2024 QUARTER 3 NOISE MONITORING

Concrush Pty Ltd
21 Racecourse Rd, Teralba

Prepared for CONCRUSH

Prepared by RCA Australia

RCA ref 13155-624/1

September 2024

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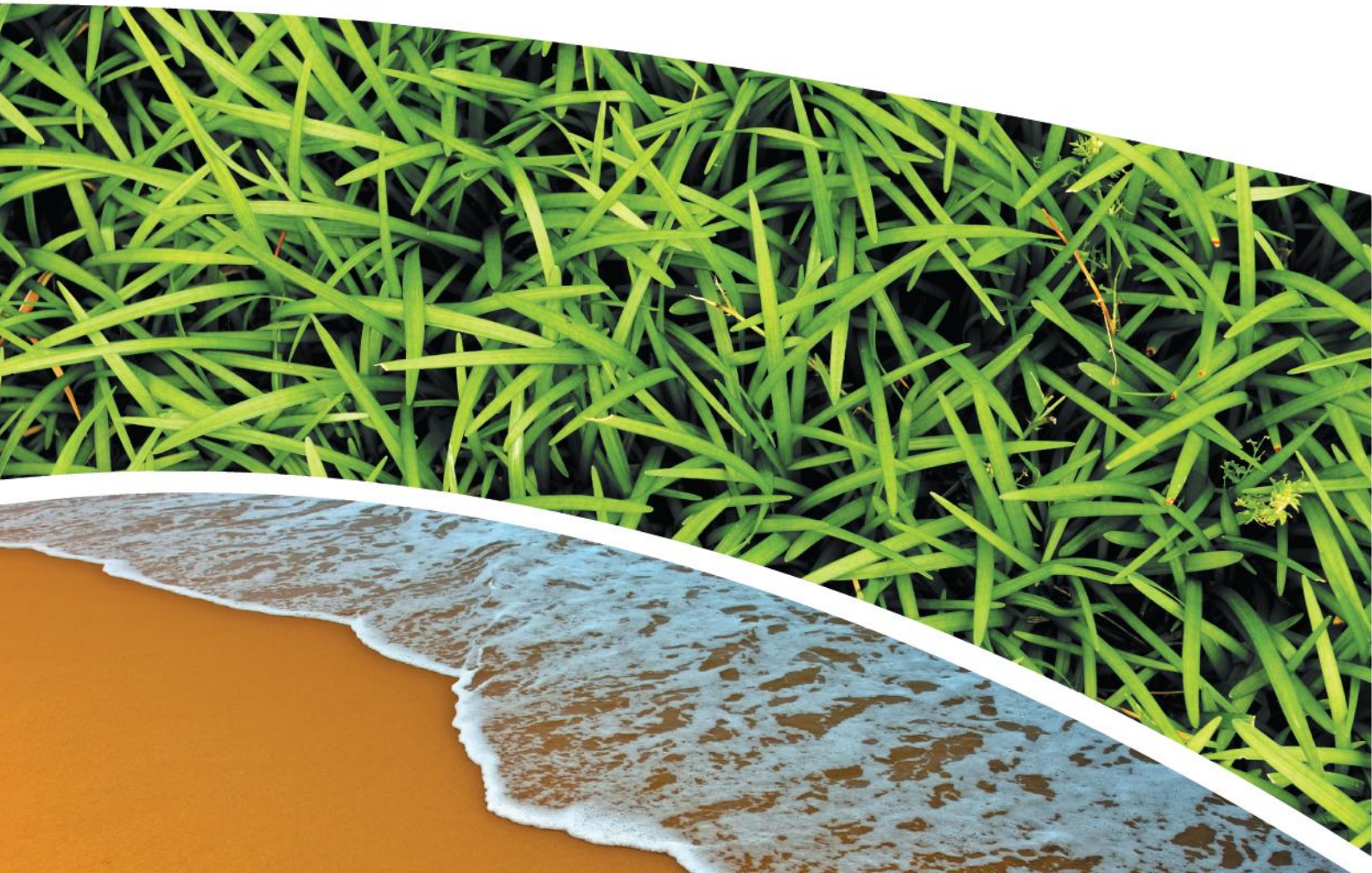

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25 September 2024

Concrush Pty Ltd
21 Racecourse Rd
Teralba NSW 2284

Attention: Mr Kevin Thompson

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3RD QUARTER 2024 NOISE MONITORING
CONCRUSH SITE, 21 RACECOURSE RD, TERALBA

1 INTRODUCTION

RCA Australia (RCA) was engaged by Concrush Pty Ltd (Concrush) to carry out a quarterly noise monitoring survey for the Concrush site facility located at 21 Racecourse Road, Teralba, NSW. The purpose of the noise survey was to monitor the noise levels at the closest sensitive receivers and assess site noise against relevant noise criteria.

The survey has been conducted in accordance with the requirements of *AS 1055-2018 - Acoustics - Description and Measurement of Environmental Noise* [1] and the *Noise Policy for Industry* [2] *(NPfI), (EPA 2017).*

Consent Condition B47 makes reference to observing noise limits stated in *EPL13351*. *EPL13351* however does not contain any noise limits, and so environmental noise management levels has been based on the *Operational Noise Management Plan* [3] *(ONMP*) for the Project prepared by RCA.

2 SITE & SURROUNDS

2.1 LOCATION AND SENSITIVE RECEIVERS

Attended noise monitoring will be undertaken on a quarterly basis at the three monitoring locations indicatively shown below. Monitoring locations may change depending on safety and access considerations and to minimise disturbance to residential receivers.

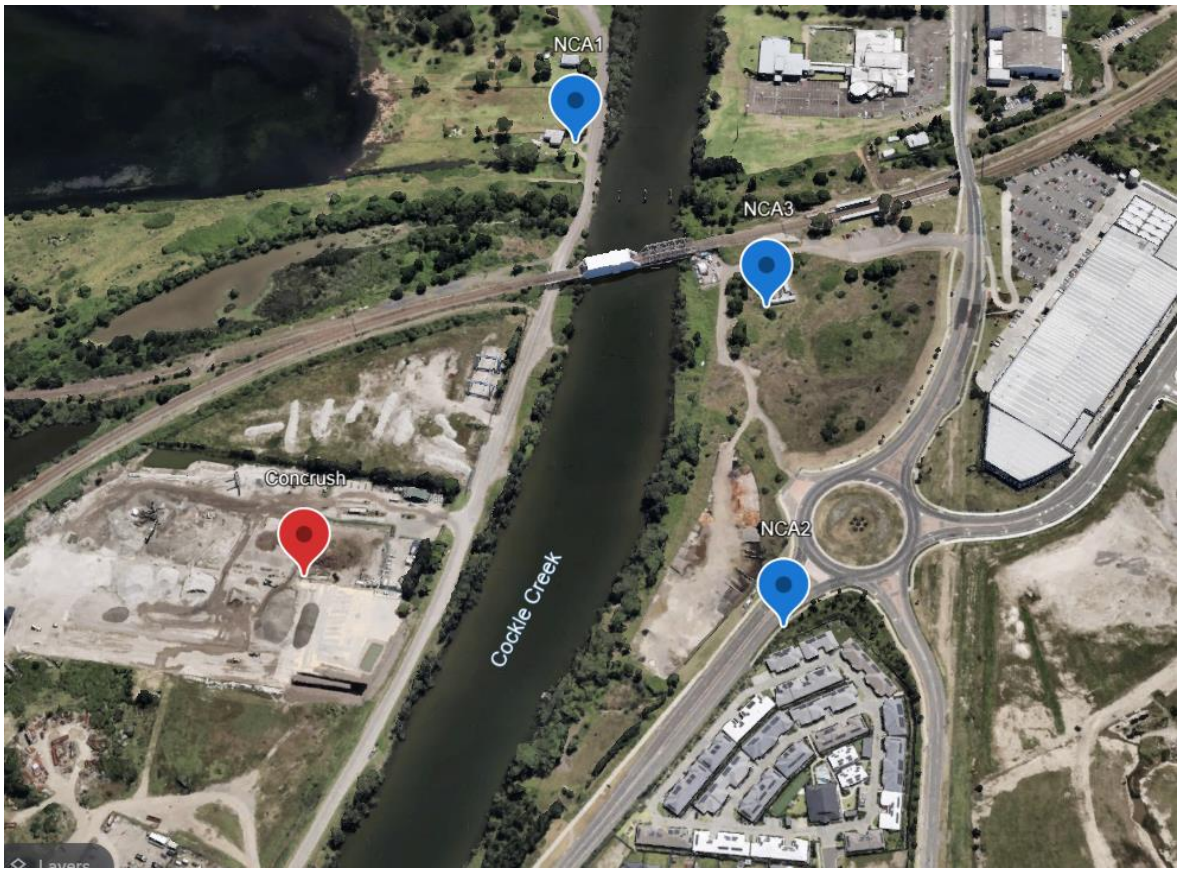


Figure 1 *Site (red) and noise monitoring locations (blue)*

3 CRITERIA

The site's environmental noise management levels at the nominated monitoring locations are shown in **Table 1.**

Table 1 *Quarterly noise monitoring locations and noise management levels*

NCA	Day noise management level $L_{Aeq,15\ min}$ dBA	Eve noise management level $L_{Aeq,15\ min}$ dBA
NCA 1	51	43
NCA 2	56	47
NCA 3	53	53

3.1 ANNOYING CHARACTERISTICS

Under the *NPfI* corrections to measured site levels may apply if annoying characteristics apply to the noise. Possible characteristics are identified in **Table 2**.

Table 2 *Modifying factors as defined in NPfI*

Factor	Description	Correction
Tonal noise	Level of one-third octave band L_{Zeq} exceeds the level of the adjacent bands on both sides by: • 5 dB or more if the centre frequency of the band containing the tone is in the range 500-10,000 Hz • 8 dB or more if the centre frequency of the band containing the tone is in the range 160-400 Hz • 15 dB or more if the centre frequency of the band containing the tone is in the range 25-125 Hz.	5 dB
Low frequency noise	Difference between L_{Ceq} and L_{Aeq} is 15 dB or more and low frequency one-third octave band L_{Zeq} levels exceed the thresholds in Table C2 of the NPfI.	2 - 5 dB
Intermittent noise	Observed level of the source varies by more than 5 dB during the night.	5 dB
Duration	One noise event in a 24-hr period, which lasts less than 2.5 hours.	0-20 dB increase in criteria

3.2 WEATHER CONDITIONS

The *NPfI* states that environmental noise measurements should not be conducted under the following conditions:

> *Average wind speeds (over 15-minute periods or shorter) at microphone height are greater than 5 metres per second, or when rainfall occurs.*

4 SURVEY METHODOLOGY

4.1 MODIFICATIONS OF PROCEDURES

The quarterly noise monitoring methodology defined in the O*NMP* requires two fifteen minute attended noise measurements to be taken at each monitoring location during both the day and evening. Concrush only operate during the evening in response to customer demands, which are usually local roadworks projects. As such, evening work is sporadic and often requested at short notice. Because of this, RCA have not been able to capture noise measurements of evening works this reporting quarter.

4.2 EQUIPMENT

The equipment used for attended monitoring is shown below in **Table 3** and the on-site sound level monitor is shown in **Table 4**. The sound level meters are class 1 measurement instruments.

Table 3 *Equipment used for attended noise monitoring*

Type	Make/Model	Serial Number	Last Calibrated
Sound Level Meter	SVAN 971	55580	April 2023
Sound Level Meter	SVAN 971	55581	June 2024
Calibrator	SV 33B	86489	March 2024

Table 4 *On-site sound level monitor*

Type	Make/Model	Serial Number	Last Calibrated
Sound Level Meter	SV 307	94124	Nov 2023

4.3 WEATHER

Conditions were clear and suitable for monitoring in accordance with *AS1055* and the *NPfI*.

Weather conditions at the time of the survey are shown in **Table 5**. Weather data has been sourced from the Concrush onsite weather station.

Table 5 *Survey weather conditions*

Survey Date	Time	Wind Speed (m/s)	Cloud cover (observed)	Valid weather conditions?
10/07/2024	11:15 am	1.9	1/8	Yes
10/07/2024	11:30 am	1.0	1/8	Yes
10/07/2024	11:45 am	2.4	1/8	Yes
10/07/2024	12:00 pm	1.0	1/8	Yes
10/07/2024	12:45 pm	1.0	1/8	Yes

5 SURVEY RESULTS

Table 6 provide the results of the daytime attended noise surveys. Marked time traces of the attended noise surveys are shown in **Appendix A** at the end of this report.

Table 7 presents a comparison of noise levels measured by RCA offsite and the corresponding onsite noise levels measured by Concrush's onsite monitor.

Table 6 *Noise survey observations Daytime 10/07/2024, dBA*

Survey Location	Survey Date Start Time	Overall				Site $L_{Amax\ 15\ min}$	Site $L_{Aeq\ 15min}$ Limit	Site $L_{Aeq\ 15min}$ Contribution	Penalty for annoying characteristics[1]	Site $L_{Aeq\ 15min}$ Contribution including penalty	Complies with condition Y/N?	Noise Sources and Level Range
		$L_{Amax\ 15min}$	$L_{Aeq\ 15\ min}$	$L_{A10\ 15min}$	$L_{A90\ 15min}$							
NCA1	10/07/2024 11:15	85	65	69	48	Nil	51	Nil	Nil	Nil	Y	Site inaudible. Road noise ~60-85 dBA Resident shovelling gravel intermittently
NCA1	10/07/2024 11:30	86	65	69	47	Nil	51	Nil	Nil	Nil	Y	Site Inaudible. Road noise ~60-86 dBA Train ~66-70 dBA
NCA1	10/07/2024 11:45	83	64	69	45	Nil	51	Nil	Nil	Nil	Y	Site Inaudible. Road noise ~60-83 dBA Train ~56-65 dBA
NCA1	10/07/2024 12:00	80	65	69	44	Nil	51	Nil	Nil	Nil	Y	Site Inaudible. Road noise ~60-80 dBA Train ~66-74 dBA
NCA2	10/07/2024 12:00	86	73	77	64	Nil	56	Nil	Nil	Nil	Y	Site was inaudible (masked by road noise). Road Noise ~65-86 dBA Train ~60-65 dBA
NCA2	10/07/2024 12:45	89	74	77	65	Nil	56	Nil	Nil	Nil	Y	Site was inaudible (masked by road noise). Other: Road Noise 63-89 dBA

Survey Location	Survey Date Start Time	Overall				Site $L_{Amax\ 15\ min}$	Site $L_{Aeq\ 15min}$ Limit	Site $L_{Aeq\ 15min}$ Contribution	Penalty for annoying characteristics[1]	Site $L_{Aeq\ 15min}$ Contribution including penalty	Complies with condition Y/N?	Noise Sources and Level Range
		$L_{Amax\ 15min}$	$L_{Aeq\ 15\ min}$	$L_{A10\ 15min}$	$L_{A90\ 15min}$							
NCA3	10/07/2024 11:30	76	60	60	49	~57	53	~52	Nil	~52	Y	Site heard in the background. Site crusher ~50-57 dBA Council truck ~65-76 dBA Aircraft ~56-62 dBA Distant road~54-60 dBA
NCA3	10/07/2024 12:45	71	57	61	49	~58	53	~52	Nil	~52	Y	Site heard in the background. Distant road~49-59 dBA Council truck ~68-71 dBA Train ~61-68 dBA Site noise ~52-58 dBA

IA indicates “inaudible”, NM indicates “not measurable”.

Table 7 *Attended measurement and on-site real time monitor results, dBA*

Survey Location	Survey Start Date & Time	Overall off-site measurements				Site $L_{Amax, 15\ min}$	Site $L_{Aeq, 15min}$ Contribution	On-Site real time monitor results			
		L_{Amax} 15min	L_{Aeq} 15min	L_{A10} 15min	L_{A90} 15min			L_{Amax} 15min	L_{Aeq} 15min	L_{A10} 15min	L_{A90} 15min
NCA1	10/07/2024 11:15	85	65	69	48	Nil	Nil	80	66	70	57
NCA1	10/07/2024 11:30	86	65	69	47	Nil	Nil	81	65	68	55
NCA1	10/07/2024 11:45	83	64	69	45	Nil	Nil	86	63	65	49
NCA1	10/07/2024 12:00	80	65	69	44	Nil	Nil	77	60	65	49
NCA2	10/07/2024 12:00	86	73	77	64	Nil	Nil	77	60	65	49
NCA2	10/07/2024 12:45	89	74	77	65	Nil	Nil	86	64	66	58
NCA3	10/07/2024 11:30	76	60	60	49	~57	~52	81	65	68	55
NCA3	10/07/2024 12:45	71	57	61	49	~58	~52	86	64	66	58

5.1 ASSESSMENT OF ANNOYING CHARACTERISTICS

5.1.1 LOW FREQUENCY NOISE

Site was occasionally audible at NCA3 but not the dominant noise source. A low frequency assessment could not be undertaken.

5.1.2 TONALITY

Site was occasionally audible but not the dominant noise source. A tonality assessment could not be undertaken.

5.1.3 INTERMITTENT NOISE

The penalty for intermittency is only applicable to the night time assessment period. This noise survey was undertaken during day and evening time, and so this potential penalty does not apply to results in this report.

5.1.4 DURATION

Site is operational for more than 2.5 hours each day, and so no 'duration' modifications apply.

5.2 SUMMARY OF OBSERVATIONS

The site was audible but other noise sources dominated the ambient acoustic environment during all measurements. All measurements complied with noise targets set in the Operational Noise Management Plan.

6 CONCLUSION

Noise levels from the Concrush site complied with noise targets adopted in the ONMP at all monitoring locations.

Yours faithfully

RCA AUSTRALIA

Zaryab Ali
Graduate Acoustic Engineer

REFERENCES

[1] Standards Australia, AS1055 (2018): Acoustics – Description and measurement of environmental noise.

[2] The Noise Policy for Industry (NSW EPA, 2017)

[3] Operational Noise Management Plan for Concrush Pty Ltd Teralba Facility

GLOSSARY

dB (A) ..... Unit of sound pressure level, modified by the A-weighting network to represent the sensitivity of the human ear.

SPL (Lp) ..... The incremental variation of sound pressure from the reference pressure level expressed in decibels.

L_{eq} ..... Equivalent continuous noise level averaged over time on an equivalent energy basis.

L_1 ..... Average Peak Noise Level in a measurement period.

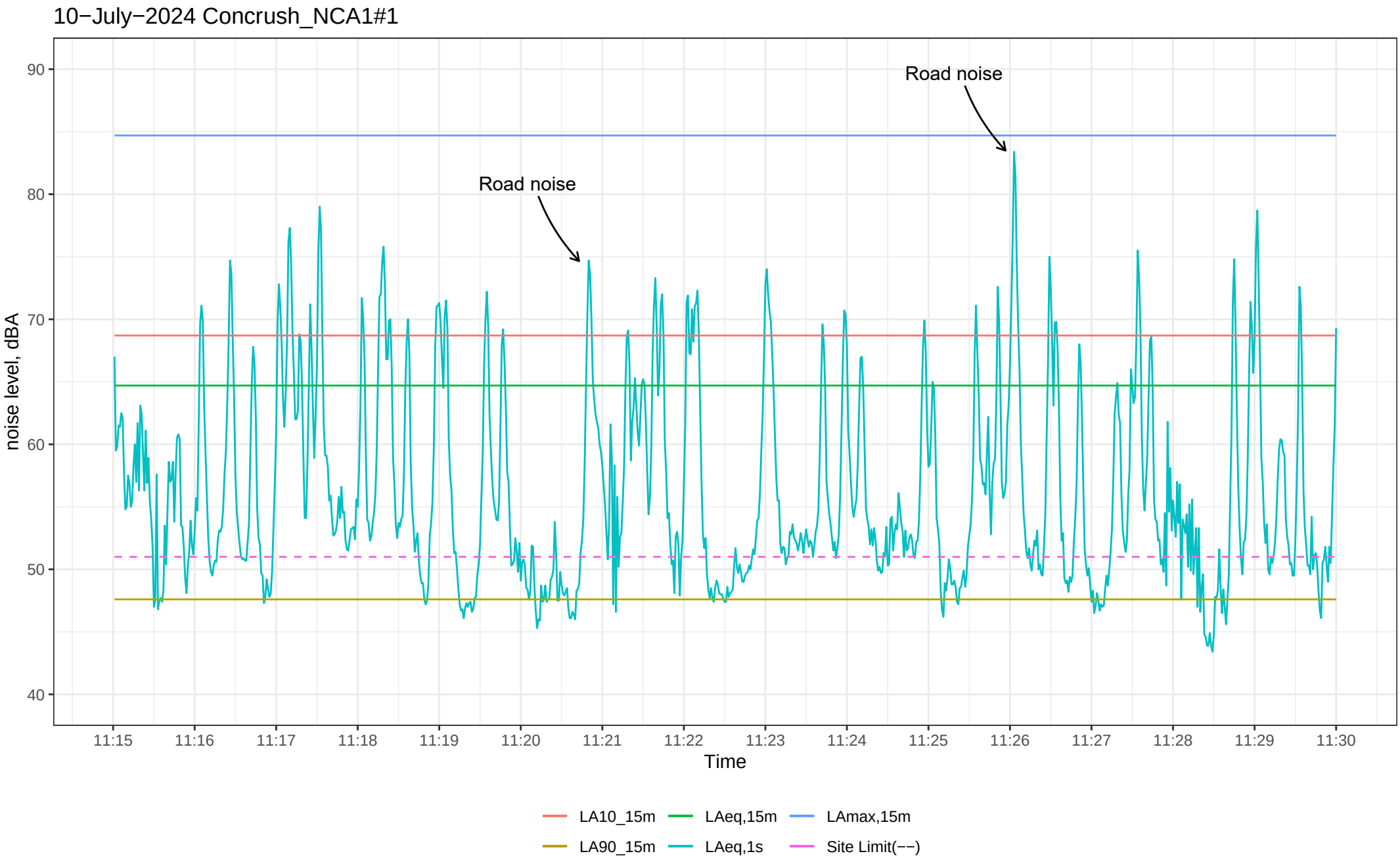
L_{10} ..... Average Maximum Noise Level in a measurement period.

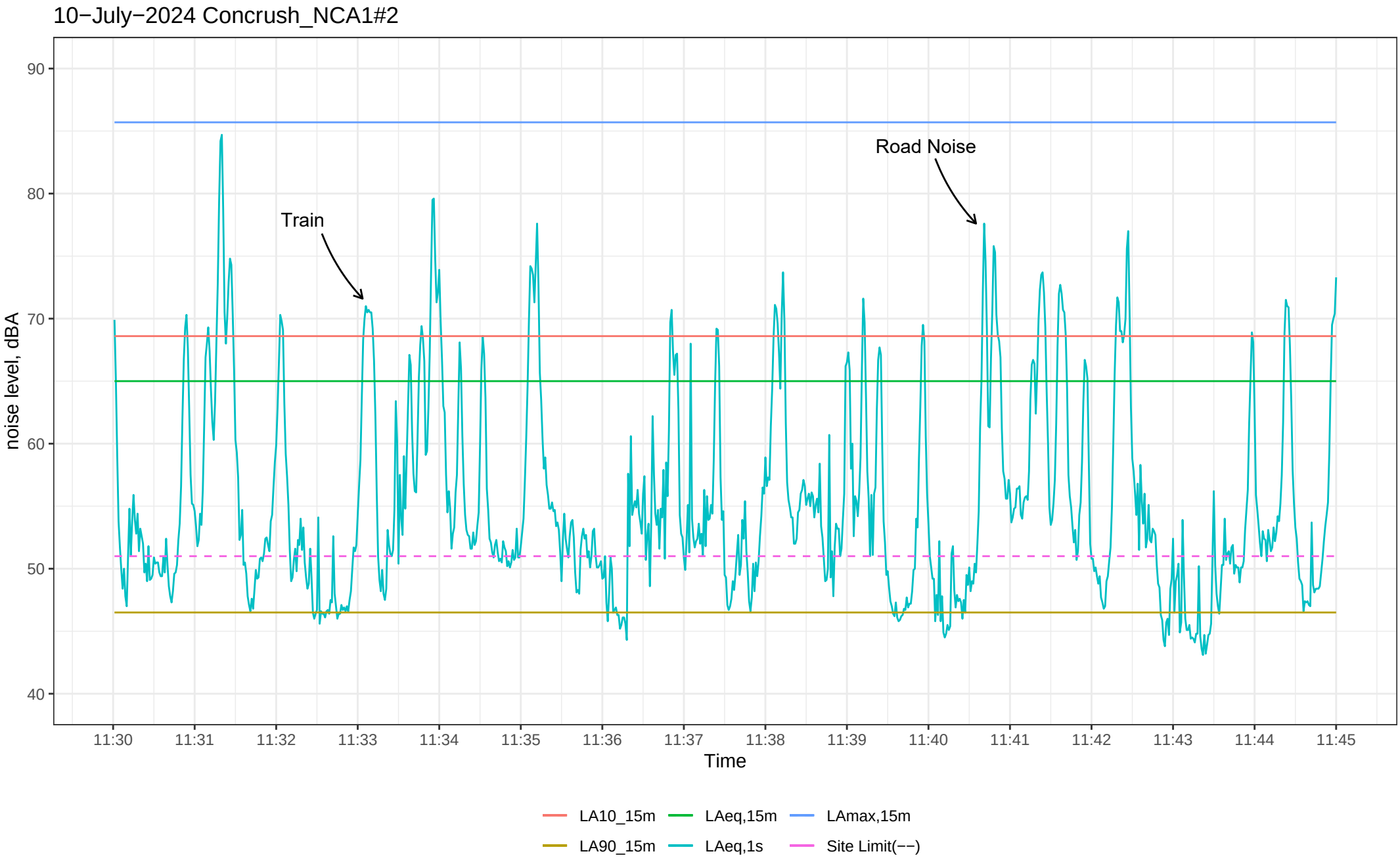
L_{90} ..... Average Minimum Noise Level in a measurement period.

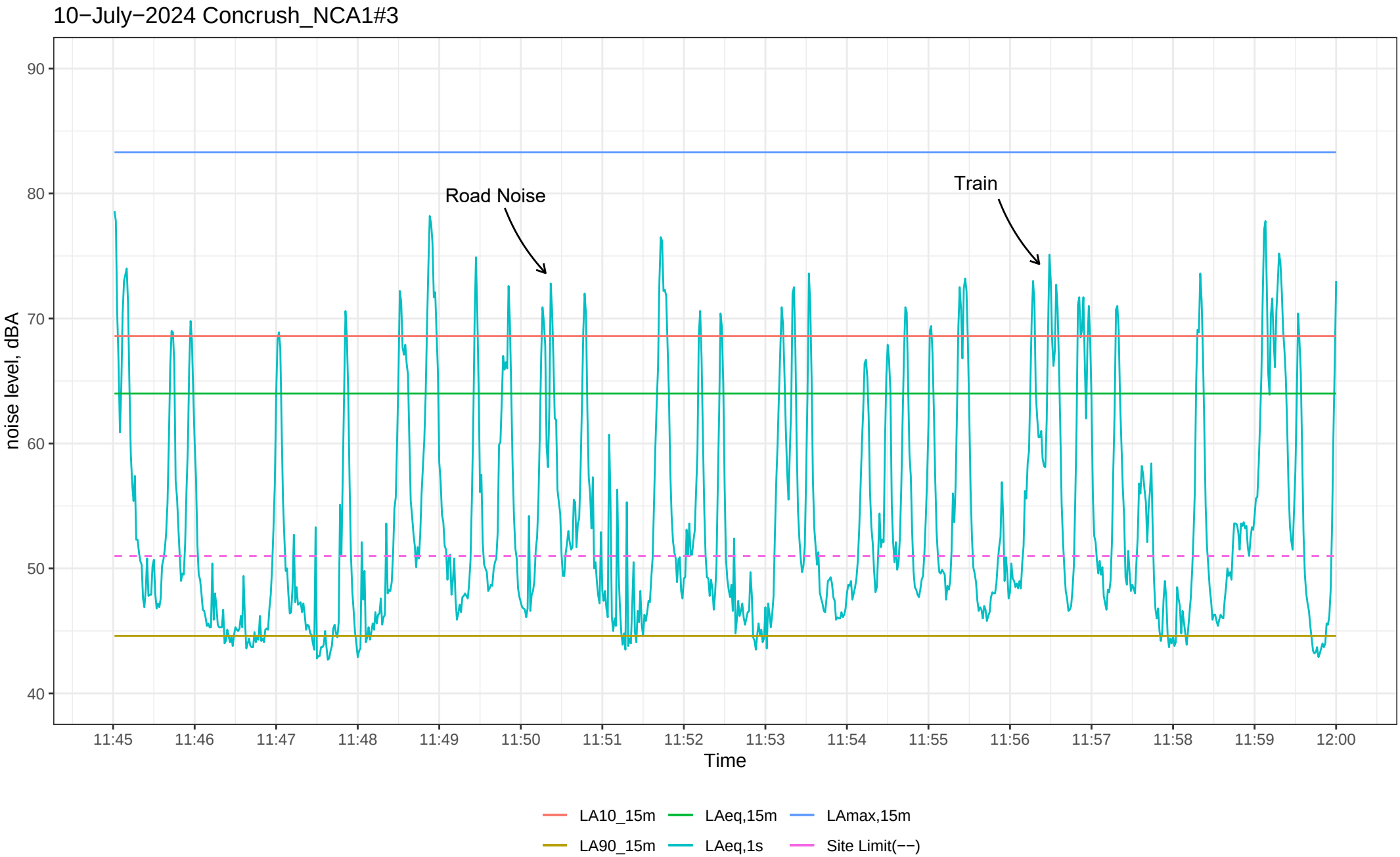
1/3 Octave ..... Division of frequencies into bands of width one-third of an octave. Sound data can be calculated for each division.

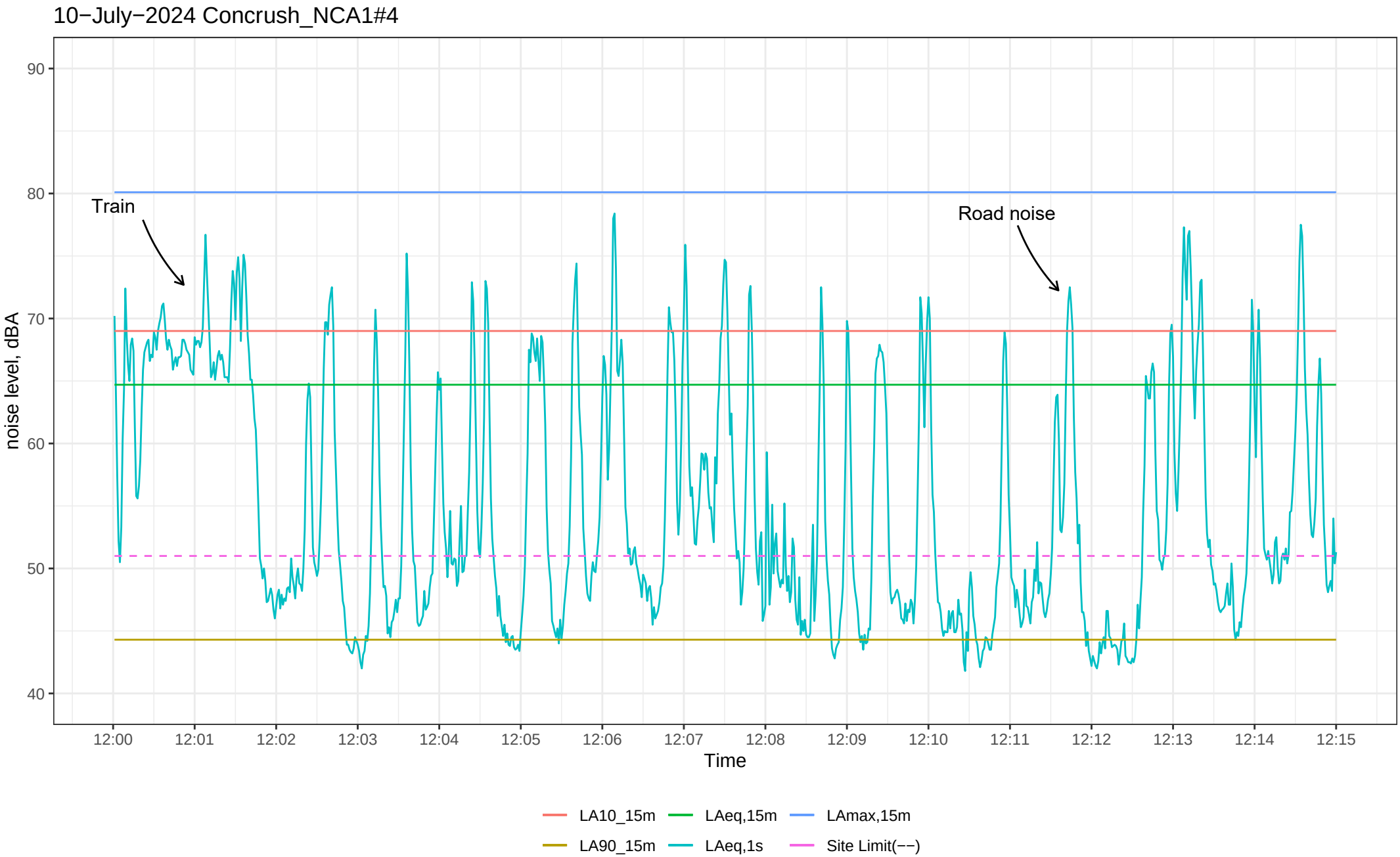
Appendix A

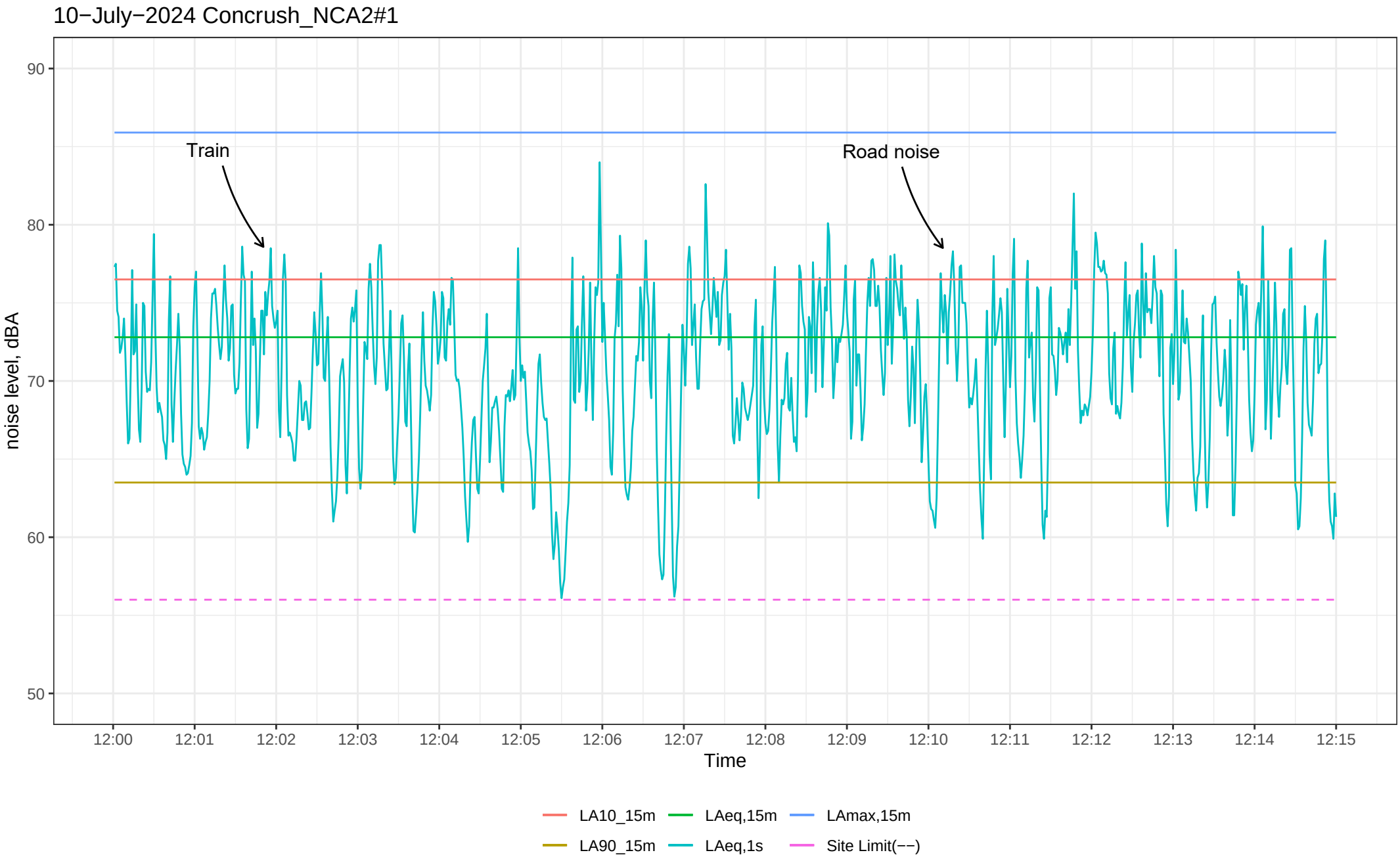
Daytime survey Time Traces

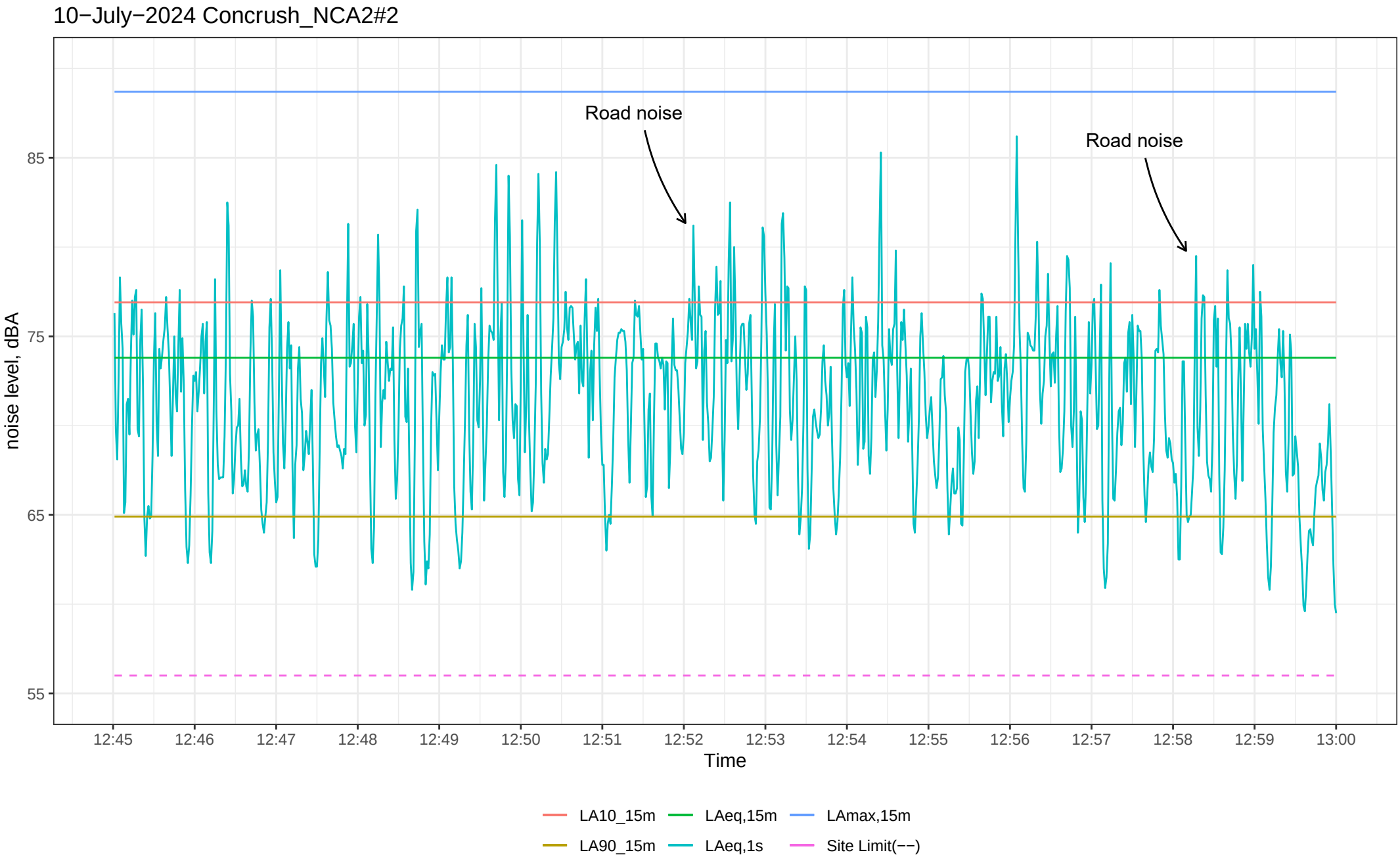

10−July−2024 Concrush_NCA1#1
Road noise
Road noise
90
80
70
60
50
40
noise level, dBA
11:15
11:16
11:17
11:18
11:19
11:20
11:21
11:22
11:23
11:24
11:25
11:26
11:27
11:28
11:29
11:30
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)

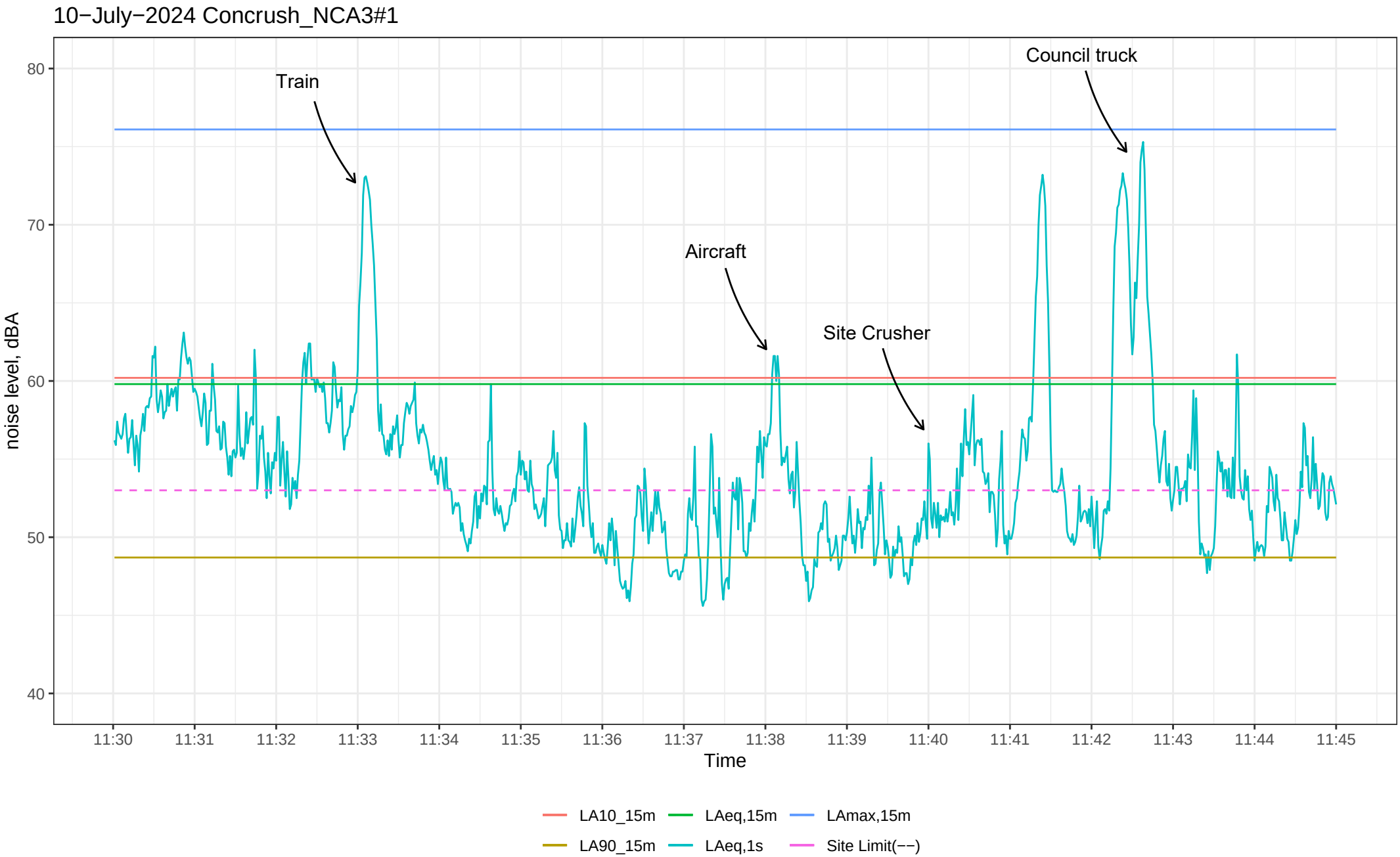

10−July−2024 Concrush_NCA1#2
90
80
70
60
50
40
noise level, dBA
Train
Road Noise
11:30
11:31
11:32
11:33
11:34
11:35
11:36
11:37
11:38
11:39
11:40
11:41
11:42
11:43
11:44
11:45
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)

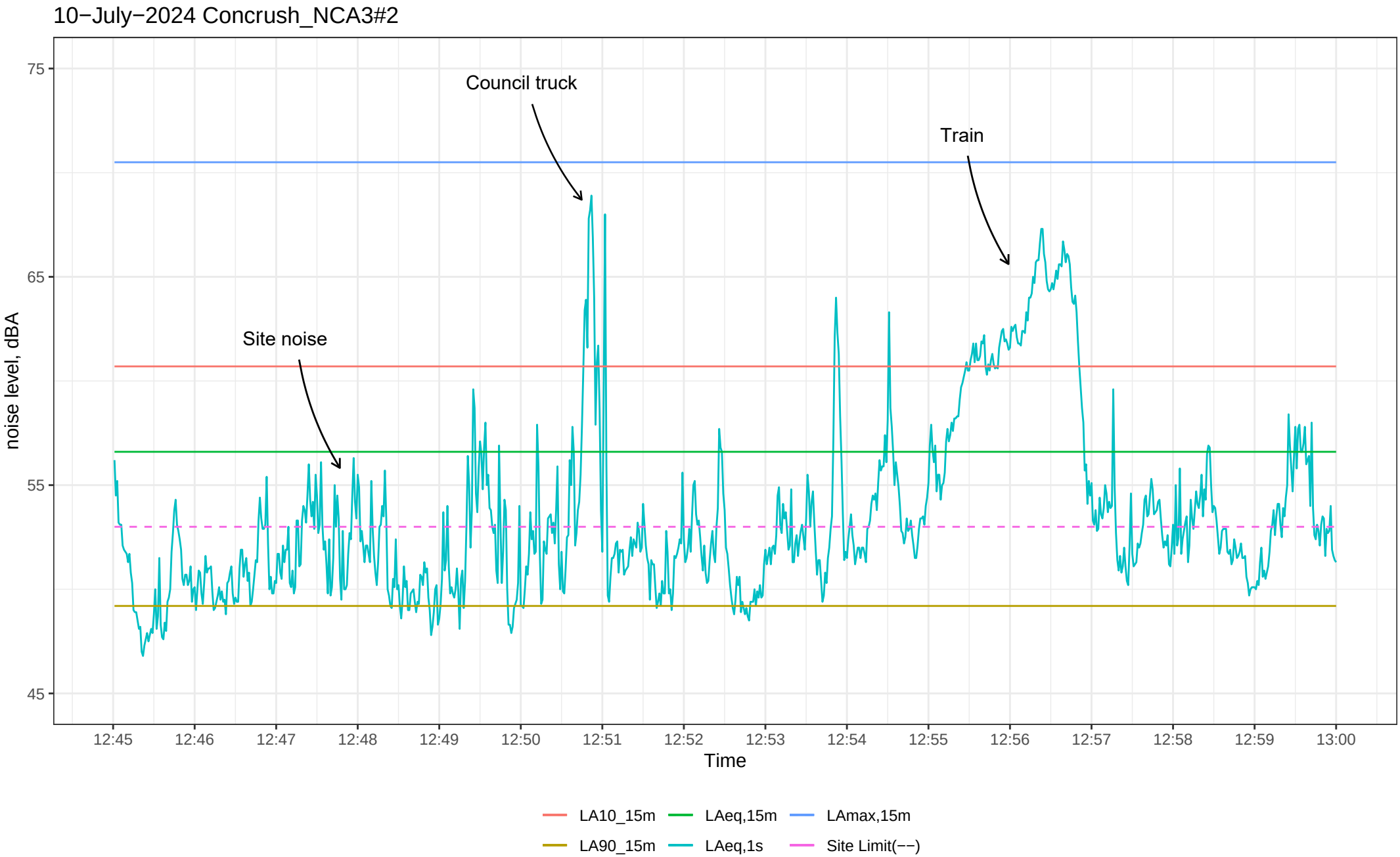

10−July−2024 Concrush_NCA1#3
Road Noise
Train
noise level, dBA
90
80
70
60
50
40
11:45
11:46
11:47
11:48
11:49
11:50
11:51
11:52
11:53
11:54
11:55
11:56
11:57
11:58
11:59
12:00
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)


10−July−2024 Concrush_NCA1#4
Train
Road noise
noise level, dBA
90
80
70
60
50
40
12:00
12:01
12:02
12:03
12:04
12:05
12:06
12:07
12:08
12:09
12:10
12:11
12:12
12:13
12:14
12:15
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)


10−July−2024 Concrush_NCA2#1
Train
Road noise
noise level, dBA
90
80
70
60
50
12:00
12:01
12:02
12:03
12:04
12:05
12:06
12:07
12:08
12:09
12:10
12:11
12:12
12:13
12:14
12:15
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)


10−July−2024 Concrush_NCA2#2
Road noise
Road noise
85
75
65
55
noise level, dBA
12:45
12:46
12:47
12:48
12:49
12:50
12:51
12:52
12:53
12:54
12:55
12:56
12:57
12:58
12:59
13:00
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)


10−July−2024 Concrush_NCA3#1
Train
Aircraft
Site Crusher
Council truck
noise level, dBA
80
70
60
50
40
11:30
11:31
11:32
11:33
11:34
11:35
11:36
11:37
11:38
11:39
11:40
11:41
11:42
11:43
11:44
11:45
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)


10−July−2024 Concrush_NCA3#2
Council truck
Train
Site noise
75
65
55
45
noise level, dBA
12:45
12:46
12:47
12:48
12:49
12:50
12:51
12:52
12:53
12:54
12:55
12:56
12:57
12:58
12:59
13:00
Time
LA10_15m
LAeq,15m
LAmax,15m
LA90_15m
LAeq,1s
Site Limit(−−)