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SIGN INSTALLATION & REMOVAL – CONSTRUCTION NOISE AND VIBRATION IMPACT STATEMENT

A2I | Albury to Illabo

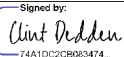
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SIGN INSTALLATION & REMOVAL – CONSTRUCTION NOISE AND VIBRATION IMPACT STATEMENT

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GLOSSARY

Specific terms and acronyms used throughout this plan are listed and described in Table 1 below.

TABLE 1: DEFINITIONS

TERM	DEFINITION
A2I	Albury to Illabo section of the Inland Rail project
AMMM	Additional Mitigation Measures Matrix
ARTC	Australian Rail Track Corporation
CoA	Condition of Approval
CNVF	Construction Noise and Vibration Framework
CNVMP	Construction Noise and Vibration Management Plan
CNVIS	Construction Noise and Vibration Impact Statement
km	Kilometres
m	Metres
NML	Noise Management Level
OOH	Out-of-hours
Project	Albury to Illabo project approved under section 5.19 of the EP&A Act on 8 October 2024, as modified on 13 August 2025
RBL	Rating Background Level
t	Tonnes
TfNSW CNVG-PTI	Transport for NSW's Construction Noise and Vibration Guideline Public Transport Infrastructure (September 2023)

1 INTRODUCTION

1.1 Purpose of this CNVIS

This Construction Noise and Vibration Impact Statement (CNVIS) has been prepared to identify and assess the additional work area required to support general signage installation and removal across work areas along the Albury to Illabo (A2I) rail alignment (the 'Project').

Signage is proposed in a number of locations across the wider A2I Project. These signs can be either permanent or temporary in nature and facilitate signalling requirements for a multitude of disciplines including access, transport, wayfinding etc. The proposed works outlines the installation and, where required, subsequent removal of these signs sitewide.

1.2 Hours of Work

In accordance with the Construction Noise and Vibration Management Plan (CNVMP) and Condition of Approval (CoA) E69 construction work must be undertaken within the approved standard construction hours:

- a) 7:00am to 6:00pm Monday to Friday, inclusive;
- b) 7:00am to 6:00pm Saturday and
- c) At no time on Sundays or public holidays.

1.2.1 Variation to Work Hours

Notwithstanding CoA E69, work may be undertaken outside the hours specified in the CoA E71 circumstances (a, b, or c):

- a) Safety and Emergencies
- b) Work, that meets specific criteria (as outlined in CoA E71)
- c) By Approval, including where different construction hours, such as those for a rail possession, are permitted under an EPL.

The proposed signage installation and removal works are expected to occur during the daytime period. Following or during rail possessions, works may also be required during daytime OOHW periods.

2 NOISE CRITERIA

The nominated LAeq(15 minute) Noise Management Levels (NML) for the proposed signage installation/removal are presented in Table 2.

TABLE 2: NOISE MANAGEMENT LEVELS

Receiver Type	Assumed Daytime Background Noise Level RBL (dBA)	Noise Management Level LAeq(15minute) dBA		Example Receiver Areas
		Approved Daytime (RBL + 10 dB)	Daytime OOH (RBL + 5 dB)	
Urban	40	50	45	Larger regional cities such as Albury and Wagga Wagga
Rural	35	45	40	Rural areas with scattered residences or isolated receivers along the alignment and smaller regional towns such as Harefield and Yerong Creek

3 NOISE ASSESSMENT

Based on information provided by the Martinus construction team, the equipment and associated sound power levels for the assumed worst-case signage installation and removal work scenarios are described in Table 3.

TABLE 3: WORK SCENARIO DESCRIPTION AND EQUIPMENT

ID	Scenario	Equipment	Sound Power Level (dBA)	Number in Operation	Assumed Operational Time	Total Lw LAeq(15 minute)
W.001	Driven Post – Installation	Light vehicles	95	2	25%	104
		Post hole driven	105	1	50%	
		Rattle gun	104	1	30%	
W.002a	Concreted Post – NDD Installation	Vacuum Truck	109	1	100%	112
		Light vehicles	95	2	25%	
		Rattle gun	104	1	30%	
		Concrete Agitator	109	1	100%	
W.002b	Concreted Post – Mechanical Installation	5-13t excavator	100	1	50%	110
		Light vehicles	95	2	25%	
		2-5t tipper	97	1	25%	
		Rattle gun	104	1	30%	
		Concrete Agitator	109	1	100%	
W.003	Driven Post – Removal	Light vehicles	95	2	25%	100
		Hand tools	102	1	50%	
W.004	Concreted Post – Removal	5-13t excavator	100	1	50%	102
		2-5t tipper	97	1	25%	
		Light vehicles	95	2	25%	
		Hand tools	102	1	50%	

Note 1: Equipment classed as ‘annoying’ in the Interim Construction Noise Guideline (DECC, 2009) include a 5 dB correction.

Note 2: Equipment sound power levels consider the mitigation measures outlined in the overarching CNVIS to provide mitigated results.

Note 3: Sound power level data is taken from the DEFRA Noise Database, AS2436, TfNSW Construction Noise and Vibration Guideline.

Noise levels were predicted at 10 m intervals in order to determine the minimum distances from the work areas where project-related communication measures would be applicable at residential receivers. The noise levels have been predicted using the ISO 9613-2024 algorithm using the following assumptions:

- Ground Factor - 0.7
- Temp – 10°C
- Humidity – 70%

The predicted noise levels for all work scenarios are presented below in Table 4, Table 5, Table 6, Table 7 and Table 8 at 10 m intervals until 200 m then 50 m intervals thereafter and compared to the nominated NMLs.

TABLE 4: PREDICTED NOISE LEVELS - W.001 DRIVEN POST – INSTALLATION

Distance from Works (m)	Noise Management Level LAeq(15minute) dBA				Predicted Noise Levels (dBA) LAeq(15minute)	Exceedance (dB)			
	Approved Hours (RBL + 10 dB)		Daytime OOH (RBL + 5 dB)			Approved Hours		Daytime OOH	
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural
10	50	45	45	40	73	23	28	28	33
20					67	17	22	22	27
30					63	13	18	18	23
40					60	10	15	15	20
50					58	8	13	13	18
60					56	6	11	11	16
70					55	5	10	10	15
80					54	4	9	9	14
90					52	2	7	7	12
100					51	1	6	6	11
110					50	0	5	5	10
120					50	0	5	5	10
130					49	0	4	4	9
140					48	0	3	3	8
150					48	0	3	3	8
160					47	0	2	2	7
170					46	0	1	1	6
180					46	0	1	1	6
190					45	0	0	0	5
200					45	0	0	0	5
250					43	0	0	0	3
300					41	0	0	0	1
≥320					40	0	0	0	0

The above assessment indicates that for the proposed driven post signage installation (W.001), exceedances of the NMLs during approved daytime hours are not likely at residences situated ≥110 m from the work locations in urban areas and ≥190 m from the work locations in rural areas. During daytime OOHs, exceedances of the NMLs are not likely at residences situated ≥190 m from the work locations in urban areas and ≥320 m from the work locations in rural areas.

TABLE 5: PREDICTED NOISE LEVELS - W.002A CONCRETED POST – NDD INSTALLATION

Distance from Works (m)	Noise Management Level LAeq(15minute) dBA				Predicted Noise Levels (dBA) LAeq(15minute)	Exceedance (dB)			
	Approved Hours (RBL + 10 dB)		Daytime OOH (RBL + 5 dB)			Approved Hours		Daytime OOH	
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural
10	50	45	45	40	81	31	36	36	41
20					75	25	30	30	35
30					71	21	26	26	31
40					68	18	23	23	28
50					66	16	21	21	26
60					64	14	19	19	24
70					63	13	18	18	23
80					62	12	17	17	22
90					60	10	15	15	20
100					59	9	14	14	19
110					58	8	13	13	18
120					58	8	13	13	18
130					57	7	12	12	17
140					56	6	11	11	16
150					56	6	11	11	16
160					55	5	10	10	15
170					54	4	9	9	14
180					54	4	9	9	14
190					53	3	8	8	13
200					53	3	8	8	13
250					51	1	6	6	11
300					49	0	4	4	9
350					47	0	2	2	7
400					46	0	1	1	6
450					45	0	0	0	5
500					44	0	0	0	4
550					43	0	0	0	3
600					42	0	0	0	2
650					42	0	0	0	2
700					41	0	0	0	1
≥730	40	0	0	0	0				

The above assessment indicates that for the proposed concreted post (NDD) signage installation (W.002a), exceedances of the NMLs during approved daytime hours are not likely at residences situated ≥260 m from the work locations in urban areas and ≥450 m from the work locations in rural areas. During daytime OOHs, exceedances of the NMLs are not

likely at residences situated ≥ 450 m from the work locations in urban areas and ≥ 740 m from the work locations in rural areas.

TABLE 6: PREDICTED NOISE LEVELS - W.002B CONCRETED POST – MECHANICAL INSTALLATION

Distance from Works (m)	Noise Management Level LAeq(15minute) dBA				Predicted Noise Levels (dBA) LAeq(15minute)	Exceedance (dB)			
	Approved Hours (RBL + 10 dB)		Daytime OOH (RBL + 5 dB)			Approved Hours		Daytime OOH	
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural
10	50	45	45	40	79	29	34	34	39
20					73	23	28	28	33
30					69	19	24	24	29
40					66	16	21	21	26
50					64	14	19	19	24
60					62	12	17	17	22
70					61	11	16	16	21
80					60	10	15	15	20
90					58	8	13	13	18
100					57	7	12	12	17
110					56	6	11	11	16
120					56	6	11	11	16
130					55	5	10	10	15
140					54	4	9	9	14
150					54	4	9	9	14
160					53	3	8	8	13
170					52	2	7	7	12
180					52	2	7	7	12
190					51	1	6	6	11
200					51	1	6	6	11
250					49	0	4	4	9
300					47	0	2	2	7
350					45	0	0	0	5
400					44	0	0	0	4
450					43	0	0	0	3
500	42	0	0	0	2				
550	41	0	0	0	1				
≥590	40	0	0	0	0				

The above assessment indicates that for the proposed concreted post (mechanical) signage installation (W.002b), exceedances of the NMLs during approved daytime hours are not likely at residences situated ≥ 210 m from the work locations in urban areas and ≥ 350 m from the work locations in rural areas. During daytime OOHs, exceedances of the

NMLs are not likely at residences situated ≥ 350 m from the work locations in urban areas and ≥ 590 m from the work locations in rural areas.

TABLE 7: PREDICTED NOISE LEVELS - W.003 DRIVEN POST – REMOVAL

Distance from Works (m)	Noise Management Level LAeq(15minute) dBA				Predicted Noise Levels (dBA) LAeq(15minute)	Exceedance (dB)			
	Approved Hours (RBL + 10 dB)		Daytime OOH (RBL + 5 dB)			Approved Hours		Daytime OOH	
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural
10	50	45	45	40	69	19	24	24	29
20					63	13	18	18	23
30					59	9	14	14	19
40					56	6	11	11	16
50					54	4	9	9	14
60					52	2	7	7	12
70					51	1	6	6	11
80					50	0	5	5	10
90					48	0	3	3	8
100					47	0	2	2	7
110					46	0	1	1	6
120					46	0	1	1	6
130					45	0	0	0	5
140					44	0	0	0	4
150					44	0	0	0	4
160					43	0	0	0	3
170					42	0	0	0	2
180					42	0	0	0	2
190					41	0	0	0	1
200					41	0	0	0	1
≥210					40	0	0	0	0

The above assessment indicates that for the proposed driven post signage removal (W.003), exceedances of the NMLs during approved daytime hours are not likely at residences situated ≥ 80 m from the work locations in urban areas and ≥ 130 m from the work locations in rural areas. During daytime OOHs, exceedances of the NMLs are not likely at residences situated ≥ 130 m from the work locations in urban areas and ≥ 210 m from the work locations in rural areas.

TABLE 8: PREDICTED NOISE LEVELS - W.004 CONCRETED POST – REMOVAL

Distance from Works (m)	Noise Management Level LAeq(15minute) dBA				Predicted Noise Levels (dBA) LAeq(15minute)	Exceedance (dB)			
	Approved Hours (RBL + 10 dB)		Daytime OOH (RBL + 5 dB)			Approved Hours		Daytime OOH	
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural
10	50	45	45	40	71	21	26	26	31
20					65	15	20	20	25
30					61	11	16	16	21
40					58	8	13	13	18
50					56	6	11	11	16
60					54	4	9	9	14
70					53	3	8	8	13
80					52	2	7	7	12
90					50	0	5	5	10
100					49	0	4	4	9
110					48	0	3	3	8
120					48	0	3	3	8
130					47	0	2	2	7
140					46	0	1	1	6
150					46	0	1	1	6
160					45	0	0	0	5
170					44	0	0	0	4
180					44	0	0	0	4
190					43	0	0	0	3
200					43	0	0	0	3
250					41	0	0	0	1
≥260					40	0	0	0	0

The above assessment indicates that for the proposed concreted post signage removal (W.004), exceedances of the NMLs during approved daytime hours are not likely at residences situated ≥90 m from the work locations in urban areas and ≥160 m from the work locations in rural areas. During daytime OOHs, exceedances of the NMLs are not likely at residences situated ≥160 m from the work locations in urban areas and ≥260 m from the work locations in rural areas.

4 MITIGATION AND MANAGEMENT MEASURES

Noise from the signage installation and removal works may be apparent at the nearest receivers at certain times. The Project should apply all feasible and reasonable mitigation measures to minimise the impacts.

In accordance with Condition E74 of the Conditions of Approval, works that exceed the noise management levels must be managed in accordance with the A2I Construction Noise and Vibration Management Plan (CNVMP).

The Inland Rail NSW Construction Noise and Vibration Framework (CNVF) outlines a hierarchy of work practices and mitigation measures to minimise the impact of construction noise and vibration on the community. This hierarchy is shown in Figure 1.

Universal work practices (UWP)

Implement: All works at all times

Standard mitigation measures (SMM)

Implement: All works where predicted NMLs exceeded

Additional management measures (AMM)

Implement: OOHW (day, evening and night) where predicted NMLs exceeded

FIGURE 1: HIERARCHY OF WORK PRACTICES AND MITIGATION MEASURES

The universal work practices (UWP) and standard mitigation measures (SMM) for the overall A2I project are outlined in the CNVMP. All mitigation and management measures outlined in the CNVMP will be adopted, where applicable, in accordance with CoA E74.

5 ADDITIONAL MITIGATION MEASURES

As outlined in Section 1.2.1, signage installation and removal works are expected to occur during daytime and daytime OOHW periods only. Where works are required during Out of Hours Works (OOHW) periods, the Additional Mitigation Measures Matrix (AMMM) adapted from the CNVF and CNVMP is to be implemented (refer **Appendix A**). Based on the predicted exceedances of the nominated urban and rural NMLs for the daytime signage installation and removal works (see Table 4, Table 5, Table 6, Table 7 and Table 8), the mitigation measures would comprise of communication with affected sensitive receivers. The minimum distances to residential receivers where the project-related communication measures would be applicable are shown in Table 9.

These communication measures have been adopted based on the AMMM in the CNVF. Further clarification on the measures is provided below:

- Communication (Category 1), i.e. CO1, is communication to provide information on works via methods such as letter box drop, email, newsletter, media advertisements and/or website prior to the works commencing.
- Communication (Category 2), i.e. CO2, is personalised communication such as door knock, meeting, telephone call, etc. Contact should commence early to enable feedback to be considered by the proposal.

TABLE 9: MINIMUM WORKING DISTANCES – ABOVE NML – SIGNAGE INSTALLATION AND REMOVAL WORKS

Work Scenario	Additional Mitigation Matrix Measure ¹	Minimum Distance to Residential Receivers Above Noise Management Level			
		Urban		Rural	
		Approved Hours	Daytime OOHW	Approved Hours	Daytime OOHW
W.001 Driven Post – Installation	CO1 ²	≤110m	≤190m	≤190m	≤320m
	CO2 ²	≤30m	≤40m	≤40m	≤70m
W.002a Concreted Post – NDD Installation	CO1 ²	≤260m	≤430m	≤430m	≤730m
	CO2 ²	≤60m	≤90m	≤90m	≤160m
W.002b Concreted Post – Mechanical Installation	CO1 ²	≤210m	≤350m	≤350m	≤590m
	CO2 ²	≤50m	≤80m	≤80m	≤130m
W.003 Driven Post – Removal	CO1 ²	≤80m	≤130m	≤130m	≤210m
	CO2 ²	≤20m	≤30m	≤30m	≤50m
W.004 Concreted Post – Removal	CO1 ²	≤90m	≤160m	≤160m	≤260m
	CO2 ²	≤20m	≤40m	≤40m	≤60m

Note 1: As outlined in the CNVF, additional mitigation measures are only applicable to works occurring during OOHW periods (i.e. daytime OOHW)

Note 2: As outlined in the CNVF, CO1 is Communication - Category 1 and CO2 is Communication - Category 2. CO1 would be applicable in conjunction with CO2 at residential receivers within this distance.

Table 9 shows the distances from the signage installation and removal works where communication measures would be applicable. These measures are applicable to works conducted during the OOHW daytime period only. It should be noted that communication measures are not likely to be required for residential receivers situated ≥430 m from the work location in urban areas and ≥730 m from the work location in rural areas.

6 VIBRATION ASSESSMENT

Due to the limited scope of work, vibration impacts from the works are not anticipated as vibration intensive items of equipment are not expected to be required during signage installation and removal works.

In the event that additional work is undertaken which requires the use of vibration intensive items of plant, such as those identified in the CNVMP, a vibration impact assessment must be conducted prior to the commencement of work.

7 CONCLUSION

A Construction Noise and Vibration Impact assessment for signage installation and removal works associated with the A2I Project has been conducted.

Noise and vibration impacts from the works were assessed to determine the potential impact to receivers along the A2I alignment. As vibration intensive items of equipment are not expected to be required, vibration impacts are not anticipated during these works.

The assessment identified the minimum working distances for the signage installation and removal works where predicted noise levels would be above the Noise Management Level (NML) and where communication measures would be applicable for noise impacts during daytime OOHW periods. As per CoA E74, the universal work practices (UWP) and standard mitigation measures (SMM) for the overall A2I project, as outlined in the CNVMP, will be adopted for the proposed works.

APPENDIX A

Airborne Noise - Additional Mitigation Measures Matrix				
Time Period	Exceedance of NML	Perception	Duration	Communication Category/Management Measure
OOHW Daytime Period Sunday 7am - 6pm (including public holidays)	<5	Noticeable	Any	CO1
	5 - 15	Clearly audible	Any	CO1
	16 - 25	Moderately intrusive	Any	CO1, CO2
	>25	Highly intrusive	Any	CO1, CO2
OOHW Evening Period Monday - Sunday 6pm - 10pm (including public holidays)	<5	Noticeable	Any	CO1
	5 - 15	Clearly audible	Any	CO1
	16 - 25	Moderately intrusive	Any	CO1, CO2
	>25	Highly intrusive	Any >2 consecutive rest periods	CO1, CO2 CO1, CO2, RO
OOHW Night Period Monday - Sunday 10pm - 7am (including public holidays)	<5	Noticeable	Any	CO1
	5 - 15	Clearly audible	Any	CO1
	16 - 25	Moderately intrusive	Any >2 consecutive sleep periods	CO1, CO2 CO1, CO2, RO, AO
	>25	Highly intrusive	Any >2 consecutive sleep periods	CO1, CO2, RO CO1, CO2, RO, AO, AltA

FIGURE 2. ADDITIONAL MITIGATION MEASURES MATRIX – AIRBORNE NOISE