, Witcombe, Cheltenham, GL3 4UG	43.6	37	43.2	36.7	44	37.4	43.7	37.1	-0.4	-0.3	0.1	0.1	SE	-	-	-	-	-
Lake House, GL53 9QT	33.8	28.2	34.8	29.1	33.7	28.1	35.4	29.6	1	0.9	1.6	1.4	W	-	-	-	-	-
First Floor Flat, Ullenwood Manor Farm, GL53 9QT	39.3	33.1	40.5	34.2	39.3	33.1	41	34.7	1.2	1.1	1.7	1.6	W	-	-	-	-	-
Crendon House, GL53 9QX	65.6	56.8	64.6	55.9	65.8	57	65.4	56.6	-1	-0.9	-0.2	-0.2	NW	-	-	-	-	-
Mosella Cottage, GL53 9QX	69.3	60.2	68.3	59.3	69.5	60.3	69.1	60	-1	-0.9	-0.2	-0.2	NW	-	-	-	-	-
West Lodge, GL53 9QT	43	36.5	42	35.6	43.1	36.6	42.8	36.3	-1	-0.9	-0.2	-0.2	E	-	-	-	-	-
Honey Acre, GL53 9QT	35.6	29.8	36.7	30.8	35.5	29.7	37.3	31.3	1.1	1	1.7	1.5	NW	-	-	-	-	-
The Grange, Ullenwood Court, GL53 9QS	51.2	43.9	52.3	44.8	51.3	43.9	52.8	45.3	1.1	0.9	1.6	1.4	NE	-	-	-	-	-
The Lodge Cottage, Salterley Grange, Leckhampton Hill, Coberley, GL53 9QW	53.4	45.8	54.6	46.9	53.4	45.8	55.3	47.5	1.2	1.1	1.9	1.7	S	-	-	-	-	-
The Flat, Cotswold Hills Golf Club, GL53 9QT	40.2	34.0	41.2	34.9	40.3	34	41.8	35.4	1	0.9	1.6	1.4	SW	-	-	-	-	-
Natstar, National Star College, Natstar College, GL53 9QU	36.4	30.5	37.9	31.9	36.2	30.4	38.5	32.4	1.5	1.4	2.1	1.9	W	-	-	-	-	-
The Lodge, GL53 9QT	35.2	29.5	36.3	30.4	35.1	29.4	36.9	31	1.1	0.9	1.7	1.5	N	-	-	-	-	-
2 Ullenwood Farm Cottages, GL53 9QT	36	30.2	37.5	31.5	35.8	30	38.2	32.2	1.5	1.3	2.2	2	W	-	-	-	-	-
1 Manor Barn, GL53 9QT	36.1	30.3	37.2	31.3	36	30.2	37.8	31.8	1.1	1	1.7	1.5	N	-	-	-	-	-
The Grove, GL53 9QX	68.7	59.6	67.7	58.7	68.9	59.8	68.4	59.3	-1	-0.9	-0.3	-0.3	NW	-	-	-	-	-
Old Ullenwood Lodge, GL53 9QX	66.6	57.7	65.1	56.4	66.8	57.9	66	57.2	-1.5	-1.3	-0.6	-0.5	S	-	-	-	-	-

Receptor address	Noise level dBL _{Aeq} free-field (day: L _{Aeq,16h} , night: L _{Aeq,8hr})																	
	Façade with greatest magnitude of noise change (GMC)														Any OTHER façade with highest noise level >SOAEL (see para 1.1.2)			
	Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
									(short term)		(long term)			(short term)		(long term)		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Lychett Cottage, GL53 9QX	59.2	51.1	58.2	50.2	59.4	51.2	58.9	50.8	-1	-0.9	-0.3	-0.3	SE	69	59.9	69.7	60.5	NW
1 Ullenwood Farm Cottages, GL53 9QT	36	30.2	37.5	31.5	35.8	30	38.2	32.2	1.5	1.3	2.2	2	W	-	-	-	-	-
Laurel Cottage, GL53 9QX	68.8	59.7	67.8	58.8	69	59.9	68.6	59.5	-1	-0.9	-0.2	-0.2	NW	-	-	-	-	-
2 Oxford Cottages, GL53 9QX	72.4	62.9	71	61.7	72.7	63.2	71.9	62.5	-1.4	-1.2	-0.5	-0.4	S	-	-	-	-	-
The Beeches, Coberley Road, GL53 9QY	46.7	39.8	45.2	38.5	46.8	39.9	46.1	39.3	-1.5	-1.3	-0.6	-0.5	S	-	-	-	-	-
Rushwood Kennels (residential), Shab Hill, GL4 8JX	42.3	35.8	56.4	48.5	36.8	30.9	57.1	49.2	14.1	12.7	14.8	13.4	W	-	-	-	-	-

Table 1.2 Non-residential receptor noise results

Receptor address	Non-residential category	Noise level dBL _{Aeq}																	
		Façade with greatest magnitude of noise change														Any OTHER Façade with highest noise level >SOAEL			
		Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
										(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		
Treasurer Of Birdlip Village Hall, GL4 8JH	Public / Village Hall / Other Community Facility	51.7	44.3	39.5	33.3	51.6	44.2	40.2	34	-12.2	-11	-11.5	-10.3	E	-	-	-	-	-
Teaching Block, Birdlip Primary School, GL4 8JH	Preparatory / First / Primary / Infant / Junior / Middle School	53.3	45.7	40.3	34	53.2	45.7	40.9	34.6	-13	-11.7	-12.4	-11.1	E	-	-	-	-	-
Coberley School, Glos County Council, Coberley C Of E Primary School, Coberley Village, GL53 9QZ	Preparatory / First / Primary / Infant / Junior / Middle School	40.2	34	38.8	32.7	40.5	34.2	39.1	33	-1.4	-1.3	-1.1	-1	E	-	-	-	-	-
St Marys Church, GL4 8JH	Church	44.4	37.7	38.4	32.3	44.2	37.6	39	32.9	-6	-5.4	-5.4	-4.8	E	-	-	-	-	-
Birdlip Primary School, Glos County Council, GL4 8JH	Primary School	49.4	42.2	38.5	32.4	49.3	42.1	39.1	33	-10.9	-9.8	-10.3	-9.2	N	-	-	-	-	-
Golden Heart Inn, Nettleton, GL4 8LA	Dual Use	71.6	62.2	43.8	37.2	71.6	62.2	44.3	37.6	-27.8	-25	-27.3	-24.6	NW	-	-	-	-	-
Green Dragon, Green Dragon Inn, Cockleford, GL53 9NW	Dual Use	59.5	51.3	57.6	49.6	59.6	51.4	55.5	47.7	-1.9	-1.7	-4	-3.6	W	-	-	-	-	-
Royal George Hotel, GL4 8JH	Dual Use	47.1	40.2	44.2	37.6	47.9	40.9	45	38.3	-2.9	-2.6	-2.1	-1.9	NW	62.6	54.1	63.2	54.7	S
St Peters Church, Witcombe, Gloucester, GL3 4UF	Church	52.6	45.1	53.1	45.6	53	45.5	53.6	46	0.5	0.5	1	0.9	NW	-	-	-	-	-
Bentham Country Club, Bentham Lane, Bentham, Cheltenham, GL3 4UD	Indoor / Outdoor Leisure / Sporting Activity / Centre	45.1	38.4	44.5	37.8	45.4	38.6	45	38.3	-0.6	-0.6	-0.1	-0.1	NE	-	-	-	-	-
Fly Up, Crickley Hill Farm, Witcombe, Gloucester, GL3 4UF	Indoor / Outdoor Leisure / Sporting Activity / Centre	63.4	54.8	65	56.3	63.8	55.2	65.6	56.8	1.6	1.5	2.2	2	NE	65.3	56.5	65.9	57.1	NW
Birdlip Radio Station, Shab Hill, Birdlip, GL4 8JX	Telecommunication	40.3	34.0	56.2	48.4	40.3	34	57.0	49.1	15.9	14.4	16.7	15.1	E	-	-	-	-	-

Receptor address	Non-residential category	Noise level dBL _{Aeq}																	
		Façade with greatest magnitude of noise change														Any OTHER Façade with highest noise level >SOAEL			
		Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change		Change		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
										(short term)		(long term)			(short term)		(long term)		
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Communications Mast Site, Shab Hill, Birdlip, GL4 8JX	Telecommunication	40.2	34.0	49.3	42.1	40.3	34	50.0	42.8	9.1	8.1	9.8	8.8	SE	-	-	-	-	-
Church Of St Giles, GL53 9RA	Church	45.8	39	43.9	37.3	46.2	39.4	44.0	37.4	-1.9	-1.7	-1.8	-1.6	NE	-	-	-	-	-
Cowley Manor, GL53 9NL	Dual Use	30.9	25.6	32.9	27.4	27.4	22.4	33.5	27.9	2	1.8	2.6	2.3	E	-	-	-	-	-
Church Of St Mary, GL53 9NL	Church	43.5	36.9	41.8	35.4	43.5	36.9	42.4	35.9	-1.7	-1.5	-1.1	-1	N	-	-	-	-	-
The Rise, Coberley Road, GL53 9QY	Dual Use	45.9	39.1	44.6	37.9	45.9	39.1	45.5	38.7	-1.3	-1.2	-0.4	-0.4	E	-	-	-	-	-
Gloucestershire Guide Association, GL53 9NJ	Indoor / Outdoor Leisure / Sporting Activity / Centre	44.6	37.9	43.4	36.8	44.6	37.9	42.1	35.7	-1.2	-1.1	-2.5	-2.2	SW	-	-	-	-	-
Ullenwood Court Riding Centre, 17 GL53 9QS	Indoor / Outdoor Leisure / Sporting Activity / Centre	40.5	34.2	42.1	35.7	40.3	34	42.7	36.2	1.6	1.5	2.2	2	S	-	-	-	-	-
Cotswold Hills Golf Club Ltd, Cotswold Hills Golf Club, GL53 9QT	Golf Facility	40.2	34.0	41.2	34.9	40.3	34	41.8	35.4	1	0.9	1.6	1.4	SW	-	-	-	-	-
Crickley Hill Country Park, Crickley Hill, Birdlip, Witcombe, Gloucester, GL4 8JY	Public Open Space / Nature Reserve	50.2	43	46.6	39.7	50.6	43.3	47.3	40.3	-3.6	-3.3	-2.9	-2.7	E	-	-	-	-	-
Barrow Wake OS Way Point - L11, ACY2	PRoWs	59.8	51.8	55	47.5	60.2	52.2	55.6	48.1	-4.8	-4.3	-4.2	-3.7	-	-	-	-	-	-
Cowley Wood West Path L7, ACY22	PRoWs	49.4	42.5	51.5	44.4	49.2	42.3	52	44.8	2.1	1.9	2.6	2.3	-	-	-	-	-	-
Crickley Camp East	Heritage	61	52.9	61.3	53.2	61.3	53.2	61.9	53.7	0.3	0.3	0.9	0.8	-	-	-	-	-	-
Crickley Camp North	Heritage	47.3	40.6	46.5	39.9	47.7	41.0	47	40.3	-0.8	-0.7	-0.3	-0.3	-	-	-	-	-	-
Crickley Camp West	Heritage	55.9	48.3	56.8	49.1	56.2	48.6	57.4	49.7	0.9	0.8	1.5	1.4	-	-	-	-	-	-
Crickley Hill car park access road L2	PRoWs	55.8	48.2	55.6	48.1	56.1	48.5	56.2	48.6	-0.2	-0.1	0.4	0.4	-	-	-	-	-	-
Emma's Grove North	Heritage	60.4	52.4	59.1	51.2	60.7	52.7	59.7	51.8	-1.3	-1.2	-0.7	-0.6	-	-	-	-	-	-

Receptor address	Non-residential category	Noise level dBL _{Aeq}																	
		Façade with greatest magnitude of noise change														Any OTHER Façade with highest noise level >SOAEL			
		Without Scheme 2024		Scheme and local roads 2024		Without Scheme 2039		Scheme and local roads 2039		Change (short term)		Change (long term)		Façade	Scheme and local roads 2024 (different façade from GMC result)		Scheme and local roads 2039 (different façade from GMC result)		Façade
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		Day	Night	Day	Night	
Footpath, west of Green Hatch Farm - L5, ACY27	PRoWs	42.6	36.4	46.5	39.9	36.4	30.8	47.1	40.4	3.9	3.5	4.5	4	-	-	-	-	-	-
Gloucestershire Way (Crickley Hill) Path L1, ACO51	PRoWs	62.7	54.5	62.7	54.5	63	54.7	63.3	55	0	0	0.6	0.5	-	-	-	-	-	-
Gloucestershire Way (Crickley Hill) Path L3, ACO51	PRoWs	73.3	64.0	63.8	55.5	73.7	64.4	64.4	56	-9.5	-8.5	-8.9	-8	-	-	-	-	-	-
Gloucestershire Way (Emma's Grove) Path L4, ACY1	PRoWs	54.4	47.0	51.1	44.0	54.8	47.3	51.8	44.6	-3.3	-3	-2.6	-2.4	-	-	-	-	-	-
Gloucestershire Way (Rushwood) Path L6, ACY3	PRoWs	42.3	36.1	57.7	50.0	40.7	34.7	58.3	50.5	15.4	13.9	16	14.4	-	-	-	-	-	-
Gloucestershire Way (nr Cally Hill) Path L9, ACO3	PRoWs	35.2	29.7	40.5	34.5	19.1	15.2	41.1	35	5.3	4.8	5.9	5.3	-	-	-	-	-	-
Highgate House Path L8, ACY40	PRoWs	53.1	45.8	53.9	46.5	53.5	46.2	54.5	47.1	0.8	0.7	1.4	1.3	-	-	-	-	-	-
Muddy Path (South Hill) L10, ACO17	PRoWs	44.1	37.7	48.5	41.7	43.9	37.5	49.2	42.3	4.4	4	5.1	4.6	-	-	-	-	-	-
Peak North	Heritage	53.4	46.1	53.6	46.3	53.7	46.4	54.1	46.7	0.2	0.2	0.7	0.6	-	-	-	-	-	-
Rushwood kennels	Animal Welfare	42.6	36.1	56.5	48.6	37.6	31.6	57.2	49.3	13.9	12.5	14.6	13.2	-	-	-	-	-	-
The Peak to Crickley Hill Farm path - L12, ABA84	PRoWs	56.6	49.0	57.1	49.4	56.9	49.2	57.7	50	0.5	0.4	1.1	1	-	-	-	-	-	-

1.1.3 Noise level changes tables as defined by LA 111 (Table 1.3 and Table 1.4).

Table 1.3 Operational noise reporting table for noise assessment – short-term

Project: A417 Missing Link						
Scenario/Comparison: Do-Something 2024 compared to Do-Minimum 2024						
Change in noise level dB(A)	DMRB impact category (short-term)	Daytime		Night-time		
		Number of dwellings	Number of 'other' noise sensitive receptors	Number of dwellings	Number of 'other' noise sensitive receptors	
Increase in noise level, L _{A10,18h} dB	<1	Negligible	26	6	31	7
	1 – 2.9	Minor adverse	57	5	60	4
	3 – 4.9	Moderate adverse	20	2	15	3
	>5	Major adverse	9	6	6	5
No change	0	Negligible	0	1	0	1
Decrease in noise level, L _{A10,18h} dB	<1	Negligible	56	3	68	3
	1 – 2.9	Minor beneficial	136	8	138	8
	3 – 4.9	Moderate beneficial	46	3	39	3
	>5	Major beneficial	60	6	53	6

Table 1.4 Operational noise reporting table for noise assessment – long-term

Project: A417 Missing Link						
Scenario/Comparison: Do-Something 2039 compared to Do-Minimum 2024						
Change in noise level dB(A)		DMRB impact category (long-term)	Daytime		Night-time	
			Number of dwellings	Number of 'other' noise sensitive receptors	Number of dwellings	Number of 'other' noise sensitive receptors
Increase in noise level, L _{A10,18h} dB	<3	Negligible	103	13	109	13
	3 – 4.9	Minor adverse	32	1	25	2
	5 – 9.9	Moderate adverse	8	3	7	2
	>10+	Major adverse	2	4	2	4
No change	0	Negligible	5	0	7	0
Decrease in noise level, L _{A10,18h} dB	<3	Negligible	176	11	180	11
	3 – 4.9	Minor beneficial	30	2	34	3
	5 – 9.9	Moderate beneficial	38	2	31	2
	>10+	Major beneficial	16	4	15	3

A417 Missing Link

Preliminary Environmental Information Report

Appendix 11.5
Noise and Vibration Legislation and Guidance and
Standards

28 September 2020

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1 Legislation, guidance and standards

Details of relevant noise and vibration legislation, guidance and standards considered as part of the assessment in the ES chapter are described below.

Legislation

EIA Regulations (Town and Country Planning (Environmental Impact Assessment) Regulations 2017)

- 1.1.1 The EIA Regulationsⁱ enact the amended EU directiveⁱⁱ “on the assessment of the effects of certain public and private projects on the environment” and sets out the assessment requirements for certain types of planning applications in England. The Regulations describe the types of project subject to a formal Environmental Impact Assessment to support the planning application, and how the process of assessment, consulting, mitigation and decision-making should be carried out.

The Environmental Noise (England) (amendment) Regulations 2018

- 1.1.2 These Regulations implement EC Directive 2002/49/ECⁱⁱⁱ (Environmental Noise Directive), on the assessment and management of environmental noise in England. Specifically, the Regulations enact the EC requirements for Noise Action Planning to promote good health and good quality of life (wellbeing) through the effective management of noise. The latest 2018 amendment to the Regulations provides for new common noise assessment methods for five-yearly Action Plans.

Land Compensation Act

- 1.1.3 The Land Compensation Act^{iv} Part 1 entitles property or landowners to apply for compensation if the value of their property goes down because of pollution or disturbance from the use of a new or altered road^v.

Noise Insulation Regulations

- 1.1.4 The Noise Insulation Regulations (NIR)^{vi} define the conditions under which dwellings are eligible for noise insulation to control internal noise levels. The conditions relate to the level of traffic noise at the façade, the increase in noise levels as a result of the highway, and the contribution of the new or altered project to the noise level received at the façade. In summary, noise insulation qualification criteria require that:

- the façade noise threshold of 68dB_{L_{pA10,18h}} is met or exceeded;
- there must be a noise increase of at least 1dB(A) compared to the prevailing noise level immediately before the works to construct or improve the highway were begun;
- the noise caused by traffic on new or altered roads makes an effective contribution of at least 1dB(A); and
- the property is 300m or less from the nearest point on the carriageway of a highway to which the Regulations apply.

Guidance, standards and strategies

DMRB – Sustainability and Environmental Appraisal, LA 111, Noise and vibration

- 1.1.5 The DMRB is the mandatory standard for the design of a new road or improvements to an existing road. As part of DMRB, LA 111^{vii} sets out the method for assessing noise and vibration associated with road traffic. LA 111 provides guidance on the selection of the scheme assessment area and the relevant

assessment years. The assessment presented in this ES has been based upon these procedures.

Calculation of road traffic noise

- 1.1.6 DMRB LA 111 requires that road traffic noise is calculated under the method described in Calculation of Road Traffic Noise (CRTN)^{viii}. This describes a procedure for determining the level of noise from the highway based upon the traffic flow parameters, road surface, propagation distance, screening, intervening ground cover and topographical features between the highway and receptor. This is the accepted methodology to quantify traffic noise levels for use with highway noise assessment procedures.

WebTAG environmental impacts worksheets

- 1.1.7 The Department for Transport's Transport Analysis Guidance (TAG) can be used to present the results of a transport scheme appraisal as part of a business case. The noise assessment takes the form of an analysis^{ix} of noise levels with and without a proposed highway scheme to calculate the monetised impacts of noise. This has been carried out in addition to the assessment presented in this ES and is reported in WebTAG: environmental impacts worksheets.

BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014 Code of practice for noise and vibration on construction and open sites

- 1.1.8 BS 5228^x provides guidance on the assessment and control of noise and vibration from construction operations. The Standard contains detailed information on noise reduction measures and promotes the 'best practicable means' approach to control noise and vibration to reduce the impact on residents and construction workers. A methodology for predicting construction noise is included. The Standard also provides criteria for vibration disturbance to people.

BS 7385-2 Evaluation and measurement for vibration in buildings – Guide to damage levels from groundborne vibration

- 1.1.9 BS 7385-2^{xi} provides criteria for the effects of vibration upon buildings.

BS ISO 4866: 2010 Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures

- 1.1.10 BS ISO 4866^{xii} provides damage categories methodologies for the measurement and effects of vibration upon buildings.

BS 8233 Guidance on sound insulation and noise reduction for buildings, British Standards Institution

- 1.1.11 BS 8233^{xiii} provides advice for the control of noise in and around buildings and guidance criteria for noise levels inside new buildings.

Department for Environment Food and Rural Affairs (2018), A Green Future: Our 25 Year Plan to Improve the Environment

- 1.1.12 With regard to AONBs and National Parks, DEFRA's 25-year plan^{xiv} (2018) states: *'Over the next 25 years, we must significantly cut all forms of pollution and ease the pressure on the environment. We must ensure that noise and light pollution are managed effectively.'*

End notes & references

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- ^{iv} UK Government, *Land Compensation Act 1973*. Statute Law Database, 1973
- ^v UK Government, “*Compensation when a road affects your property’s value*,” 2019. [Online]. Available: <https://www.gov.uk/compensation-road-property-value>. [Accessed: 18-Nov-2019]
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- ^{xiv} Department for Environment Food and Rural Affairs (2018), *A Green Future: Our 25 Year Plan to Improve the Environment* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf