M60/M62/M66 Simister Island Interchange

TR010064

ENVIRONMENTAL STATEMENT APPENDICES

APPENDIX 11.3 BASELINE NOISE SURVEY RESULTS

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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ENVIRONMENTAL STATEMENT APPENDICES
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Appendix 11.3 Baseline noise survey results

1.1 Introduction

1.1.1 This appendix describes the baseline noise surveys that have been undertaken to inform the noise assessment presented in Chapter 11: Noise and Vibration of the Environmental Statement (TR010064/APP/6.1).

1.1.2 A glossary of acoustic terms is provided in Appendix 11.1: Introduction to Acoustics of the Environmental Statement Appendices (TR010064/APP/6.3).

Survey aims and objectives

1.1.3 The objective of the baseline noise measurements detailed in this appendix is to characterise the existing noise environment near the Scheme and collect baseline data to inform the various assessments described in Chapter 11: Noise and Vibration of the Environmental Statement (TR010064/APP/6.1).

1.1.4 Proposals regarding the baseline noise survey methodology were described within the Environmental Scoping Report (TR010064/APP/6.6), identifying five noise monitoring locations. Permission to access four of these were obtained in time for the planned surveys in the autumn of 2021, with permission for the fifth location obtained after the initial survey period, leading to the fifth location being surveyed in winter 2021. Figure 11.1b Noise Monitoring Locations and Areas of Application of Construction Noise Effect Levels of the Environmental Statement Figures (TR010064/APP/6.2) indicate the noise measurement locations.

1.2 Methodology

Noise monitoring locations

1.2.1 A number of constraints influenced the choice of measurement locations, including acoustic suitability, ease of access and equipment security. The final locations are detailed in Table 1.1 and shown on Figure 11.1b: Noise Monitoring Locations and Areas of Application of Construction Noise Effect Levels of the Environmental Statement Figures (TR010064/APP/6.2).

Table 1.1 Noise measurement locations

ID	Name	Survey Dates	Observed noise sources, or those informed about from the owners
N1	9 Droughts Lane	05/10/2021 to 12/10/2021	Constant road traffic noise, water feature in garden and barking dogs. The location has approximately 10 dogs.
N2	Eastview, Corday Lane	05/10/2021 to 12/10/2021	Constant road traffic noise, horses in adjacent field.
N3	9 Conisborough Place	05/10/2021 to 12/10/2021	Constant road traffic noise, some birdsong and leaf rustle.

ID	Name	Survey Dates	Observed noise sources, or those informed about from the owners
N4	37 Marston Close	05/10/2021 to 12/10/2021	Low level traffic noise, some birdsong and local traffic. Resident undertook fence spraying on the Wednesday and Thursday afternoons.
N5	Cowl Gate Farm	29/11/21 to 07/12/21	Constant road traffic noise from M66/M60. Farm activities, including goats, horses, chickens and dogs. Some birdsong.

1.2.2 The rational for the selection of each survey location is given in Table 1.2. The rationale behind choosing some locations was based upon potential uses of the data during the assessment.

Table 1.2 Rational for selection of noise measurement locations

ID	Name	Rational for selection
N1	9 Droughts Lane	Chosen to be representative of dwellings close to M60 J18.
N2	Eastview, Corday Lane	Chosen to be representative of dwellings in the region of M60 J18 that are close to both the M60 and M62.
N3	9 Conisborough Place	Chosen to be representative of dwellings that are close to the M60 between J17 and J18.
N4	37 Marston Close	Chosen to be representative of the closest dwellings to M60 J18 and the new dedicated left turn lane.
N5	Cowl Gate Farm	Chosen to represent the single isolated dwelling at this location in the area of the M66 and Northern Loop road links.

Noise measurement instrumentation and set-up

1.2.3 Ambient noise levels were measured at each location using integrating-averaging Sound Level Meters (SLMs) or equivalent systems conforming to Class 1 as defined by British Standard (BS) EN 61672-1:2013 (British Standards Institution (BSI), 2013). Each SLM was field calibrated before the start of each survey by applying an acoustic calibrator conforming to BS EN 60942:2018 (BSI, 2018) to the microphone to check the sensitivity of the measuring equipment. Calibration checks were also performed at the end of each survey. No significant drift over the survey period was noted at any location.

1.2.4 The equipment used for the noise measurements was subject to more extensive performance tests, traceable to primary standards, at accredited independent laboratories within a period of one year prior to use.

1.2.5 The microphone height at each survey location was between 1.2m and 1.5m above ground level. To reduce the influence of reflections the microphone positions were at least 3.5m from any reflecting surface other than the ground for free-field measurements.

1.2.6 A suitable foam windshield, conforming to Class 1 of BS 61672-1:2013 (BSI, 2013) was fitted to each microphone. At each location, the SLM was set to measure using the logging facility with the A-weighting filter.

1.2.7 Table 1.3 presents a summary of the noise measurement equipment used at each survey location. A single SLM calibrator was used at each location.

Table 1.3 Noise measurement equipment

Survey location	Equipment make and model	Serial number	Date of last calibration
N1	Rion NL-52 Sound Level Meter	732094	28/04/2021
	Rion NC-74 Field Calibrator	34494274	23/04/2021
N2	Rion NL-52 Sound Level Meter	976221	28/04/2021
	Rion NC-74 Field Calibrator	34494274	23/04/2021
N3	Rion NL-52 Sound Level Meter	1087405	13/05/2021
	Rion NC-74 Field Calibrator	34494274	23/04/2021
N4	Rion NL-52 Sound Level Meter	586907	20/07/2021
	Rion NC-74 Field Calibrator	34494274	23/04/2021
N5	Rion NL-52 Sound Level Meter	976220	27/07/2021
	Rion NC-74 Field Calibrator	34825715	07/01/2021

1.2.8 The equipment was installed by persons competent in environmental noise measurement and who hold qualifications in acoustics.

Weather station instrumentation and set-up

1.2.9 A weather station was co-located at measurement location N2 during the October 2021 measurement period that logged rainfall and windspeed. The anemometer and rainfall collector were installed at approximately 1.5m above local ground level. During the second survey period at N5 local weather observations were used to identify periods of rainfall and wind.

Excluded survey data

1.2.10 During the noise survey period there was unavoidably some periods of rainfall and high winds. In these situations the measured noise levels can be unreliable, unrepresentative, or not repeatable. Therefore some periods from the measured noise data have been removed from the analysis, and these are shown in Table 1.4.

1.2.11 The time periods where data has been excluded are due to either rainfall exceeding 1mm in a one-hour period, an average wind exceeding 5m/s, or gusts above 10m/s. The noise data within periods of rainfall of less than 1mm were not excluded as it was considered that on busy roads, such as the M60/M62/M66, even at night, this amount of rainfall is unlikely to cause a noticeable change to the type / road noise. This decision was based on professional judgement.

Table 1.4 Periods of excluded data due to adverse weather

Date	Time
Tuesday 05/10/2021	16:45 to 19:40
Wednesday 06/10/2021	17:10 to 17:15, 19:00 to 20:35
Saturday 09/10/2021	13:00 to 13:55, 17:30 to 23:50
Sunday 10/10/2021	00:35 to 00:55
Tuesday 30/11/2021	19:30 to 00:00
Wednesday 01/12/2021	00:00 to 10:05, 14:00 to 18:05
Thursday 02/12/2021	23:30 to 00:00
Friday 03/12/21	00:00 to 07:05
Saturday 04/12/21	02:10 to 00:00
Sunday 05/12/2021	00:00 to 12:25
Monday 06/12/2021	08:40 to 14:45, 19:50 to 23:05
Tuesday 07/12/2021	04:20 to 11:05

Data processing methodology

1.2.12 At some locations, particular noise sources were identified that would not be representative of baseline conditions. As such the following periods of data have also been disregarded from the following locations:

- L1, periods of dogs barking on all days during survey period

1.2.13 The remaining data have been used to derive the baseline statistical noise parameters needed by the guidance and standards which have been used to assess the potential noise effects of the Scheme. These guidance and standards documents are:

- Calculation of Road Traffic Noise (Department of Transport and Welsh Office, 1988)
- BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites - Noise (BSI, 2014)

1.2.14 Following the sift for weather and extraneous noise sources, all remaining data points have been used to calculate noise levels for various daytime and night-time periods. The maximum measured L_{AFmax} is reported in each period, as well as the logarithmic $L_{Aeq,T}$ and statistical average $L_{A90,T}$ and $L_{A10,T}$ dB.

1.2.15 Some of the values are based on data from the full measurement period, while others will be based on reduced datasets because of excluded data.

1.3 Measurement results

Location N1 – 9 Droughts Lane

1.3.1 Measurement location N1 was in the garden of 9 Droughts Lane in Simister. Observations of noise sources included constant traffic noise from the nearby motorways, a water feature in the garden and barking from multiple dogs that reside at the dwelling. This location is indicated in Plate 1.1.

Plate 1.1 Measurement location N1 – 9 Droughts Lane

1.3.2 The free-field measurement results for N1 are presented in Tables 1.5 to 1.8. The measurements were carried out for a seven-day period from 5th October 2021 to 12th October 2021. Measurement results are also presented in graphs in Annex A.

Table 1.5 Measured daytime $L_{Aeq,T}$, free-field – N1 9 Droughts Lane

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	16:45-19:00	Day	-	61.2
06/10/2021	Wednesday	07:00-19:00	Day	62.3	
07/10/2021	Thursday	07:00-19:00	Day	60.9	
08/10/2021	Friday	07:00-19:00	Day	60.2	
09/10/2021	Saturday	07:00-13:00	Day	59.3	
11/10/2021	Monday	07:00-19:00	Day	62.7	
12/10/2021	Tuesday	07:00-14:20	Day	62.1	

Table 1.6 Measured night-time $L_{Aeq,T}$, free-field – N1 9 Droughts Lane

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	23:00-07:00	Night	59.5	56.1
06/10/2021	Wednesday	23:00-07:00	Night	55.1	
07/10/2021	Thursday	23:00-07:00	Night	55.1	
08/10/2021	Friday	23:00-07:00	Night	52.7	
09/10/2021	Saturday	23:00-07:00	Night	55.1	
10/10/2021	Sunday	23:00-07:00	Night	57.5	
11/10/2021	Monday	23:00-07:00	Night	58.0	

Table 1.7 Measured other period $L_{Aeq,T}$, free-field – N1 9 Droughts Lane

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	19:00-23:00	Evening	61.7	59.1
06/10/2021	Wednesday	19:00-23:00	Evening	56.9	
07/10/2021	Thursday	19:00-23:00	Evening	58.1	
08/10/2021	Friday	19:00-23:00	Evening	56.7	
09/10/2021	Saturday	13:00-23:00	Weekend	59.1	
10/10/2021	Sunday	07:00-23:00	Weekend	61.8	
11/10/2021	Monday	19:00-23:00	Evening	59.8	

Table 1.8 Measured weekday $L_{A10,18h}$, free-field – N1 9 Droughts Lane

Date	Day	Time	$L_{A10,T}$ dB	
			Daily	Period Average
05/10/2021	Tuesday	16:45-00:00	62.8	62.8
06/10/2021	Wednesday	06:00-00:00	61.3	60.8
07/10/2021	Thursday	06:00-00:00	60.4	
08/10/2021	Friday	06:00-00:00	59.3	
11/10/2021	Monday	06:00-00:00	62.1	
12/10/2021	Tuesday	06:00-14:20	61.5	61.5

Location N2 – Eastview

1.3.3 Measurement location N2 was in the garden of Eastview, Corday Lane in the south-west quadrant of the M60 J18. The weather station was co-located with the sound level meter in this location. Observations of noise sources included constant traffic noise from the nearby motorways. The location is indicated in Plate 1.2.

Plate 1.2 Measurement location N2 – Eastview

1.3.4 The free-field measurement results for N2 are presented in Tables 1.9 to 1.12. The measurements were carried out for a seven-day period from 5th October 2021 to 12th October 2021. Measurement results are also presented in graphs in Annex A.

Table 1.9 Measured daytime $L_{Aeq,T}$, free-field – N2 Eastview

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	14:10-19:00	Day	-	63.8
06/10/2021	Wednesday	07:00-19:00	Day	65.7	
07/10/2021	Thursday	07:00-19:00	Day	61.6	
08/10/2021	Friday	07:00-19:00	Day	61.6	
09/10/2021	Saturday	07:00-13:00	Day	62.6	
11/10/2021	Monday	07:00-19:00	Day	65.6	
12/10/2021	Tuesday	07:00-13:05	Day	65.6	

Table 1.10 Measured night-time $L_{Aeq,T}$, free-field – N2 Eastview

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	23:00-07:00	Night	63.7	59.9
06/10/2021	Wednesday	23:00-07:00	Night	58.3	
07/10/2021	Thursday	23:00-07:00	Night	58.8	
08/10/2021	Friday	23:00-07:00	Night	56.1	
09/10/2021	Saturday	23:00-07:00	Night	59.3	
10/10/2021	Sunday	23:00-07:00	Night	61.3	
11/10/2021	Monday	23:00-07:00	Night	61.5	

Table 1.11 Measured other period $L_{Aeq,T}$, free-field – N2 Eastview

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	19:00-23:00	Evening	65.5	62.6
06/10/2021	Wednesday	19:00-23:00	Evening	59.7	
07/10/2021	Thursday	19:00-23:00	Evening	60.8	
08/10/2021	Friday	19:00-23:00	Evening	59.9	
09/10/2021	Saturday	13:00-23:00	Weekend	63.0	
10/10/2021	Sunday	07:00-23:00	Weekend	66.2	
11/10/2021	Monday	19:00-23:00	Evening	62.8	

Table 1.12 Measured weekday $L_{A10,18h}$, free-field – N2 Eastview

Date	Day	Time	$L_{A10,T}$ dB	
			Daily	Period Average
05/10/2021	Tuesday	16:45-00:00	66.3	66.3
06/10/2021	Wednesday	06:00-00:00	64.6	63.2
07/10/2021	Thursday	06:00-00:00	61.6	
08/10/2021	Friday	06:00-00:00	61.4	
11/10/2021	Monday	06:00-00:00	65.1	
12/10/2021	Tuesday	06:00-14:20	66.0	66.0

Location N3 – 9 Conisborough Place

1.3.5 Measurement location N3 was in the garden of 9 Conisborough Place, alongside the clockwise carriageway of the M60 between J17 and J18. Observations of noise sources confirmed constant road traffic noise from the nearby motorway. The location is indicated in Plate 1.3.

Plate 1.3 Measurement location N3 – 9 Conisborough Place

1.3.6 The free-field measurement results for N3 are presented in Tables 1.13 to 1.16. The measurements were carried out for a seven-day period from 5th October 2021 to 12th October 2021. Measurement results are also presented in graphs in Annex A.

Table 1.13 Measured daytime $L_{Aeq,T}$, free-field – N3 9 Conisborough Place

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	13:30-19:00	Day	-	65.4
06/10/2021	Wednesday	07:00-19:00	Day	65.3	
07/10/2021	Thursday	07:00-19:00	Day	65.8	

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
08/10/2021	Friday	07:00-19:00	Day	65.7	
09/10/2021	Saturday	07:00-13:00	Day	65.5	
11/10/2021	Monday	07:00-19:00	Day	65.3	
12/10/2021	Tuesday	07:00-12:10	Day	64.9	

Table 1.14 Measured night-time $L_{Aeq,T}$, free-field – N3 9 Conisborough Place

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	23:00-07:00	Night	62.5	61.3
06/10/2021	Wednesday	23:00-07:00	Night	61.8	
07/10/2021	Thursday	23:00-07:00	Night	61.8	
08/10/2021	Friday	23:00-07:00	Night	60.5	
09/10/2021	Saturday	23:00-07:00	Night	59.7	
10/10/2021	Sunday	23:00-07:00	Night	61.6	
11/10/2021	Monday	23:00-07:00	Night	61.4	

Table 1.15 Measured other period $L_{Aeq,T}$, free-field – N3 9 Conisborough Place

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	19:00-23:00	Evening	64.4	64.3
06/10/2021	Wednesday	19:00-23:00	Evening	64.0	
07/10/2021	Thursday	19:00-23:00	Evening	64.2	
08/10/2021	Friday	19:00-23:00	Evening	64.0	
09/10/2021	Saturday	13:00-23:00	Weekend	65.0	
10/10/2021	Sunday	07:00-23:00	Weekend	65.1	
11/10/2021	Monday	19:00-23:00	Evening	63.2	

Table 1.16 Measured weekday $L_{A10,18h}$, free-field – N3 9 Conisborough Place

Date	Day	Time	$L_{A10,T}$ dB	
			Daily	Period Average
05/10/2021	Tuesday	13:30-00:00	65.2	65.2
06/10/2021	Wednesday	06:00-00:00	65.8	66.0
07/10/2021	Thursday	06:00-00:00	66.2	
08/10/2021	Friday	06:00-00:00	66.3	
11/10/2021	Monday	06:00-00:00	65.8	
12/10/2021	Tuesday	06:00-12:10	66.0	66.0

Location N4 – 37 Marston Close

1.3.7 Measurement location N4 was in the garden of 37 Marston Close, in the north-west quadrant of the M60 J18. Observations of noise sources included constant traffic noise from the nearby motorways, subjectively quieter than at the other survey locations, and some bird song. The location is indicated in Plate 1.4.

Plate 1.4 Measurement location N4 – 37 Marston Close

1.3.8 The free-field measurement results for N4 are presented in Tables 1.17 to 1.20. The measurements were carried out for a seven day period from 5th October to 12th October 2021. Measurement results are also presented in graphs in Annex A.

Table 1.17 Measured weekday daytime $L_{Aeq,T}$, free-field – N4 37 Marston Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	14:55-19:00	Day	-	58.3
06/10/2021	Wednesday	07:00-19:00	Day	56.7	
07/10/2021	Thursday	07:00-19:00	Day	62.1	
08/10/2021	Friday	07:00-19:00	Day	60.9	
09/10/2021	Saturday	07:00-13:00	Day	57.8	
11/10/2021	Monday	07:00-19:00	Day	57.7	
12/10/2021	Tuesday	07:00-13:55	Day	54.7	

Table 1.18 Measured night-time $L_{Aeq,T}$, free-field – N4 37 Marston Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	23:00-07:00	Night	53.9	54.6
06/10/2021	Wednesday	23:00-07:00	Night	56.9	
07/10/2021	Thursday	23:00-07:00	Night	56.6	
08/10/2021	Friday	23:00-07:00	Night	55.5	
09/10/2021	Saturday	23:00-07:00	Night	49.3	
10/10/2021	Sunday	23:00-07:00	Night	56.9	
11/10/2021	Monday	23:00-07:00	Night	52.9	

Table 1.19 Measured other period $L_{Aeq,T}$, free-field – N4 37 Marston Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
05/10/2021	Tuesday	19:00-23:00	Evening	53.6	55.8
06/10/2021	Wednesday	19:00-23:00	Evening	57.9	
07/10/2021	Thursday	19:00-23:00	Evening	58.6	
08/10/2021	Friday	19:00-23:00	Evening	57.6	

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
09/10/2021	Saturday	13:00-23:00	Weekend	54.9	
10/10/2021	Sunday	07:00-23:00	Weekend	53.7	
11/10/2021	Monday	19:00-23:00	Evening	54.2	

Table 1.20 Measured weekday $L_{A10,18h}$, free-field – N4 37 Marston Close

Date	Day	Time	$L_{A10,T}$ dB	
			Daily	Period Average
05/10/2021	Tuesday	14:55-00:00	54.1	54.1
06/10/2021	Wednesday	06:00-00:00	57.8	59.4
07/10/2021	Thursday	06:00-00:00	61.8	
08/10/2021	Friday	06:00-00:00	60.7	
11/10/2021	Monday	06:00-00:00	57.4	
12/10/2021	Tuesday	06:00-13:55	56.2	56.2

Location N5 – Cowl Gate Farm

1.3.9 Measurement location N5 was in the garden of Cowl Gate Farm, located to the west of the northbound M66. Observations of noise sources included constant traffic noise from the nearby motorways, some human activities on the farm, animal sounds (chickens, dogs) and bird song. The location is indicated in Plate 1.5.

Plate 1.5 Measurement location N5 – Cowl Gate Farm

1.3.10 The free-field measurement results for N5 are presented in Tables 1.21 to 1.25. The measurements were carried out for a seven-day period from 20th November to 7th December 2021. Measurement results are also presented in graphs in Annex A.

Table 1.21 Measured daytime $L_{Aeq,T}$, free-field – N5 Cowl Gate Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
30/11/2021	Tuesday	13:55-19:00	Day	70.8	72.6
01/12/2021	Wednesday	07:00-19:00	Day	73.1	
02/12/2021	Thursday	07:00-19:00	Day	72.6	
03/12/2021	Friday	07:00-19:00	Day	71.8	
04/12/2021	Saturday	07:00-13:00	Day	-	
06/12/2021	Monday	07:00-19:00	Day	71.7	
07/12/2021	Tuesday	07:00-11:05	Day	73.8	

Table 1.22 Measured night-time $L_{Aeq,T}$, free-field – N5 Cowl Gate Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
30/11/2021	Tuesday	23:00-07:00	Night	-	66.5
01/12/2021	Wednesday	23:00-07:00	Night	66.6	
02/12/2021	Thursday	23:00-07:00	Night	67.3	
03/12/2021	Friday	23:00-07:00	Night	65.8	
04/12/2021	Saturday	23:00-07:00	Night	-	
05/12/2021	Sunday	23:00-07:00	Night	66.4	
06/12/2021	Monday	23:00-07:00	Night	66.6	

Table 1.23 Measured other period $L_{Aeq,T}$, free-field – N5 Cowl Gate Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
30/11/2021	Tuesday	19:00-23:00	Evening	70.3	70.0
01/12/2021	Wednesday	19:00-23:00	Evening	70.7	
02/12/2021	Thursday	19:00-23:00	Evening	69.1	
03/12/2021	Friday	19:00-23:00	Evening	69.1	
04/12/2021	Saturday	13:00-23:00	Weekend	-	
05/12/2021	Sunday	07:00-23:00	Weekend	71.9	
06/12/2021	Monday	19:00-23:00	Evening	69.2	

Table 1.24 Measured weekday $L_{A10,18h}$, free-field – N5 Cowl Gate Farm

Date	Day	Time	$L_{A10,T}$ dB	
			Daily	Period Average
30/11/2021	Tuesday	13:55-00:00	72.2	72.2
01/12/2021	Wednesday	06:00-00:00	73.3	72.8
02/12/2021	Thursday	06:00-00:00	73.2	
03/12/2021	Friday	06:00-00:00	72.5	
06/12/2021	Monday	06:00-00:00	72.0	
07/12/2021	Tuesday	06:00-11:05	74.6	74.6

Acronyms and initialisms

Acronym or initialism	Term
CRTN	Calculation of Road Traffic Noise
dB	Decibel
SLM	Sound Level Meter
BS	British Standard
BSI	British Standards Institution

References

British Standards Institution (2018). BS EN IEC 60942:2018: Electroacoustics. Sound calibrators.

British Standards Institution (2013). BS EN 61672-1:2013: Electroacoustics. Sound level meters – Specifications.

British Standards Institution (2014). BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites. Noise.

Department of Transport and Welsh Office (1988). Calculation of Road Traffic Noise.

Annex A Graphs of survey results

Plate 1.6 Graph of survey results – N1 – 9 Droughts Lane

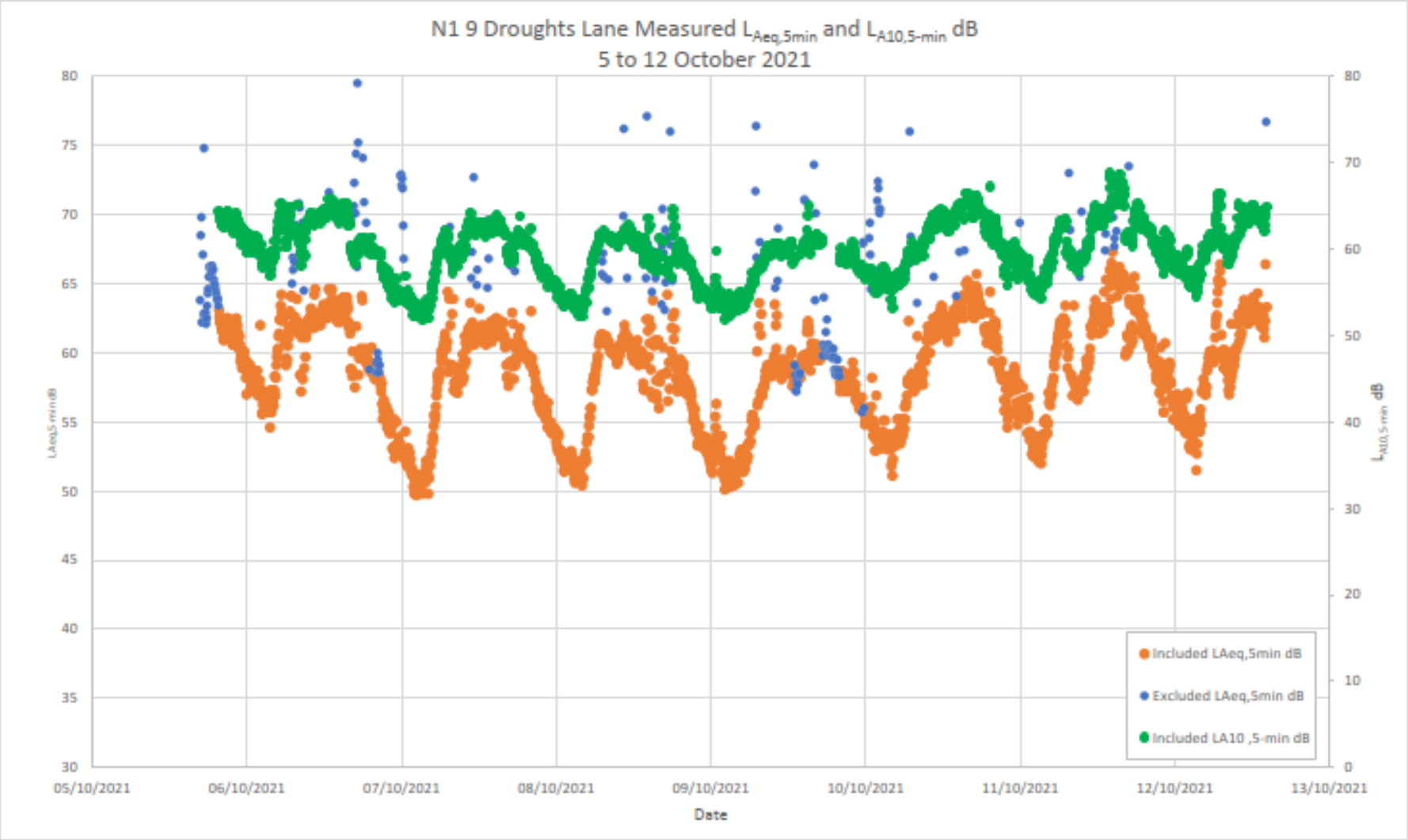

Plate 1.7 Graph of survey results – N2 – Eastview

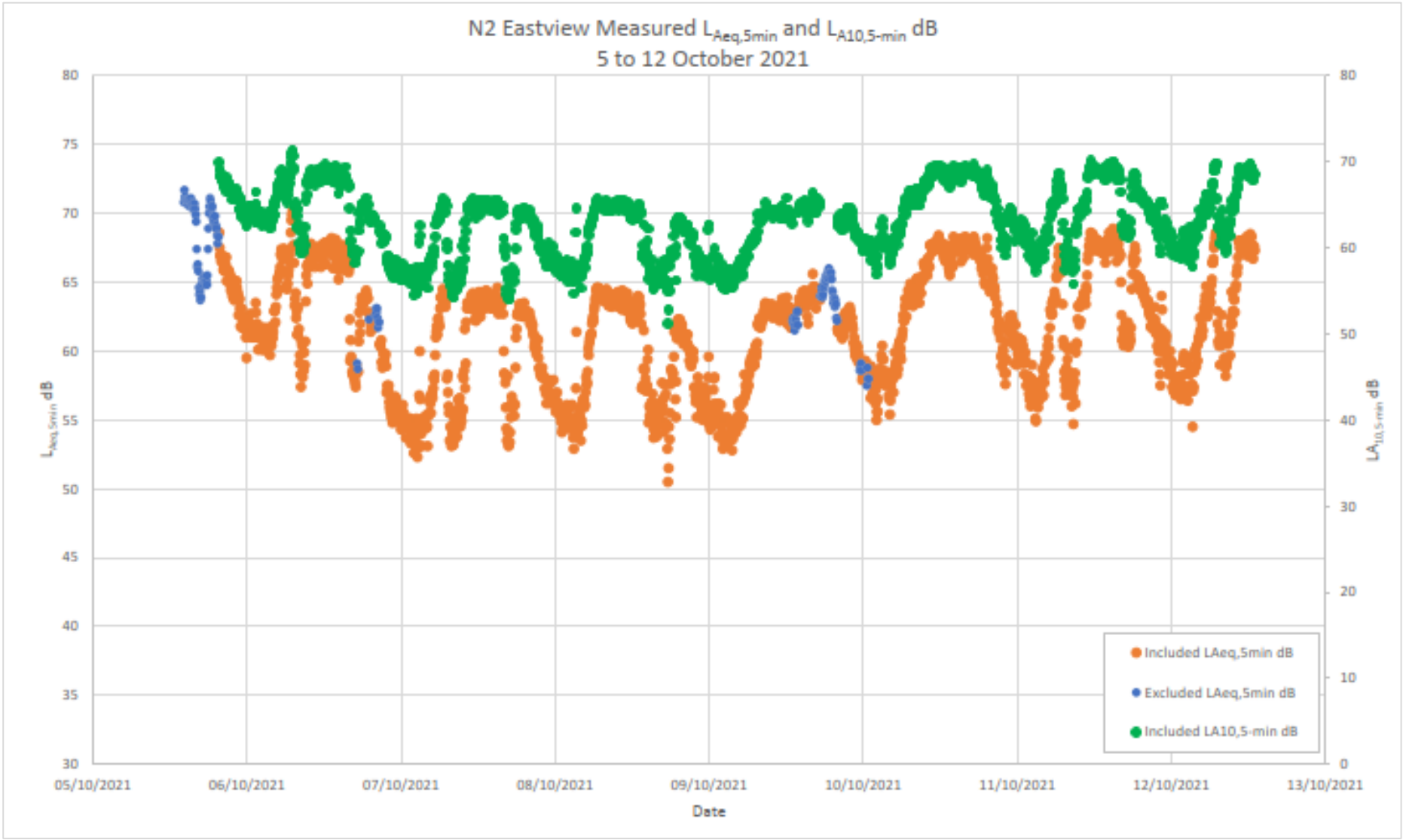

Plate 1.8 Graph of survey results – N3 – 9 Conisborough Place

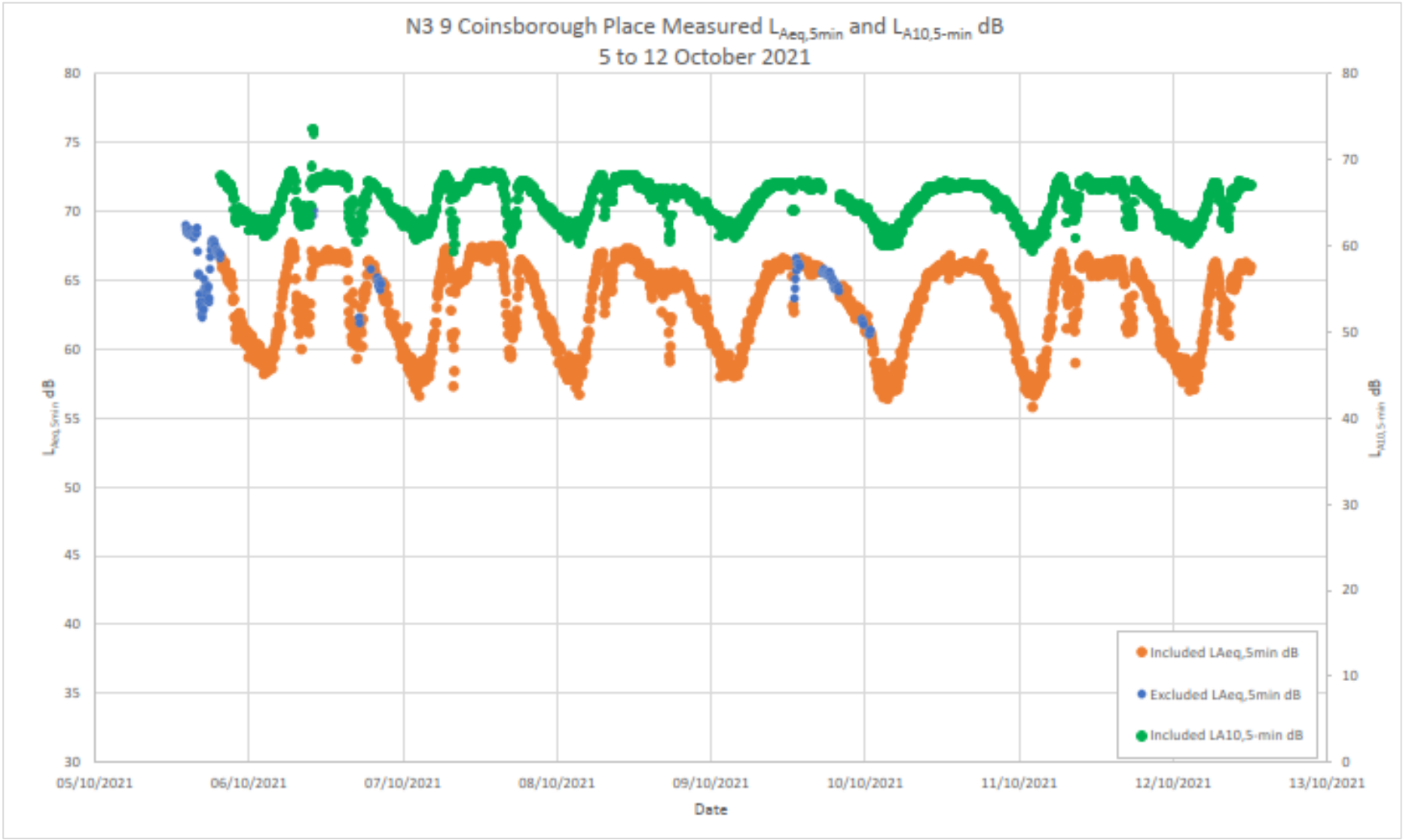

Plate 1.9 Graph of survey results – N4 – 37 Marston Close

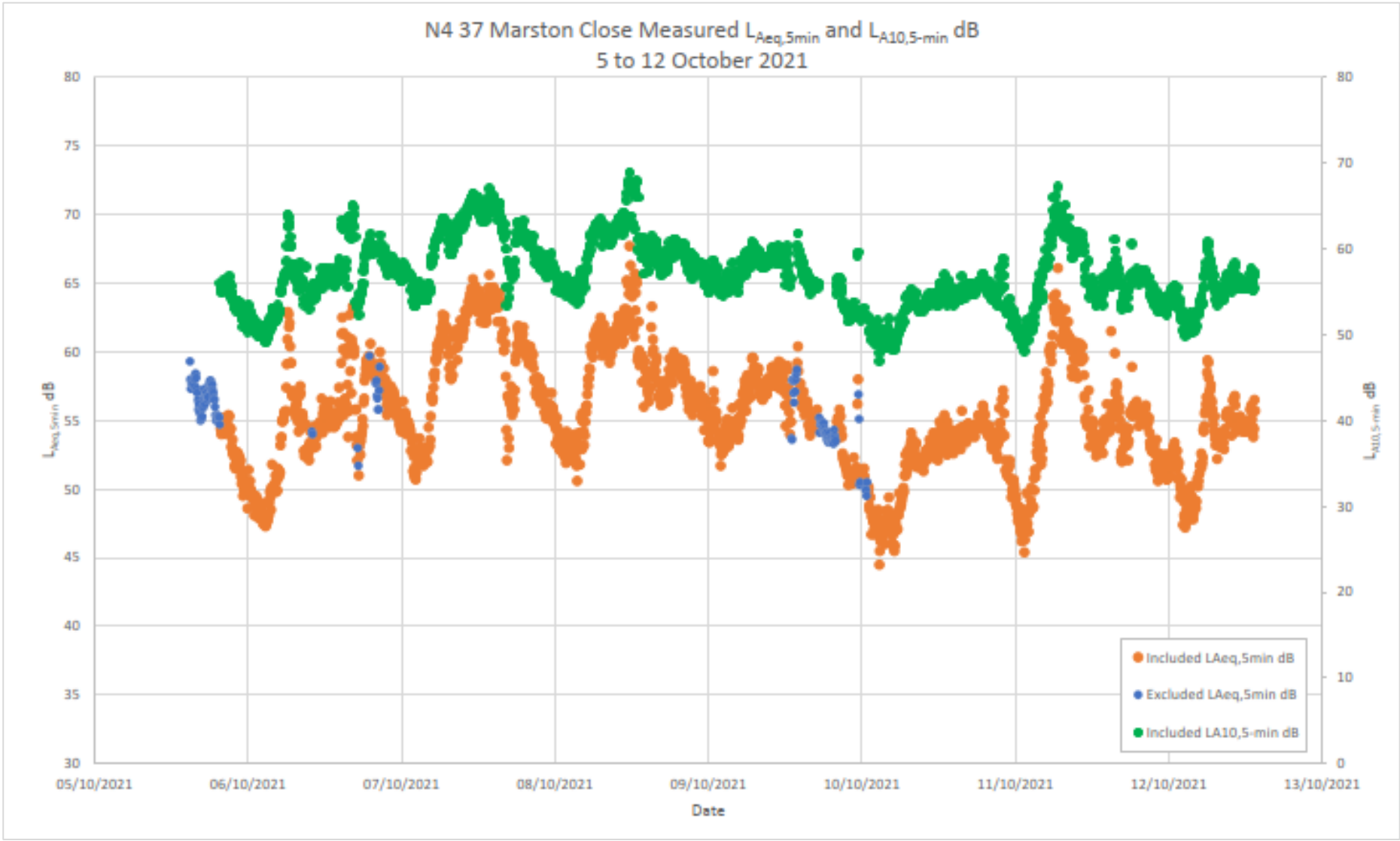

Plate 1.10 Graph of survey results – N5 – Cowl Gate Farm