



# EIS CONSISTENCY ASSESSMENT REPORT (MINOR) BILLY HUGHES BRIDGE STAGE B

A21 | Albury to Illabo



EIS CONSISTENCY ASSESSMENT REPORT (MINOR) BILLY HUGHES BRIDGE STAGE B

**Document Control**

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## Glossary

Specific terms and acronyms used throughout this consistency assessment are listed and described in the table below.

TERM	DEFINITION
Action Management Plan	<i>EPBC Act:</i> In relation to an action, means a plan for managing the impacts of the action on a matter protected by a provision of Part 3, such as a plan for conserving habitat of a species.
AHA	Aboriginal Heritage Assessment (OzArk, September 2025)
AHD	Australian Height Datum
AltA	Alternative Accommodation
A2I	Albury to Illabo section of the Inland Rail Program
ARTC	Australian Rail Track Corporation
ASP1	Accredited Service Provider Level 1
ASS	Acid Sulfate Soils
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CNVIS	Construction Noise and Vibration Impact Statement
Change	Macquarie Dictionary: A variation, adjustment, alteration, deviation or transformation to the Project scope, construction methodology or design.
CoA	Condition(s) of Approval
Construction	Includes work required to construct the CSSI as defined in the Project Description described in the documents listed in Condition A1 including commissioning trials of equipment and temporary use of any part of the CSSI but excluding Low Impact Work which is carried out or completed prior to approval of the CEMP.
Consistent	Macquarie Dictionary: Agreeing or accordant; compatible; not self-opposed or self-contradictory; constantly adhering to the same principles, course, etc.
Consistent with	Means that carrying out the Project (as approved) will comply with the terms of the approval despite the Proposed Change. (See <i>Barrick Australia Ltd v. Williams</i> [2009] NSWCA 275)
Compatible	Macquarie Dictionary: Capable of existing in harmony. Capable of orderly, efficient integration with other elements in a system.
DAWE	<i>Former</i> Australian Government Department of Agriculture, Water and Environment
Division 5.2 Approval	An approval under Division 5.2 of the NSW Environmental Planning and Assessment Act 1979 for State Significant Infrastructure / Critical State Significant Infrastructure.
DSI	Detailed Site Investigation
EAD	Environmental Assessment Documentation
EIS	Environmental Impact Statement
EPL	Environment Protection Licence
HNA	Highly Noise Affected
HV	Heavy Vehicle
IBRA	Interim Biogeographic Regionalisation for Australia
IRPL	Inland Rail Pty Ltd (subsidiary of ARTC)

LEP	Local Environment Plan
LV	Light Vehicle
MR	Martinus Rail, the principal contractor appointed by IRPL to construct the A2I section of the Inland Rail program.
Modification of an Approval	Section 5.25 Environmental Planning and Assessment Act 1979: Means changing the terms of the Division 5.2 approval, including revoking or varying a condition of the approval or imposing an additional condition on the approval.
PIR	Preferred Infrastructure Report
PIR CIZ	Preferred Infrastructure Report Construction Impact Zone, the Construction Boundary set out for A2I under the EAD.
PM10	Particles with a diameter of 10 micrometres or less
PM2.5	Particles with a diameter of 2.5 micrometres or less
PMST	Protected Matters Search Tool
Proposed Change	This includes adjustments to the construction boundary to allow for the construction of permanent works including fauna crossing poles and other fauna connectivity measures, improve site access throughout construction and upon completion of permanent works, and to allow for safe storage of plant and equipment from the danger zone during drainage scope works.
RAP	Remediation Action Plan
Revised BDAR	Revised Technical Paper 8: Biodiversity Development Assessment Report of the EAD (WSP, 2024)
SHR	State Heritage Register
SSI	State Significant Infrastructure
SSI Approval	A2I Inland Rail Project's Approval (SSI-10055)
UMM	Updated Mitigation Measure(s)

# 1 Introduction

## 1.1 Background

### 1.1.1 Division 5.2 approval

ARTC prepared an Environmental Impact Statement (EIS) for the Inland Rail – Albury to Illabo Project which was placed on public exhibition from 17 August 2022 to 28 September 2022. The EIS identified a range of environmental, social and planning issues associated with the construction and operation of the Albury to Illabo (A2I) Project and proposed measures to mitigate and manage those potential impacts.

In accordance with section 5.17(6)(b) of the EP&A Act, on 13 April 2023 the Planning Secretary directed ARTC to submit a Preferred Infrastructure Report (PIR) that provides further assessment of traffic and transport, noise and vibration, and air quality impacts. The PIR was also prepared to consider changes to the exhibited Project that have arisen as a consequence of these further assessments and related submissions.

The Inland Rail – Albury to Illabo Project was assessed as part of the following documents:

- ▶ Inland Rail – Albury to Illabo Environmental Impact Statement (ARTC, August 2022).
- ▶ Albury to Illabo Response to Submissions (ARTC, November 2023).
- ▶ Albury to Illabo Preferred Infrastructure Report (ARTC, November 2023).
- ▶ Albury to Illabo Preferred Infrastructure Report Response to Submissions (ARTC, February 2024).
- ▶ Inland Rail – Albury to Illabo (SSI-10055) Response to request for additional information – Air Quality Assessment (letter dated 1 May 2024).
- ▶ Part 1 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024).
- ▶ Part 2 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024).
- ▶ Albury to Illabo Kemp Street Bridge Enhancement Site Modification (June 2025).
- ▶ Albury to Illabo Kemp Street Bridge Enhancement Site Modification Clarification (July 2025).
- ▶ Albury to Illabo Kemp Street Bridge Modification Noise and Vibration Impact Assessment (August 2025).

The Minister for Planning and Public Spaces approved the Albury to Illabo Project under section 5.19 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 8 October 2024. The approval incorporated the Minister's Conditions of Approval. The Modification was approved by the delegate of the NSW Minister for Planning and Public Spaces on 13 August 2025. The approval incorporated the Consolidated Minister's Conditions of Approval.

For the purposes of this consistency assessment (CA), the approval issued by the NSW Minister for Planning and Public Spaces for the A2I Project is referred to as the Division 5.2 approval.

### 1.1.2 EPBC Act referral

The A2I Project was referred to the Australian Government Minister for the Environment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to potential for impacts on protected matters on 2 June 2020 (EPBC Referral No 202/8670). On 29 June 2020, the former Australian Government Department of Agriculture, Water and Environment (DAWE) notified that the proposal is not a controlled action, and hence approval under the EPBC Act is not required.

## 1.2 Project changes

The Project has been subject to a modification under section 5.25 of the EP&A Act:

- ▶ Inland Rail Albury to Illabo Modification 1 Kemp Street Bridge, Junee (SS-10055-Mod-1)

The following consistency assessments have been prepared to support the undertaking of the Project:

- ▶ EIS Consistency Assessment Report (Minor) Kildare Catholic College (MR, April 2025)
- ▶ EIS Consistency Assessment Report (Minor) Cassidy Parade and Pearson Cassidy (MR, April 2025)
- ▶ EIS Consistency Assessment Report (Small Scale) Wagga Traffic Investigations (MR, May 2025)
- ▶ EIS Consistency Assessment Report (Minor) Edmondson Street Utilities (MR, July 2025)
- ▶ EIS Consistency Assessment Report (Minor) Edmondson Street Timing (MR, July 2025)
- ▶ EIS Consistency Assessment Report (Minor) Diver Platforms Stage B (MR, August 2025)
- ▶ EIS Consistency Assessment Report (Minor) Junee Precinct (MR, August 2025)
- ▶ EIS Consistency Assessment Report (Minor) Albury Precinct (MR, September 2025)
- ▶ EIS Consistency Assessment Report (Minor) Wagga Stage B (MR, September 2025)
- ▶ EIS Consistency Assessment Report (Minor) Junee to Illabo Clearances (MR, September 2025)
- ▶ EIS Consistency Assessment Report (Minor) Riverina Highway Site Establishment (MR, September 2025)
- ▶ EIS Consistency Assessment Report (Minor) Wagga Wagga Traffic Mitigations (MR, October 2025)
- ▶ EIS Consistency Assessment Report (Minor) Bomen Yard Construction Boundary Changes (MR, November 2025)
- ▶ EIS Consistency Assessment Report (Small Scale) Albury North Signal Hut (MR, November 2025)
- ▶ EIS Consistency Assessment Report (Minor) Signalling Scope Stage B (MR, November 2025)
- ▶ EIS Consistency Assessment Report (Minor) Culcairn Site Establishment (MR, November 2025)
- ▶ EIS Consistency Assessment Report (Minor) The Rock & Table Top Site Establishment (MR, November 2025)
- ▶ EIS Consistency Assessment Report (Minor) Uranquinty Supporting Works (MR, November 2025).

### 1.3 Purpose of consistency assessment

This consistency assessment has been prepared in accordance with the Inland Rail Pty Ltd (IRPL) specification for NSW Consistency Assessments (0-0000-902-EEC-00-SP-0001\_1). The purpose of this consistency assessment is to:

- ▶ Describe the Proposed Change relative to the Division 5.2 approval.
- ▶ Assess the environmental impacts associated with the Proposed Change relative to the Division 5.2 approval.
- ▶ Determine if the Proposed Change is consistent with the Division 5.2 approval or whether further approval is required either for a modification application or a new Project.

## 2 Proposed Change

### 2.1 Description of Proposed Change

The EAD identified the indicative proposal sites to enable construction of the reference design for the Albury to Illabo (A21) section of the Inland Rail program. Further detailed design, construction planning, and site surveys have identified refinements to the construction methodology and resulted in the requirement to adjust the construction boundary as defined in the Division 5.2 approval and described in the EAD.

The Proposed Change relates to the construction impact zone (CIZ) at the Billy Hughes Bridge enhancement site which currently aligns with the construction boundary (approved CIZ).

This Consistency Assessment report (CA) considers the Proposed Change, which involves extending the approved CIZ as set out in the PIR (PIR CIZ). This includes adjustments to the CIZ to allow for the construction of permanent works including signalling, drainage and stabilisation of embankments, improvement of site access throughout construction, and to allow for safe storage of plant and equipment from the danger zone during drainage scope works.

For the purpose of this consistency assessment, the CIZ, where areas are proposed to be expanded, are referred to as the proposed CIZ extension areas. The proposed CIZ extension areas are located immediately adjacent to the existing CIZ construction boundary areas.

The proposed CIZ extension areas are described in Table 2-1 and shown in Figure 2-1. The proposed CIZ extension areas are required to carry out indicative construction activities for the project as set out in Chapter 8 of the EIS, however example activities for each CIZ extension area are described in Table 2-1.

Table 2-1: Proposed CIZ extension areas

LABEL	ACTIVITIES	INDICATIVE AREA (HA)
B5-001	Enable safe access	0.05
B5-002	Enable safe access	0.13
B5-003	Enable safe access, construction of CESS drain and signalling scope	0.03
B5-004	Enable embankment earthworks, shotcrete and soil nailing	0.03
B5-005	Enable safe access and construction of protection slab	0.01
B5-006	Enable safe access and construction of CESS drain	0.02
B5-007	Enable safe access	0.13
B5-008	Enable safe access	0.16
B5-009	Facilitate destressing extents	0.05
B5-010	Enable embankment earthworks and drainage works	0.08

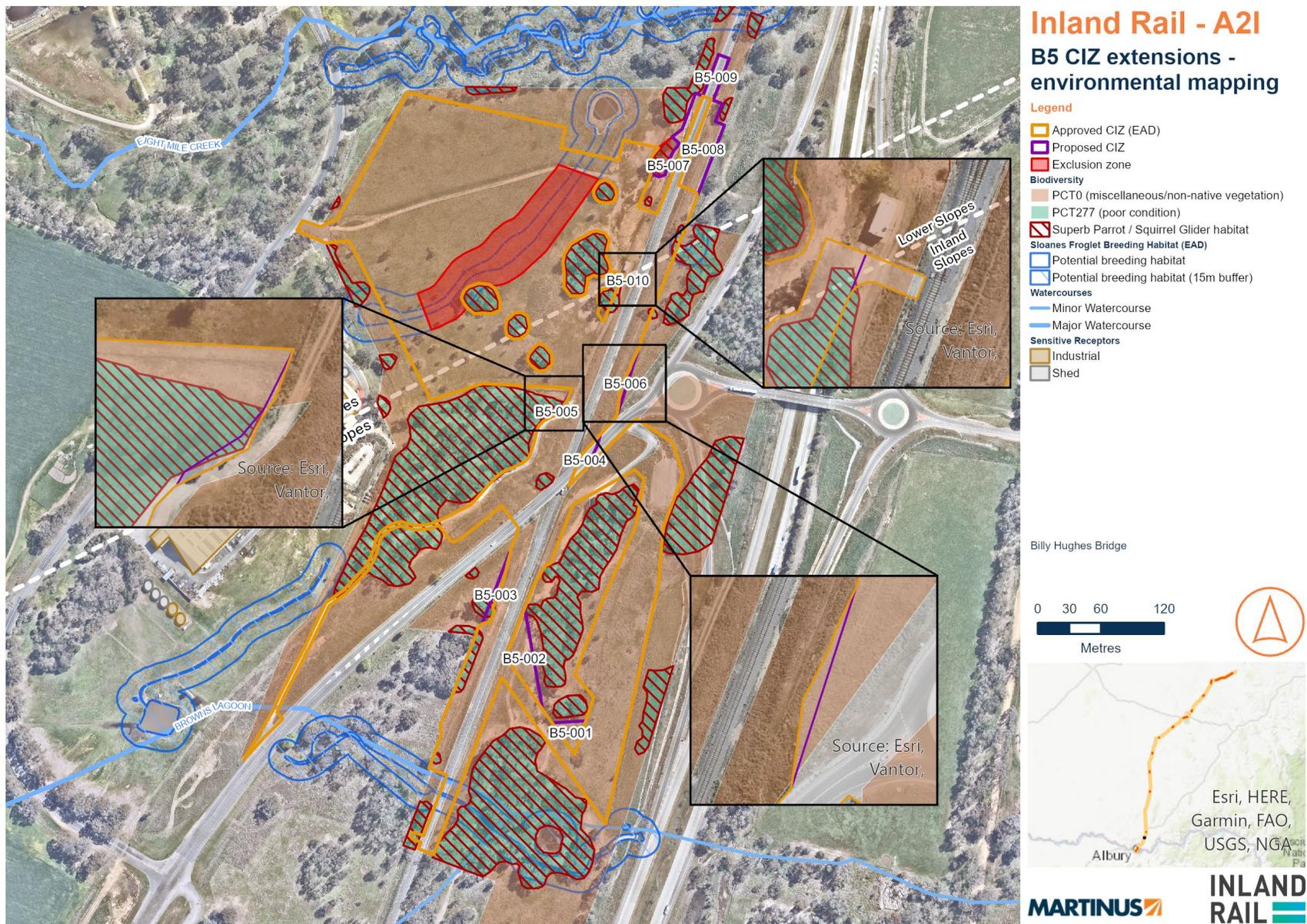


Figure 2-1: Proposed Change in relation to the approved EIS construction boundary at Billy Hughes Bridge

## 2.2 Methodology

### Work Plan

Chapter 8 of the EIS provides an overview of construction activities for the Project and describes construction activities planned for each of the enhancement sites. The Proposed Change would enable these construction activities to occur and would not introduce additional activities at Billy Hughes Bridge enhancement site.

The proposed CIZ extensions at Billy Hughes Bridge are to allow for the construction of permanent works by widening existing work fronts and providing safe passage of plant and equipment throughout construction and once permanent earthworks are complete. As the Proposed Change is primarily to facilitate site access, the extended CIZ areas will have various light and heavy vehicles and plant passing to facilitate works.

Construction activities, including the required plant and equipment, that would be undertaken within the proposed CIZ are described as below.

### Methodology

- ▶ Site establishment (including site clearances)
- ▶ Site operational activities
- ▶ Signalling works (cable route relocation and construction)
- ▶ Demobilisation and landscaping

### Plant and equipment

Plant and equipment required for these works include:

- ▶ Articulated dump truck
- ▶ Centrifugal fan
- ▶ Compressor
- ▶ Crane (mobile)
- ▶ Crane Franna
- ▶ Directional drill
- ▶ Elevated work platform
- ▶ Excavator – slasher
- ▶ Front end loader
- ▶ Generator
- ▶ Hand tools (powered and electric)
- ▶ Light vehicles
- ▶ Roller – smooth drum
- ▶ Tractor – Slasher
- ▶ Truck – Medium Rigid
- ▶ Truck & Dog
- ▶ Watercart.

## 2.3 Need

The EAD identified the 'Proposal site area' consisting of each of the enhancement sites to enable construction of the reference design, which forms the construction boundary, as defined in the Division 5.2 approval and referred to as the 'approved CIZ' for the purpose of this CA. Further detailed design and site surveys resulted in the requirement to adjust the approved CIZ to better allow for site access from the public road network and within the rail corridor, safe manoeuvring, and sufficient space for fauna connectivity poles.

The Proposed Change is required for constructability of the Project, which was not adequately considered as part of the reference design in the EIS, particularly where the approved CIZ dissects access roads and embankments, which are required to access key components of the rail corridor, provide adequate safe manoeuvring around the worksite and facilitate the erection of fauna connectivity poles. Additionally, the CIZ change at the gate at R.W. Henry Drive may be required to avoid and/or protect a gas main that has been identified to be located in the vicinity of the gate.

## 2.4 Location and setting

The Proposed Change relates to the Billy Hughes Bridge enhancement site, located within the Albury precinct of the Project. The regional context and the construction layout as identified in the EAD is included in Figure 2-2.

Aspect specific location and setting information as it relates to the Proposed Change is contained in the subsections below.

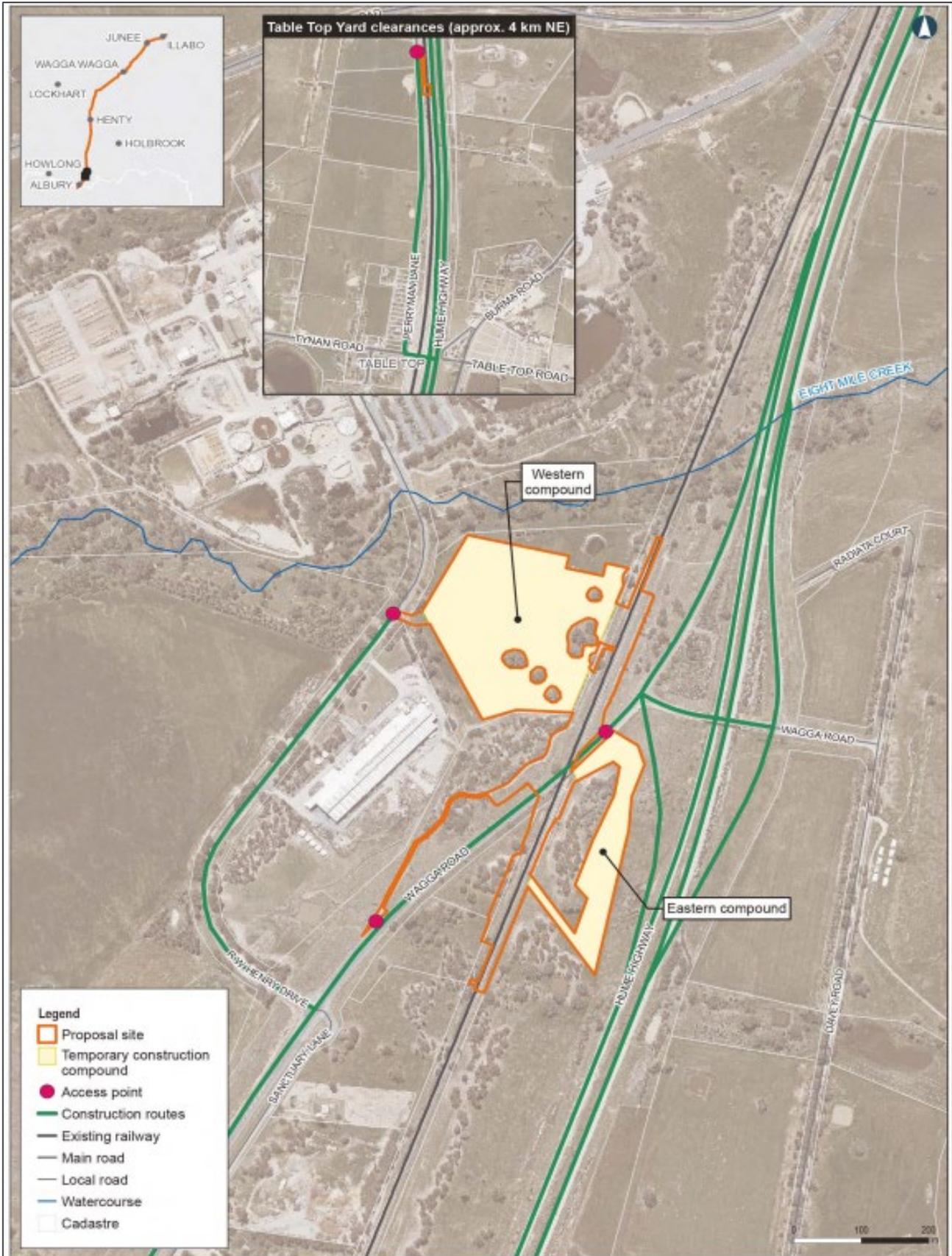


Figure 2-2: Regional context of the Billy Hughes Bridge enhancement site (Source: Figure 8-3 of the EIS)

## 2.5 Construction hours

The works associated with the Proposed Change will be timetabled to be carried out during the approved standard construction hours as per the Project's Environment Protection Licence #21984 (EPL) and CoA E69, where possible. The standard construction hours are as follow:

- ▶ 7:00am to 6:00pm Monday to Friday, inclusive.
- ▶ 7:00am to 6:00pm Saturday and
- ▶ At no time on Sundays or public holidays.

The Proposed Change activities may occur outside of standard construction hours, and the hours approved as part of CoA E69 and EPL L4.1 condition. Any out-of-hours works (OOHW) within the extended CIZ would be implemented in accordance with CoA E71 and EPL L4.3, L4.4, L4.5 and L4.6 conditions

### 3 Consultation

Inland Rail does not always carry out consultation for consistency assessments. However, in some cases consultation may be carried out to:

- ▶ Help identify the nature and scale of the impacts.
- ▶ Involve the community in the options considerations for the Proposed Change.
- ▶ Manage community expectations for the Project.
- ▶ Provide the best design outcome that minimises environmental impacts.

As considered above, Martinus Rail has undertaken ongoing consultation with asset and/or property owners in relation to determining a suitable design and to coordinate construction impacts on existing operational utilities.

The community would be notified in accordance with Section 7.1 of the Community Communication Strategy (IRPL, 2024), including where works may be required outside of the approved construction hours for A2I, prior to commencement of works. Any complaints, feedback or enquiries would be handed in accordance with Section 8 of the Community Communication Strategy.

Consultation with each of the affected landowners where works are proposed outside the approved CIZ would be undertaken prior to commencement of works. The proposed CIZ extension areas are located within the rail corridor, adjacent road corridor and associated yards.

Where arrangements such as licences are required for use of land adjacent to the rail corridor for access or construction related activities (such as temporary stockpiling), these arrangements would be made in consultation with the relevant landowner or, in the case of access from the public road network, the relevant road authority.

## 4 Environmental Assessment

### 4.1 Environmental risk review

An environmental risk review of the proposed activity has been undertaken and is provided below in Table 4.1.

Assessments of potential impacts are provided in greater detail for the following environmental aspects:

- ▶ Traffic and transport (Section 4.2)
- ▶ Noise and vibration (Section 4.3)
- ▶ Aboriginal heritage (Section 4.4)
- ▶ Biodiversity (Section 4.5)
- ▶ Soils and contamination (Section 4.6)
- ▶ Air quality (Section 4.7)
- ▶ Landscape and visual (Section 4.8)

Table 4-1: Consistency assessment review

ISSUE	Y/N	NOTES
Are works required outside the IR property acquisition boundary, or land not previously impacted on by Project works?	No	The Proposed Change would involve impact outside of the approved CIZ and therefore on land not previously impacted on by Project works, however the proposed CIZ extension areas are immediately adjacent to the approved CIZ and primarily fall within the existing road and rail corridors and land leases. Therefore, no additional property acquisition or leases would be required to accommodate the Proposed Change.
Will the works result in any changes to form or functionality of the approved Project?	No	The Proposed Change would not impact on the form or functionality of the approved project. The Proposed Change is required to improve constructability of the approved Project following detailed design and would involve the same construction activities and operation in the EAD.
Are there any potential impacts on traffic and transport associated with the works?	Yes	The Proposed Change is unlikely to result in any additional localised and short-term traffic and transport impacts during construction as a result of the modified CIZ. However, the potential Traffic and Transport impacts have been considered as part of this CA. Potential traffic and transport impacts are considered in greater detail in Section 4.2.
Are there any potential noise and vibration impacts associated with the works?	Yes	The Proposed Change is unlikely to result in any additional noise and vibration impacts during construction as a result of the proposed CIZ extension. However, the potential Noise and Vibrations impacts have been considered in greater detail as part of this CA in Section 4.3.
Are there any potential impacts on known Aboriginal heritage items or sites located in the vicinity of the works?	Yes	The Proposed Change area is located in proximity to Aboriginal sites. These impacts are therefore considered in greater detail in Section 4.4.
Are there any potential impacts on non-Aboriginal heritage items or sites located in the vicinity of the works?	No	The Proposed Change is not located in proximity to any known non-Aboriginal heritage items and sites. A heritage assessment was undertaken (Appendix C) which concludes that no heritage items are within the proposed

		CIZ extension, and that there will be no likely impacts to historic heritage from the Proposed Change.
Are the works within 50m of an EEC or threatened species?	Yes	The Proposed Change is located in an area where several threatened species have been sighted. These impacts are therefore considered in greater detail in Section 4.5.
Do the works require clearing of native vegetation or habitat trees?	Yes	Some minor additional clearing would be required to facilitate the proposed CIZ extension. These impacts are therefore considered in greater detail in Section 4.5.
Are the works within 40m of a waterway or water body?	Yes	A minor tributary is located in the southern vicinity of the CIZ site, however, the proposed CIZ extension is not expected to impact the tributary to a greater extent than what was already considered in the EIS.
Are the works located on flood prone land?	Yes	The Proposed Change is located in an area where there is no flood risk within and around the enhancement site for events up to the 1% AEP, and less than 1m in the PMF. Work associated with the proposed CIZ extension is not expected to affect flood levels or behaviour, and the changes are all construction related and therefore, any potential impacts would be negligible and consistent with what has already been assessed in the EAD.
Are the works located on bushfire prone land?	Yes	The Proposed Change is located on bushfire prone land. However, the proposed changes are unlikely to result in an increased bushfire risk at this enhancement site greater than what has already been assessed in the EAD.
Do the works involve ground disturbance of more than 2 hectares?	No	The Proposed Change is under 2 hectares. The extent of ground disturbance required for the Proposed Change would be less than the proposed construction impact zone.
Are the works in an area of known salinity hazard risk?	Yes	The Proposed Change is located in areas of low and moderate salinity hazard. The impacts associated with salinity are discussed in greater detail in Section 4.6
Are the works in an area of known acid sulfate soil risk?	Yes	The Proposed Change is located in an area of a low probability for acid sulfate soils occurrence. The impacts associated with acid sulfate soils are discussed in greater detail in Section 4.6.
Will works require temporary or permanent placement of surplus spoil material?	Yes	The Proposed Change would require temporary placement of surplus spoil material; this material will be accommodated within the proposed stockpile/laydown sites and reused/disposed of in accordance with Chapter 23 of the EIS.
Are the works in an area of known contamination risk?	Yes	The Proposed Change is located in an area noted as a general contamination risk. The impacts associated with contamination are discussed in greater detail in Section 4.6.
Are there any potential air quality impacts associated with the works?	Yes	The Proposed Change would result in potential minor and short-term air quality impacts. These impacts are discussed in greater detail in Section 4.7.
Are there any potential landscape and visual impacts associated with the works?	Yes	The Proposed Change would result in minor and short-term landscape and visual impacts. These impacts are discussed in greater detail in Section 4.8.
Will works result in any operational impacts further to those detailed in the approved Project?	No	The Proposed Change relates to required adjustment of utilities designed in consultation with the parties responsible for maintenance of the respective assets. The

		Proposed Change would not represent an increase in operational impact to what was assessed in the approved Project.
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## 4.2 Traffic and transport

### 4.2.1 Existing environment

The following discussion is drawn from Technical Paper 1: Traffic and Transport of the EAD.

The Proposed Change is located on land within and adjacent to the existing rail corridor which forms part of the Main South Line in the NSW rail network.

#### Construction traffic

The Billy Hughes enhancement site is assessed as requiring up to forty-seven (47) light vehicles and ten (10) heavy vehicle one-way movements per peak hour (EIS, Tech Paper 1). The Wagga Road, in the vicinity of the Billy Hughes Bridge enhancement site, generally features 3.9m wide lanes, sealed shoulders, and has a posted speed limit of 100km/h. The Hume Highway is a major arterial road that carries a high volume of traffic and provides interstate travel between NSW and Victoria. Key local roads and LoS (including construction traffic) that serve Billy Hughes Bridge are summarised in Table 4-2.

Table 4-2: Overview of key roads and performance at Billy Hughes

KEY ROADS	MAXIMUM AND MINIMUM TRAFFIC VOLUMES FOR NON-ARTERIAL ROADS (DAILY TWO-WAY)	LOCAL ROAD PERFORMANCE
Wagga Road and Hume Highway	5,392, proportion of heavy vehicles not available (Wagga Road)	Roads perform at a LoS of C or better.

#### Construction access points

Construction access points between the public road network and the Billy Hughes Bridge enhancement site considered in the EAD are detailed in Table 4-3 and shown in the mapping provided in Appendix A.

Table 4-3: Existing access points at Bily Hughes Bridge

ROAD NAME	TURN TREATMENT	CONSIDERATIONS
43 / Wagga Road	Channelised Right-Turn / Auxiliary Left Turn	Left and right turn into and out of site. Opposing movements on public road. High speed environment ( $\geq 80$ km/h). Current configuration does not meet turn warrant guidance. Road Safety Audit would investigate the need for traffic management of this access.
42 / Wagga Road	Channelised Right-Turn / Auxiliary Left Turn	Left and right turn into and out of site. Opposing movements on public road High speed environment ( $\geq 80$ km/h). Potential for impacts from construction vehicles movements or implementation of traffic management. Current configuration does not meet turn warrant guidance. Road Safety Audit would investigate the need for traffic management of this access
74 / R W Henry Drive	Channelised Right-Turn / BAL	Left and right turn into and out of site. Opposing movements on public road High speed environment ( $\geq 80$ km/h). Potential for impacts from construction vehicles movements or implementation of traffic management. Current configuration does not meet turn warrant guidance. Road Safety Audit would investigate the need for traffic management of this access.

### 4.2.2 Impact assessment

The CIZ extensions proposed at Billy Hughes Bridge do not encroach on any local or main roads and are not expected to increase the traffic and transport impacts. The number and type of construction vehicles required for the proposed works are consistent with the EAD, therefore, no increase in construction traffic is anticipated as a result of the Proposed Change. The change in the CIZ at the gate access adjacent to R.W. Henry Drive is not expected to affect the turn warrant treatment for this gate, but rather just move the gate laterally slightly to avoid the underground gas main.

### 4.2.3 Conclusion

The Proposed Changes are not anticipated to increase traffic associated with construction activities at Billy Hughes Bridge enhancement site. The impacts would be generally in accordance with the impacts considered as part of the EAD and would be managed in accordance with traffic management as part of the broader A2I Project and in accordance with the Infrastructure Approval.

All applicable mitigation measures in the Conditions of Approval (CoAs) and Updated Mitigation Measures (UMMs) will be implemented, with any identified additional mitigation measures outlined in Table 4-19.

## 4.3 Noise and vibration

### 4.3.1 Existing environment

Common noise and vibration sources in the subject area are train movements along the operational rail corridor, major road traffic and local traffic. Potentially sensitive receivers are those that may be affected by changes in noise and vibration levels within the work area. The Billy Hughes enhancement site falls within noise catchment area (NCA) 3 which comprises of 13 residential properties and 57 industrial properties, giving the catchment a total of 70 noise sensitive receivers. There are no educational facilities, medical facilities or places of workshop located within the NCA specific to this enhancement site.

The existing vibration environment in close proximity to the railway line includes vibration from existing freight train movements on the alignment. Additional sources of vibration may be associated with operation of industrial premises, road traffic operations and construction activities typical of the environment. Adjacent heritage structures are considered as vibration sensitive receivers due to the potential for cosmetic damage; however, a heritage structure should not be assumed to be more sensitive to vibration, unless it is structurally unsound.

### 4.3.2 Construction hours

Construction hours for the Billy Hughes Bridge enhancement site are discussed in Section 2.5, with the following also noted:

#### Highly noise intensive works

'Highly noise intensive works' as per the Project Approval are defined as:

- ▶ use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work
- ▶ grinding metal, concrete or masonry
- ▶ rock drilling
- ▶ line drilling
- ▶ vibratory rolling
- ▶ bitumen milling or profiling
- ▶ jackhammering, rock hammering or rock breaking

- ▶ impact piling; and
- ▶ tamping (for rail Projects).

As outlined in Condition of Approval (CoA) E70, any highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken between:

- ▶ 8:00am to 6:00pm Monday to Friday
- ▶ 8:00am to 1:00pm Saturday

If continuously, then not exceeding (3) hours, with a maximum cessation of work of not less than an hour.

**Out-of-hours work**

- ▶ In accordance with CoA E73, where out-of-hours work (OOHW) is required for:
- ▶ For carrying out work that if carried out during standard hours would result in a high risk to construction personnel or public safety based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009: “Risk management; or
- ▶ Where the relevant roads authority has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to road network performance and a road occupancy licence will not be issued; or
- ▶ Where the relevant utility service operator has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to the operation and integrity of the utility network; or
- ▶ Work undertaken in a rail possession for operational or safety reasons.
- ▶ This will be regulated through the OOHW Protocol except as permitted by an EPL.

**4.3.3 Impact assessment**

**Noise catchment areas**

NCA’s were defined in the EIS to classify groups of sensitive receivers that are likely to have a similar existing noise environment and experience similar impacts from construction of the Project. These were determined through reference to aerial imagery and land use maps and verified during background noise monitoring.

A Construction Noise and Vibration Impact Statement (CNVIS) (SLR May 2025 Doc No: 6-0052-210-EEC-B5-AS-0001\_0) and CNVIS Addendum (MR October 2025 Dock No: 6-0052-210-EEC-B5-AS-0001\_ADD\_3) were undertaken for the Billy Hughes Bridge scope (refer to Appendix A). The Proposed Change area is surrounded by 13 residential and 57 commercial receivers. The corresponding NCA, approximate number of receivers and noise management levels (NMLs) are noted below in Table 4-4, Table 4-5, and shown in Figure 4-1.

**Table 4-4: NCAs and background noise information**

ENHANCEMENT SITE(S)	NCA ID	APPROXIMATE NUMBER OF RECEIVERS IN NCA	DESCRIPTION	RBL (dBA)		
				Day*	Evening*	Night*
Billy Hughes Bridge	03	70	Industrial area to the north of Albury, adjacent to the Hume Highway and Wagga Road	37	37(41 <sup>1</sup> )	37(38 <sup>2</sup> )

\*Time periods defined as - Day: 7am to 6pm Monday to Saturday, 8am to 6pm Sunday; Evening, 6pm to 10pm; Night 10pm to 7am Monday to Saturday, 10pm to 8am Sunday

<sup>1</sup> The evening RBL data has been reduced to the daytime period RBL in this case (bracketed figures indicate the measured value)

<sup>2</sup> The night-time RBL data has been reduced to the evening period RBL in this case (bracketed figures indicates the measured value)

Table 4-5: NCAs and noise management levels

NCA ID	NOISE MANAGEMENT LEVEL (NML)			SLEEP DISTURBANCE SCREENING LEVEL (RBL +15 dBA or + 52 dBA)	SLEEP AWAKENING REACTION LEVEL	
	APPROVED HOURS (RBL + 10 dBA)	OUT-OF-HOURS				
		DAYTIME (RBL + 5 dBA) *	EVENING (RBL + 5 dBA) *			NIGHT-TIME (RBL + 5 dBA) *
NCA 03	47	42	42	52	65	

\*Time periods defined as - Day: 7am to 6pm Monday to Friday, 8am to 6pm Saturday; Out-of-hours day: 8 am to 6 pm Sunday and public holidays; Evening, 6pm to 10pm Monday to Sunday (including public holidays); Night 10pm to 7am Monday to Saturday, 10pm to 8am Sunday (including public holidays)

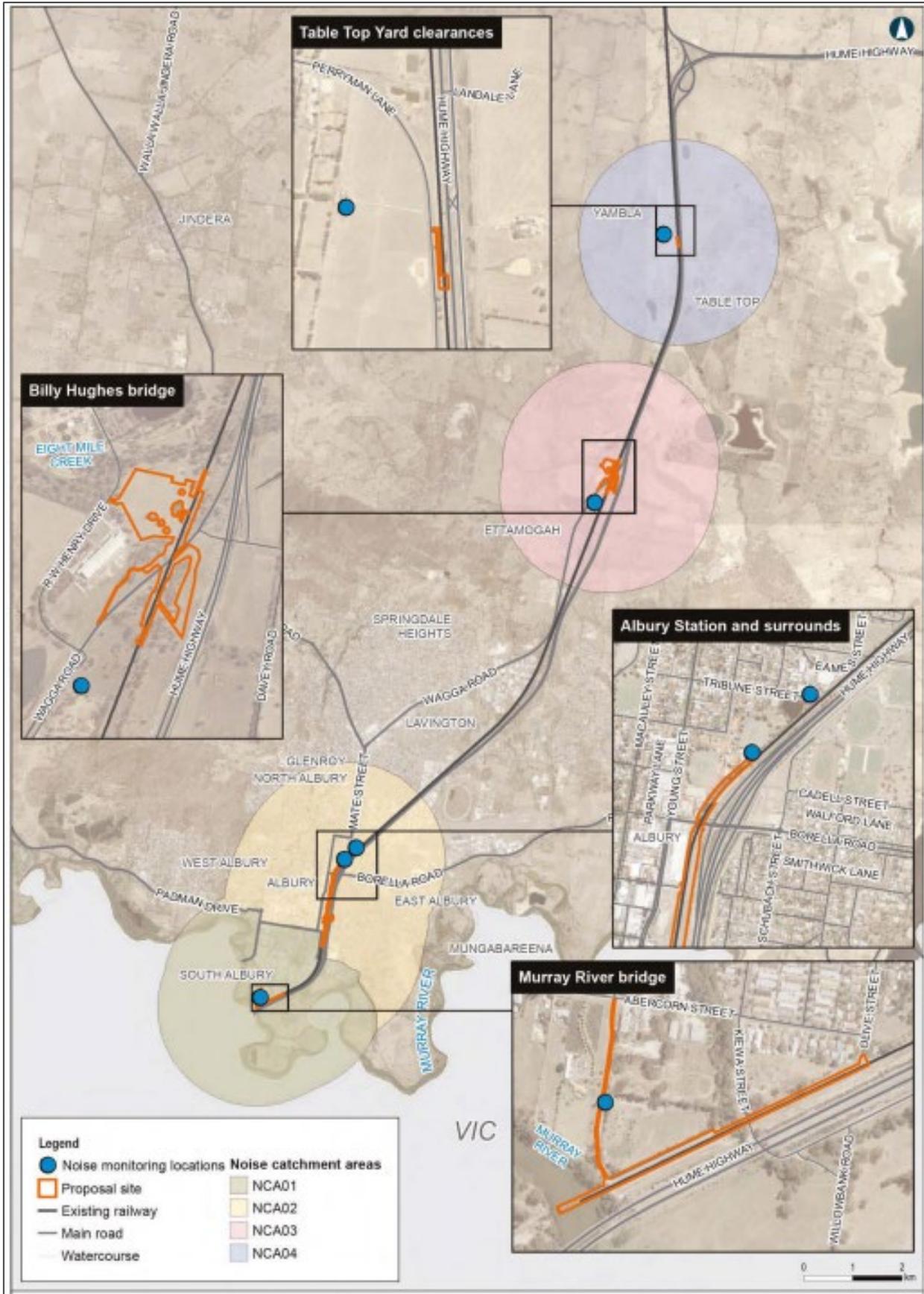


Figure 4-1: EAD showing location of NCAs at Billy Hughes Bridge

## Predicted noise levels

The Proposed Change activities have been incorporated and assessed in the CNVIS Addendum (Appendix A). The Proposed Change has been assessed utilising SLR Predict, the A2I noise and vibration management tool.

The Proposed Change activities are referred to as 'Work Scenarios', with the following noted:

- ▶ W.001B Site establishment activities
- ▶ W.002B Compound activities
- ▶ W.004B Earthworks
- ▶ W.011A Signalling enabling activities
- ▶ W.011B Signalling infrastructure

### W.001B

The CNVIS Addendum has assessed the revised work area, which consists of the work area identified in the endorsed CNVIS and additional work area identified in this Consistency Assessment.

The highest noise generating items of plant and equipment in this work scenario (front end loader and articulated dump truck) have been considered as a worst-case scenario, with 100% utilisation within a 15-minute assessment period.

Table 4-6 provides a summary of the exceedances identified for daytime out of hours, as the most affected period. It compares the following:

- ▶ W.001 exceedances identified in the Billy Hughes CNVIS
- ▶ W.001B exceedances identified in the SLR Predict results for the revised work area.

**Table 4-6 Exceedance comparisons for W.001B**

ASSESSMENT RESULTS	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	CNVIS – W.001	W.001B SLR PREDICT – REVISED WORK AREA
<b>Total Lw (dBA)</b>	<b>115</b>	<b>114</b>
Noticeable (1-5 dB)	0	1
Clearly Audible (6-15 dB)	0	1
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 4-6 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.001B.

### W.002B

The CNVIS Addendum has assessed the revised work area, which consists of the work area identified in the endorsed CNVIS and additional work area identified in this Consistency Assessment.

The highest noise generating items of plant and equipment in this work scenario (front end loader and compressor) have been considered as a worst-case scenario, with 100% utilisation within a 15-minute assessment period.

Table 4-7 provides a summary of the exceedances identified for night time out of hours, as the most affected period. It compares the following:

- ▶ W.002 exceedances identified in the Billy Hughes CNVIS
- ▶ W.002B exceedances identified in the SLR Predict results for the revised work area.

Table 4-7 Exceedance comparisons for W.002B

ASSESSMENT RESULTS	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	CNVIS – W.002	W.002B SLR PREDICT – REVISED WORK AREA
<b>Total Lw (dBA)</b>	<b>113</b>	<b>114</b>
Noticeable (1-5 dB)	0	1
Clearly Audible (6-15 dB)	0	1
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 4-7 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.002B.

#### W.004B

The CNVIS Addendum has assessed the revised work area, which consists of the work area identified in the endorsed CNVIS and additional work area identified in this Consistency Assessment.

The highest noise generating items of plant and equipment in this work scenario (front end loader and grader) have been considered as a worst-case scenario with 100% utilisation within a 15-minute assessment period.

Table 4-8 provides a summary of the exceedances identified for night time out of hours, as the most affected period. It compares the following:

- ▶ W.004 exceedances identified in the Billy Hughes CNVIS (original earthwork scenario)
- ▶ W.004B exceedances identified in the SLR Predict results for the revised work area.

Table 4-8 Exceedance comparisons for W.004B

ASSESSMENT RESULTS	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	CNVIS – W.004	W.004B SLR PREDICT – REVISED WORK AREA
<b>Total Lw (dBA)</b>	<b>117</b>	<b>116</b>
Noticeable (1-5 dB)	0	0
Clearly Audible (6-15 dB)	1	2
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 4-8 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.004B.

#### W.0011A

The CNVIS Addendum has assessed the revised work area, which consists of the work area identified in the endorsed CNVIS and additional work area identified in this Consistency Assessment.

The highest noise generating items of plant and equipment in this work scenario (light vehicles and powered hand tools) have been considered as a worst-case scenario with 100% utilisation within a 15-minute assessment period.

Table 4-9 provides a summary of the exceedances identified for night time out of hours, as the most affected period. It compares the following:

- ▶ W.011 exceedances identified in the Billy Hughes CNVIS (original signalling work scenario)
- ▶ W.011A exceedances identified in the SLR Predict results for the revised work area.

Table 4-9 Exceedance comparisons for W.0011A

ASSESSMENT RESULTS	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	CNVIS – W.0011	W.0011A SLR PREDICT – REVISED WORK AREA
<b>Total Lw (dBA)</b>	<b>113</b>	<b>106</b>
Noticeable (1-5 dB)	1	0
Clearly Audible (6-15 dB)	0	0
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 4-9 shows a decreased number of receivers experiencing a noticeable level of noise (1-5 dB exceedance). There are no other changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.011A

#### W.0011B

The CNVIS Addendum has assessed the revised work area, which consists of the work area identified in the endorsed CNVIS and additional work area identified in this Consistency Assessment.

The highest noise generating items of plant and equipment in this work scenario (truck – vacuum (NDD) and directional drill) have been considered as a worst-case scenario with 100% utilisation within a 15-minute assessment period.

Table 4-10 provides a summary of the exceedances identified for night time out of hours, as the most affected period. It compares the following:

- ▶ W.011 exceedances identified in the Billy Hughes CNVIS (original signalling work scenario)
- ▶ W.011B exceedances identified in the SLR Predict results for the revised work area.

Table 4-10 Exceedance comparisons for W.0011B

ASSESSMENT RESULTS	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	CNVIS – W.0011	W.0011B SLR PREDICT – REVISED WORK AREA (DIRECTIONAL DRILL)
<b>Total Lw (dBA)</b>	<b>113</b>	<b>101</b>
Noticeable (1-5 dB)	1	0
Clearly Audible (6-15 dB)	0	0
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 4-10 shows a decreased number of receivers experiencing a noticeable level of noise (1-5 dB exceedance). There are no other changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.011B

#### **Heritage structures**

No heritage structures have been identified within 100m from the works area. If other vibration intensive activities are required within minimum working distances to heritage structures, a building condition

assessment should be undertaken of the heritage item/s to assess if they are considered to be sensitive to vibration prior to vibration work commencing

### **Buried pipework and utilities**

No buried pipework or utilities have been identified in the CNVIS at risk of impact from vibration. Therefore, no additional consideration or assessment has been undertaken in relation to buried pipework and utilities. Where buried pipework or utilities are uncovered during works, they should be identified and managed in accordance with the measures outlined in the CNVMP.

### **Human comfort assessment**

The CNVIS has shown that no buildings are expected to fall within the minimum working distances for human comfort. Feasible and reasonable construction vibration mitigation measures should be applied where vibration intensive work is required within the minimum working distances, which can be found under Section 8.1 of the CNVIS.

### **Cumulative impacts**

There is potential for cumulative construction impacts from multiple construction activities being completed in different areas of the Proposed Change.

As noted in the CNVIS, since the construction scenarios required for various stages of the Proposed Change would generally require similar items of equipment, concurrent construction work being completed near to a particular area could theoretically increase the worst-case noise levels in this report by around 3 dB (i.e., a logarithmic adding of two sources of noise at the same level).

The likelihood of worst-case noise levels being generated by two different work activities at the same time is considered low and rather than increase construction noise levels, the impact of concurrent work would generally be limited to a potential increase in the duration, and annoyance, of noise impacts on the affected receivers. In practice, construction noise levels in any one location would vary and would be frequently much lower than the worst-case scenario assessed due to construction staging moving work around within the study area and, in many cases, only a few items of equipment being used at any one time.

Feasible and reasonable steps will be taken to consult and coordinate with other construction Projects when they become aware of them and if they have the potential to impact the same receivers concurrently, to minimise cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers (in accordance with CoA E72 and E83).

#### **4.3.4 Conclusion**

Feasible and reasonable management and mitigation measures will be implemented as required to minimise noise, vibration and cumulative impacts for the scope of works as per the Proposed Change.

All applicable mitigation measures in the CoAs and UMMs will be implemented, with any identified additional mitigation measures outlined in Table 4-19.

## **4.4 Aboriginal heritage**

### **4.4.1 Existing environment**

Potential Aboriginal heritage impacts were assessed within Chapter 10 of the EIS, Technical Paper 2 (Aboriginal heritage). The study area for EIS Technical Paper 2 (Aboriginal heritage) included the length of the existing railway corridor from Albury to Illabo, with a specific focus on the 14 enhancement sites, including Aboriginal objects and places within and in the vicinity of the enhancement sites that could be directly or indirectly impacted by the Project.

An Aboriginal Heritage Assessment (AHA) was prepared by OzArk (September 2025) for the Proposed Change (Appendix C).

#### 4.4.2 Impact assessment

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken over a 500m-by-500m area centred on the study area. Three sites were recorded within the search area comprising of two artefact scatters with potential archaeological deposits (60-3-0070 [AWD 1 PAD 10] and 6030080 [AWH 11 PAD 9]), and one artefact scatter 960-3-005 [One Tree Hill; TS7]), shown in Figure 4-2.

No previously recorded sites are located within the CIZ extension with the closest being approximately 65m east of the northeastern most CIZ extension area, shown in Figure 4-2. There are no other sources of information to indicate that Aboriginal objects are likely in the study area.

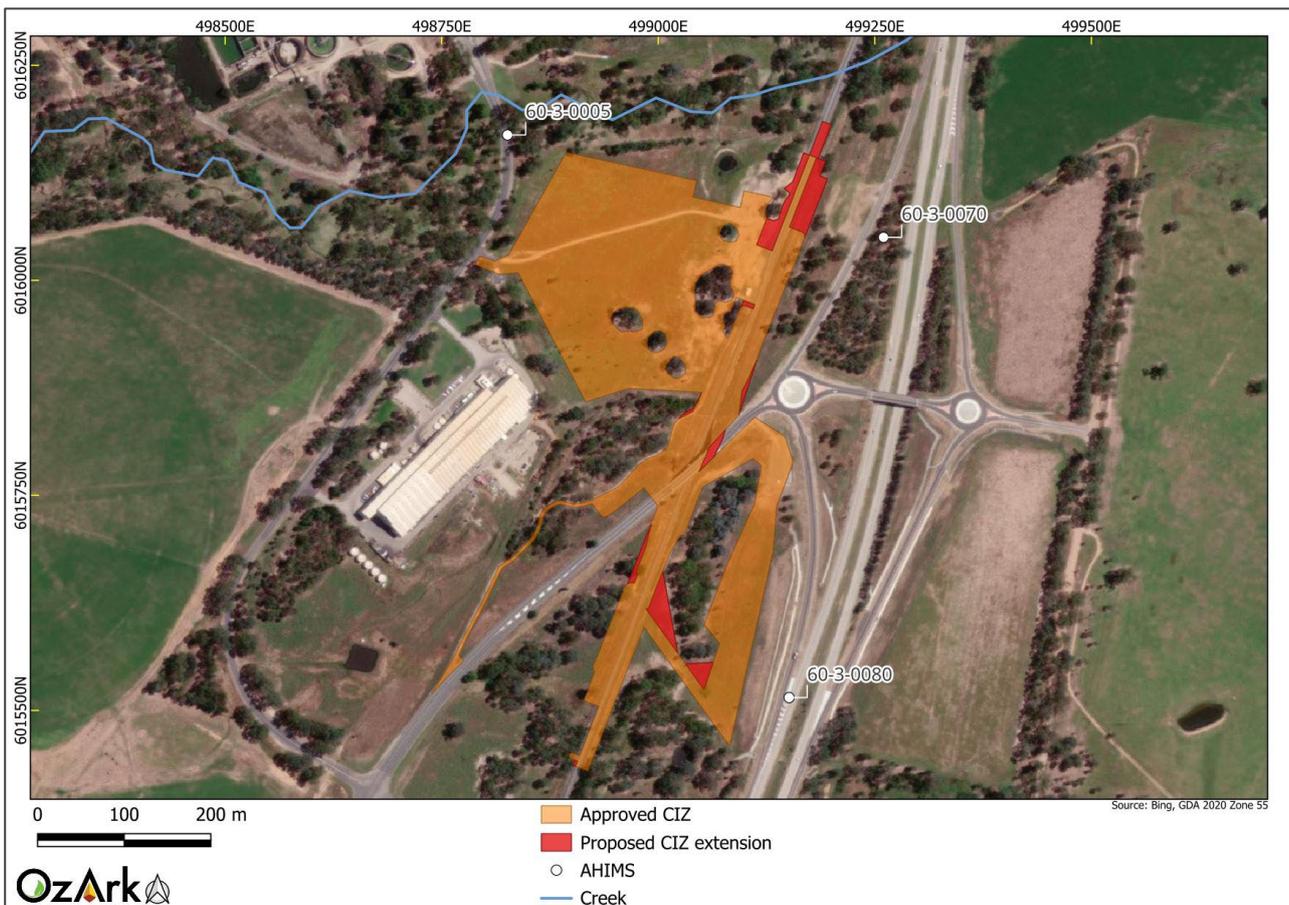


Figure 4-2: View of previously recorded sites near to the CIZ extension

The CIZ extension is situated 89m south of Eight Mile Creek at its closest point and therefore is within landforms with identified archaeological sensitivity as set out in the *Due Diligence Code of Practice*. As such, a visual inspection was undertaken. The visual inspection concluded that the Proposed Change areas have all been heavily disturbed by the construction of the railway, Billy Hughes Bridge and Wagga Road. These disturbances afforded good visibility with some exposures present mostly on vehicle tracks and within the railway corridor. Vegetation has been cleared near to existing infrastructure with low grasses present albeit some semi-mature/juvenile tree species present just beyond the extension.

No Aboriginal heritage sites were recorded and the inspection concluded that the CIZ extension has low archaeological potential.

#### Compliance with E60

As noted in the AHA, as part of the Response to Submissions (RtS) phase of the EIS, Heritage NSW queried the lack of Potential Archaeological Deposits (PADs) designated in the Billy Hughes Zone 3 assessment area (HNSW letter dated 13.9.2022).

GML responded to this in the A2I Submissions report, (GML 2023: 2-6). In this response, GML provided additional reasoning and evidence for their assessment that no PAD was present in Zone 3, particularly the northwest section. In a letter dated 21/11/2023, Heritage NSW acknowledged that the matters they had previously raised had been satisfactorily dealt with. As noted in the AHA, there shouldn't be a requirement for testing or salvaging at Billy Hughes as a result of that information exchange. It appears to be referenced in Condition E60 in error. E60 should in fact refer only to the Murray River Bridge enhancement site, at the PAD along Townsend Street.

#### 4.4.3 Conclusion

The assessment for Aboriginal heritage using the Due Diligence Code has determined that the proposed CIZ extension has a low likelihood of harming Aboriginal objects or landscape features with archaeological sensitivity.

No previously recorded Aboriginal sites are within the study area, and it was determined that due to land use disturbance as well as distance to watercourses, there is a low likelihood of intact, subsurface archaeological deposits. No further archaeological investigation is required.

Potential Aboriginal heritage impacts of the Proposed Change can be adequately managed in accordance with the CoAs and UMMs and through the implementation of the Project's Construction Cultural Heritage Management Plan. The works may proceed with caution and in the unlikely event that Aboriginal objects are encountered, refer to Appendix D, Unexpected Finds Procedure (Heritage and Human Remains).

## 4.5 Biodiversity

### 4.5.1 Existing environment

The following discussion is drawn from Revised Technical Paper 8: Biodiversity Development Assessment Report of the EAD (Revised BDAR).

The Proposed Change is located in the NSW South Western Slopes Bioregion, within both the Lower Slopes and Inland Slopes Subregions. The Proposed Change is located within or adjacent to the existing rail corridor in areas that have been predominantly cleared. The landscape in the area surrounding the proposal has been heavily fragmented by development, with existing habitat connectivity limited to creek lines and road reserves.

The Proposed Change is located within the Revised BDAR study area at the Billy Hughes Bridge and Table Top Yard enhancement sites.

#### Native vegetation

Native vegetation in NSW is classified using the Plant Community Type (PCT) classification system, approved by the NSW Plant Community Type Control Panel and described in the BioNet Vegetation Classification Database (DPIE, 2021). The Billy Hughes Bridge Enhancement Site contains two PCTs (as shown in Figure 2-1):

- ▶ Blakely’s red gum—Yellow box grassy tall woodland (PCT 277) in poor condition.
- ▶ Miscellaneous ecosystem – highly disturbed areas with no or limited native vegetation (PCT0).

Table 9.4 of the Revised BDAR states that the project will directly impact 0.14 ha of PCT 277 (poor condition) in the Inland Slopes Interim Biogeographic Regionalisation for Australia (IBRA) subregion. The description of the ‘Poor’ broad condition state provided in the Revised BDAR is detailed in Table 4-11.

**Table 4-11: Broad condition state description provided in Table 4.1 of the Revised BDAR (WSP, 2024)**

BROAD CONDITION STATE	DESCRIPTION
Poor	Vegetation has retained a native canopy or the canopy cover is showing signs of regeneration. The understorey and groundcover layers are generally dominated or co-dominated by exotic species. Native species diversity is generally relatively low and the mid and low strata have been structurally modified due to weed incursions, clearing, agricultural practises such as cropping or direct seeding.

A letter of advice prepared by a suitably qualified ecologist (Habitat Innovation and Management, 2025) notes that an area mapped as PCT 277 (poor condition) within the study area for the Revised BDAR, but not within the approved CIZ, has since been subject to removal and ground disturbance. As a result, this area does not meet the diagnostic criteria for PCT277 and native vegetation is considered to be absent (refer to Appendix G).

#### Threatened flora

The Revised BDAR determined that no threatened flora species individuals were likely to utilise the proposal site (which included the Proposed Change area).

#### Threatened fauna

The Proposed Change would occur within the Revised BDAR study area and mapped vegetation areas. The following threatened fauna species and potential habitats were noted in the Revised BDAR:

- ▶ Sloane’s Froglet (*Crinia sloanei*)
- ▶ Squirrel Glider (*Petaurus norfolcensis*)
- ▶ Superb Parrot (*Polytelis swainsonii*)
- ▶ Regent Honeyeater (*Anthochaera phrygia*).

## 4.5.2 Impact assessment

### Plant community types

Up to 0.01 hectares (ha) of PCT 277 (poor condition) would be directly impacted outside the CIZ as part of the Proposed Change (BH-4 and BH-5 in Table 4-12). This potential impact may be accommodated by the project in accordance with the clearing limits presented in CoA E20, as a greater than equivalent cumulative area (BH-2 and BH-3 in Table 4-12) of mapped PCT 277 (poor condition) within the approved CIZ (and therefore were assessed for impact in the EAD) would be managed through construction to maintain this condition class following completion of works. This is due to the fact that potential impacts to the understorey and any trimming would be temporary (during the construction phase of the project) and would not inhibit the area from meeting the criteria for classification as PCT 277 (poor condition) following the construction phase.

In addition, an area of approximately 0.004 ha of PCT 277 (poor condition) which was mapped as part of the Revised BDAR study area, but not identified for impact (as it is located outside the PIR CIZ) has been identified as being cleared by others prior to any disturbance occurring in relation to this project. Therefore, any direct impact to this area (BH-1 in Table 4-12) would not contribute to the project's clearing limits (refer to the memo provided at Appendix G).

The above outcomes of the Proposed Change are described in Table 4-12 and shown in Figure 4-3.

**Table 4-12: Billy Hughes Bridge PCT 277 (poor condition) potential impact assessment**

LABEL	LOCATION	PROPOSED CHANGE OUTCOME	PCT AREA (HA)
BH-1	<ul style="list-style-type: none"> <li>▶ Within proposed CIZ</li> <li>▶ Billy Hughes Bridge</li> <li>▶ Lower Slopes IBRA</li> </ul>	PCT 277 determined to be absent*	Approx. 0.004 ha
BH-2	<ul style="list-style-type: none"> <li>▶ Within CIZ</li> <li>▶ Billy Hughes Bridge</li> <li>▶ Inland Slopes IBRA</li> </ul>	PCT 277 to be managed in accordance with 'poor' broad condition class (temporary impact only)**	Approx. 0.004 ha
BH-3	<ul style="list-style-type: none"> <li>▶ Within CIZ</li> <li>▶ Table Top Yard</li> <li>▶ Inland Slopes IBRA</li> </ul>	PCT 277 to be managed in accordance with 'poor' broad condition class (temporary impact only)**	Approx. 0.007 ha
BH-4	<ul style="list-style-type: none"> <li>▶ Within proposed CIZ</li> <li>▶ Billy Hughes Bridge</li> <li>▶ Inland Slopes IBRA</li> </ul>	Potential impact proposed	Reduction of approx. 0.007 ha
BH-5	<ul style="list-style-type: none"> <li>▶ Within proposed CIZ</li> <li>▶ Billy Hughes Bridge</li> <li>▶ Inland Slopes IBRA</li> </ul>	Potential impact proposed	Reduction of approx. 0.003 ha

\*Where PCT277 has been previously impacted by others and is now considered absent, any impacts to this area would not contribute towards the project's clearing limits. Any threatened species associated with previously impacted vegetation such as Superb Parrots and Squirrel Gliders should not be considered as present or potentially present (Habitat Innovation, 2025)

\*\*Where trimming is required, this would not occur to an extent that would discourage canopy regeneration in line with the broad condition class for 'poor condition' as described in Table 4.1 of the Revised BDAR.

### Threatened fauna

Targeted surveys for *Crinea sloanei* were completed in July and August 2024 in accordance with CoA E25. No *Crinea sloanei* were identified by the surveys. Notwithstanding, any works occurring within and adjacent to Sloane's Froglet habitat will be managed in accordance with the approved Sloane's Froglet Management Plan, including but not limited to erosion and sediment control and monitoring requirements.

The Squirrel Glider (*Petaurus norfolcensis*) is listed as Vulnerable under the BC Act. A2I also interacts with a separate endangered population listing for Squirrel Gliders in the Albury LGA. The Revised BDAR applied species polygons for (*Petaurus norfolcensis*) at Billy Hughes Bridge enhancement site for all Plant Community Type (PCT) 277 patches. The additional PCT 277 vegetation required to be cleared would remain below the approved plant community type impacts and Squirrel Glider species habitat areas as outlined in CoA E20 – Table 7.

Superb Parrot (*Polytelis swainsonii*) is listed as Vulnerable under both the BC and EPBC Act. The Revised BDAR applied species polygons for *Polytelis swainsonii* at Billy Hughes Bridge for all PCT 277 patches with the exception of derived and native plantings. The additional PCT 277 vegetation required to be cleared would remain below the approved plant community type impacts and Superb Parrot species habitat areas as outlined in CoA E20 – Table 7.

Mapped habitat for *Petaurus norfolcensis* and *Polytelis swainsonii* aligns with PCT 277 (poor condition) in accordance with the Revised BDAR. Therefore, the outcomes discussed for PCT 277 (poor condition), as described in Table 4-12 and shown in Figure 4-3 apply to mapped *Petaurus norfolcensis* and *Polytelis swainsonii* threatened species habitat.

The Proposed Change would not impact any native vegetation where it intersects mapped Regent Honeyeater (*Anthochaera phrygia*) important habitat.

**Compliance with CoA E20**

Impacts to PCTs and threatened species habitat must not exceed the impact limits set out under CoA E20. Potential impacts to PCTs and threatened species habitat are considered in relation to the Proposed Change in Table 4-13 and Table 4-14. Indicative impact areas, exclusion zones and reallocated PCT areas are shown in Figure 4-3.

Table 4-13 PCTs impacts and ecosystem credit requirements (SSI-10055)

NAME OF PLANT COMMUNITY TYPE/ID	AREA OF IMPACT*	ECOSYSTEM CREDITS TO BE RETIRED	PROPOSED CHANGE IMPACTS*
<p><b>PCT 277 (poor condition) – Blakely’s Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion</b></p>	<p>1.44 ha</p>	<p>30 credits</p>	<ul style="list-style-type: none"> <li>▶ MR track PCT 277 (poor condition) impacts and include these in the quarterly biodiversity monitoring report submissions to IRPL.</li> <li>▶ As shown in Figure 4-3, up to 0.01 ha of PCT 277 (poor condition) falls within the Proposed CIZ. More than 0.01 ha of PCT (poor condition) within the PIR CIZ (assessed for direct impact) would be maintained as such, which would allow for 0.01 ha of PCT 277 (poor condition) to be impacted as part of the Proposed Change.</li> <li>▶ As shown in Figure 4-3, up to 0.004 of PCT 277 (poor condition) that is outside of the PIR CIZ was impacted by others. Therefore the Proposed Change would not contribute to project clearing limits in this area.</li> </ul>

\*In line with CoA E20, areas of vegetation are measured in ha and rounded to two decimal places.

Table 4-14: Threatened species habitat impacts and species credit requirements (SSI-10055)

NAME OF THREATENED SPECIES	AREA OF IMPACT*	ECOSYSTEM CREDITS TO BE RETIRED	PROPOSED CHANGE IMPACTS*
<b>Lower Slopes IBRA subregion</b>			
<b>Sloane’s Froglet (<i>Crinia sloanei</i>)</b>	0.03 ha	2 credits	▶ The Proposed Change would not impact potential Sloane’s Froglet Breeding Habitat buffer where it intersects native vegetation within the Lower Slopes IBRA subregion.
<b>Squirrel Glider (<i>Petaurus norfolcensis</i>)</b>	0.16 ha	3 credits	▶ As shown in Figure 4-3, the Proposed Change would not impact mapped <i>Petaurus norfolcensis</i> habitat within the Lower Slopes IBRA subregion, as the area previously mapped as PCT 277 (poor condition) within the Proposed CIZ is now considered to be absent.
<b>Superb Parrot (<i>Polytelis swainsonii</i>)</b>	0.16 ha	3 credits	▶ As shown in Figure 4-3, the Proposed Change would not impact mapped <i>Polytelis swainsonii</i> habitat within the Lower Slopes IBRA subregion, as the area previously mapped as PCT 277 (poor condition) within the Proposed CIZ is considered to be absent.
<b>Inland Slopes IBRA subregion</b>			
<b>Sloane’s Froglet (<i>Crinia sloanei</i>)</b>	0.23 ha	5 credits	▶ The Proposed Change would not impact potential Sloane’s Froglet Breeding Habitat buffer where it intersects native vegetation within the Inland Slopes IBRA subregion.
<b>Squirrel Glider (<i>Petaurus norfolcensis</i>)</b>	1.82 ha	41 credits	<ul style="list-style-type: none"> <li>▶ <i>Petaurus norfolcensis</i> is associated with PCT 277 (poor condition).</li> <li>▶ As shown in Figure 4-3, up to 0.01 ha of PCT 277 (poor condition), which is also mapped as <i>Petaurus norfolcensis</i> habitat, falls within the Proposed CIZ. More than 0.1 ha of PCT (poor condition) within the PIR CIZ (assessed for direct impact) would be maintained as such, which would allow for 0.01 ha of <i>Petaurus norfolcensis</i> habitat within the Inland Slopes IBRA subregion to be impacted as part of the Proposed Change.</li> </ul>

<p><b>Superb Parrot (<i>Polytelis swainsonii</i>)</b></p>	<p>1.82 ha</p>	<p>41 credits</p>	<ul style="list-style-type: none"> <li>▶ <i>Polytelis swainsonii</i> is associated with PCT 277 (poor condition).</li> <li>▶ As shown in Figure 4-3, up to 0.01 ha of PCT 277 (poor condition), which is also mapped as <i>Polytelis swainsonii</i> habitat, falls within the Proposed CIZ. More than 0.1 ha of PCT (poor condition) within the PIR CIZ (assessed for direct impact) would be maintained as such, which would allow for 0.01 ha of <i>Polytelis swainsonii</i> habitat within the Inland Slopes IBRA subregion to be impacted as part of the Proposed Change.</li> </ul>
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\*In line with CoA E20, areas of vegetation are measured in ha and rounded to two decimal places.

The Proposed Change would not cause the Project to exceed the limits set out in CoA E20, including the 1.44 ha of PCT277 (poor condition) set out in Table 6, or the 0.23 ha of *Crinea sloanei* and 1.82 ha of *Petaurus norfolcensis* and *Polytelis swainsonii* set out in Table 7 .

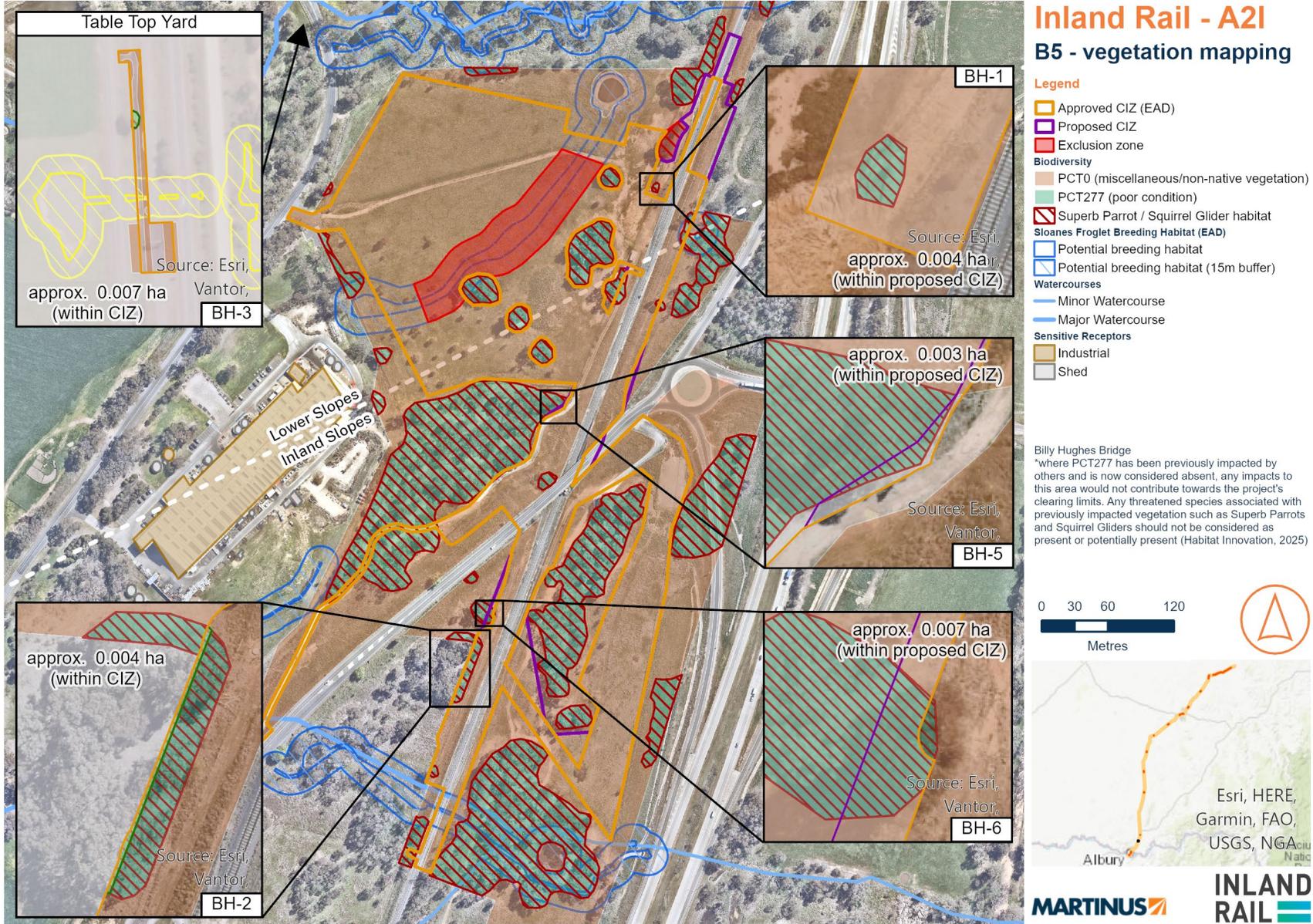


Figure 4-3 Proposed Change outcomes in relation to mapped PCT277 (poor condition) and threatened species habitat

### 4.5.3 Conclusion

Where possible, consideration would be given to minimise impacts to the above through further construction design in accordance with CoA E19 of the Infrastructure Approval. Predicted clearing for the Proposed Change would be limited against overall project clearing limits as part of the pre-clearing process.

Although the Proposed Change would involve potential impacts to threatened species and ecological communities outside of the approved CIZ, the biodiversity impacts are considered consistent with the assessment contained in the Revised BDAR and no further offsets (ecosystem or species credits) would be required. The proposed clearing can be accommodated within the clearing limits set out for the project in accordance with CoA E20 of the Infrastructure Approval.

Cumulative impacts are being tracked through an internal clearing tracking register, with progressive updates being reported through the Project's monthly and quarterly monitoring reports to IRPL and the ER.

Potential biodiversity impacts of the Proposed Change can therefore be adequately managed in accordance with the CoAs and UMMs, and through the implementation of the Project's CEMP, with any identified additional mitigation measures outlined in Table 4-19.

Specific mitigation measures to manage potential biodiversity impacts are as follows:

- ▶ Where PCT 277 (poor condition) is directly impacted by the Proposed Change, an equivalent (or greater) area would be managed within the PIR CIZ so impacts to the understory and any trimming would be temporary (during the construction phase of the project) and would not inhibit the area from meeting the criteria for classification as PCT 277 (poor condition) following construction.

## 4.6 Soils and contamination

### 4.6.1 Existing environment

The Proposed Change area is located within the Albury precinct at an elevation of about 230m Australian Height Datum (AHD) as part of the Albury sub catchment of the Murray River Basin. Billy Hughes Bridge crosses a tributary of Eight Mile Creek and has a number of dams surrounding it. The underlying geology of the site comprising of ungrouped Devonian Volcanics of the Lachlan Orogen overlain by Cenozoic sedimentary residual deposits. No naturally occurring asbestos was noted in the vicinity of this precinct. Existing soil characteristics within the Proposed Change area are shown in Table 4-15 below.

Table 4-15: Existing soil characteristics

ENHANCEMENT SITE	LANDSCAPE	SOIL	CHARACTERISTICS
<b>Billy Hughes Bridge</b>	▶ Ettamogah landscape	<ul style="list-style-type: none"> <li>▶ Typically, deep to moderately deep red to yellow Chromosols and Kurosols</li> <li>▶ Sodosols in low-lying areas.</li> </ul>	▶ High erosion hazard, acidity and localised foundation hazard

#### Saline soils

The Billy Hughes enhancement site has one of the highest risks of saline soils due to the moderate-to-high potential for salinity in the soil profile and the significant excavations associated with the track lowering and realignment.

The potential for impacts due to the presence of saline soils would be managed by site-specific salinity assessments.

**Acid sulfate soils**

The Proposed Change area is located within an area impacted by naturally acidic soils.

**Contamination**

The Proposed Change area is located within an existing rail corridor, which is considered to contain a general level of risk associated with contamination from historical development and activities associated with its operation. A range of sites adjacent to the rail corridor that would be considered to have associated contaminated risk were identified, including agricultural land.

The sources for these general contamination risks include:

- ▶ fill used in construction of the existing rail line, which may be contaminated
- ▶ weed-suppression activities
- ▶ buildings potentially containing hazardous materials
- ▶ rail line ballast potentially containing heavy metals and other contaminants
- ▶ contamination from maintenance activities undertaken at sidings and near silos or other areas
- ▶ use of chemicals on agricultural land
- ▶ machinery storage and maintenance, refuelling and spray rig filling, agricultural sheds and silos

Description of the AEC and potential contaminants of concern are presented in Table 4-16, with their locations shown in Figure 4-4.

**Table 4-16: Description of AEC and potential contaminants of concern**

ENHANCEMENT SITE	AEC	DESCRIPTION OF AEC	POTENTIAL CONTAMINANTS OF CONCERN
Billy Hughes Bridge	AEC 11	▶ Ballast stockpiles	▶ Heavy metals, TRH, BTEX, PAHs, asbestos, lead containing dust and/or paint

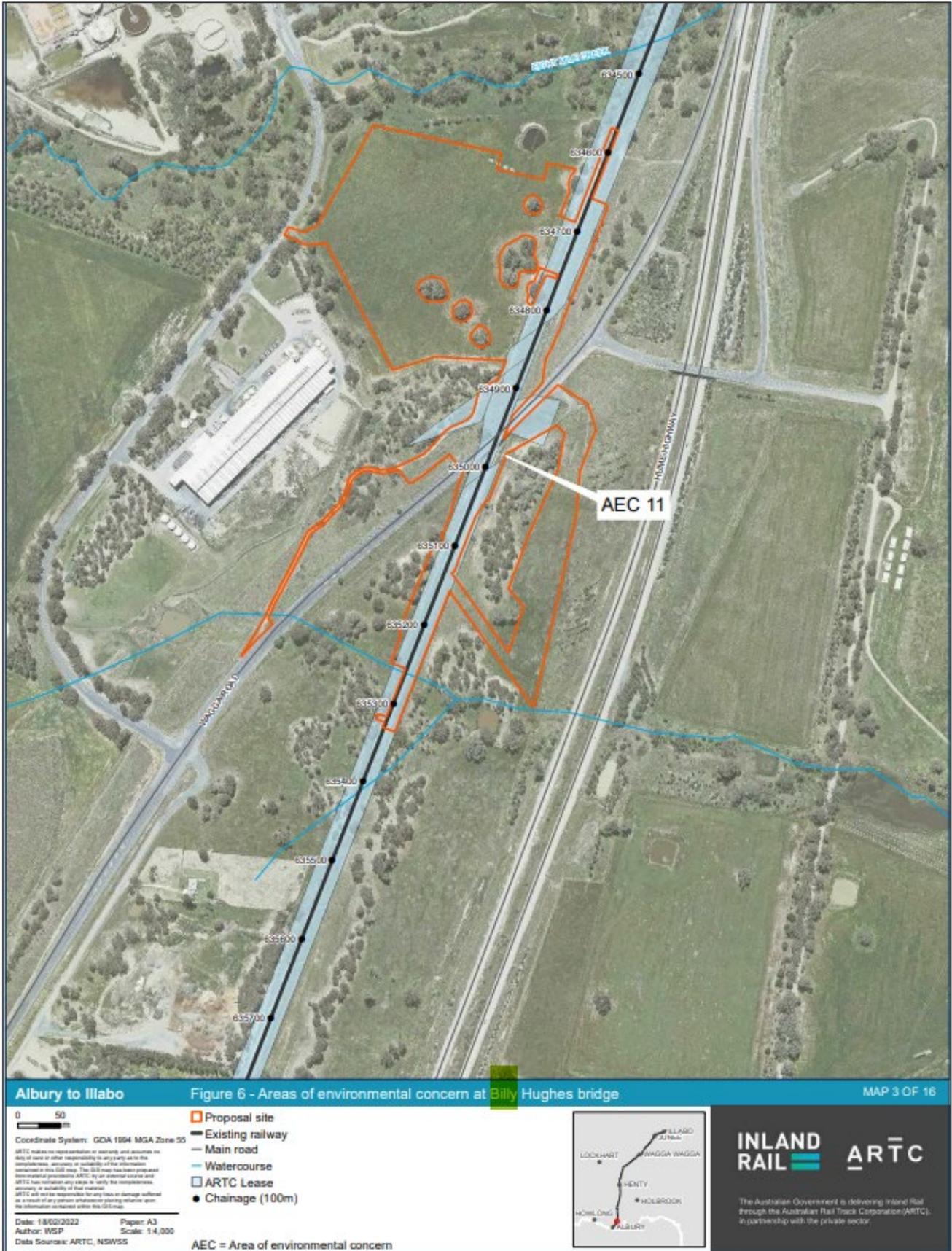


Figure 4-4: EAD showing location of AEC at Billy Hughes Bridge

## 4.6.2 Impact assessment

Excavation and ground disturbance activities would expose and disturb soils. If not adequately managed, this could result in (EIS, Chapter 20):

- ▶ erosion of exposed soil and stockpiled materials
- ▶ dust generation
- ▶ an increase in sediment loads entering the stormwater system and/or local runoff, and, therefore, nearby receiving waterways
- ▶ increase in salinity levels in soil
- ▶ ASS conditions
- ▶ mobilisation of contaminated sediments, with resultant potential for environmental and human health impacts.

### Soil erosion

Construction would temporarily expose the natural ground surface and sub-surface through the removal of vegetation, overlying structures (such as existing roads) and excavation. The exposure of soil to runoff and wind can increase soil erosion potential; particularly, where construction activities are undertaken in soil landscapes characterised by dispersive soils, given their susceptibility to erosion.

The potential for erosion impacts would be minimised by implementing standard best-practice soil erosion management measures during construction and risks associated with dust are discussed further in Section 4.7.

### Saline soils

Excavation of salt-affected soil from deeper horizons are likely to lead to an increase in salinity presence at the surface. Excavation of these areas are likely to disrupt the existing aboveground and sub-surface drainage patterns, allowing salts to be brought to the surface in seeps or to accumulate in zones of evaporation. Soil disruption associated with excavations or cuttings into the landscape for the proposal, footings, construction compounds, bridges or levelling purposes are potential activities that could lead to increased salinity risk.

Due to the bulk earthworks proposed at the Billy Hughes Bridge enhancement site, further assessment for saline soils will have to be undertaken where significant excavations are planned to occur. The assessment of salinity will include drilling of representative boreholes to test the depth profile of salts and consideration of how the works will affect surface and subsurface water flows. Where identified, salinity will be managed in accordance with the salinity management plan. Relevant aggressivity will be considered in the design of subsurface structures.

The potential for impacts due to the presence of saline soils would be managed by site-specific salinity assessments.

### Contamination

There is a general contamination risk present within the Proposed Change area, based on the general setting within an existing rail corridor and land uses that occur in and adjacent to the area.

As noted in the EIS (Chapter 20), the risk of contamination within the Proposed Change area is considered to be higher risk due to the significant excavations proposed. A Sampling, Analysis, and Quality Plan (SAQP) has been developed and approved for all sites across the alignment. The SAQP was utilised to inform the scope of a Detailed Site Investigation (DSI) for the Billy Hughes Bridge enhancement site, which concluded that the site is suitable for the proposed development and the requirement of a remediation action plan (RAP) is not warranted.

### 4.6.3 Conclusion

Construction activities at the Proposed Change area would be short term and would be prepared with consideration of the existing soils and contamination characteristics of the area.

All applicable mitigation measures in the CoAs and UMMs will be implemented, with any identified additional mitigation measures outlined in Table 4-19.

## 4.7 Air quality

### 4.7.1 Existing environment

Regional air quality is mainly influenced by rural activities, industrial activities, vehicle emissions, railway operations, power generation, waste management and extraction activities. Dust from paved and unpaved roads, and domestic solid and liquid fuel burning in the region, also contribute to the local air shed.

As noted in the EIS (Chapter 22), air quality data has been sourced from the Albury monitoring station, with the results summarised in Table 4-17 below, alongside the air quality impact assessment criterion for each pollutant specified in the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (NSW EPA, 2016).

Table 4-17: Background air quality (2016 to 2020)

MONITORING STATION	POLLUTANT	AVERAGING PERIOD	AIR QUALITY IMPACT ASSESSMENT CRITERIA	YEAR*				
				2016	2017	2018	2019	2020
Albury	PM <sub>10</sub> (g/m <sup>3</sup> )	Maximum 24-hour average	50	<b>51</b>	<b>48.8</b>	<b>107.8</b>	<b>222.4</b>	<b>298.3</b>
		Annual average	25	14.9	15.6	<b>19.4</b>	<b>23.2</b>	19.7
	PM <sub>2.5</sub> (g/m <sup>3</sup> )	Maximum 24-hour average	25	28.1	<b>15.6</b>	<b>30.4</b>	<b>167.1</b>	<b>275</b>
		Annual average	8	7.4	<b>18.7</b>	<b>7.3</b>	<b>10.1</b>	<b>11.4</b>

\*Exceedances of the air quality impact assessment criteria as shown in **bold**.

### 4.7.2 Impact assessment

#### Dust emissions

The following activities have the potential to generate dust during construction:

- ▶ vegetation clearing and grubbing
- ▶ installation of temporary infrastructure and site compound
- ▶ earthworks such as rail formation works
- ▶ civil works at road and pedestrian bridges
- ▶ dirt, mud, or other materials tracked onto a paved public roadway by a vehicle leaving a construction site (generally referred to as egress)
- ▶ erosion of unsealed surfaces
- ▶ materials handling and loading at laydown areas, and vehicle movements on unsealed roads/surfaces

The UMMs outlined in the EAD will be implemented to minimise the risk of impacts to air quality during the Proposed Change.

### 4.7.3 Conclusion

The Proposed Change impacts to air quality have been deemed as negligible to high prior to any mitigation measure implementation (EIS, Chapter 22). Following the implementation of appropriate mitigation measures, the residual air quality impacts would be reduced to negligible to low risk and short-term.

All applicable mitigation measures in the CoAs and UMMs will be implemented, with any identified additional mitigation measures outlined in Table 4-19.

## 4.8 Landscape and visual

### 4.8.1 Existing environment

While this landscape is largely rural in character, consisting of undulating pastoral plains, it includes some large industrial developments. This area includes several manufacturing industries, a paper mill, a future industrial estate subdivision and the Ettamogah Rail Hub. The existing bushland and trees scattered across the fields are a local landscape feature, with some areas zoned E3 Environmental Conservation (Albury LEP 2010)

The Billy Hughes Bridge site is located in the 'Nexus Industrial Precinct', a 450-hectare industrial zone 10 kilometres north of the Albury CBD, 'strategically located adjacent to the Melbourne-Sydney railway and the Hume Freeway corridor', supporting 'major development opportunities in various sectors such as transport and logistics and manufacturing' (EIS, Tech Paper 10). The Billy Hughes Bridge enhancement site is located on the eastern edge of this precinct, where the rail corridor passes under the bridge.

### 4.8.2 Impact assessment

#### Landscape impacts

The Proposed Change facilitates the construction compounds to be established to the east and west of the rail corridor to support the works, including storage and laydown areas beside the Hume Highway and paper mill. The compounds would be located to protect the mature native vegetation and areas zoned E3 Environmental Conservation (Albury LEP 2010). While the construction activity would alter the character of a localised part of this landscape, this would be consistent in character with the transitioning use of the area to industrial. Overall, there would be a low magnitude of change and a negligible landscape impact, and the changes are consistent with the scale and nature of the work already assessed in the EAD.

#### Viewpoints

Under Technical Paper 10 of the EIS, no viewpoints were assessed for Billy Hughes Bridge due to its limited visibility.

### 4.8.3 Conclusion

The Proposed Change would deepen the existing cutting and the existing trees surrounding the rail corridor and existing roads would be maintained. Overall, there would be a negligible magnitude of change to this landscape as a result of the proposal and a negligible landscape impact.

Impacts to landscape character are considered to be short-term and minor with the implementation of appropriate mitigation measures as outlined in the CoA and UMMs.

All applicable mitigation measures in the CoAs and UMMs will be implemented, with any identified additional mitigation measures outlined in Table 4-19.

## 4.9 Matters of national environmental significance

As discussed in Section 1.1, the A2I Project was referred to the Australian Government Minister for the Environment under the EPBC Act due to potential for impacts on protected matters on 2 June 2020 (EPBC Referral No 202/8670). On 29 June 2020, DAWE notified that the proposal is not a controlled action, and hence approval under the EPBC Act is not required.

The Proposed Change is considered against matters of national environmental significance and impacts on Commonwealth land in accordance with the EPBC Act in Table 4-18, which determined that there would be no impacts on matters of national environmental significance, and no referral is required.

**Table 4-18: Matters of national environmental significance**

FACTOR	IMPACT (YES/NO)	IMPACT DESCRIPTION
Any impact on a World Heritage property?	No	The Proposed Change would not have a direct or indirect impact on any World Heritage property.
Any impact on a National Heritage place?	No	The Proposed Change would not have a direct or indirect impact on any National Heritage place.
Any impact on a wetland of international importance?	No	The Proposed Change would not have a direct or indirect impact on any wetlands of national importance.
Any impact on a listed threatened species or communities?	No	<p>The Proposed Change would not have a direct or indirect impact on listed threatened species or communities.</p> <p>The results from the site assessment, including targeted flora surveys and habitat assessment, were used to assess each species' likelihood of occurrence within the Subject Land. After carrying out the assessment, the assessor determined that the habitat is substantially degraded such that all potential threatened flora species are unlikely to occur within the Subject Land.</p> <p>The degraded vegetation within the Subject Land would only provide low-quality foraging habitat for threatened species. There was no breeding habitat identified (in the form of hollow-bearing trees, rocky outcrops/ caves, waterbodies, large trees or human-made structures).</p> <p>Due to the absence of suitable habitat constraints and/ or the degraded nature of potential habitat and historical clearing, it was determined that the habitat is substantially degraded such that potential threatened fauna are unlikely to utilise the Subject Land.</p> <p>All vegetation proposed for removal provides low-quality foraging habitat for threatened fauna. Within the context of the surrounding landscape, it is unlikely this vegetation would be utilised given the presence of superior habitats adjoining the Subject Land, and in the broader landscape. Further, it is considered unlikely that any threatened species would occupy the Subject Land due to evidence of ongoing disturbance (railway, roads, residential housing). As such, no threatened flora or fauna are likely to be significantly impacted.</p>
Any impacts on listed migratory species?	No	The Proposed Change is within the Revised BDAR study area, which concluded that it is unlikely that the Project would significantly affect migratory species.

		Therefore, the Proposed Change would not have a direct or indirect impact on any listed migratory species.
Any impact on a Commonwealth marine area?	No	The Proposed Change would not have a direct or indirect impact on a Commonwealth marine area.
Does the proposal involve a nuclear action (including uranium mining)?	No	The Proposed Change does not relate to a nuclear action.
Additionally, any impact (direct or indirect) on Commonwealth land?	No	The Proposed Change is not located in proximity to and would not have any direct or indirect impact on, any Commonwealth land, as per a review of the publicly available 'Commonwealth Owned Land' dataset provided by the Commonwealth Department of Finance (dated 27 August 2024).

### 4.10 Environmental management measures

Table 4-19 outlines any changes to relevant CoAs and UMMs, called EMMs in this document, that will be implemented as additional management measures for the Proposed Change.

Table 4-19: Additional Mitigation Measures

ASPECT	NATURE AND EXTENT OF IMPACTS (NEGATIVE AND POSITIVE) DURING CONSTRUCTION (IF CONTROL MEASURES IMPLEMENTED) OF THE PROPOSED CHANGE, RELATIVE TO THE APPROVED PROJECT	PROPOSED CONTROL MEASURES IN ADDITION TO PROJECT COA AND UMM	MINIMAL IMPACT YES/NO	ENDORSED	
				Yes/No	Comments
<b>Traffic and transport</b>	The Proposed Change's scope of works would not result in an increase in the level of impact assessed as part of the A2I EAD and would not impact on the Project's ability to comply with relevant CoAs and UMMs.	No additional mitigation measures required.	Yes		
<b>Noise and vibration</b>	The Proposed Change's scope of works would not result in an increase in the level of impact assessed as part of the A2I EAD and would not impact on the Project's ability to comply with relevant CoAs and UMMs.	No additional mitigation measures required.	Yes		
<b>Aboriginal heritage</b>	An Aboriginal Heritage Assessment (AHA) was prepared for the Proposed Change and has concluded that there is a low likelihood of harming Aboriginal objects	No additional mitigation measures required	Yes		

	or landscape features with archaeological sensitivity. The Proposed Change would not result in an increase in the level of impact assessed as part of the A2I EAD and would not impact on the Project's ability to comply with relevant CoAs and UMMs.				
<b>Non-Aboriginal heritage</b>	A heritage assessment memo (Appendix C) was prepared for the Proposed Change which concluded that the works may proceed with caution with no further management measures. The Proposed Change would not result in an increase in the level of impact assessed as part of the A2I EAD and would not impact on the Project's ability to comply with relevant CoAs and UMMs.	No additional mitigation measures required	Yes		
<b>Biodiversity</b>	Although the Proposed Change would involve impacts to threatened species and ecological communities outside the approved CIZ, the biodiversity impacts are considered consistent with the assessment contained in the Revised BDAR and no further offsets (ecosystem or species credits) would be required.	<ul style="list-style-type: none"> <li>Where PCT 277 (poor condition) is directly impacted by the Proposed Change, an equivalent (or greater) area would be managed within the PIR CIZ so impacts to the understory and any trimming would be temporary (during the construction phase of the project) and would not inhibit the area from meeting the criteria for classification as PCT 277 (poor condition) following construction.</li> </ul>	Yes		

<b>Soils and contamination</b>	No changes from approved Project.	No additional mitigation measures required.	Yes		
<b>Air quality</b>	The residual air quality impacts would be negligible to low risk and short-term.	No additional mitigation measures required.	Yes		
<b>Landscape and visual</b>	Impacts to landscape character, viewpoints, and night-time visuals are considered to be short-term and minor.	No additional mitigation measures required.	Yes		

## 5 Consistency Assessment

Table 5-1 presents a set of questions that assist Inland Rail to determine whether the Proposed Change can be considered consistent with the Minister’s approval.

Table 5-1: Consistency questions

CONSISTENCY QUESTION	DISCUSSION	CONSISTENT
Q1) Are the proposed works being carried out as part of an approved Project? E.g. Are works “generally in accordance with” Project documents and plans, where relevant?	As considered throughout this document, the Proposed Change is being carried out generally in accordance with the EAD outlined in CoA A1 of the Infrastructure Approval.	Yes
Q2) Is the modification such a radical transformation of the Project as a whole, as to be, in reality, an entirely new Project?  Note: If answered Yes, a new Project application may be required.	The Proposed Change is not considered to constitute a ‘modification’ and is not such a radical transformation of the Project that would result in an entirely new project.	Yes
Q3) Are the proposed works a modification that is considered “consistent with” the Project as approved? This will require the work in question to have environmental impacts contemplated by the approval (such as EA / EIS, CEMP, spoil management plan, heritage management plan or the like), including documents forming part of the approval, or as a minimum, very few additional impacts.	Yes, the proposed works are considered “consistent with” the project as approved. The Proposed Change aligns with the safeguards outlined in the PIR RtS and the CoA.  The Proposed Change has been carefully evaluated and determined to be consistent with the level of environmental impact accounted for in the approval documents and would be implemented in accordance with the approved environmental management plans for the Project.	Yes
Q4) When considering all previous consistency assessments and the potential cumulative impacts, are the proposed works still considered “consistent with” the Project as approved?	Yes, when considering all previous consistency assessments and the potential cumulative impacts, the proposed works are still considered ‘consistent with’ the project as approved. A list of consistency assessments approved prior to the Proposed Change is provided in Section 1.2.	Yes



## 6 Monitoring and Reporting

There are no further monitoring or reporting required as a result of the Proposed Change.

## 7 Conclusion

Based on the consistency assessment in this report, the Proposed Change is considered:

- Consistent with the Ministers Conditions of Approval, and the Updated Mitigation Measures.
- ~~Not consistent with the Ministers Conditions of Approval, and the Mitigation Measures. A modification to the Project approval must be prepared and submitted to the Department of Planning Infrastructure and Environment for approval.~~

EIS CONSISTENCY ASSESSMENT REPORT (MINOR) BILLY HUGHES BRIDGE STAGE B

## 8 Certification

### Author

This consistency assessment provides a true and fair review of the Proposed Change for the Inland Rail – Albury to Illabo Project.

<b>Name:</b> Chris Standing	<b>Signature:</b> 
<b>Position:</b> Environment, Approvals and Sustainability Manager (A2P)	<b>Date:</b> 23/02/2026
<b>Organisation:</b> Martinus Pty Ltd	

### Inland Rail

The Proposed Change, subject to the implementation of all the environmental requirements of the Project, is consistent with the Division 5.2 approval.

<b>Name:</b> Susan Kay	<b>Signature:</b> 
<b>Position</b> : Principal Environment Advisor	<b>Date:</b> 24/2/2026
<b>Organisation:</b> Inland Rail	

<b>Name:</b> Malcolm Clark	<b>Signature:</b> 
<b>Position</b> : Project Director (Manager)	<b>Date:</b> Mr Malcolm Clark - Australian Rail Track Corporation
<b>Organisation:</b> Inland Rail	Feb 26, 2026, 9:54 AM GMT+11:00

I have examined the Proposed Changes by reference to the Division 5.2 approval in accordance with Section 5.25(2) of the EP&A Act. I consider that the proposal is consistent with the Division 5.2 approval.

I ~~agree / do not agree~~ with the recommendations of the ~~insert above signatory e.g. PEL~~ and ~~approve / do not approve~~ of the carrying out the Proposed Change in accordance with those recommendations.



## Appendix A Construction Noise and Vibration Impact Statement



# A2I | Albury to Illabo – Billy Hughes Bridge

## Construction Noise and Vibration Impact Statement

### Martinus Rail

1/23-27 Waratah Street, Kirrawee, NSW 2232

Prepared by:

### SLR Consulting Australia

Tenancy 202 Submarine School, Sub Base  
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SLR Project No.: 610.031317.00001

Client Reference No.: R20

28 May 2025

Revision: v1.0

## Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
v1.0	28 May 2025	Nicholas Vandenberg	Steven Luzuriaga	

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Martinus Rail (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



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## Appendices

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- Appendix B** Modelling Scenarios and Equipment
- Appendix C** Noise Impact Maps
- Appendix D** Receivers Triggering Additional Mitigation



## Acronyms and Abbreviations

AA	The Acoustics Advisor for the CSSI approved by the Planning Secretary
A2I	Albury to Illabo section of the Inland Rail project
ARTC	Australian Rail Track Corporation
AS	Australian Standard
AV:ATG	Assessing Vibration: a technical guideline (DEC, 2006)
BS	British Standard
dBA	A-weighted decibel (referenced 20 µPa)
DPHI	Department of Planning, Housing and Infrastructure
CCHMP	Construction Cultural Heritage Management Plan
CEMP	Construction Environmental Management Plan
CNVF	Inland Rail NSW Construction Noise and Vibration Framework
CNVIS	Construction Noise and Vibration Impact Statement
CNVMP	Construction Noise and Vibration Management Plan
CSSI	Critical Stage Significant Infrastructure
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change (now NSW EPA)
DIN	Deutsches Institut für Normung (German Institute for Standardisation)
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
ER	The Environmental Representative(s) for CSSI approved by the Planning Secretary.
HNA	Highly Noise Affected
Hz	Hertz
ICNG	Interim Construction Noise Guideline (DECC, 2009)
IR	Inland Rail
ISO	International Standards Organisation
km	Kilometres
km/h	Kilometres per hour
LAeq	Equivalent continuous noise level, providing a representation of the cumulative level of noise exposure over a defined period.
LAeq(15hour)	The equivalent continuous noise level for the 15-hour daytime period of 7.00 am to 10.00 pm
LAeq(9hour)	The equivalent continuous noise for the 9-hour daytime period of 10.00 pm to 7.00 am
LAeq(1hour)	The equivalent continuous noise for the busiest 1-hour period.



L <sub>Amax</sub>	The maximum noise level during the measurement or assessment period. The L <sub>AFmax</sub> or Fast is averaged over 0.125 of a second and the L <sub>ASmax</sub> or Slow is averaged over 1-second.
m	Metres
mm	Millimetres
mm/s	Millimetres per second
m/s	Metres per second
MR	Martinus Rail
NCA	Noise Catchment Area
NML	Noise Management Level
NSW	New South Wales
NPfl	Noise Policy for Industry
OOHW	Out of hours work
PPV	Peak Particle Velocity
RBL	Rating Background Level
TfNSW	Transport for New South Wales
VDV	Vibration Dose Value



## Compliance Table

CoA	Requirement	Reference
A1	<p>The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the:</p> <ul style="list-style-type: none"> <li>a) Inland Rail – Albury to Illabo Environmental Impact Statement (ARTC, August 2022)</li> <li>b) Albury to Illabo Response to Submissions (ARTC, November 2023)</li> <li>c) Albury to Illabo Preferred Infrastructure Report (ARTC, November 2023)</li> <li>d) Albury to Illabo Preferred Infrastructure Report Response to Submissions (ARTC, February 2024)</li> <li>e) Inland Rail – Albury to Illabo (SSI-10055) Response to request for additional information – Air Quality Assessment (letter dated 1 May 2024)</li> <li>f) Part 1 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024)</li> <li>g) Part 2 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024)</li> </ul>	<b>The CNVMP</b>
A2	<p>The CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.</p>	<b>The CNVMP</b>
C9	<p>The Construction Noise and Vibration Sub-plan must include, but not limited to:</p> <ul style="list-style-type: none"> <li>a) measures to reduce construction to standard ICNG hours where sensitive land uses are likely to be noise affected for more than 3 months;</li> <li>b) an approach to assess and manage construction fatigue from noise impacts on sensitive receivers on an ongoing basis;</li> <li>c) noise sensitive periods identified by the community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas and measures to ensure noise levels above the NMLs do not occur during sensitive periods in accordance with Condition E76;</li> <li>d) mitigation for construction traffic noise impacts from additional construction traffic and road diversions;</li> <li>e) the location of all heritage items, non-heritage structures and infrastructure likely to be impacted by vibration and measures to manage vibration impacts at those items and structures; and</li> <li>f) vibration levels at a range of distances from vibration intensive equipment such as excavators and vibratory rollers before undertaking works with the specific type and size of equipment.</li> </ul>	<b>The CNVMP</b>
E68	<p>A detailed land use survey must be undertaken to confirm sensitive land use(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration, construction ground-borne noise and operational noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction or operational noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Noise and Vibration CEMP sub-plan required by Condition C8.</p>	<b>The CNVMP, Section 3.0, Figure 1</b>
E69	<p>Work must be undertaken during the following hours:</p> <ul style="list-style-type: none"> <li>a) 7:00am to 6:00pm Mondays to Fridays, inclusive;</li> <li>b) 7:00am to 6:00pm Saturdays; and</li> <li>c) at no time on Sundays or public holidays.</li> </ul>	<b>Section 2.2</b>



CoA	Requirement	Reference
E70	<p>Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken:</p> <ol style="list-style-type: none"> <li>a) between the hours of 8:00 am to 6:00 pm Monday to Friday;</li> <li>b) between the hours of 8:00 am to 1:00 pm Saturday; and</li> <li>c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one hour.</li> </ol> <p>For the purposes of this condition, 'continuously' includes any period during which there is less than one hour between ceasing and recommencing any of the work.</p>	<p><b>Section 2.2.1,</b> <b>Section 8.2</b></p>
E71	<p>Notwithstanding Conditions E69 and E70, work may be undertaken outside the hours specified in the following circumstances (a, b, or c):</p> <ol style="list-style-type: none"> <li>a) Safety and Emergencies, including: <ol style="list-style-type: none"> <li>i. for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or</li> <li>ii. where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm.</li> </ol> <p>On becoming aware of the need for emergency work in accordance with Condition E71(a), the AA, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. Best endeavours must be used to notify all noise and/or vibration affected residents and owners/occupiers of properties identified sensitive land use(s) of the likely impact and duration of those work.</p> </li> <li>b) Work, that meets the following criteria: <ol style="list-style-type: none"> <li>i. construction that causes LAeq(15 minute) noise levels: <ul style="list-style-type: none"> <li>• no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and</li> <li>• no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land use(s); and</li> </ul> </li> <li>ii. construction that causes LAFmax noise levels no more than 15 dB above the rating background level at any residence during the night period as defined in the ICNG. and</li> <li>iii. construction that causes: <ul style="list-style-type: none"> <li>• continuous or impulsive vibration values, measured at the most affected residence no more than the preferred values for human exposure to vibration, specified in Table 2.2 of <i>Assessing Vibration: a technical guideline</i> (DEC, 2006), or</li> <li>• intermittent vibration values measured at the most affected residence no more than the preferred values for human exposure to vibration, specified in Table 2.4 of <i>Assessing Vibration: a technical guideline</i> (DEC, 2006).</li> </ul> </li> </ol> </li> <li>c) By Approval, including: <ol style="list-style-type: none"> <li>i. where different construction hours, such as those for a rail possession, are permitted under an EPL in force in respect of the CSSI; or</li> <li>ii. works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E72; or</li> <li>iii. negotiated agreements with directly affected residents and sensitive land use(s).</li> </ol> </li> </ol>	<p><b>Section 2.3</b></p>
E72	<p>An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work which is outside the hours defined in Conditions E69, and that are not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of the Out-of-Hours Work. The Protocol must be prepared in consultation with the ER, AA and EPA.</p>	<p><b>The CNVMP,</b> <b>Section 2.4</b></p>



CoA	Requirement	Reference
	<p>The Protocol must include:</p> <ul style="list-style-type: none"> <li>a) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: <ul style="list-style-type: none"> <li>i. the ER and AA review all proposed out-of-hours activities and confirm their risk levels,</li> <li>ii. low risk activities can be approved by the ER in consultation with the AA, and</li> <li>iii. high risk activities that are approved by the Planning Secretary;</li> </ul> </li> <li>b) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria;</li> <li>c) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods. The measures must take into account the predicted noise levels and the likely frequency and duration of the out-of-hours works that sensitive land use(s) would be exposed to, including the number of noise awakening events;</li> <li>d) procedures to facilitate the coordination of out-of-hours work including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; and</li> <li>e) notification arrangements for affected receivers for approved out-of-hours work and notification to the Planning Secretary of approved low risk out-of-hours works.</li> </ul> <p>This condition does not apply if the requirements of Condition E71 are met.</p>	
E73	<p>Except as permitted by an EPL, out-of-hours work that may be regulated through the Out-of-Hours Work Protocol as per Condition E72, but is not limited to:</p> <ul style="list-style-type: none"> <li>a) Carrying out work that if carried out during standard hours would result in a high risk to construction personnel or public safety based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009: “Risk management; or</li> <li>b) where the relevant roads authority has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to road network performance and a road occupancy licence will not be issued; or</li> <li>c) where the relevant utility service operator has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to the operation and integrity of the utility network; or</li> <li>d) work undertaken in a rail possession for operational or safety reasons.</li> </ul> <p><i>Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project’s Out-of-Hours Work Protocol for works not subject to an EPL.</i></p>	<b>Section 2.3</b>
E74	<p>Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration objectives:</p> <ul style="list-style-type: none"> <li>a) construction ‘Noise affected’ NMLs established using the Interim Construction Noise Guideline (DECC, 2009);</li> <li>b) vibration criteria established using <i>the Assessing vibration: a technical guideline</i> (DEC, 2006) (for human exposure);</li> <li>c) Australian Standard AS 2187.2 - 2006 “<i>Explosives - Storage and Use - Use of Explosives</i>”;</li> <li>d) BS 7385 Part 2-1993 “<i>Evaluation and measurement for vibration in buildings Part 2</i>” as they are “applicable to Australian conditions”; and</li> <li>e) the vibration limits set out in the <i>German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures</i> (for structural damage).</li> </ul>	<b>The CNVMP, Section 4.0, Section 8.0</b>



CoA	Requirement	Reference
	Work that exceeds the noise management levels and/or vibration criteria must be managed in accordance with the Noise and Vibration CEMP sub-plan. <i>Note: The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction NML.</i>	
E75	Mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A). The mitigation measures must be outlined in the Noise and Vibration CEMP sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E72.	<b>Section 4.2.3</b>
E76	Noise generating work in the vicinity of community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas (such as exam halls, theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled during sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	<b>Section 8.0</b>
E77	At no time can noise generated by construction exceed the National Standard for exposure to noise in the occupational environment of an eight-hour (8hr) equivalent continuous A-weighted sound pressure level of LAeq,8h of 85 dB(A) for any employee working at a location near the CSSI.	<b>Section 8.6</b>
E78	Construction Noise and Vibration Impact Statements (CNVIS) must be prepared for work that may exceed the noise management levels, vibration criteria and/or ground-borne noise levels specified in Condition E74 and Condition E75 at any residence outside construction hours identified in Condition E69, or where receivers will be highly noise affected. The CNVIS must include specific mitigation measures identified through consultation with affected sensitive land use(s) and the mitigation measures must be implemented for the duration of the works. A copy of the CNVIS must be provided to the AA and ER prior to the commencement of the associated works. The Planning Secretary may request a copy/ies of CNVIS.	<b>This report, Section 8.5</b>
E79	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before work that generates vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and Vibration CEMP Sub-plan required by Condition C8 and the Community Communication Strategy required by Condition B1.	<b>Section 8.0</b>
E80	Vibration testing must be undertaken before and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the construction methodology must be reviewed and, if necessary, additional mitigation measures implemented.	<b>Section 6.1, Section 8.0</b>
E81	Advice from an independent heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures. <i>Note: The heritage specialist is to provide advice prior to installing equipment that may impact the heritage significance or structural integrity of the heritage listed structures.</i>	<b>Section 8.0</b>
E83	All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. This must include:	<b>Section 8.0, Section 8.2</b>



CoA	Requirement	Reference
	<p>a) rescheduling work to provide respite to impacted noise sensitive land use(s) so that the respite is achieved; or</p> <p>b) the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and</p> <p>c) the provision of documentary evidence to the AA in support of any decision made in relation to respite or mitigation.</p> <p>The consideration of respite must also include all other CSSI, SSI and SSD projects which may cause cumulative and/or consecutive impacts at receivers affected by the delivery of the CSSI.</p>	
E119	<p>The Proponent must coordinate Work with adjoining Inland Rail Projects, including any work to relocate or connect utilities, to minimise cumulative and consecutive noise and vibration impacts and maximise respite for affected sensitive land uses. Coordination and mitigation measures must be detailed in the Construction Noise and Vibration management Sub-plan required by Condition C9.</p>	<p><b>Section 8.0,</b> <b>Section 8.2,</b> <b>Section 9.0</b></p>
E122	<p>Property damage caused directly or indirectly (for example from vibration or from groundwater change) by the construction or operation must be rectified at no cost to the owner. Alternatively, compensation may be provided for the property damage as agreed with the property owner.</p>	<p><b>Section 6.1</b></p>



## 1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Martinus Rail (MR) to prepare a construction noise and vibration impact statement (CNVIS) for the work at the Billy Hughes Bridge in Albury NSW. These sites form part of the Albury to Illabo (A2I) section of Inland Rail (the Project). This assessment has been prepared in accordance with the Construction Noise and Vibration Management Plan (CNVMP) for the A2I section of the Project.

This report assesses the potential construction noise and vibration impacts for the work at the Billy Hughes Bridge in Albury, NSW. An explanation of the specialist acoustic terminology used in this report is provided in **Appendix A**.

## 2.0 Project Description

Inland Rail is an approximate 1,600 kilometres (km) freight rail network that will connect Beveridge and Kagaru via regional Victoria, New South Wales and Queensland. The Inland Rail route would involve using approximately 1,000 km of existing track (with enhancements and upgrades where necessary) and 600 km of new track, passing through 30 local government areas. Inland Rail will accommodate double-stacked freight trains up to 1,800 metres (m) long and 6.5 m high.

The Albury to Illabo (A2I) section (the Project) forms a key component of the Inland Rail program. It is a 185 km section of existing rail corridor located in regional NSW between the towns of Albury and Illabo. Works would include track realignment, lowering and/or modification within the existing rail corridor, modification, removal or replacement of bridge structures (rail, road and/or pedestrian bridges), raising or replacing signal gantries, level-crossing modifications and other associated works. This CNVIS is associated with work associated with the Billy Hughes Bridge.

Relevant noise and vibration conditions from the Conditions of Approval (CoA) are detailed within the compliance table at the beginning of this document and will be complied with during the work.

### 2.1 Scope of this CNVIS

The focus of this CNVIS is the work associated with the Billy Hughes Bridge track lowering. Work at the site includes:

- Establishment of temporary site facilities, including site office/shed and materials laydown areas and demobilisation
- Operation of the site compound and delivery of materials/equipment
- Contamination investigations and sampling
- Earthworks
- Track work and subsequent track tamping
- Piling work and retaining wall and protection barrier construction
- Drainage and signalling works

Further details of work activities are outlined in **Section 5.1**. The work area is surrounded by scattered rural residential receivers, commercial and industrial receivers, with the Hume Highway adjacent to the site to the east. The Project location, work area and surrounding receivers are shown in **Figure 1**.



## 2.2 Hours of work

In accordance with the Construction Noise and Vibration Management Plan (CNVMP) and 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.

### 2.2.1 Highly Noise Intensive Work

As outlined in the CoA E70, any highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken:

- a) Between 08:00am – 06:00pm Monday to Friday;
- b) Between 08:00am – 01:00pm Saturday; and
- c) If continuously, then not exceeding (3) hours, with a maximum cessation of work of not less than one hour.

The CoA defines ‘highly noise intensive works’ as those identified as annoying under the Interim Construction Noise Guideline (ICNG) and include:

- Use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work
- Grinding metal, concrete or masonry
- Rock drilling
- Line drilling
- Vibratory rolling
- Bitumen milling or profiling
- Jackhammering, rock hammering or rock breaking
- Impact piling and
- Tamping (for rail projects)

## 2.3 Variation to hours of work

Notwithstanding CoA E69 and E70, 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
- c) By Approval

Note: refer to **Compliance Table** for further detail.

## 2.4 Justification of Out of Hours Work (OOHW)

Work activities that may be required or proposed to be undertaken outside of standard working hours will be managed in accordance with the OOHW Protocol as defined in CoA E72 and E73, unless the work is regulated by an EPL.

All work on or adjacent to roads would be carried out in accordance with a relevant Traffic Control Plan (TCP), Road Occupancy Licence (ROL) and/or rail possession to facilitate safe



work near live road/rail traffic. Where an ROL/rail possession cannot be obtained for the approved project hours and/or proposed works cannot be undertaken safely during these hours, some works will be required to be undertaken outside of standard hours (ie Out of Hours Work, OOHW).

As outlined in the ICNG, work undertaken on public infrastructure may need to be undertaken outside the recommended standard hours. For this project the need is based on a requirement to sustain the operational integrity of public infrastructure, as works to restore operation of the infrastructure provide benefit to the greater community (ie more than just local residents).

Further detail around the specific work tasks, duration and justification of OOHW must be identified in the OOHW permit, required by the OOHW Protocol or EPL.

### 3.0 Existing Environment

The existing ambient noise environment was described in Environmental Impact Statement (EIS), Technical Paper 6 – Noise and Vibration (Non-Rail) for the Albury to Illabo project. This section provides details of the existing ambient noise environment relevant to the Billy Hughes track lowering.

The noise catchment area (NCA) used is consistent with the NCA described in the EIS, shown in **Figure 1**, with the receiver classifications and approximate noise monitoring location. Sensitive land uses and receiver classifications within the project area were confirmed through a detailed land use survey undertaken in August 2024. Results of the land use survey have been incorporated into the receiver classifications shown in **Figure 1**.

#### 3.1 Background Noise Levels

Background noise levels have been referenced from the baseline noise survey undertaken as part of the EIS and reproduced in the CNVMP. The background noise levels relevant to the Billy Hughes Bridge enhancement works are summarised in **Table 1**.

**Table 1 Background Noise Levels**

Noise Monitoring Location	NCA	Rating background Level (RBL) dBA NPfI defined time periods <sup>1</sup>		
		Daytime period	Evening period	Night-time period
3	NCA03	37	37 (41 <sup>2</sup> )	37 (38 <sup>3</sup> )

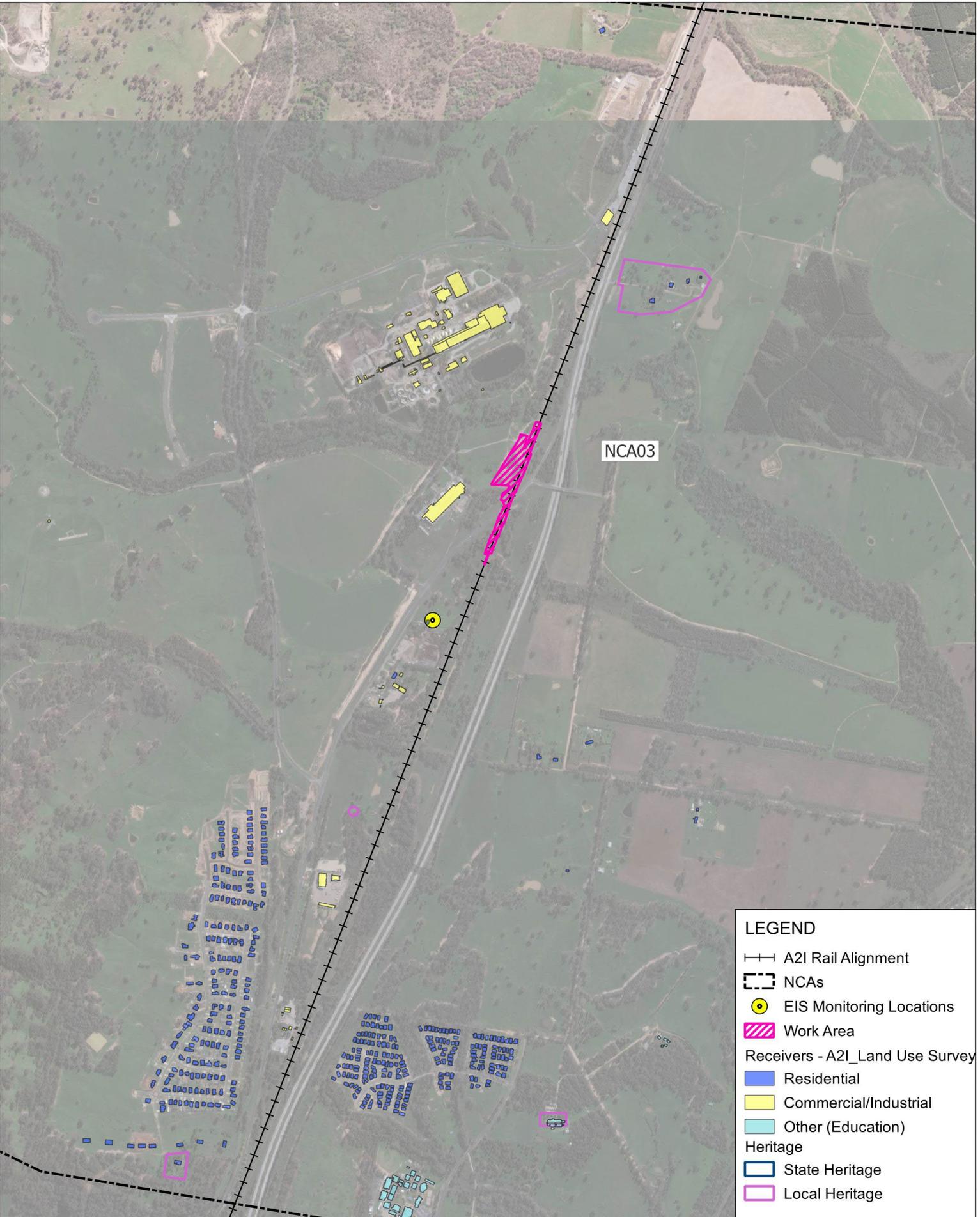
Note 1: The assessment periods are the daytime which is 7 am to 6 pm Monday to Saturday and 8 am to 6 pm on Sundays and public holidays, the evening which is 6 pm to 10 pm, and the night-time which is 10 pm to 7 am on Monday to Saturday and 10 pm to 8 am on Sunday and public holidays. See the NSW EPA Noise Policy for Industry (NPfI).

Note 2: The evening RBL data has been reduced to the daytime period RBL in this case (bracketed figures indicates the measured value).

Note 3: The night-time RBL data has been reduced to the evening period RBL in this case (bracketed figures indicates the measured value).



H:\Projects-SLR\610-Srv\610-SYD\610-031317-00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\02 A21\07 Analysis\Bridges\610.031317 A21 CNVIS - Billy Hughes.ggz



**LEGEND**

- +— A21 Rail Alignment
- NCA03
- EIS Monitoring Locations
- ▨ Work Area
- Receivers - A21\_Land Use Survey
- Residential
- Commercial/Industrial
- Other (Education)
- Heritage
- ▭ State Heritage
- ▭ Local Heritage



Scale: Scale: 1:22,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 22-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery

DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

Receiver Classifications and Noise Monitoring Locations

FIGURE 1

## 4.0 Assessment Criteria

### 4.1 Construction Noise and Vibration Guidelines

The standards and guidelines relevant to the Project are listed in **Table 2**. These guidelines aim to protect the community and environment from excessive noise and vibration impacts during construction of projects.

**Table 2 Construction Noise and Vibration Standards and Guidelines**

Guideline/Policy Name	Where Guideline Used
<i>Inland Rail NSW Construction Noise and Vibration Framework</i> (CNVF)	Assessment and management protocols for airborne noise, ground-borne noise and vibration impacts for construction of NSW Inland Rail projects
<i>Interim Construction Noise Guideline</i> (ICNG) (DECC, 2009)	Assessment of airborne noise impacts on sensitive receivers
<i>Environmental Criteria for Road Traffic Noise</i> (ECRTN) (EPA, 1999)	Contains guidance for assessing potential sleep disturbance impacts
<i>Road Noise Policy</i> (RNP) (DECCW, 2011)	Assessment of construction traffic impacts
<i>BS 7385 Part 2-1993 Evaluation and measurement for vibration in buildings Part 2</i> , BSI, 1993	Assessment of vibration impacts (structural damage) to non-heritage sensitive structures
<i>DIN 4150:Part 3-2016 Structural vibration – Effects of vibration on structures</i> , Deutsches Institut für Normung, 2016	Screening assessment of vibration impacts (structural damage) to heritage sensitive structures, where the structure is found to be unsound
<i>Assessing Vibration: a technical guideline</i> (DEC, 2006)	Assessment of vibration impacts on sensitive receivers
<i>AS2187.2:2006 Explosives – Storage and use Part 2: Use of explosives</i>	Assessment of impacts from blasting activities
<i>Construction Noise and Vibration Guideline (Public Transport Infrastructure)</i> (CNVG-PTI) (Transport for NSW, 2023)	Utilised for minimum working distances for vibration intensive work.

### 4.2 Noise Management Levels

The noise management levels (NMLs) for residential and other sensitive receivers have been adopted from the CNVMP, as determined in the EIS. Receiver types and locations are shown **Figure 1**.

#### 4.2.1 Residential Receivers

Project-specific NMLs for residential receivers were determined for each NCA. NMLs for other sensitive receivers are fixed values adopted from the Interim Construction Noise Guideline (ICNG) (DECC, 2009) and outlined in the CNVMP. Residential NMLs for NCAs surrounding the utilities work sites are shown in **Table 3**.



**Table 3 Residential Noise Management Levels**

NCA	Noise Management Level (LAeq(15minute) - dB)			Sleep disturbance Screening Level (RBL +15dB or 52 dB)	Sleep Awakening Reaction Level
	Approved Hours (RBL +10dB)	Out of Hours <sup>1,2</sup>			
		Daytime (RBL +5dB)	Evening (RBL +5dB)		
NCA03	47	42	42	52	65

Note 1: Approved Construction Hours are Monday to Saturday 7 am to 6 pm, as defined in CoA E69.

Note 2: Work outside of the Approved Hours is defined as OOHW = Out of Hours Work. Daytime out of hours is Sunday and public holidays between 8 am to 6 pm. Evening is 6pm to 10pm Monday – Sunday (including public holidays). Night-time is 10pm to 7am Monday – Saturday and 10pm to 8am Sunday (including public holidays).

### Highly Noise Affected

In addition to the NMLs presented above, the ICNG highly noise affected level (>75 dBA) represents the point above which there may be strong community reaction to noise and is applicable to all residential receivers during approved project hours as outlined in the CNVMP and the ICNG.

### Sleep Disturbance

Where the sleep disturbance screening level (RBL + 15 dB or 52 dB, whichever is greater, see **Table 3**) is exceeded, further assessment is required to determine whether the 'awakening reaction' level of LAmax 65 dBA (external) would be exceeded and the likely number of these events. The awakening reaction level is the level above which residents are likely to be awoken from sleep.

### 4.2.2 Other Sensitive Land Uses and Commercial Receivers

The ICNG NMLs for 'other sensitive' non-residential land uses are shown in **Table 4**. No additional 'other sensitive' receivers have been identified in the project area.

**Table 4 NMLs for 'Other Sensitive' Receivers**

Land Use	Noise Management Level LAeq(15minute) (dB) (Applied when the property is in use)	
	Internal	External
<b>ICNG 'Other Sensitive' Receivers</b>		
Classrooms at schools and other educational institutions	45	55 <sup>1,3</sup>
Hospital wards and operating theatres	45	65 <sup>2</sup>
Places of worship	45	55 <sup>1</sup>
Active recreation areas (characterised by sporting activities which generate noise)	-	65
Passive recreation areas (characterised by contemplative activities that generate little noise)	-	60
Commercial	-	70
Industrial	-	75

Note 1: It is assumed that these receivers have windows partially open for ventilation which results in internal noise levels being around 10 dB lower than the external noise level.

Note 2: It is assumed that these receivers have fixed windows which conservatively results in internal noise levels being around 20 dB lower than the external noise level.

Note 3: Some receivers near highways or rail lines may have building façade mitigation and air-conditioning. Where evidence is provided a 20dB reduction from external to internal may be adopted.



### 4.2.3 Ground-borne Noise

Construction work can cause ground-borne (structure-borne or regenerated) noise impacts in nearby buildings when vibration intensive equipment is in use, such as during tunnelling or excavation work using tunnel boring machines, roadheaders or rockbreakers. Vibration can be transmitted through the ground and into nearby buildings, which can then create audible noise impacts inside the building.

Ground-borne noise NMLs are applicable where ground-borne noise levels are likely to be higher than airborne noise levels, which can occur where work is underground or where surface work is shielded by noise barriers, other structures or façade mitigation at the receiver. Ground-borne noise is generally found to generate impacts during the evening and night-time periods when ambient noise levels are often much lower, and ground-borne noise is more prominent.

The internal ground-borne noise NMLs for residential receivers are shown in **Table 5**.

**Table 5 Internal ground-borne NMLs**

Receiver Type	Noise Management Level (LAeq(15minute) – dBA)		
	Daytime <sup>1</sup>	Evening <sup>2</sup>	Night-time <sup>2</sup>
Residential	n/a	40	35

Note 1: Daytime ground-borne noise NMLs are not specified in the ICNG or CoA.

Note 2: Specified in the ICNG and CoA E75.

For other sensitive receivers, the ICNG does not provide guidance in relation to acceptable ground-borne noise levels. For the purpose of this CNVIS, the internal airborne NMLs presented in **Table 4** will also be adopted for ground-borne noise.

## 4.3 Vibration Criteria

The effects of vibration from construction work can be divided into three categories:

- Those in which the occupants of buildings are disturbed (**human comfort**). People can sometimes perceive vibration impacts when vibration generating construction work is located close to occupied buildings. Vibration from construction work tends to be intermittent in nature and the EPA’s Assessing Vibration: a technical guideline (2006) (AV:ATG) provides criteria for intermittent vibration based on the Vibration Dose Value (VDV), as shown in **Table 6**. While the construction activities for the proposal are generally not expected to result in continuous or impulsive vibration impacts, corresponding criteria are provided in **Table 7**.
- Those where building contents may be affected (**building contents**). People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents. Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes or medical imaging equipment, are in buildings near to construction work. No such equipment has been identified in the study area.
- Those where the integrity of the building may be compromised (**structural/cosmetic damage**). If vibration from construction work is sufficiently high it can cause cosmetic damage to elements of affected buildings. Industry standard cosmetic damage vibration limits are specified in British Standard BS 7385 and German Standard DIN 4150. The limits are shown in **Table 8** and **Table 9**.



**Table 6 Human Comfort Vibration – Vibration Dose Values for Intermittent Vibration**

Building Type	Assessment Period	Vibration Dose Value <sup>1</sup> (m/s <sup>1.75</sup> )	
		Preferred	Maximum
Critical Working Areas (eg operating theatres or laboratories)	Day or night-time	0.10	0.20
Residential	Daytime	0.20	0.40
	Night-time	0.13	0.26
Offices, schools, educational institutions and places of worship	Day or night-time	0.40	0.80
Workshops	Day or night-time	0.80	1.60

Note 1: The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.

**Table 7 Human Comfort Vibration – Preferred and Maximum Weighted Root Mean Square Values for Continuous and Impulsive Vibration Acceleration (m/s<sup>2</sup>) 1–80 Hz**

Location	Assessment period	Preferred values		Maximum values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
<b>Continuous vibration</b>					
Residential	Daytime	0.010	0.0071	0.020	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
Workshops	Day or night-time	0.04	0.029	0.080	0.058
<b>Impulsive vibration</b>					
Residential	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

**Table 8 Cosmetic Damage – BS 7385 Transient Vibration Values for Minimal Risk of Damage**

Group	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures. Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.



**Table 9 Cosmetic Damage – DIN 4150 Guideline Values for Short-term Vibration on Structures**

Group	Type of Structure	Guideline Values Vibration Velocity (mm/s)				
		Foundation, All Directions at a Frequency of			Topmost Floor, Horizontal	Floor Slabs, Vertical
		1 to 10 Hz	10 to 50 Hz	50 to 100 Hz	All frequencies	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 <b>and</b> are of great intrinsic value (eg heritage listed buildings)	3	3 to 8	8 to 10	8	20 <sup>1</sup>

Note 1: It may be necessary to lower the relevant guideline value markedly to prevent minor damage.

#### 4.3.1 Heritage Buildings or Structures

Heritage listed buildings and structures should be considered on a case-by-case basis but BS 7385 notes that buildings of historical value should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values in **Table 9** can be applied.

#### Heritage Structures

No heritage structures have been identified in close proximity to the project site.

#### 4.3.2 Buried Pipework and Utilities

The German Standard DIN 4150-3:1999 “Structural Vibration Part 3: Effects of vibration in structures” provides guideline values for evaluating the effect of vibration on buried pipework. The values are based on the assumption that pipes have been manufactured and laid using current technology. Additional considerations may be required at junctions. The recommended limits for short term vibration to ensure minimal risk of damage are presented numerically in **Table 10**.

**Table 10 Guideline Values for Short Term Vibration on Buried Pipework**

Line	Pipe Material	Guideline value at the Pipe <sup>1,2</sup> (PPV mm/s)
1	Steel (including welded pipes)	100
2	Clay, concrete, reinforced concrete, pre stressed concrete, metal (with or without flange)	80
3	Masonry, plastic <sup>3</sup>	50

Note 1: Mounting equipment directly onto pipes may not be possible. If the vibration source is not immediately next to the pipework, measurements can be made on the ground surface to obtain an estimate. Generally, this vibration level will be greater than the level measured directly on the pipework.

Note 2: The guideline values may be reduced by 50% without further analysis when evaluating the effects of long-term vibration on buried pipework.

Note 3: Drainpipes shall be evaluated using the values given for Line 3.



## Buried Pipework and Utilities

No buried pipework or utilities have been identified in this CNVIS at risk of impact from vibration. Therefore, no additional consideration or assessment has been undertaken in relation to buried pipework and utilities. Where buried pipework or utilities are uncovered during works, they should be identified and managed in accordance with the measures outlined in the CNVMP.

### 4.3.3 Minimum Working Distances for Vibration Intensive Work

Minimum working distances for typical vibration intensive construction equipment have been sourced from the Transport for NSW (TfNSW) Construction Noise and Vibration Guideline (Public Transport Infrastructure) (CNVG-PTI) and are shown in **Table 11**. The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA Assessing Vibration: a technical guideline). They are calculated from empirical data which suggests that where work is further from receivers than the quoted minimum distances then impacts are not considered likely.

The minimum working distances listed in the CNVG were used to derive the minimum working distances required for cosmetic damage to industrial and heavy commercial buildings (also reinforced or framed structures). The following pseudo-power law relationship has been used in the derivations:

$$V_2 = V_1 \times \left(\frac{D_1}{D_2}\right)^B$$

where a site exponent value of B = 1.6 is adopted for the calculations, as per AS2187.2:2006

**Table 11 Recommended Minimum Working Distances from Vibration Intensive Equipment**

Plant Item	Rating/Description	Minimum Distance			
		Cosmetic Damage			Human Response (NSW EPA Guideline) <sup>2</sup>
		Residential and Light Commercial (BS 7385)	Heritage Items <sup>1</sup> (DIN 4150, Group 3)	Industrial and Heavy Commercial (BS 7385)	
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	3 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	3 m	20 m
	<200 kN (4–6 tonne)	12 m	25 m	6 m	40 m
	<300 kN (7–13 tonne)	15 m	31 m	8 m	100 m
	>300 kN (13–18 tonne)	20 m	40 m	10 m	100 m
	>300 kN (>18 tonne)	25 m	50 m	12 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	1 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	4 m	23 m
Large Hydraulic Hammer	1,600 kg (18 to 34 t excavator)	22 m	44 m	11 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	5 m to 40 m	1 to 10 m	20 m



Plant Item	Rating/Description	Minimum Distance			
		Cosmetic Damage			Human Response (NSW EPA Guideline) <sup>2</sup>
		Residential and Light Commercial (BS 7385)	Heritage Items <sup>1</sup> (DIN 4150, Group 3)	Industrial and Heavy Commercial (BS 7385)	
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	1 m	4 m
Jackhammer	Hand held	1 m (nominal)	3 m	1 m	2 m
Ballast Tamping <sup>2</sup>	N/A	5 m	10 m	3 m	30 m

Note 1: Minimum working distances for heritage items that have been identified as structurally unsound or otherwise particularly sensitive to vibration. These distances have been calculated based on the 2.5 mm/s PPV criteria from DIN 4150 and the cosmetic damage minimum working distances presented in the CNVG-PTI with reference to BS 7385.

Note 2: Based on SLR measurement data. The human response minimum working distance for Ballast Tamping is determined based on a residential night-time preferred VDV criterion.

The minimum working distances are indicative and will vary depending on the particular item of equipment and local geotechnical conditions. The distances apply to cosmetic damage of typical buildings under typical geotechnical conditions.

## 4.4 Traffic on Surrounding Roads

The potential impacts from project related traffic on the surrounding public roads are assessed using the NSW EPA *Road Noise Policy* (RNP). An initial screening test is first applied to evaluate if existing road traffic noise levels are expected to increase by more than 2.0 dB. Where this is considered likely, further assessment is required using the RNP criteria shown in **Table 12**.

**Table 12 RNP/NCG Criteria for Assessing Traffic on Public Roads**

Road Category	Type of Project/Land Use	Assessment Criteria (dB)	
		Daytime (7 am – 10 pm)	Night-time (10 pm – 7 am)
Freeway/ arterial/ sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	LAeq(15hour) 60 (external)	LAeq(9hour) 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	LAeq(1hour) 55 (external)	LAeq(1hour) 50 (external)

## 5.0 Noise Assessment

The potential construction noise levels from the Project have been predicted using ISO 9613:2 algorithm in SoundPLAN noise modelling software. The model includes ground topography, buildings and representative noise sources from the Project.

### 5.1 Work Scenarios

Noise modelling scenarios have been determined based on key Project noise generating stages, supplied by the Project team. A detailed description of each work scenario and the total sound power levels (LW) are provided in **Table 13**. A summary of construction work periods and schedule required for each scenario is shown in **Table 14**, as per the working hours defined in the CNVMP. The locations of the various work scenarios are shown in **Figure 2**.



**Table 13 Work Scenario Descriptions**

ID	Scenario	Description	Total Lw
W.001	Site Establishment / Demobilisation	<ul style="list-style-type: none"> <li>Site Compound delivery and set up</li> <li>Haul road and laydown area construction</li> <li>Trimming and removal of vegetation</li> </ul>	115
W.002	Compound Operation	<ul style="list-style-type: none"> <li>Operation of the site compound</li> <li>Delivery of materials / equipment</li> </ul>	113
W.003	Sampling Analysis and Quality Plan (SAQP)	<ul style="list-style-type: none"> <li>Bulk earthworks and associated contamination investigation and sampling</li> </ul>	118
W.004	Earthworks	<ul style="list-style-type: none"> <li>Earthworks</li> </ul>	117
W.005	Track Work - Peak	<ul style="list-style-type: none"> <li>Track work including highly noise intensive work</li> </ul>	119
W.006	Track Work - Typical	<ul style="list-style-type: none"> <li>Track work excluding highly noise intensive work</li> </ul>	114
W.007	Track Tamping	<ul style="list-style-type: none"> <li>Tamping following track work</li> </ul>	116
W.008	Piling Work	<ul style="list-style-type: none"> <li>Piling work for deflection walls and retaining walls</li> </ul>	112
W.009	Retaining Wall and Protection Barrier Construction	<ul style="list-style-type: none"> <li>Installation of deflection walls and retaining walls</li> </ul>	119
W.010	Drainage Work	<ul style="list-style-type: none"> <li>Drainage work</li> </ul>	120
W.011	Signalling Work	<ul style="list-style-type: none"> <li>Installation of signalling infrastructure</li> </ul>	113

**Table 14 Scenarios and Periods of Work**

ID	Scenario	Hours of Work				Indicative Start Date	Likely Duration <sup>5</sup>
		Approved Hours	Out-of-Hours Work <sup>4</sup>				
			Day OOH <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>		
W.001	Site Establishment / Demobilisation	✓	✓	-	-	Aug-25	3 months
W.002	Compound Operation	✓	✓	✓	✓	Aug-25	Ongoing
W.003	Sampling Analysis and Quality Plan (SAQP)	✓	-	-	-	Jul-25	2 weeks
W.004	Earthworks	✓	✓	-	-	Sep-25	4 months
W.005	Track Work - Peak	✓	✓	✓	✓	Jul-26	7 months
W.006	Track Work - Typical	✓	✓	✓	✓	Jul-26	7 months
W.007	Track Tamping	✓	✓	✓	✓	Jul-26	7 months
W.008	Piling Work	✓	✓	-	-	Oct-25	4 months
W.009	Retaining Wall and Protection Barrier Construction	✓	✓	-	-	Nov-25	10 months
W.010	Drainage Work	✓	✓	✓	✓	Oct-25	4 months
W.011	Signalling Work	✓	✓	✓	✓	Feb-26	2 months

Note 1: Daytime out of hours is 7 am to 8 am on Saturday, and 8 am to 6 pm on Sunday and public holidays.

Note 2: Evening is 6 pm to 10 pm Mondays to Saturdays.

Note 3: Night is 10 pm to 7 am for Mondays to Saturdays and 6 pm to 8 am for Sundays and public holidays.

Note 4: Where works are expected to occur outside of the standard working hours, further detail around the specific work tasks, duration and justification of OOHW must be identified in the OOHW permit, required by the OOHW Protocol or EPL.

Note 5: Works scenarios may occur simultaneously during enhancement works and the total duration for the completion of all works is expected to be approximately 18 months.



**Figure 2 Construction Work Location**



### 5.1.1 Modelling Scenarios and Equipment

The assessment uses ‘realistic worst-case’ scenarios to determine the impacts from the noisiest 15-minute period that is likely to occur for each work scenario, as required by the ICNG. Sound power levels (LW) for the construction equipment used in the modelling are listed in **Appendix B**.

## 5.2 Predicted Noise Levels

The following overview is based on the predicted impacts at the most affected receivers and is representative of the worst-case noise levels that are likely to occur during construction.

The assessment shows the predicted ‘mitigated’ impacts based on the exceedance of the noise management levels, as per the categories in **Table 15**. The mitigation and management measures adopted for this CNVIS are provided in **Section 8.0**.

**Table 15 Exceedance Bands and Impact Colouring**

Subjective Classification	Exceedance of Noise Management Level		Impact Colouring
	Daytime	Out of Hours	
Negligible	No exceedance	No exceedance	
Noticeable	-	1 to 5 dB	
Clearly Audible	1 to 10 dB	6 to 15 dB	
Moderately Intrusive	11 to 20 dB	16 to 25 dB	
Highly Intrusive	> 20 dB	> 25 dB	



A summary of the number of buildings where NML exceedances were predicted for the various work scenarios is shown in **Table 16**. The number of receivers above the 'highly noise affected' (HNA) level are also included in the table. Maps of the predicted worst-case noise impacts are presented in **Appendix C**.

The assessment presents the combined predicted noise impacts for each scenario. Meaning, the worst-case result at each receiver is considered from all potential work areas where each scenario is to be undertaken.

The assessment is generally considered conservative as the calculations assume several items of construction equipment are in use at the same time within individual scenarios. As outlined in **Section 5.1.1**, the assessment uses 'realistic worst-case' scenarios to determine the impacts from the noisiest 15-minute period that is likely to occur for each work scenario.

The exceedances shown in **Table 16** are therefore representative of a 'realistic worst-case' 15-minute period, and are unlikely to occur for extended periods of time throughout the entire construction period at any given receiver.

The indicative work durations presented in **Table 14** represent a window of time where the scenarios could occur, and does not represent the entire duration of the exceedances shown in **Table 16**.

In reality, there would frequently be periods when construction noise levels are much lower than the worst-case levels predicted as well as times when no equipment is in use and no noise impacts occur.



**Table 16 Overview of NML Exceedances**

ID	Scenario	Number of Receivers																	
		HNA <sup>1</sup>	With NML exceedance (dB) <sup>2</sup>																
			Approved Daytime	Out of Hours															
				Daytime OOH				Evening				Night-time				Sleep Disturbance	Sleep Awakening		
1-10	11-20	>20	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	>Screening Level (NCA03 – 52 dB)	>65 dB			
<b>Residential Receivers</b>																			
W.001	Site Establishment / Demobilisation	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.003	Sampling Analysis and Quality Plan (SAQP)	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	-	1	-	-	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.005	Track Work - Peak	-	2	-	-	2	2	-	-	2	2	-	-	2	2	-	-	2	-
W.006	Track Work - Typical	-	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	1	-
W.007	Track Tamping	-	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	2	-
W.008	Piling Work	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.009	Retaining Wall and Protection Barrier Construction	-	1	-	-	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.010	Drainage Work	-	1	-	-	2	1	-	-	2	1	-	-	2	1	-	-	3	-
W.011	Signalling Work	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-
<b>Other Sensitive Receivers</b>																			
W.001	Site Establishment / Demobilisation	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.003	Sampling Analysis and Quality Plan (SAQP)	n/a	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.005	Track Work - Peak	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.006	Track Work - Typical	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.007	Track Tamping	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.008	Piling Work	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.009	Retaining Wall and Protection Barrier Construction	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.010	Drainage Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.011	Signalling Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Note 1: Highly noise affected, based on ICNG definition (i.e. predicted LAeq(15minute) noise at residential receiver is greater than 75 dBA).

Note 2: Based on worst-case predicted noise levels



A summary of the predicted worst-case noise levels is shown below for each work area:

- During approved daytime hours, the highest noise impacts are predicted to be limited to ‘clearly audible’ at up to two residential receivers during *W.003*, *W.004*, *W.005*, *W.006*, *W.007*, *W.009* and *W.010*. Similarly, during OOHWs, these same receivers are predicted to be ‘clearly audible’ or less. The addresses of the residential receivers impacted by OOHW are provided in **Appendix D**.
- These impacts are predicted when works occur at the closest location to each receiver. When works occur further from these receivers, impacts are expected to be lower
- No receivers are predicted to be ‘highly noise affected’.
- Noise levels are predicted to exceed the sleep disturbance screening level at up to three residential receivers however are not predicted to exceed the sleep awakening criteria. Sleep disturbance impacts would generally be caused by heavy vehicle movements and more noise intensive equipment. Where reasonable and feasible, these activities should be limited to the less sensitive periods to avoid noise impacts during more sensitive out-of-hours periods (refer to **Section 8.0**). The number of awakening events would depend on several factors, including the equipment being used, the duration of noisy work and the distance of the work to each residential receiver. Further detail around the specific OOHW, (eg duration and justification) must be identified in the OOHW permit, refer **Section 2.4**.
- No other sensitive receivers are predicted to exceed the relevant NML.

At this stage, these works are not expected to be undertaken for more than two consecutive nights, however further detail around the specific OOHW, (eg duration and justification) will be identified in the OOHW permit.

All appropriate feasible and reasonable construction noise mitigation measures will be applied to work as outlined in **Section 8.0** and **Section 8.1**.

### 5.3 Ground-borne Noise

Ground-borne construction noise impacts from the Project are not anticipated. Vibration intensive work for the Project will be completed outdoors meaning airborne noise levels at the nearest receivers are expected to be higher than the corresponding internal ground-borne noise levels.

Where airborne noise levels are higher than ground-borne noise levels it is not necessary to evaluate potential ground-borne noise impacts and as such, they have not been considered further for this assessment.



## 6.0 Vibration Assessment

Vibration intensive items of equipment that would be required during work assessed in this CNVIS include a Medium Hydraulic Hammer. These items of equipment are required during the work as shown in **Table 17**.

The potential impacts during vibration intensive work have been assessed using the Transport CNVG-PTI minimum working distances for cosmetic damage and human response shown in **Table 17**.

**Table 17 Vibration Intensive Equipment**

ID	Scenario	Rating/Description	Minimum Distance			
			Cosmetic Damage			Human Response (NSW EPA Guideline)
			Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	Industrial and Heavy Commercial (BS 7385)	
W.003	Sampling Analysis and Quality Plan (SAQP)	Vibratory Roller: <300 kN (7–13 tonne)	15 m	31 m	8 m	100 m
W.004	Earthworks					
W.005	Track work - Peak					
W.007	Track Tamping	Ballast Tamping	5 m	10 m	3 m	30 m
W.008	Piling Works	Piling Rig - Bored ≤ 800 mm	2 m (nominal)	5 m	1 m	4 m
W.010	Drainage Works	Vibratory Roller <50 kN (1–2 tonne)	5 m	11 m	3 m	15 m to 20 m
		Large Hydraulic Hammer 1,600 kg (18-34 t excavator)	22 m	44 m	11 m	73 m

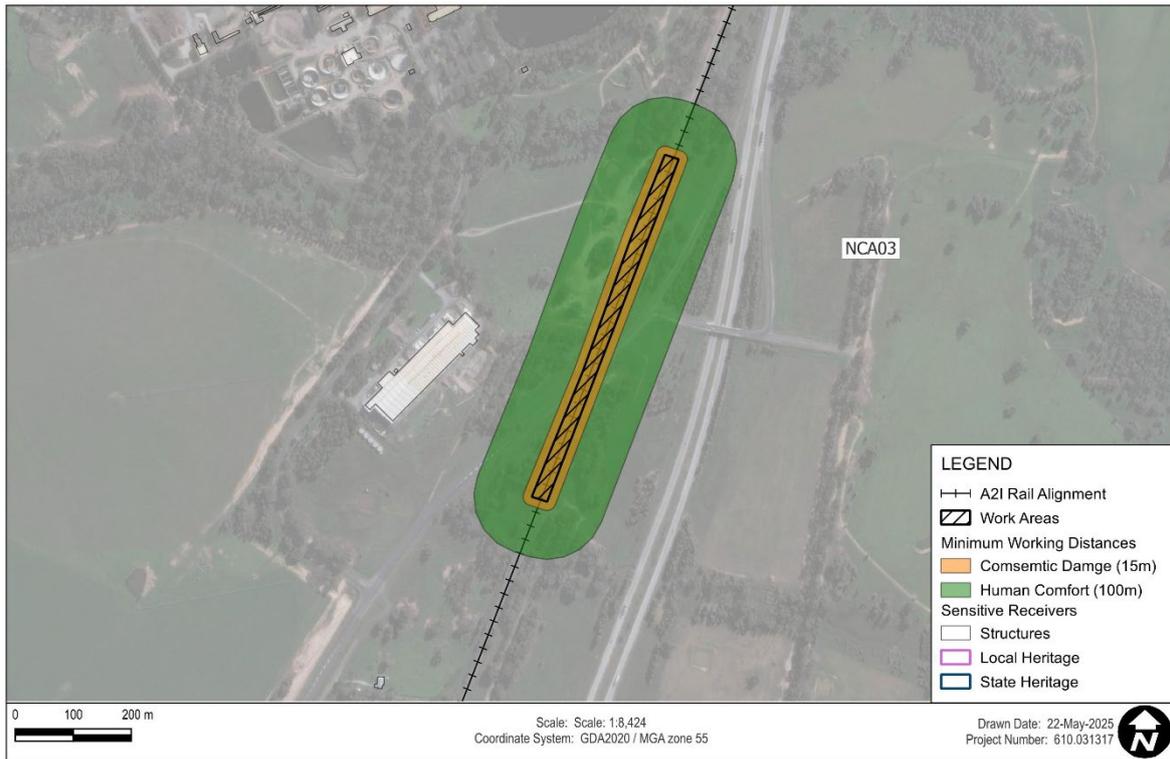
Vibration offset distances have been determined from the TfNSW CNVG-PTI minimum working distances for cosmetic damage and human comfort (see **Table 11** and the assessment is summarised in **Figure 3** to **Figure 8**). The offset distances are representative of the highest vibration levels that would likely be experienced by the nearest receivers when work occurs nearby.

For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels occurring over shorter time periods are allowed.

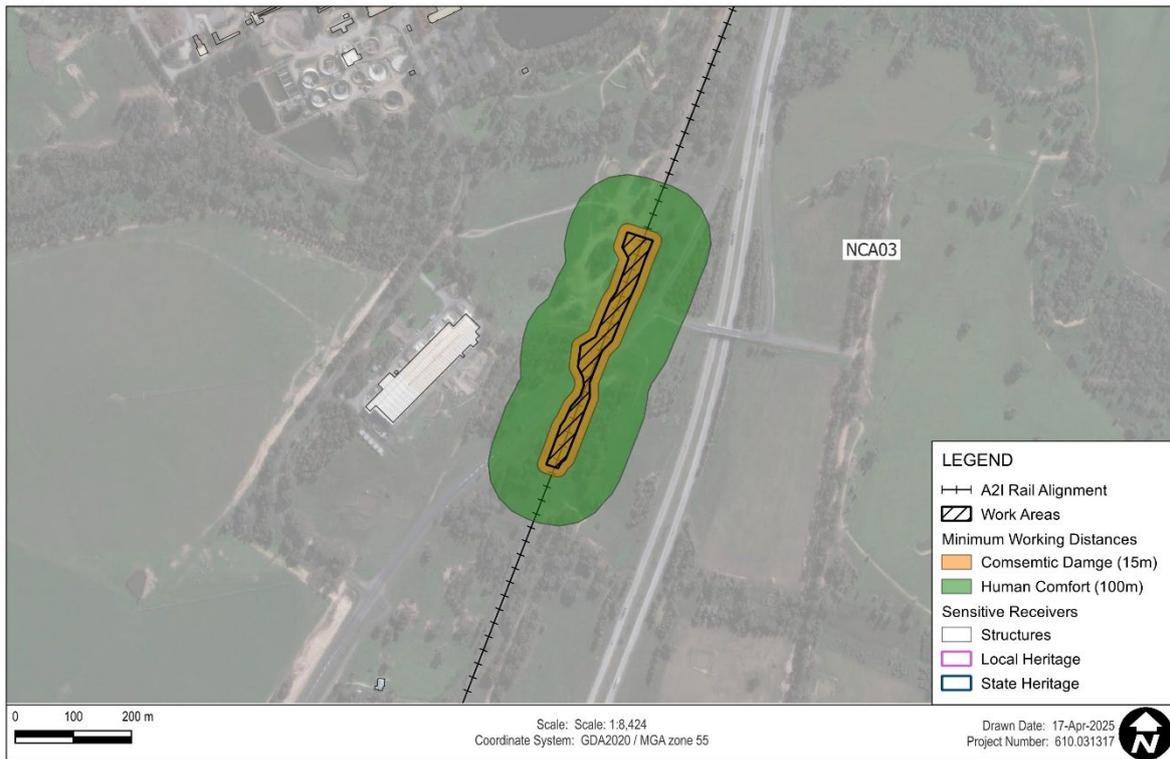
In the event that additional work is undertaken which requires the use of other items of plant identified than those identified in **Table 17**, a vibration impact assessment must be conducted prior to the commencement of work.



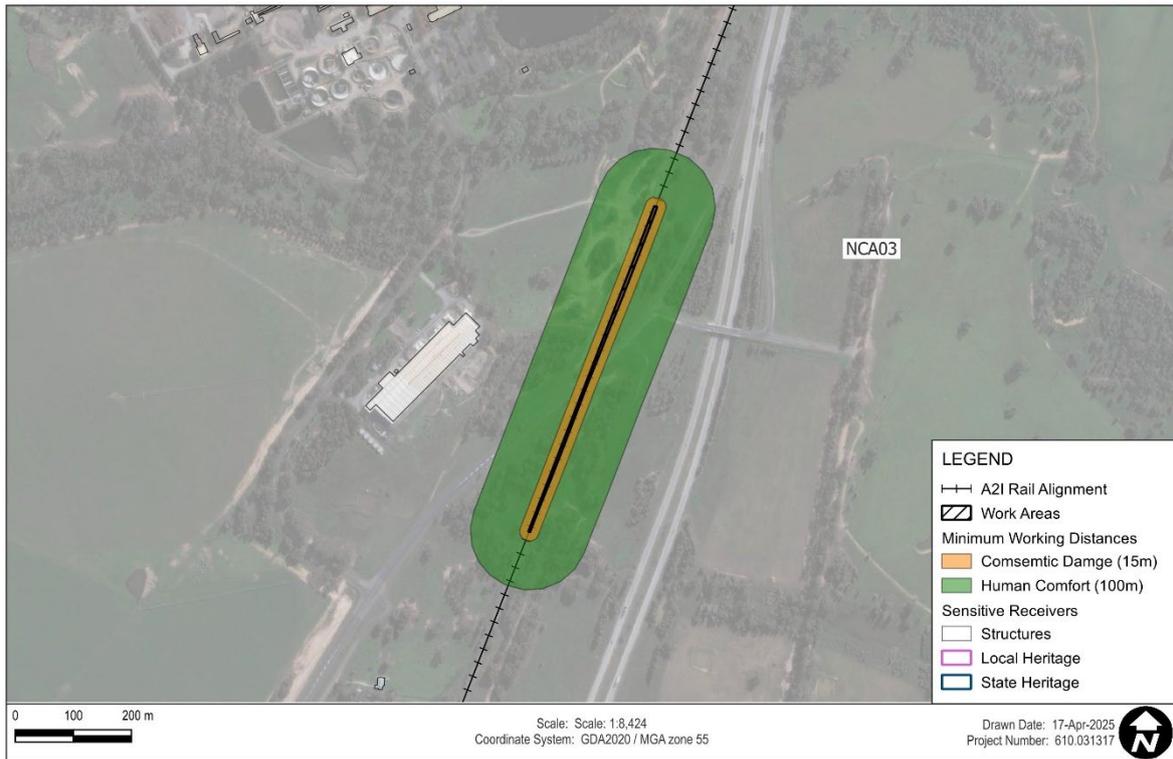
**Figure 3 Construction Vibration Minimum Working Distances – Vibratory Roller <300kN (7-13 tonne) (W.003)**



**Figure 4 Construction Vibration Minimum Working Distances – Vibratory Roller <300kN (7-13 tonne) (W.004)**



**Figure 5 Construction Vibration Minimum Working Distances – Vibratory Roller <300kN (7-13 tonne) (W.005)**



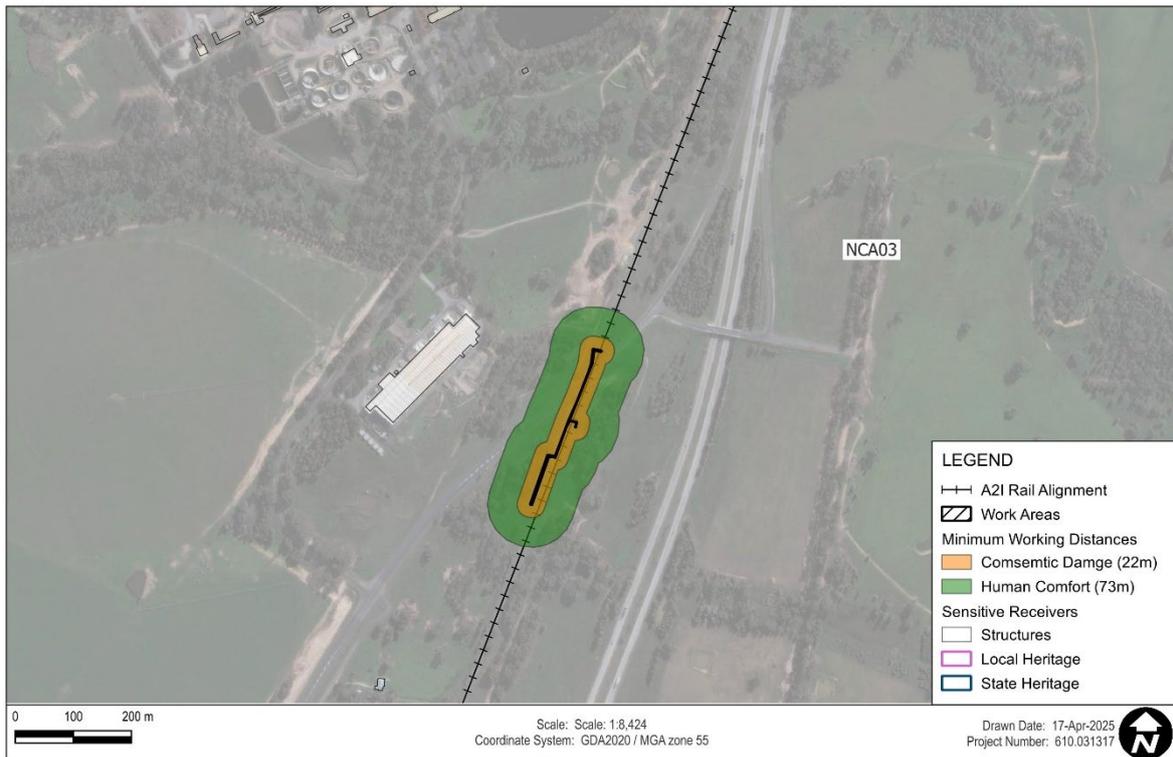
**Figure 6 Construction Vibration Minimum Working Distances – Ballast tamper (W.007)**



**Figure 7 Construction Vibration Minium Working Distances – Vibratory Roller <50kN (1-2 tonne) (W.010)**



**Figure 8 Construction Vibration Minium Working Distances – Large Hydraulic Hammer (W.010)**



## 6.1 Cosmetic Damage Assessment

**Figure 3 to Figure 8** shows that all buildings are expected to be outside the minimum working distances for cosmetic damage.

Feasible and reasonable construction vibration mitigation measures should be applied where vibration intensive work is required within the minimum working distances. Construction vibration mitigation and management measures are discussed in **Section 8.1**.

In accordance with CoA E122, property damage caused directly or indirectly by the construction or operation must be rectified at no cost to the owner. Alternatively, compensation may be provided for the property damage as agreed with the property owner.

### Heritage Structures

No heritage structures have been identified within 100m from the works area.

If other vibration intensive activities are required within minimum working distances to heritage structures, a building condition assessment should be undertaken of the heritage item/s to assess if they are considered to be sensitive to vibration prior to vibration work commencing.

## 6.2 Human Comfort Assessment

**Figure 3 to Figure 8** show that no buildings are expected to fall within the minimum working distances for human comfort.

Feasible and reasonable construction vibration mitigation measures should be applied where vibration intensive work is required within the minimum working distances. Construction vibration mitigation and management measures are discussed in **Section 8.1**.

## 7.0 Construction Traffic Assessment

The EIS identified that during the construction phase of the project, heavy vehicles would be required for materials and equipment delivery while light vehicles will transport workers to and from the site. This additional road traffic may impact receivers along the proposed transport routes.

No additional information has been provided regarding construction road traffic, therefore a summary of the predicted daytime traffic noise levels from the EIS is shown in **Table 18**.

**Table 18 Construction Traffic Assessment**

Traffic Route	Road Type	Predicted Construction Traffic Noise (Both Directions) LAeq (Period)		Exceed base criterion? Day <sup>1</sup> (7am – 10pm)	Potential Increase > 2dB	Potential Noise Impact
		Existing	Existing + Proposed			
<b>Albury Precinct - Billy Hughes Bridge</b>						
Wagga Road	Sub-arterial	59.6	60.7	Yes	No	No
Hume Highway	Arterial	66.5	67.1	Yes	No	No

Note 1: Freeway/arterial/sub-arterial roads: LAeq(15hour) 60dBA(external)  
Local roads: LAeq(1hour) 55dBA (external)

The EIS found that construction traffic associated with the Billy Hughes Bridge on public road complies with the road traffic noise goals during the daytime period.



The EIS did not assess construction traffic during the night-time period, and no additional information has been provided regarding construction road traffic. Therefore, it is conservatively assumed that where night-time construction traffic is required, noise level increases potentially exceeding the RNP criteria would be experienced by residences along construction routes on sub-arterial and local roads within close proximity to the work sites. Night-time noise impacts are not anticipated on arterial roads.

Extended traffic diversions are not expected for the works assessed in this CNVIS, and any necessary diversions will be confined to daytime hours. Should night-time diversions be required for construction activities, a more detailed assessment will be undertaken and provided.

Mitigation and management measures to assist in minimising noise impacts from construction traffic are shown in **Section 8.0**.

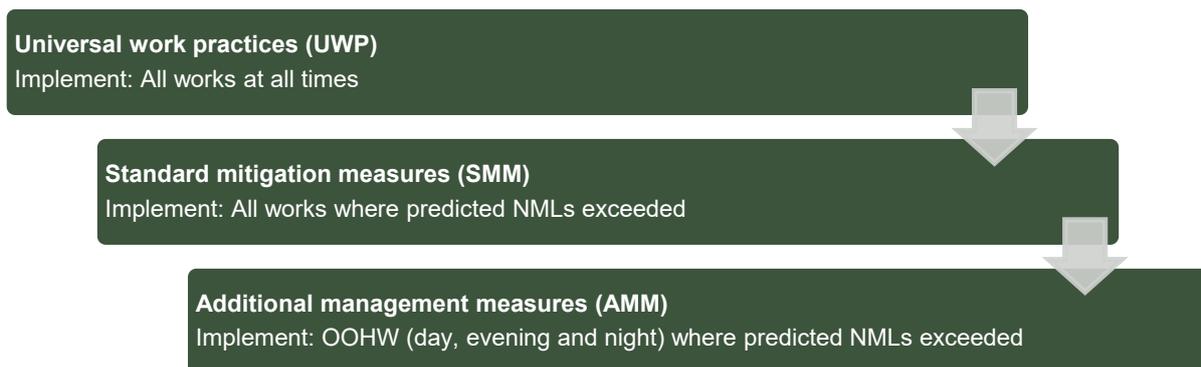
## 8.0 Mitigation and Management Measures

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

In accordance with CoA E74, works that exceed the noise management levels and/or vibration criteria must be managed in accordance with the CNVMP.

The Inland Rail NSW Construction Noise and Vibration Framework (CNVF) has been adopted as a guideline for this project and 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 9**.

**Figure 9 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 in accordance with CoA E74. Site specific mitigation measures are also outlined below in **Section 8.1**. These measures have been incorporated into the noise modelling assessment to provide mitigated results. Additional Management Measures (AMM) are outlined in **Section 8.3**.

### 8.1 Site Specific Mitigation Measures

**Table 19** outlines the mitigation and management measures that will be adopted to minimise potential noise and vibration impacts associated with this CNVIS at surrounding sensitive receivers. These measures have been considered in noise modelling based on the total scenario sound power levels, refer **Appendix B**.



**Table 19 Site Specific Mitigation Measures**

Measure	Reference / Notes
<b>Project Planning</b>	
Use quieter and less vibration emitting construction methods where feasible and reasonable.	Best practice
Works will be completed during the approved daytime construction hours where possible, as outlined in <b>Section 2.2</b> . Some unavoidable OOHW will be required due to road and rail traffic management restrictions, as outlined in <b>Section 2.3</b> .	Best practice CoA E69 CoA E71
Where OOHW is required, an OOHW Permit will be prepared, as required by the OOHW Protocol or EPL. Further detail around the specific work tasks, duration and justification of OOHW must be identified in the OOHW permit.	Best practice CoA E71 CoA E72 CoA E73
<b>Scheduling</b>	
Highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken: a) Between 08:00am – 06:00pm Monday to Friday; b) Between 08:00am – 01:00pm Saturday; and c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one hour. Refer <b>Section 8.2</b> .	Best practice CoA E70
Noise generating work in the vicinity of community, religious, educational institutions, noise and vibration-sensitive businesses and critical working areas (such as exam halls, theatres, laboratories and operating theatres) resulting in noise levels above the NMLs will not be timetabled during sensitive periods, unless other reasonable arrangements with the affected institutions can be made at no cost to the affected institution. Refer to Community Consultation in <b>Section 8.5</b> .	Best practice CoA E76
All work undertaken for the delivery of the project including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided.	Best practice, CoA E83
<b>Site Layout</b>	
Compounds and worksites have been designed to promote one-way traffic and minimise the need for vehicle reversing.	Best practice
Construction activities must be planned to minimise vehicle movements around the Site.	
Work compounds, parking areas, and equipment and material stockpiles will be positioned away from noise-sensitive locations and take advantage of existing screening from local topography.	
Equipment that is noisy will be started away from sensitive receivers where practicable.	
<b>Training</b>	
Training will be provided to all personnel on noise and vibration requirements for the project. Inductions and toolbox talks to be used to inform personnel of the location and sensitivity of surrounding receivers.	Best practice
The induction protocols must include awareness of noise generating activities and mitigation measures and techniques that should be implemented.	
Training must be conducted for appropriate community behaviours when access/egress the Site.	



Measure	Reference / Notes
<b>Plant and Equipment Source Mitigation</b>	
All plant and equipment must be maintained in a proper and efficient condition, operated in a proper and efficient manner, and feature standard noise reduction measures where applicable.	Best practice CNVF
Plant and equipment must be selected with options to minimise noise such as covers, mufflers, shrouds and other noise suppression equipment. Low noise emission plant and equipment must be selected where available.	
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out-of-hours work, including delivery vehicles.	
Stationary noise sources will be sited behind structures (or temporary screens) that act as barriers, or at the greatest distance from the noise-sensitive area (where practicable). Equipment will be oriented so that noise emissions are directed away from any sensitive areas.	
Noise generating equipment will be regularly checked and effectively maintained, including checking of hatches/enclosures regularly to ensure that seals are in good condition and doors close properly against seals.	
Noise monitoring spot checks of equipment will be completed to ensure individual items are operating as expected	
Dropping materials from a height will be avoided.	
Loading and unloading will be carried out as far as possible from noise sensitive areas.	
<b>Construction Traffic</b>	
Construction traffic routes to site will be limited to major roads where possible.	Best practice
Trucks will not queue outside residential properties.	
Truck drivers will be instructed to avoid compression braking as far as practicable.	
Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible.	
Truck movements will be kept to a minimum where possible (ie trucks are fully loaded on each trip).	
<b>Screening</b>	
Install purpose-built screening or enclosures around long-term fixed plant that has the potential to impact nearby receivers	Best practice CNVF
The layout of the site will take advantage of existing screening from local topography, where possible. Site huts, maintenance sheds and/or containers will be positioned between noisy equipment and the affected receivers.	
Implementation of temporary noise barriers for highly intensive noise activities, such as saw cutting or rock breaking.	
<b>Community Consultation</b>	
Regular communications on the activities and progress of the proposal shall be provided to the community (eg via newsletter, email and/or website).	Best practice CNVF
A telephone, email and web-based community information service shall be established to allow the community to obtain additional information on construction activities, provide feedback or make a complaint.	Best practice CNVF
Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage (and/or human comfort) must be notified before work that generates vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential	Best practice CoA E79



Measure	Reference / Notes
exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier.	
Notification will be provided to all impacted residences along construction traffic routes (including temporary diversions).	Best practice
Where complaints are received, work practices will be reviewed and feasible and reasonable practices applied to minimise any further impacts.	Best practice
<b>Monitoring</b>	
Noise and/or vibration monitoring will be conducted (as appropriate) when noise/vibration intensive works are being undertaken in close proximity to sensitive receivers.	Best practice CNVF CoA E80
Noise and vibration monitoring will be undertaken in accordance with the CNVMP and Monitoring Program.	CoA E81
Advice from a heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures.	
See <b>Section 8.7</b> for details of monitoring requirements.	
<b>Vibration</b>	
<p>Where vibration generating works are required within the minimum working distances and considered likely to exceed the criteria:</p> <ul style="list-style-type: none"> <li>Different construction methods with lower source vibration levels (ie alternative equipment) will be investigated and implemented, where feasible (refer <b>Table 11</b>).</li> <li>Attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels of the item. Vibration intensive works will cease if the monitoring indicates vibration levels are likely to, or do, exceed the relevant cosmetic damage criteria. Work methods will be modified prior to recommencing the activity.</li> </ul>	Best practice CoA E80
<p>Vibration intensive works required within the minimum working distance at the same receiver must only be undertaken:</p> <p>a) Between 08:00am – 06:00pm Monday to Friday; b) Between 08:00am – 01:00pm Saturday; and c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one hour.</p> <p>Refer to <b>Section 8.2</b>.</p>	Best practice CoA E70
<p>Where works are required within the cosmetic damage minimum working distances, building condition surveys will be completed before and after the works to ensure no cosmetic damage has occurred.</p> <p>Condition status of all heritage structures that fall within the unsound heritage minimum working distance for the nominated vibration-intensive equipment should be confirmed prior to the commencement of works.</p>	Best practice CoA C9
Property damage caused directly or indirectly (for example from vibration or from groundwater change) by the construction or operation must be rectified at no cost to the owner. Alternatively, compensation may be provided for the property damage as agreed with the property owner.	Best practice CoA E122



## 8.2 Respite

In accordance with CoA E70, except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken:

- a) *Between 08:00am – 06:00pm Monday to Friday;*
- b) *Between 08:00am – 01:00pm Saturday; and*
- c) *if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one hour.*

*For the purposes of this condition, ‘continuously’ includes any period during which there is less than one hour between ceasing and recommencing any of the work.*

In accordance with CoA E72 and E83, the procedure outlined in the OOHW Protocol must be implemented to coordinate OOHW (including those approved by an EPL or undertaken by a third party), to ensure appropriate respite is provided. This coordination must include:

- a) rescheduling work to provide respite to impacted noise sensitive land use(s) so that the respite is achieved; or
- b) the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and
- c) the provision of documentary evidence to the AA in support of any decision made in relation to respite or mitigation.

The consideration of respite must also include all other CSSI, SSI and SSD projects which may cause cumulative and/or consecutive impacts at receivers affected by the delivery of the CSSI.

Highly noise intensive works (as defined in **Section 2.2.1**) are required in various work scenarios. As outlined above, highly noise intensive work that results in an exceedance of the applicable NML is restricted to the hours shown above and must have respite periods as defined above.

CoA E70 applies to the following work scenarios where highly noise intensive works are proposed and the NML is predicted to be exceeded:

- W.003 – SAQP
- W.004 – Earthworks
- W.005 – Track Work - Peak
- W.007 – Track Tamping
- W.009 – Retaining Wall and Protection Barrier Construction
- W.010 – Drainage Work

In accordance with CoA E71, these activities require approval through the OOHW Protocol or and EPL to occur outside the hours listed above from CoA E70.

Respite offers are also required as part of the additional mitigation measured outlined in **Section 8.3**.



### 8.3 Additional Mitigation and Management Measures for Out of Hours Work

Where the ‘mitigated’ construction noise levels remain above the NMLs, the Additional Mitigation Measures Matrix (AMMM) adapted from in the CNVF and CNVMP is to be implemented. The approach, guided by the AMMM, is primarily aimed at pro-active engagement with affected sensitive receptors rather than additional noise reducing mitigation. OOHW has been divided into three periods (Day, Evening and Night) as adapted from the CNVF around the approved project hours (CoA E69).

Additional mitigation measures described in the CNVF and CNVMP are listed in **Table 20**. The additional mitigation measures for airborne noise are shown in **Table 21**. The additional mitigation measures for construction vibration are shown in **Table 22**.

**Table 20 Additional Mitigation Measures**

Mitigation/Management Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

Note 1: As outlined in the CNVF, Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

Note 2: As outlined in the CNVF, Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

Note 3: As outlined in the CNVF, RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.



**Table 21 Airborne Noise – Additional Mitigation Measures Matrix**

Time Period		Exceedance of NML	Perception	Duration	Communication Category/ Management Measure
OOHW Daytime Period	Sunday 8am – 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	CO1, CO2
>2 consecutive rest periods <sup>1</sup>	CO1, CO2, RO				
OOHW Night Period	Monday – Saturday 10pm – 7am	<5	Noticeable	Any	CO1
		5-15	Clearly audible	Any	CO1
	Sunday 10pm – 8am (including public holidays)	16-25	Moderately intrusive	Any	CO1, CO2
				>2 consecutive sleep periods <sup>1</sup>	CO1, CO2, RO, AO
	>25	Highly intrusive	Any	CO1, CO2, RO	
			>2 consecutive sleep periods <sup>1</sup>	CO1, CO2, RO, AO, AltA	

Note 1: Where the duration exceeds 2 consecutive rest/sleep periods, the corresponding additional mitigation measures will be provided for all periods where construction exceedances are expected to occur.

**Table 22 Vibration – Additional Mitigation Measures Matrix**

Time Period		Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period	Sunday 8am – 6pm (including public holidays)	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period	Monday – Sunday 6pm – 10pm (including public holidays)	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period	Monday – Saturday 10pm – 7am Sunday 10pm – 8am (including public holidays)	Any	CO1, CO2, RO	CO1, CO2, RO, AltA



### 8.3.1 Receivers Eligible for Additional Mitigation Measures - Noise

The receivers eligible for additional mitigation and management measures due to construction noise from the project work are presented in **Appendix C** and **Appendix D**. Where work occurs for greater than two consecutive evening or nights, receivers may be eligible for respite offers (RO), agreements with owners (AO) or alternative accommodation (AltA) depending on the exceedance level and works period as detailed in **Table 21**.

As outlined in **Section 5.2**, no 'highly intrusive' impacts at nearest residential receivers. The addresses of the impacted receivers are provided in **Appendix D**.

Where possible, work would be scheduled to avoid impacting the same receivers for more than two consecutive sleep periods. Receivers that would be impacted for more than two consecutive sleep periods must be identified in the OOHW permit.

### 8.3.2 Receivers Eligible for Additional Mitigation Measures - Vibration

As detailed in **Section 6.0**, no buildings are expected to fall within the minimum working distances for cosmetic damage and human comfort.

As defined in **Section 2.2.1** and **Section 8.2** activities involving high noise generating equipment, such as rock hammering or rock breaking, are limited to specific daytime construction hours only. Respite periods of 1 hour after every 3 hours of high noise/vibration generating work are also required.

Construction vibration mitigation and management measures are discussed in **Section 8.0**. No additional mitigation (from **Table 22**) for vibration activities is required, given no impacts are predicted.

Any proposed works outside of the approved daytime hours will need to be assessed as part of the OOHW permit preparation discussed in **Section 2.4**.

## 8.4 Community Notification

As detailed in the standard management measures outlined in the CNVF.

- A telephone, email and web-based community information service will be established to allow the community to obtain additional information on construction activities, provide feedback or make a complaint.
- Regular communications on the activities and progress of the proposal shall be provided to the community (e.g. via newsletter, email and/or website).

## 8.5 Consultation with Affected Receivers

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided below.

### 8.5.1 Consultation approach

This section discusses the consultation approach that has been undertaken for the purposes of the work subject to this CNVIS. It is noted that consultation with affected sensitive land users on what specific mitigation measures they may require is considered to be an ongoing and live process and as such, measures that are personal to individual affected sensitive land user(s) will not be regularly documented in this CNVIS. Consultation records will be made available to the AA upon request.



The purpose of this consultation is to identify receivers who have specific circumstances that need further consideration during construction – for example, households who have children undertaking exams (HSC or similar), households who have vulnerable persons with disabilities or medical conditions, shift workers, etc.

The consultation approach utilised by Martinus Rail is in accordance with the Community Communications Strategy (CCS). The approach involved directly contacting the affected sensitive land user identified by this CNVIS through one or more of the following methods:

- Surveys distributed by email and paper notifications
- Door-knocks with a ‘Sorry we missed you’ card for those who were not at home
- Notifications
- Phone calls
- Emails
- Community briefings / group meetings.

Affected sensitive land users contacted by Martinus Rail have been made aware of the anticipated duration and nature of construction works that may affect them, as well as mitigation measures that will be implemented in accordance with the CEMP and CNVMP. Contact information for Martinus Rail’s Community Team have been provided to assist with ongoing consultation during construction.

Depending on individual needs and circumstances, specific mitigation measures offered by Martinus Rail could include but are not limited to:

- Offers of individually agreed respite to highly noise affected sensitive land users (standard construction hours)
- Consultation on timetabling of highly noise intensive works to avoid sensitive periods
- Offers of attended noise monitoring at the premises to confirm actual levels of impact
- Offers of temporary alternative accommodation or work space
- Individual briefings.

Specific mitigation measures identified in consultation with individual affected sensitive land users will be implemented during works subject to this CNVIS. Further mitigation measures may be identified by the affected community as construction progresses and these will be assessed where reasonable and feasible and on a case by-case basis.

### **8.5.2 Consultation for this CNVIS**

The project website includes the following key information:

- Latest approvals
- All management plans, including the CNVMP and the Construction Environmental Management Plan (CEMP), which provide information on the relevant environmental management measures
- Notifications, including three-month lookaheads, monthly updates and specific OOHW notifications
- Contact mechanisms, including requests for feedback and/or complaints on individual circumstances.



As part of the project’s program of regular notifications, the following notifications have included information on the OOHW requirements subject to this CNVIS:

- Project-wide monthly notifications distributed to over 25,000 properties
- Work specific notifications
- Three-month lookahead notifications distributed to over 25,000 properties
- Regular email with details of upcoming work or changes.

All notifications include the following:

- Link to project website
- 24/7 phone number and email address for enquiries, complaints or comments
- Requests for the community to provide feedback on their individual needs and circumstances.

Prior to commencement of works subject to this CNVIS, targeted consultation occurred with a total of approximately 7,127 residential properties across the entire project alignment, approximately 61 of which were nearby the Billy Hughes Bridge site. These properties received targeted letterbox drops, emails and newspaper adverts from the Community Team and feedback was sought across (3) three weeks, from 7 August to 28 August 2024.

The team requested feedback from the affected community on their individual needs during this targeted consultation.

### 8.5.3 Consultation outcomes

Feedback received during this consultation was primarily related to the existing operational train line and the disturbance the trains cause.

In the greater Albury area, no additional management measures relating to construction noise were identified during this consultation (as required by CoA E78); however, the following general sentiments were noted from respondents:

- Limit noise generating work outside of standard construction hours as much as possible
- Limit noise generating work on the weekends as much as possible
- Construction works should be completed as soon as possible.

The CNVIS documents the need to limit noise generating work as much as possible and this will be achieved through the implementation of existing mitigation measures listed in this CNVIS.

Nevertheless, regular consultation with the community will continue throughout construction in accordance with the Community Communications Strategy and the Community Action Plan prepared for the relevant activities. A list of key stakeholders relevant to this CNVIS are included in, see **Table 23** below.

**Table 23 Key Stakeholders for this CNVIS**

Precinct Area	Receiver Type	Level of Engagement	Distance from Work Site (m)
<b>Billy Hughes Bridge</b>			
Sanctuary Lane	Residential	Consult	290



## 8.6 Occupational Noise Exposure

In accordance with CoA E77, worksites will be managed to ensure that noise generated by construction will not exceed the National Standard for exposure to noise in the occupational environment of an eight-hour equivalent continuous A-weighted sound pressure level of  $L_{Aeq,8h}$  of 85 dBA for any employee working at a location near the project.

It is not anticipated that an exceedance will occur at any point during the project, however occupational exposure to noise will primarily be managed under the Work Health and Safety Management Plan.

## 8.7 Monitoring

Noise and vibration monitoring will be undertaken in accordance with the CNVMP (including monitoring program) and the CNVF.

CoA E81 requires that advice from an independent heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures prior to the installation of the equipment.

### Construction Noise Monitoring

Construction noise monitoring will be carried out at the commencement of activities to confirm that actual noise levels are consistent with the predictions presented in this CNVIS, and that the management measures that have been implemented are effective or as per the CNVMP.

Monitoring locations will be focused to the most impacted receivers identified in **Appendix C**. Indicative locations are identified in **Table 24**, however, these will be subject to provision of safe access and the specific location of work being undertaken at the time of monitoring.

Noise monitoring will, where practicable, be in a position with unobstructed views of general site activities, whilst shielded as much as possible from non-construction site noise (e.g. road traffic, rail noise and other surrounding noise). The preferred measurement height is 1.2-1.5m above the ground. In accordance with *Australian Standard AS1055:2018*, outdoor noise monitoring is to be undertaken at least 3.5m from any reflecting structure other than the ground.

Noise monitoring will be carried out on or near the property boundary at the locations representative of the nominated receivers in **Table 24** (i.e. in publicly accessible areas near the nominated receivers, if it is safe to do so). Noise monitoring results will be assessed against the noise management levels (NMLs) and predicted exceedance category identified in **Appendix C**.

The results will be documented with discussion about the details of work underway at the time and mitigation in place. Noise monitoring results will be recorded on the MR Noise Monitoring Form in Procure. Noise monitoring data will be made available to the AA and ER for information, upon request.

### Construction Vibration monitoring

Attended or unattended vibration monitoring will be undertaken as required. Monitoring locations may vary as work progresses and will be determined on a case-by-case basis or in response to complaints. The focus of monitoring will be at risk buildings, structures and sensitive receivers as identified in **Section 6.0**. If other vibration intensive activities are required, an assessment of their potential impact is required as per the CNVMP.



Indicative locations are identified in **Table 24**, however, these will be subject to provision of safe access and the specific location of work being undertaken at the time of monitoring. Vibration monitoring data will be made available to the AA and ER for information, upon request.

**Table 24 Indicative Monitoring Locations**

Location	Type	Monitoring	Timing
<b>Noise Monitoring</b>			
<ul style="list-style-type: none"> <li>19 Sanctuary Lane, Ettamogah</li> </ul>	Activities based noise monitoring	<ul style="list-style-type: none"> <li>Confirming that actual noise levels are consistent with predicted noise impacts and that the effectiveness of actions and mitigation measures implemented are satisfactory</li> <li>In response to a noise related complaint(s) (determined on a case-by-case basis)</li> <li>Following implementation of mitigation measures or noise attenuation because of exceedance of predicted noise levels</li> </ul>	At the commencement of the activities being undertaken
	Out of Hours Work	Attended monitoring as required by the Out of Hours Work (OOHW) plan to validate noise levels are consistent with predicted noise impacts and that the effectiveness of actions and mitigation measures implemented are satisfactory	At the commencement of the range of OOHW activities being undertaken.
	Plant / Equipment Checks	Spot checks would be carried out as required on a case-by-case basis, such as <ul style="list-style-type: none"> <li>In response to a specific noise related complaint and</li> <li>During noise verification monitoring when it is possible to isolate the noise from one piece of plant or equipment.</li> </ul>	case-by-case basis
<b>Vibration Monitoring</b>			
<ul style="list-style-type: none"> <li>N/A</li> </ul>	Activities based vibration monitoring	<ul style="list-style-type: none"> <li>In response to a vibration related complaint(s) (determined on a case-by-case basis)</li> </ul>	Throughout vibration generating activities subject to complaints from nearby receivers.



## 9.0 Cumulative Impacts

Cumulative construction noise impacts can occur where multiple work activities are being completed near to a particular receiver at the same time. There is potential for cumulative construction impacts from multiple construction activities being completed in different areas of the project.

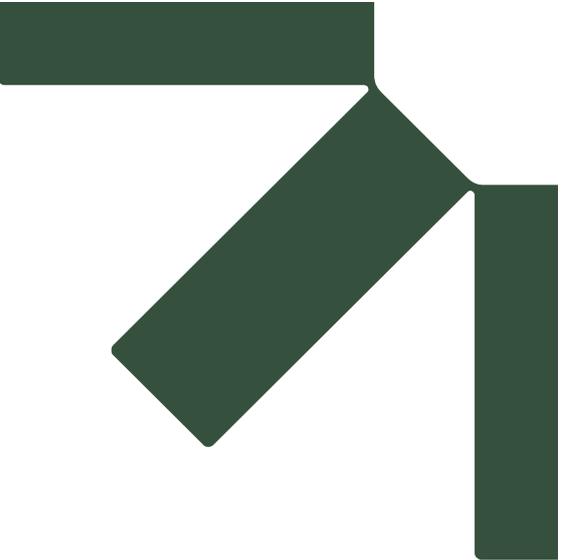
Since the construction scenarios required for various stages of the project would generally require similar items of equipment, concurrent construction work being completed near to a particular area could theoretically increase the worst-case noise levels in this report by around 3 dB (ie a logarithmic adding of two sources of noise at the same level).

The likelihood of worst-case noise levels being generated by two different work activities at the same time is, however, considered low and rather than increase construction noise levels, the impact of concurrent work would generally be a limited to a potential increase in the duration, and annoyance, of noise impacts on the affected receivers.

In practice, construction noise levels in any one location would vary and would be frequently much lower than the worst-case scenario assessed due to construction staging moving work around within the study area and, in many cases, only a few items of equipment being used at any one time.

Martinus Rail will take feasible and reasonable steps to consult and coordinate with other construction projects when they become aware of them and if they have the potential to impact the same receivers concurrently, to minimise cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers (in accordance with CoA E72 and E83).





# Appendix A Acoustic Terminology

## A2I | Albury to Illabo – Billy Hughes Bridge

### Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

28 May 2025

### 1. Sound Level or Noise Level

The terms ‘sound’ and ‘noise’ are almost interchangeable, except that ‘noise’ often refers to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is  $2 \times 10^{-5}$  Pa.

### 2. ‘A’ Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an ‘A-weighting’ filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People’s hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely noisy
110	Grinding on steel	
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Kerbside of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to quiet
50	General Office	
40	Inside private office	Quiet to very quiet
30	Inside bedroom	
20	Recording studio	Almost silent

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as ‘linear’, and the units are expressed as dB(lin) or dB.

### 3. Sound Power Level

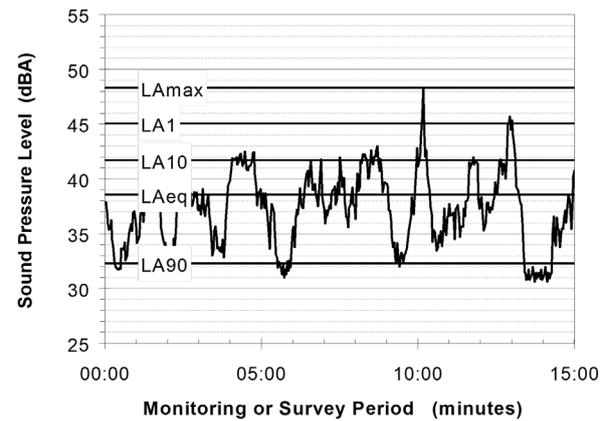
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit  $10^{-12}$  W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

### 4. Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time, LA10 the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

- LA1 The noise level exceeded for 1% of the 15 minute interval.
- LA10 The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.
- LA90 The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.
- LAeq The A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.
- LAmax The A-weighted maximum sound pressure level of an event measured with a sound level meter.

### 5. Frequency Analysis

Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

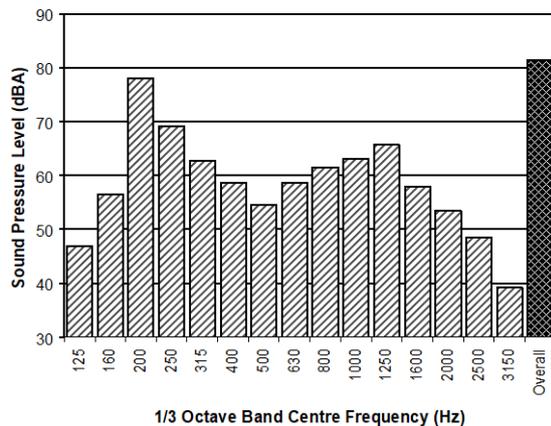
The units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)
- Narrow band (where the spectrum is divided into 400 or more bands of equal width)



The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



## 6. Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

## 7. Vibration

Vibration may be defined as cyclic or transient motion. This motion can be measured in terms of its displacement, velocity or acceleration. Most assessments of human response to vibration or the risk of damage to buildings use measurements of vibration velocity. These may be expressed in terms of 'peak' velocity or 'rms' velocity.

The former is the maximum instantaneous velocity, without any averaging, and is sometimes referred to as 'peak particle velocity', or PPV. The latter incorporates 'root mean squared' averaging over some defined time period.

Vibration measurements may be carried out in a single axis or alternatively as triaxial measurements (ie vertical, longitudinal and transverse).

The common units for velocity are millimetres per second (mm/s). As with noise, decibel units can also be used, in which case the reference level should always be stated. A vibration level  $V$ , expressed in mm/s can be converted to decibels by the formula  $20 \log (V/V_0)$ , where  $V_0$  is the reference level ( $10^{-9}$  m/s). Care is required in this regard, as other reference levels may be used.

## 8. Human Perception of Vibration

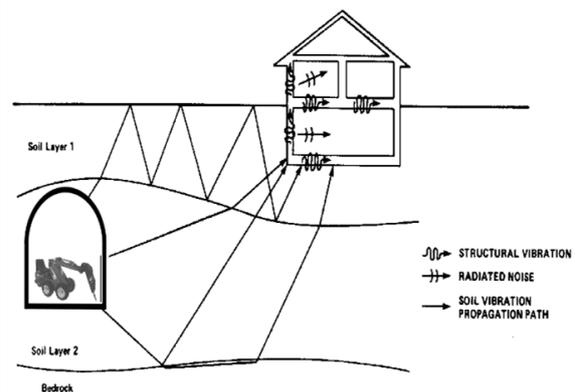
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as 'normal' in a car, bus or train is considerably higher than what is perceived as 'normal' in a shop, office or dwelling.

## 9. Ground-borne Noise, Structure-borne Noise and Regenerated Noise

Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces is termed 'structure-borne noise', 'ground-borne noise' or 'regenerated noise'. This noise originates as vibration and propagates between the source and receiver through the ground and/or building structural elements, rather than through the air.

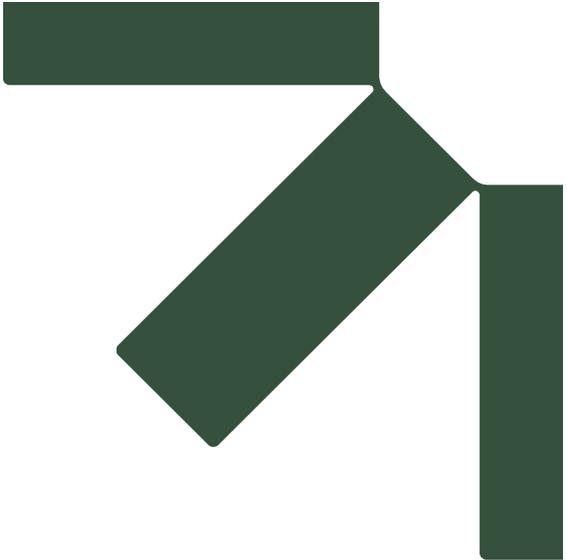
Typical sources of ground-borne or structure-borne noise include tunnelling works, underground railways, excavation plant (eg rockbreakers), and building services plant (eg fans, compressors and generators).

The following figure presents an example of the various paths by which vibration and ground-borne noise may be transmitted between a source and receiver for construction activities occurring within a tunnel.



The term 'regenerated noise' is also used in other instances where energy is converted to noise away from the primary source. One example would be a fan blowing air through a discharge grill. The fan is the energy source and primary noise source. Additional noise may be created by the aerodynamic effect of the discharge grill in the airstream. This secondary noise is referred to as regenerated noise.





# Appendix B Modelling Scenarios and Equipment

## A2I | Albury to Illabo – Billy Hughes Bridge

### Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

28 May 2025





# Appendix C Noise Impact Maps

## A2I | Albury to Illabo – Billy Hughes Bridge

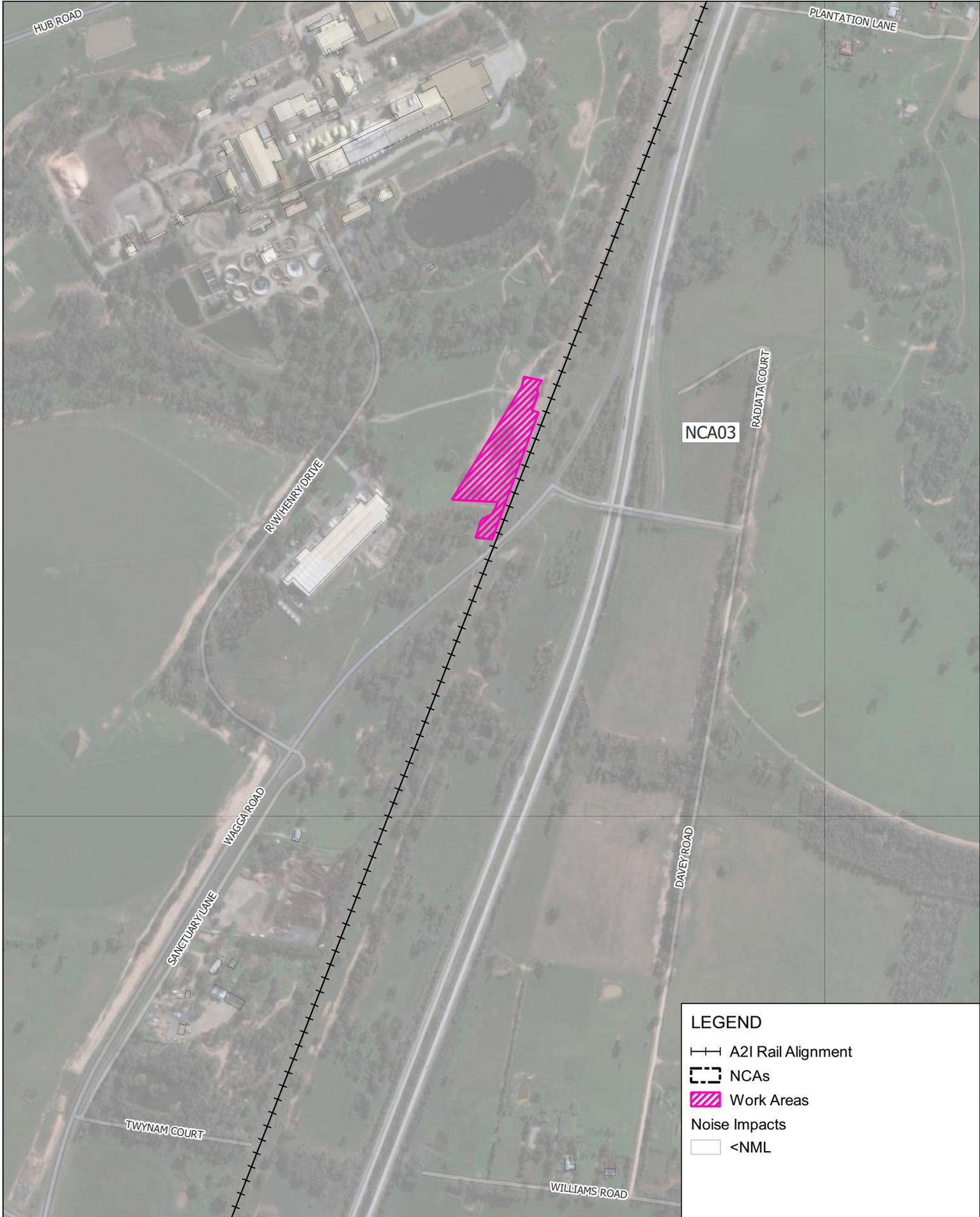
### Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

28 May 2025

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317



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**W.001 Site Establishment /  
 Demobilisation - Approved Daytime  
 Hours**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML



Scale: Scale: 1:9,000  
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Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
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W.001 Site Establishment /  
 Demobilisation - Out of Hours Daytime

**APPENDIX C-2**

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**LEGEND**

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- NCAs
- Work Areas
- Noise Impacts
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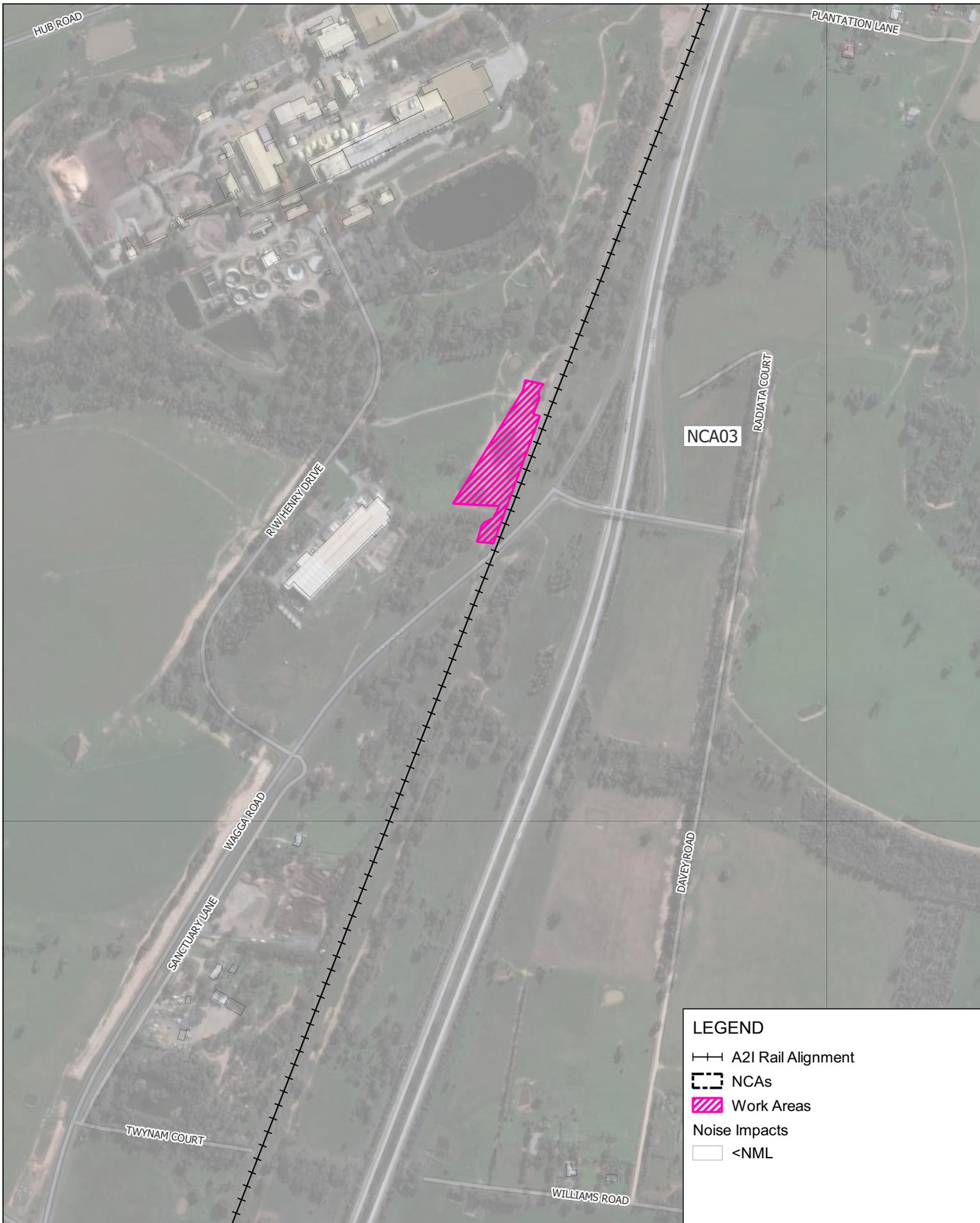
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**W.002 Compound Operation - Approved Daytime Hours**

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**LEGEND**

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- NCA
- ▨ Work Areas
- Noise Impacts
- <NML



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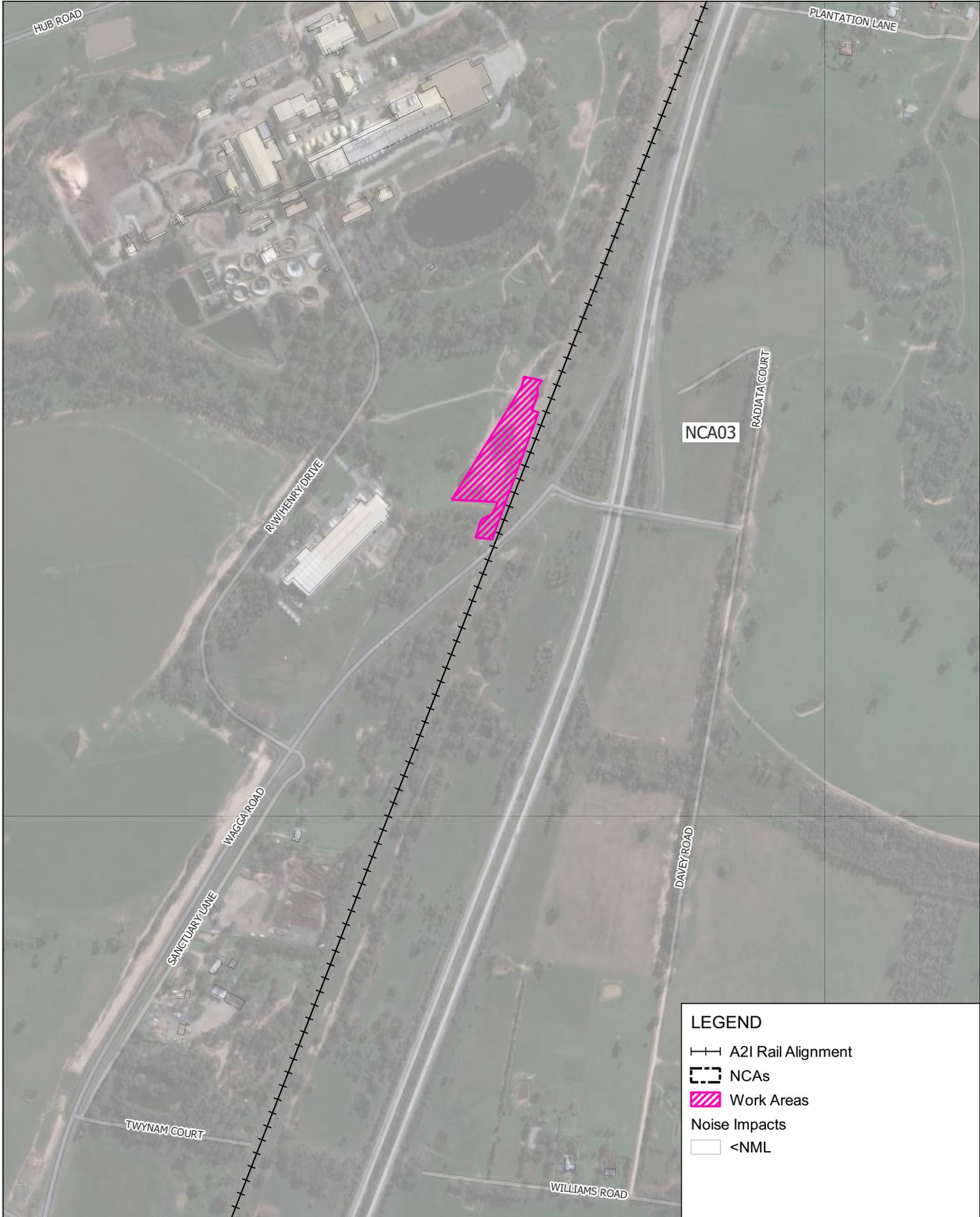


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W.002 Compound Operation - Out of Hours Daytime

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML



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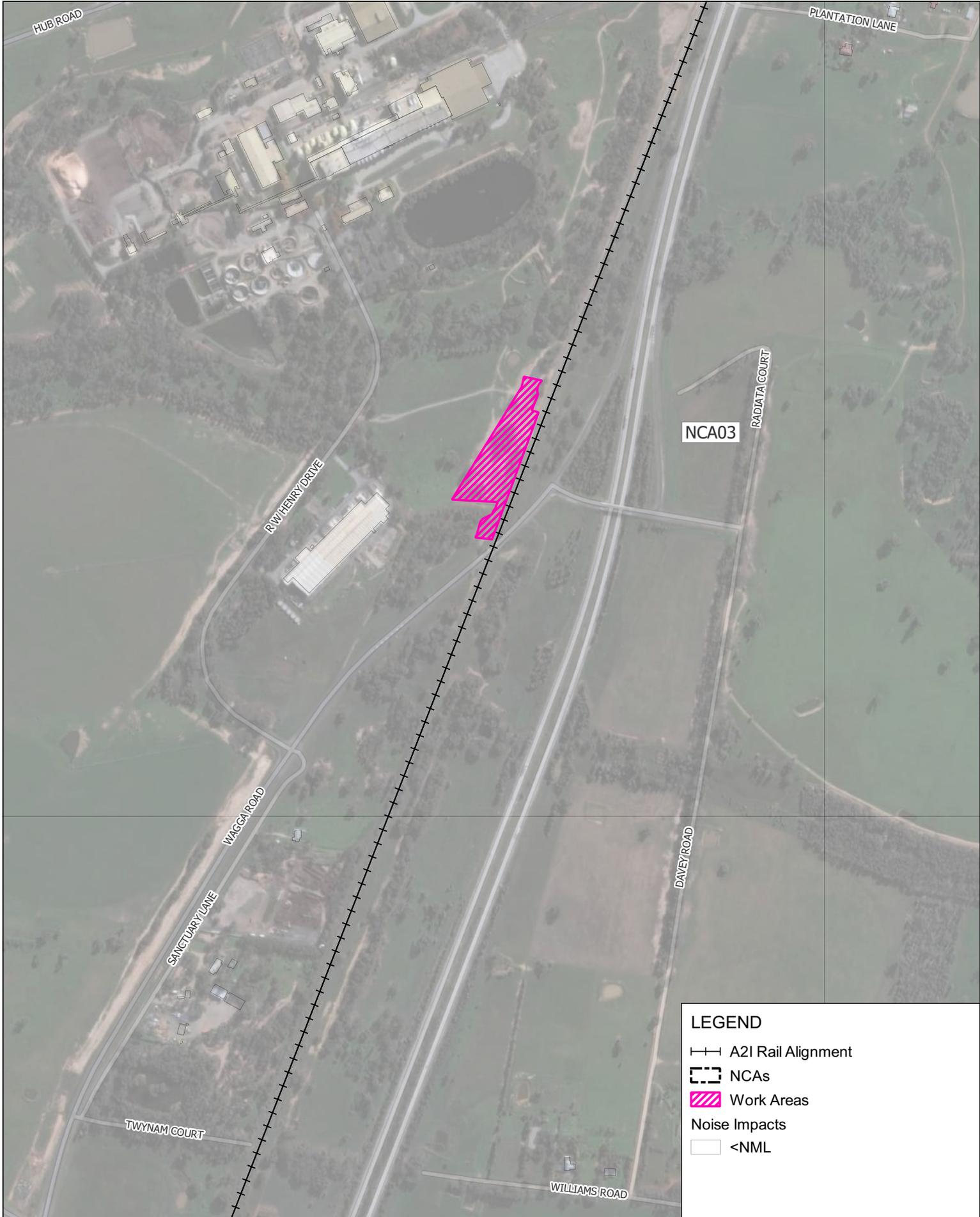
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**W.002 Compound Operation - Out of Hours Evening**

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- +--- A21 Rail Alignment
- - - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML



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 Project Number: 610.031317

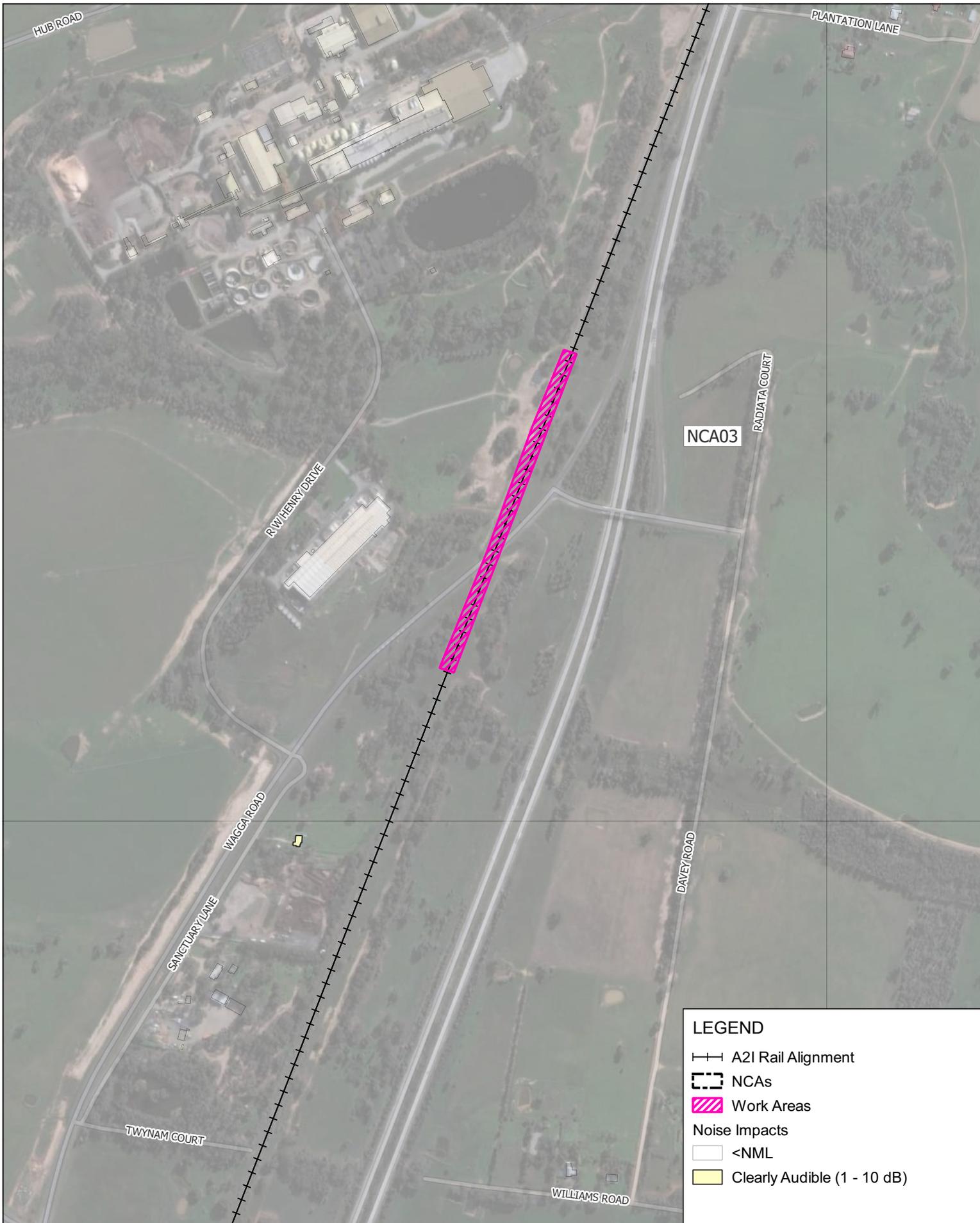


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W.002 Compound Operation - Out of Hours Night-time

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Clearly Audible (1 - 10 dB)



Scale: Scale: 1:9,000  
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Drawn Date: 28-May-2025  
 Project Number: 610.031317



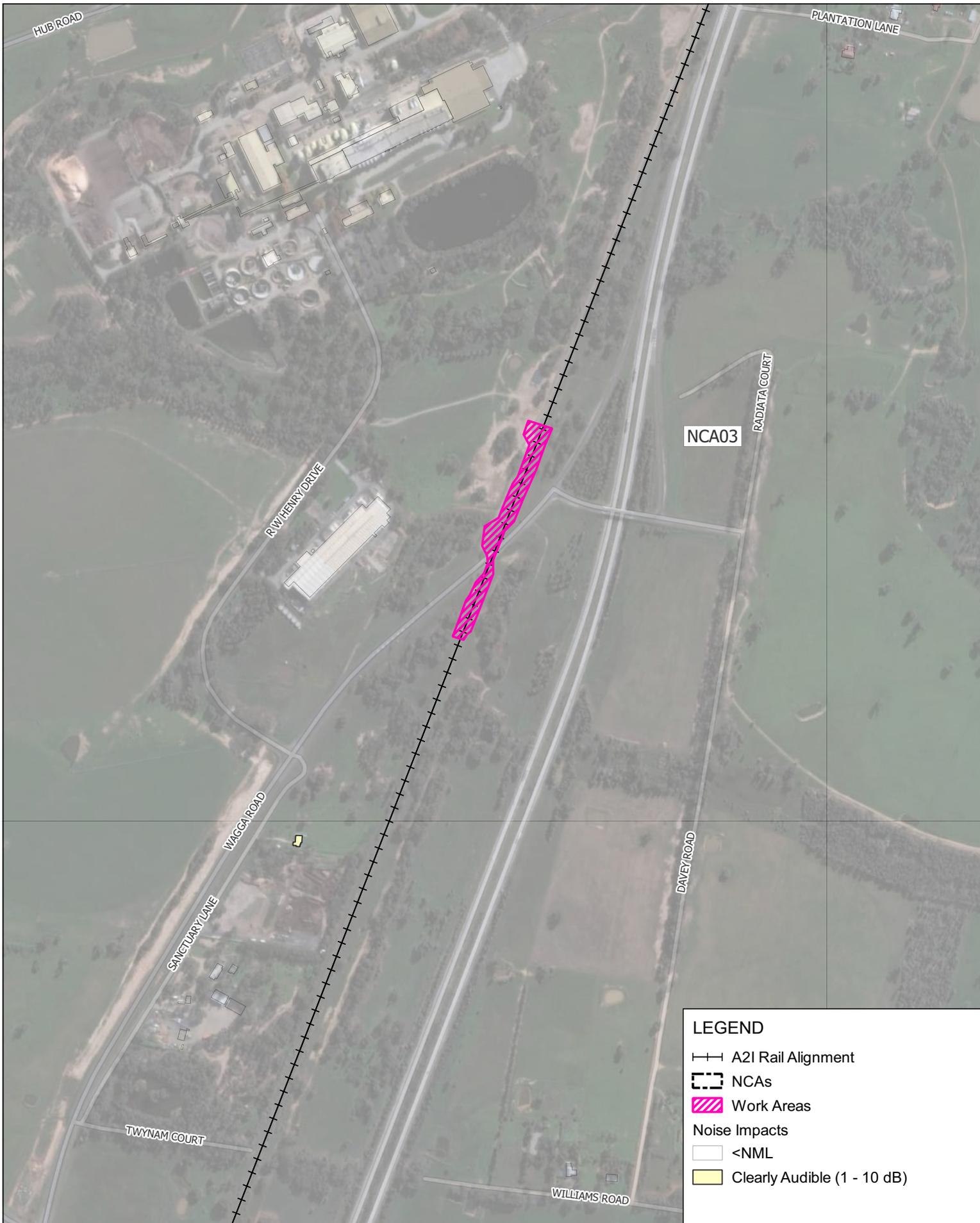
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W.003 SAQP - Approved Daytime Hours

**APPENDIX C-7**

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**LEGEND**

- +--- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Clearly Audible (1 - 10 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

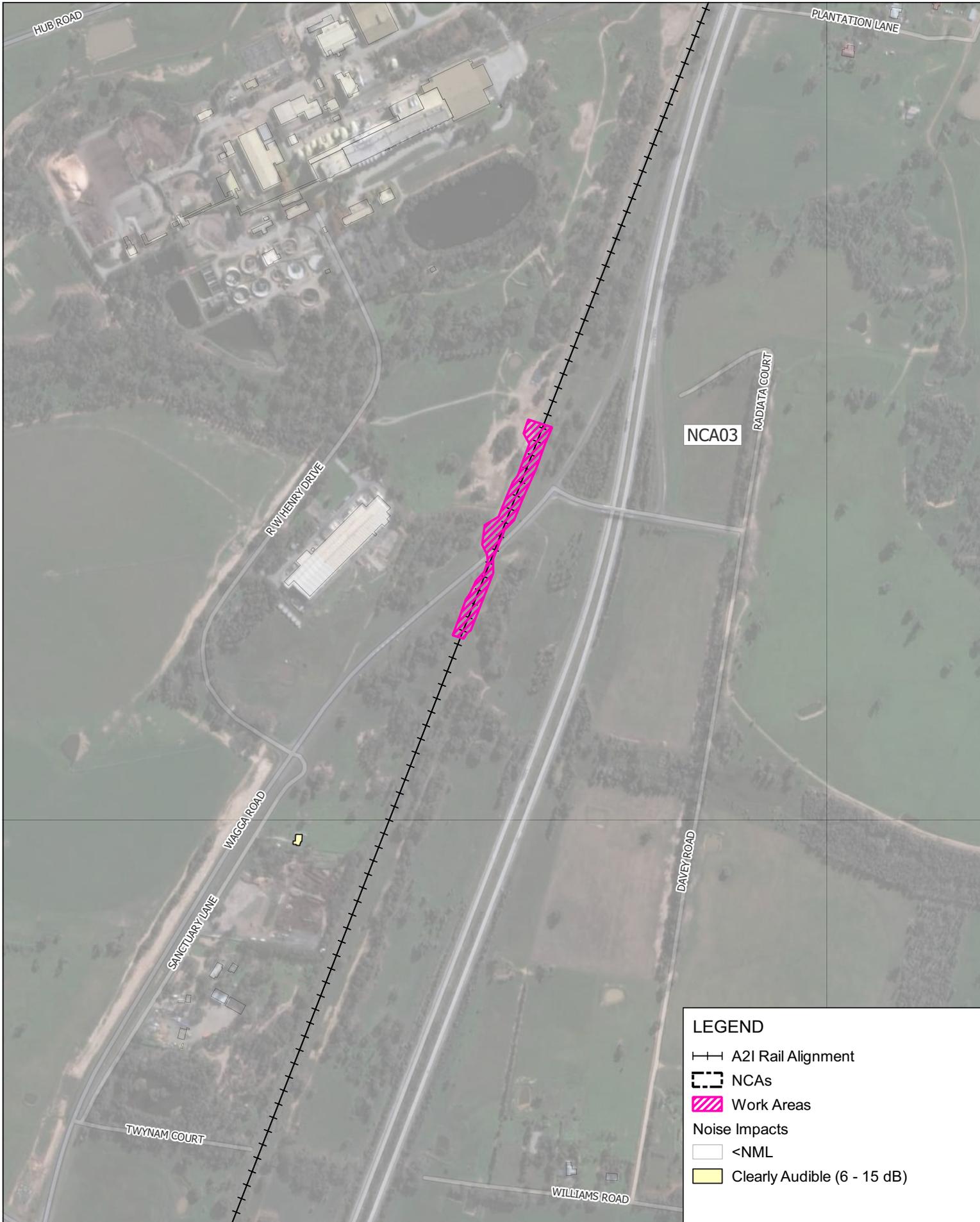


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**W.004 Earthwork - Approved Daytime Hours**

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**LEGEND**

- +--- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

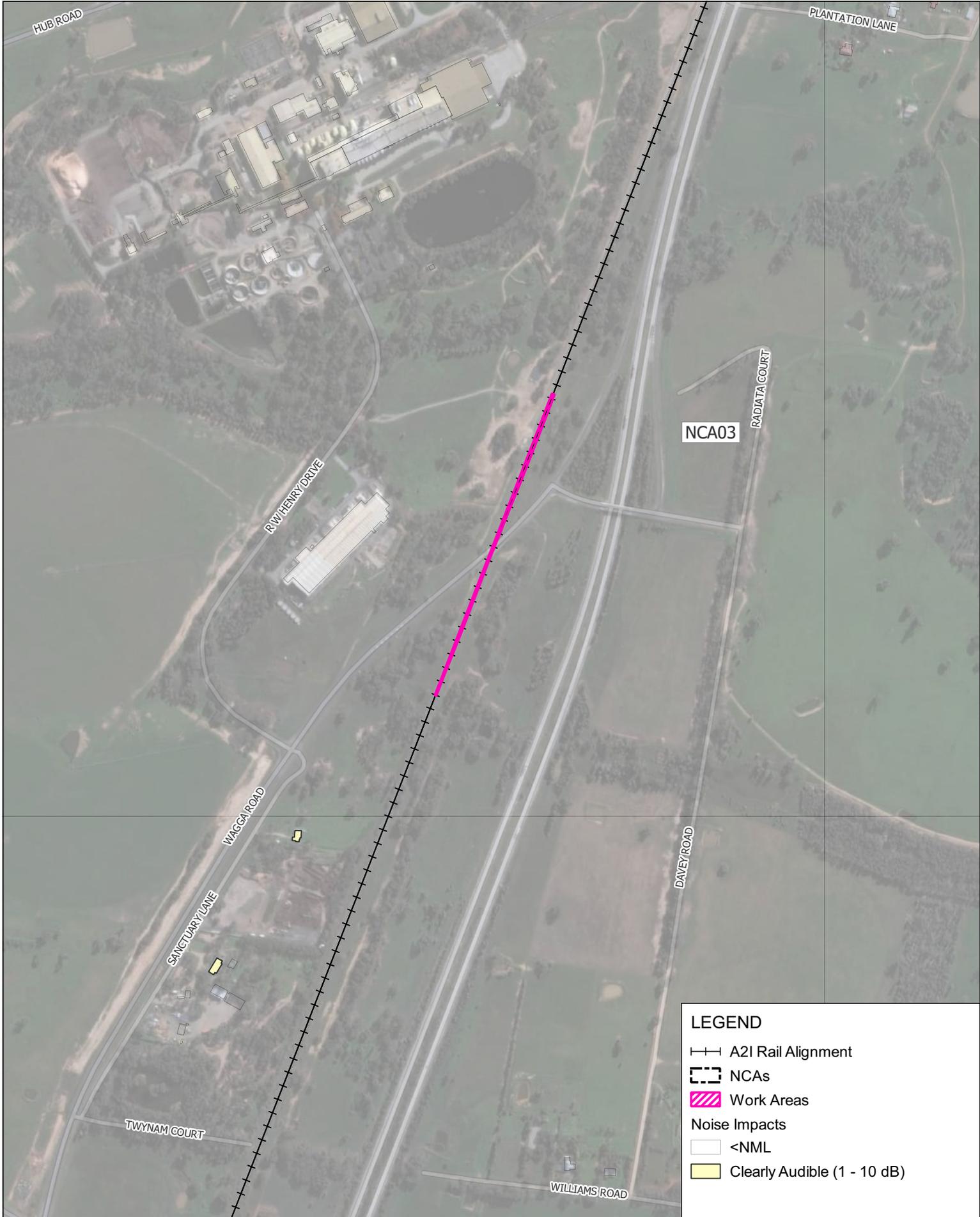


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W.004 Earthwork - Out of Hours Daytime

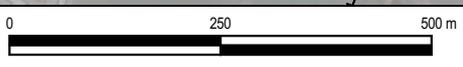
**APPENDIX C-9**

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**LEGEND**

- +--- A21 Rail Alignment
- NCA's
- Work Areas
- Noise Impacts
- <NML
- Clearly Audible (1 - 10 dB)



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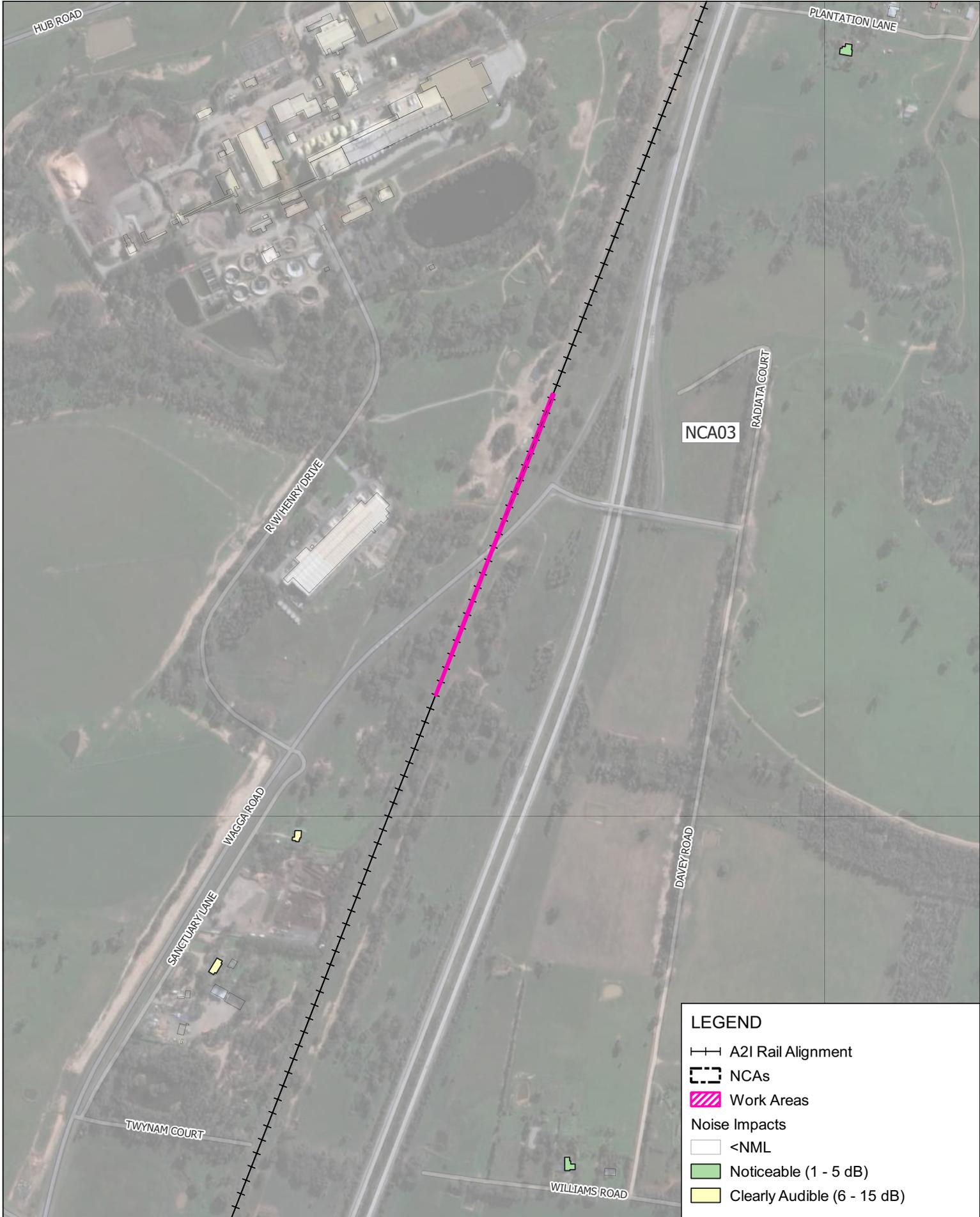
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 Project Number: 610.031317



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W.005 Track Work - Peak - Approved Daytime Hours

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**LEGEND**

- +— A21 Rail Alignment
- - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

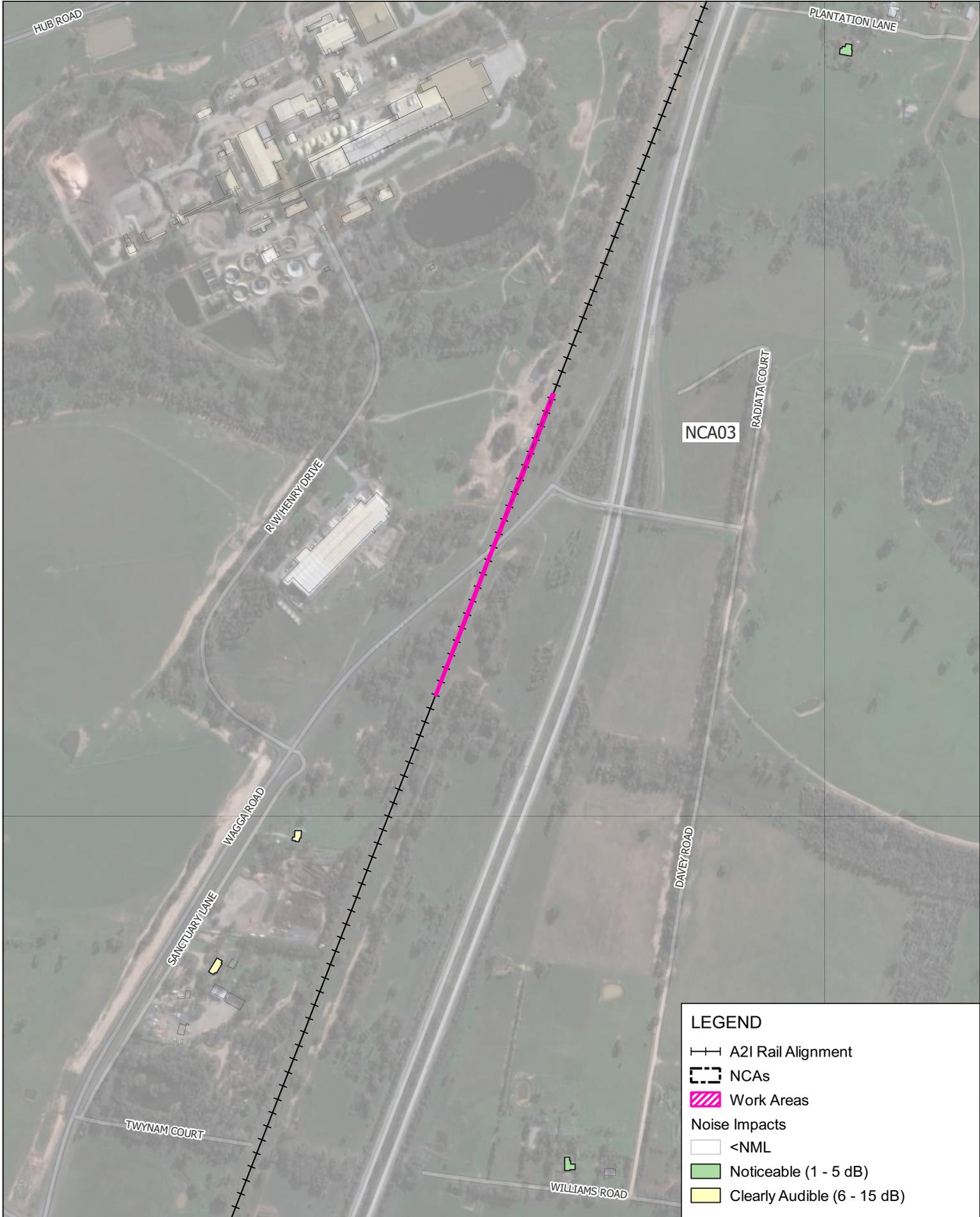


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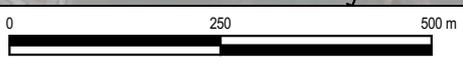
W.005 Track Work - Peak - Out of Hours  
 Daytime

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**LEGEND**

- +— A21 Rail Alignment
- - - NCA's
- ▨ Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
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Drawn Date: 28-May-2025  
 Project Number: 610.031317

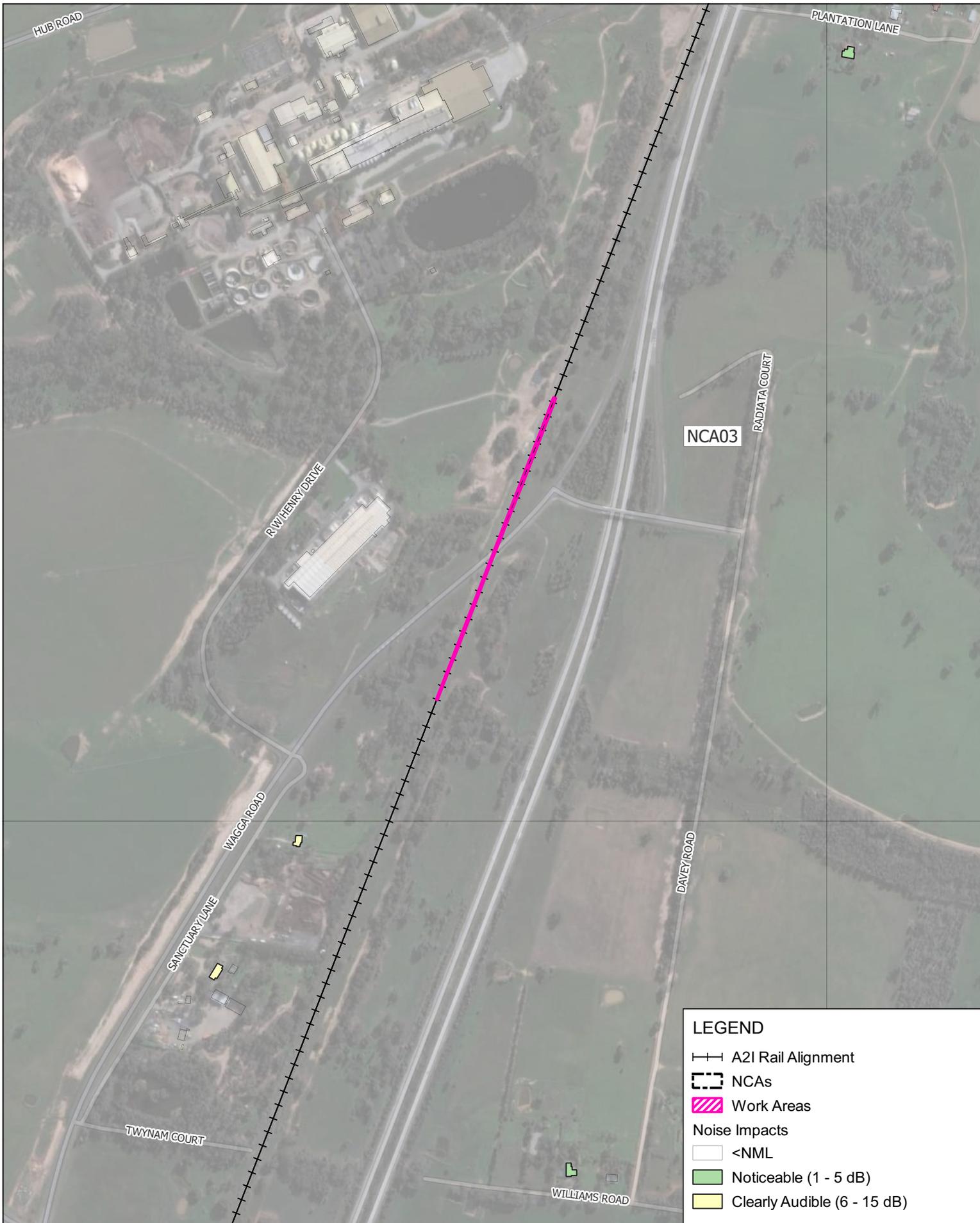


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W.005 Track Work - Peak - Out of Hours  
 Evening

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**LEGEND**

- +— A21 Rail Alignment
- - - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

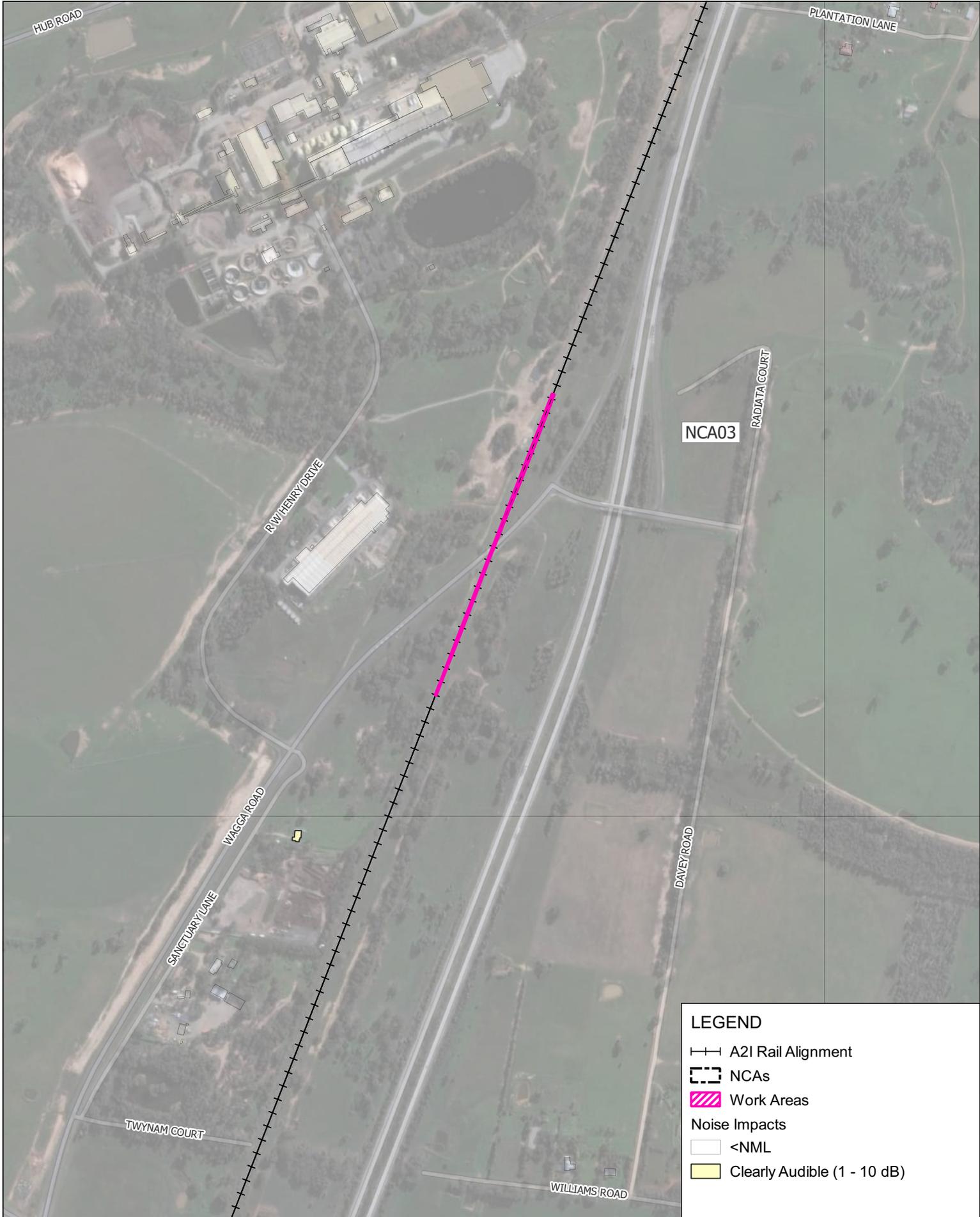


Data Source:  
 ESRI World Imagery

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**W.005 Track Work - Peak - Out of Hours  
 Night-time**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Clearly Audible (1 - 10 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

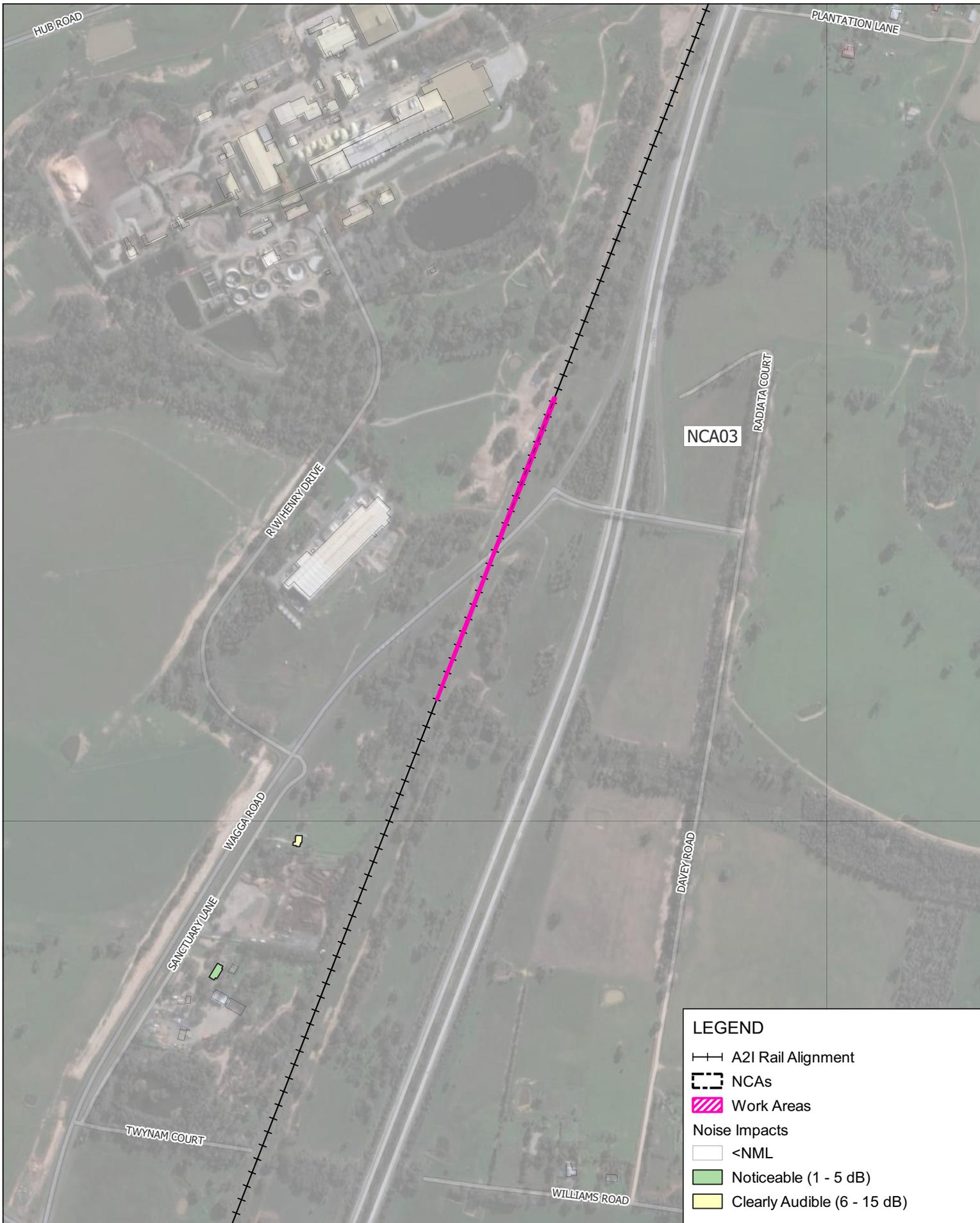
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 Project Number: 610.031317



Data Source:  
 ESRI World Imagery  
 DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.006 Track Work - Typical - Approved Daytime Hours**

H:\Projects-SLR\610-Svcs\610-SYD\610.031317-00001 Inland Rail A2P Enhancement\06 SLR>Data\05 Modelling\90 CNVIS\02 A2107 Analysis\Bilby Hughes Bridge\610.031317 A21 CNVIS - Bilby Hughes.ggz



**LEGEND**

- +— A21 Rail Alignment
- - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML
- ▒ Noticeable (1 - 5 dB)
- ▒ Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

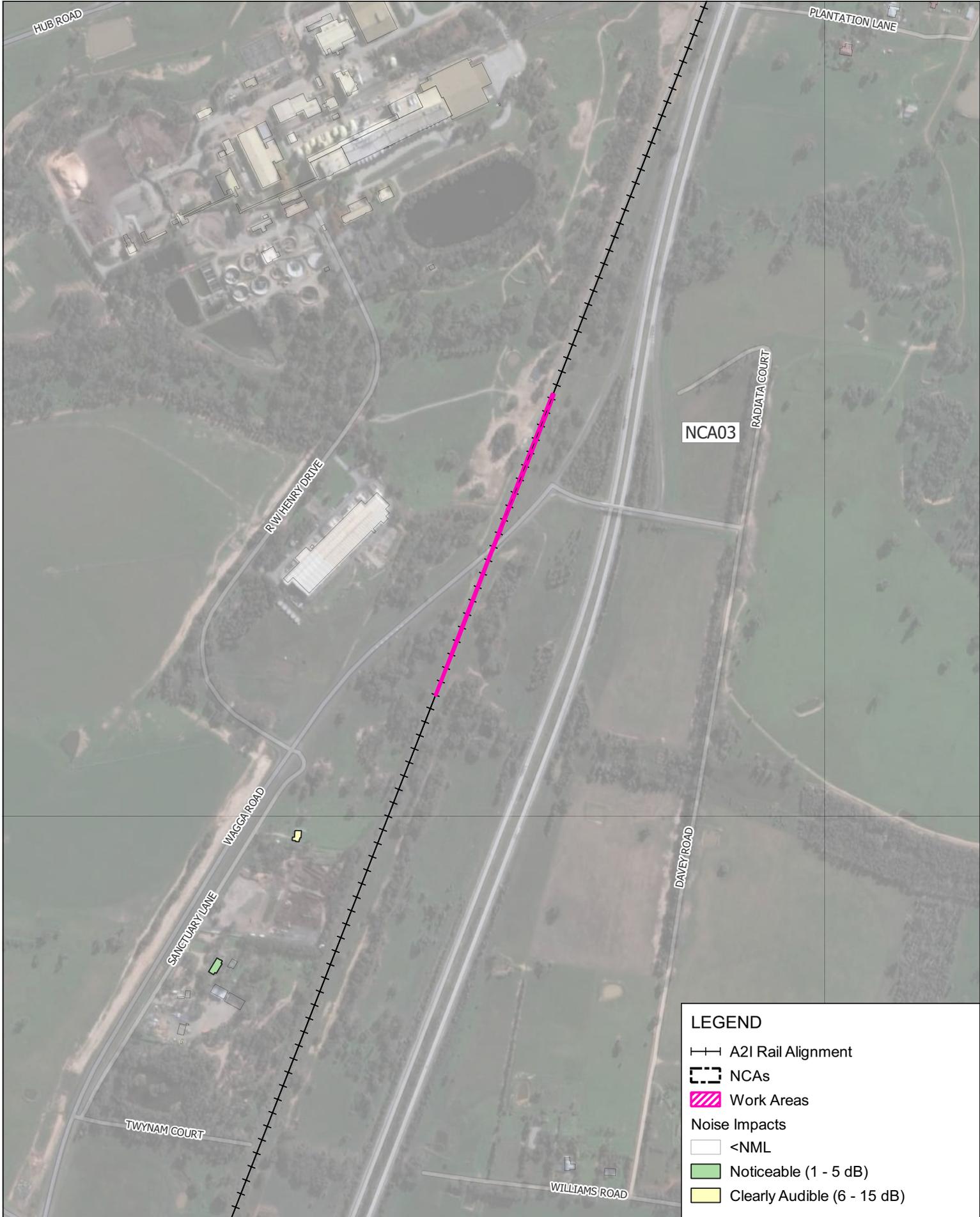


Data Source:  
 ESRI World Imagery

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**W.006 Track Work - Typical - Out of Hours Daytime**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas

**Noise Impacts**

- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
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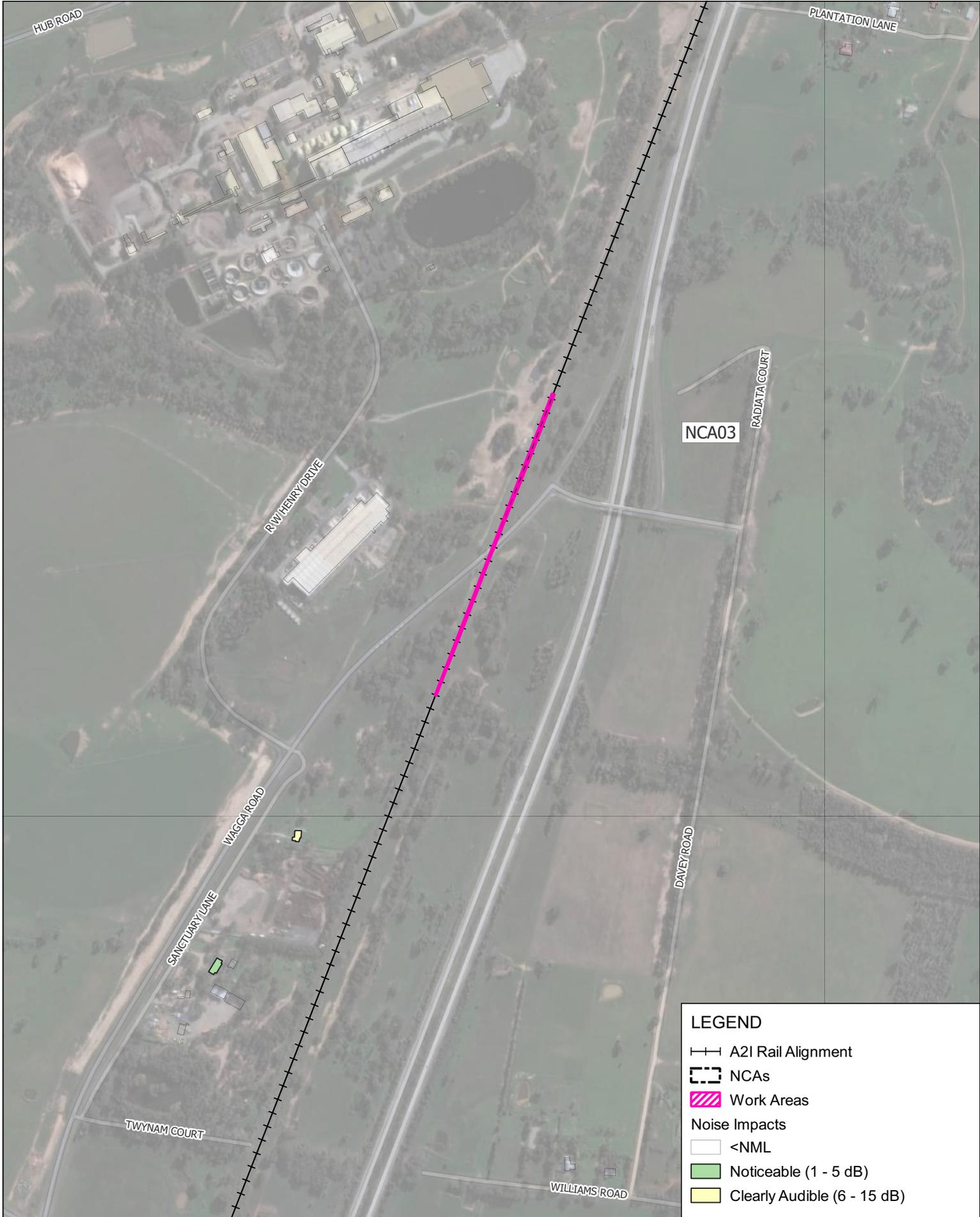
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Project Number: 610.031317



Data Source:  
ESRI World Imagery  
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### W.006 Track Work - Typical - Out of Hours Evening

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas

**Noise Impacts**

- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
Coordinate System: GDA2020 / MGA zone 55

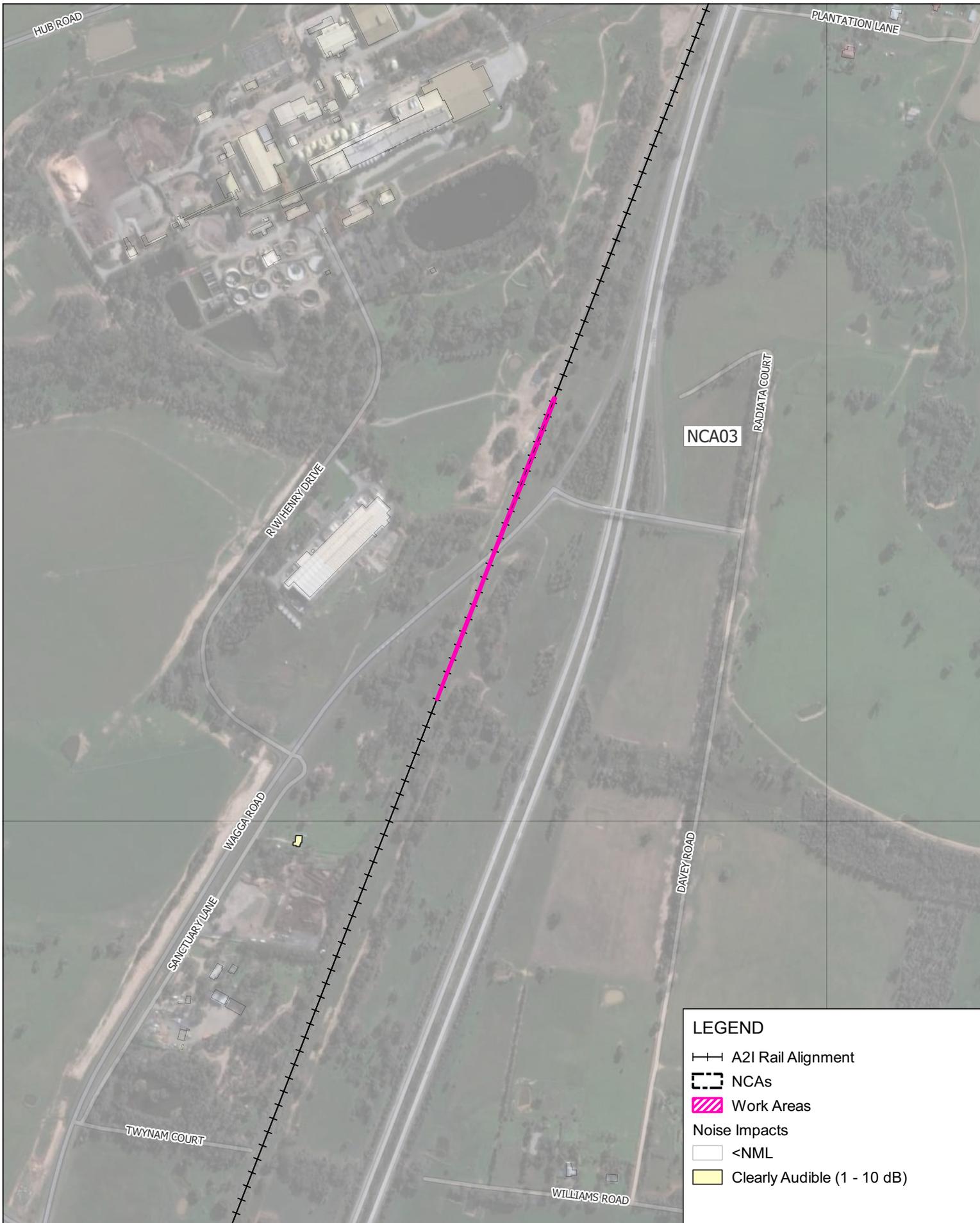
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Project Number: 610.031317



Data Source:  
ESRI World Imagery  
DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

### W.006 Track Work - Typical - Out of Hours Night-time

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**LEGEND**

- A21 Rail Alignment
- NCA03
- ▨ Work Areas
- Noise Impacts
- <NML
- ▨ Clearly Audible (1 - 10 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

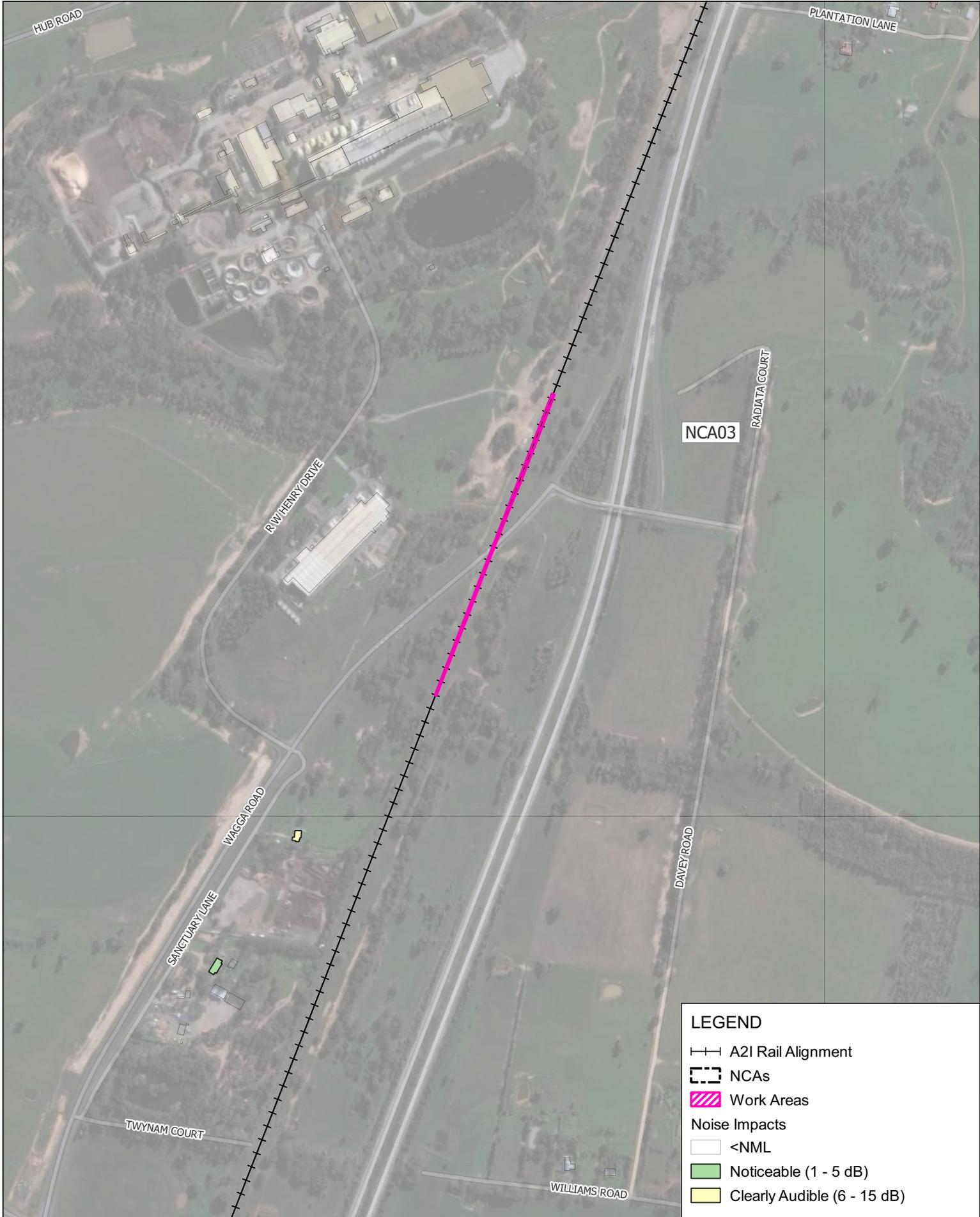


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DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

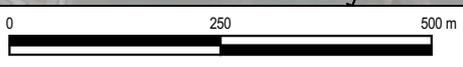
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**LEGEND**

- A21 Rail Alignment
- NCA03
- Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

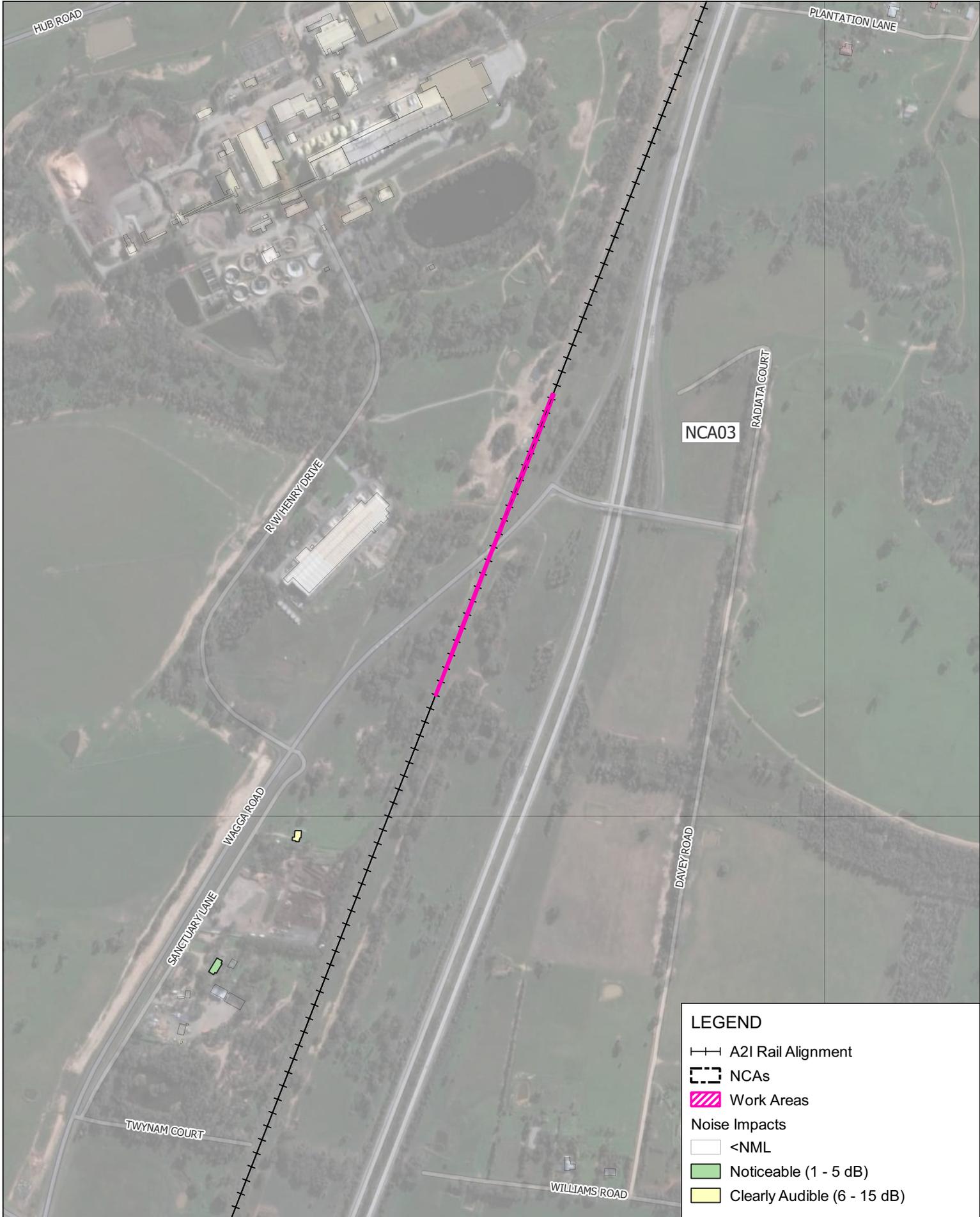


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DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

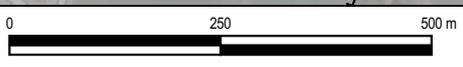
**W.007 Track Tamping - Out of Hours Daytime**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

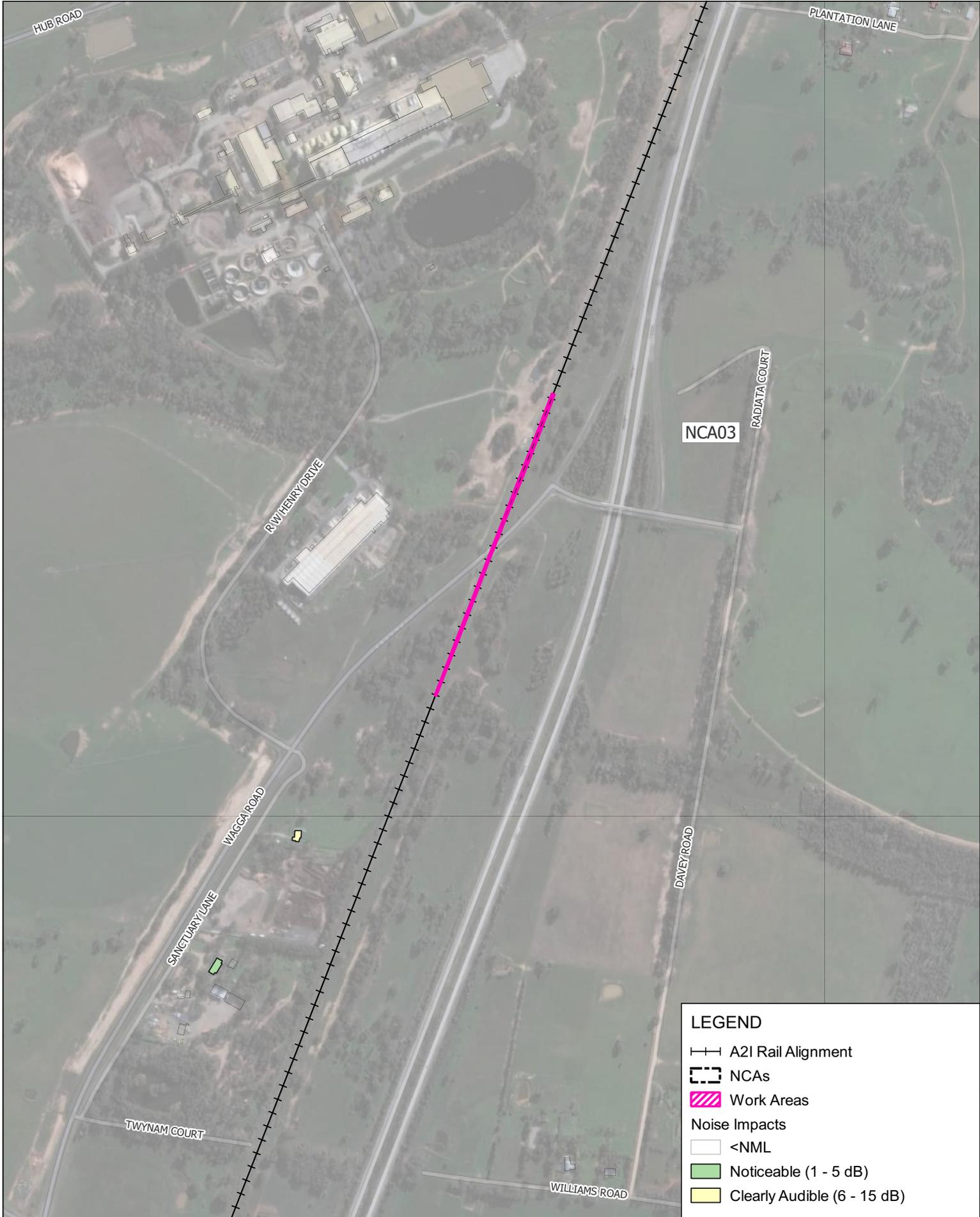


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DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

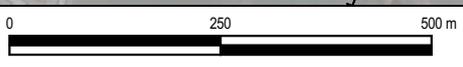
W.007 Track Tamping - Out of Hours Evening

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

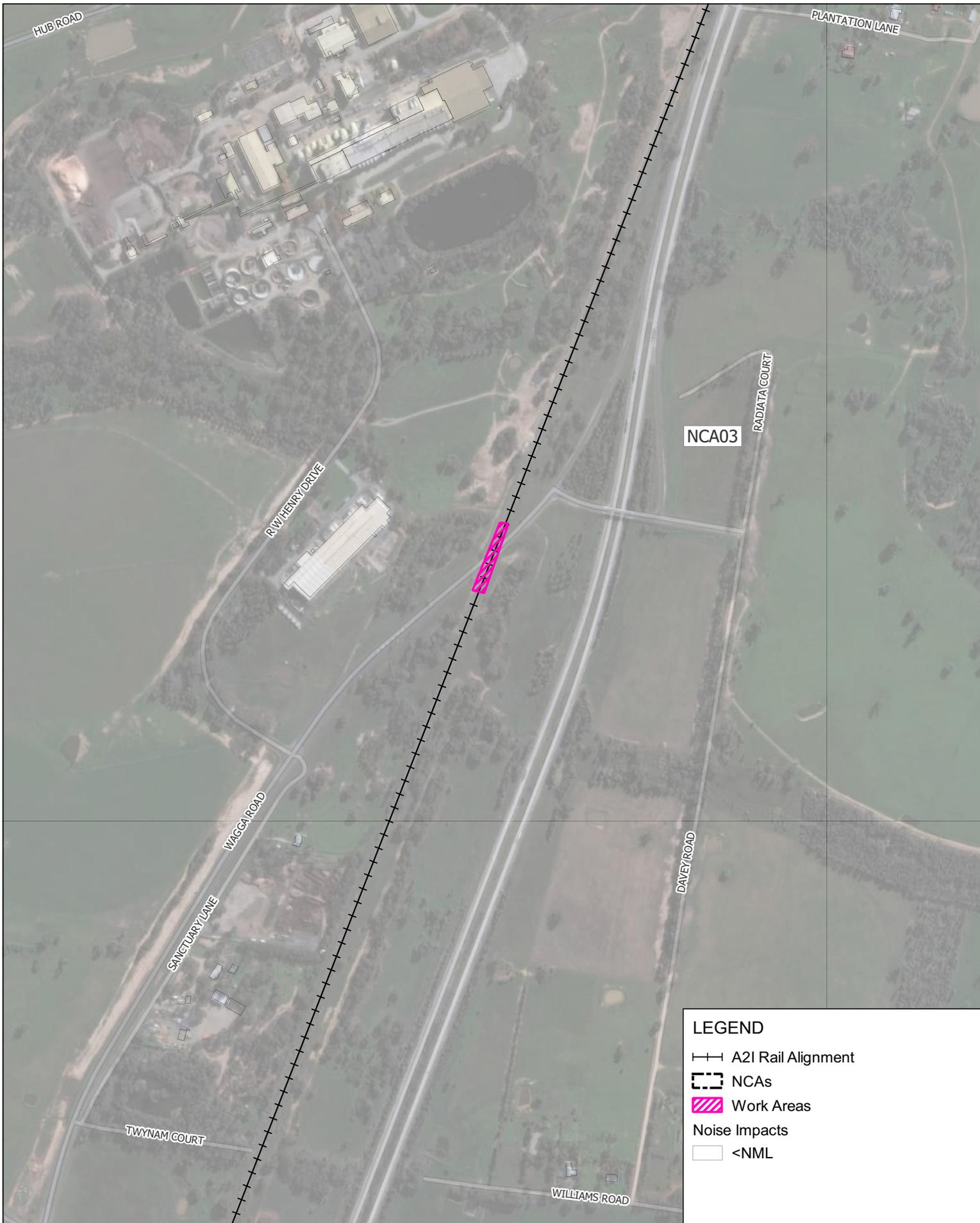
Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery  
 DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.007 Track Tamping - Out of Hours Night-time**

H:\Projects-SLR\610-Svcs\610-SYD\610.031317-00001 Inland Rail A2P Enhancement\06 SLR>Data\05 Modelling\90 CNVIS\02 A2107 Analysis\Bilby Hughes Bridge\610.031317 A21 CNVIS - Billy Hughes.ggz



**LEGEND**

- +— A21 Rail Alignment
- - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

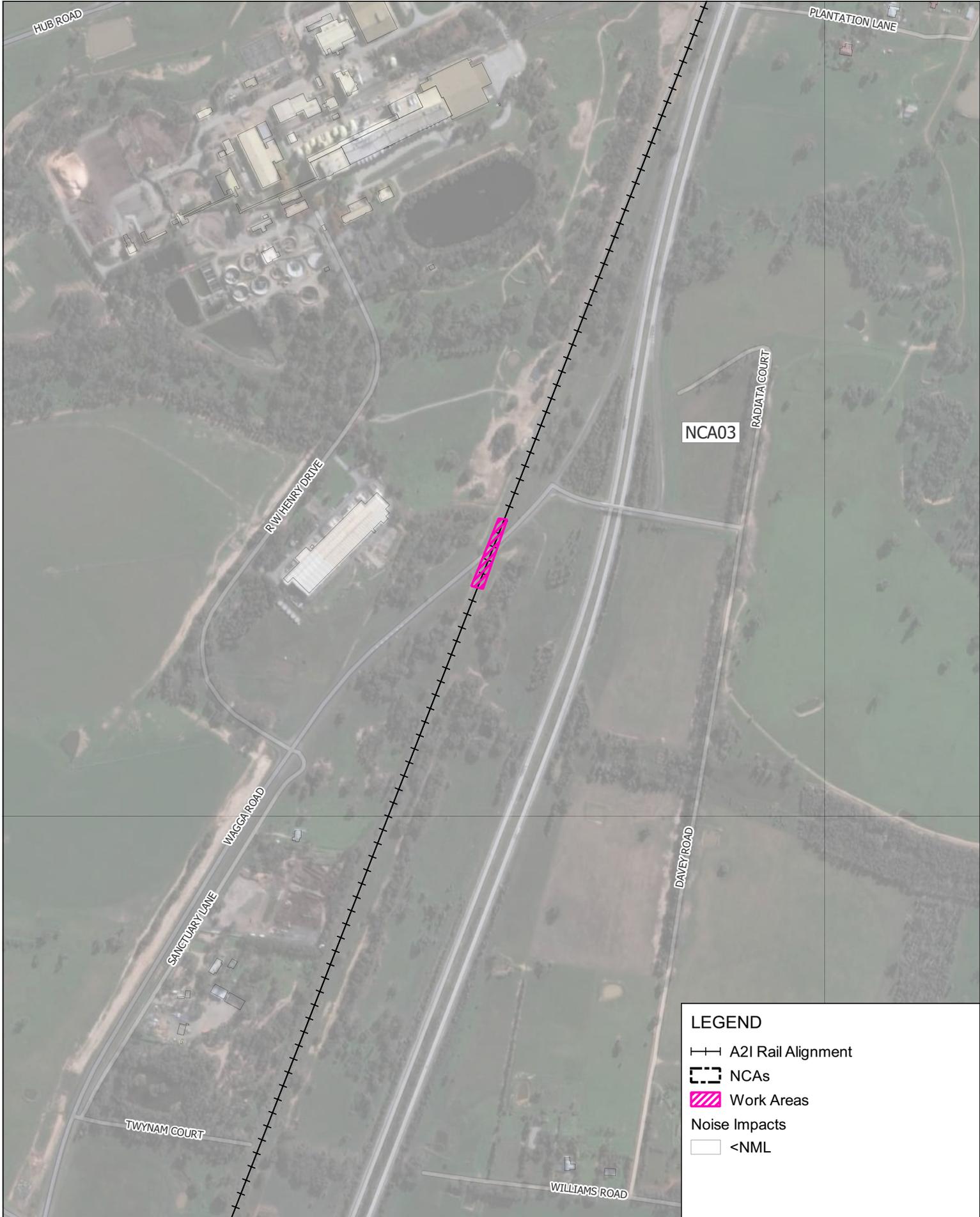


Data Source:  
 ESRI World Imagery

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**W.008 Piling Work - Approved Daytime Hours**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts**
- <NML



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

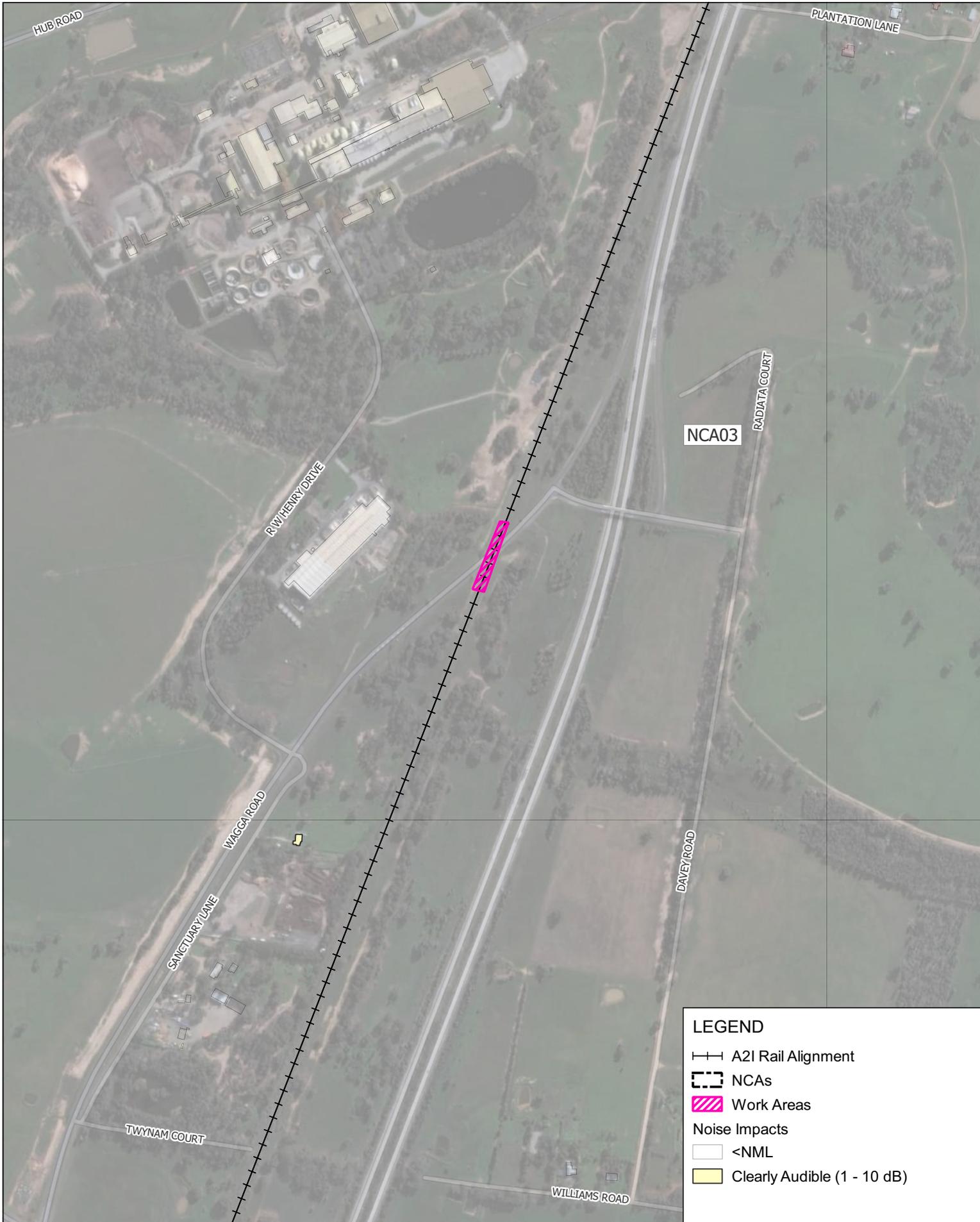


Data Source:  
 ESRI World Imagery

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**W.008 Piling Work - Out of Hours  
 Daytime**

H:\Projects-SLR\610-SvSYD\610-031317-00001 Inland Rail A2P Enhancement\06 SLR>Data\05 Modelling\90 CNVIS\02 A2107 Analysis\Bilby Hughes Bridge\610.031317 A21 CNVIS - Billy Hughes.ggz



**LEGEND**

- +— A21 Rail Alignment
- NCAs
- ▨ Work Areas
- Noise Impacts
- <NML
- ▭ Clearly Audible (1 - 10 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

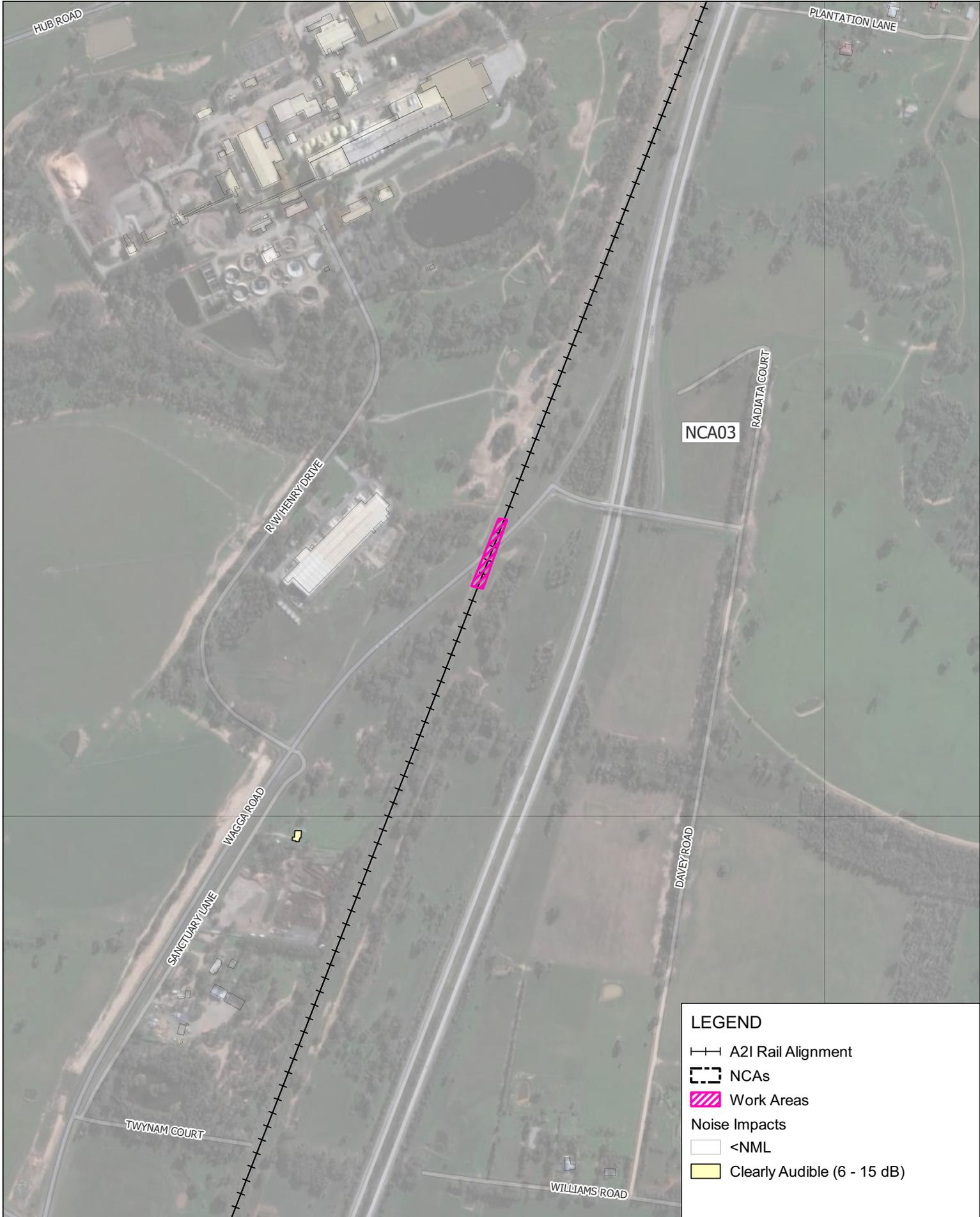


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 ESRI World Imagery

DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.009 Retaining Wall and Protection Barrier Construction - Approved Daytime Hours**

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**LEGEND**

- +— A21 Rail Alignment
- NCAs
- ▨ Work Areas

**Noise Impacts**

- <NML
- ▭ Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

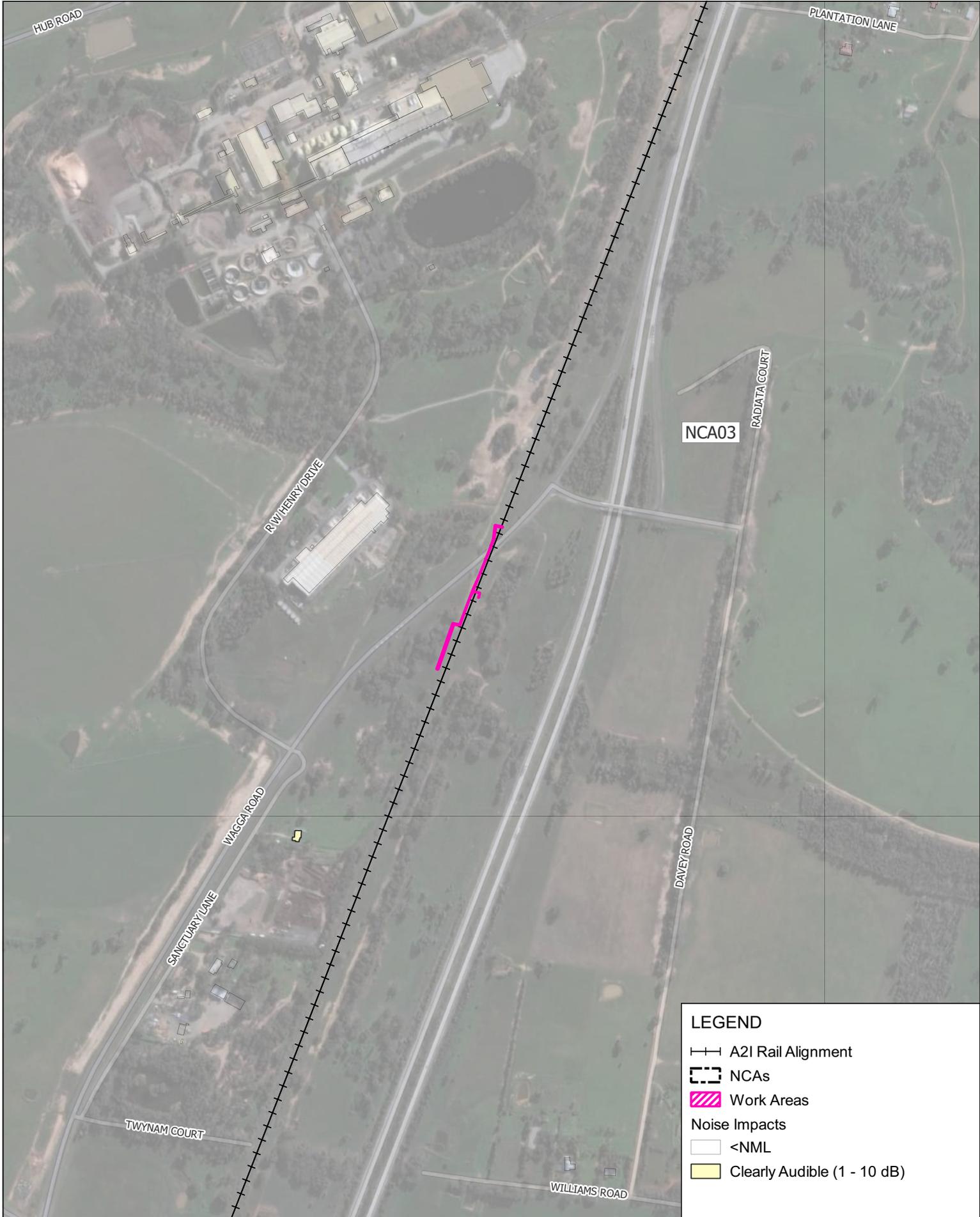


Data Source:  
 ESRI World Imagery

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**W.009 Retaining Wall and Protection Barrier Construction - Out of Hours Daytime**

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**LEGEND**

- +— A21 Rail Alignment
- - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML
- ▭ Clearly Audible (1 - 10 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

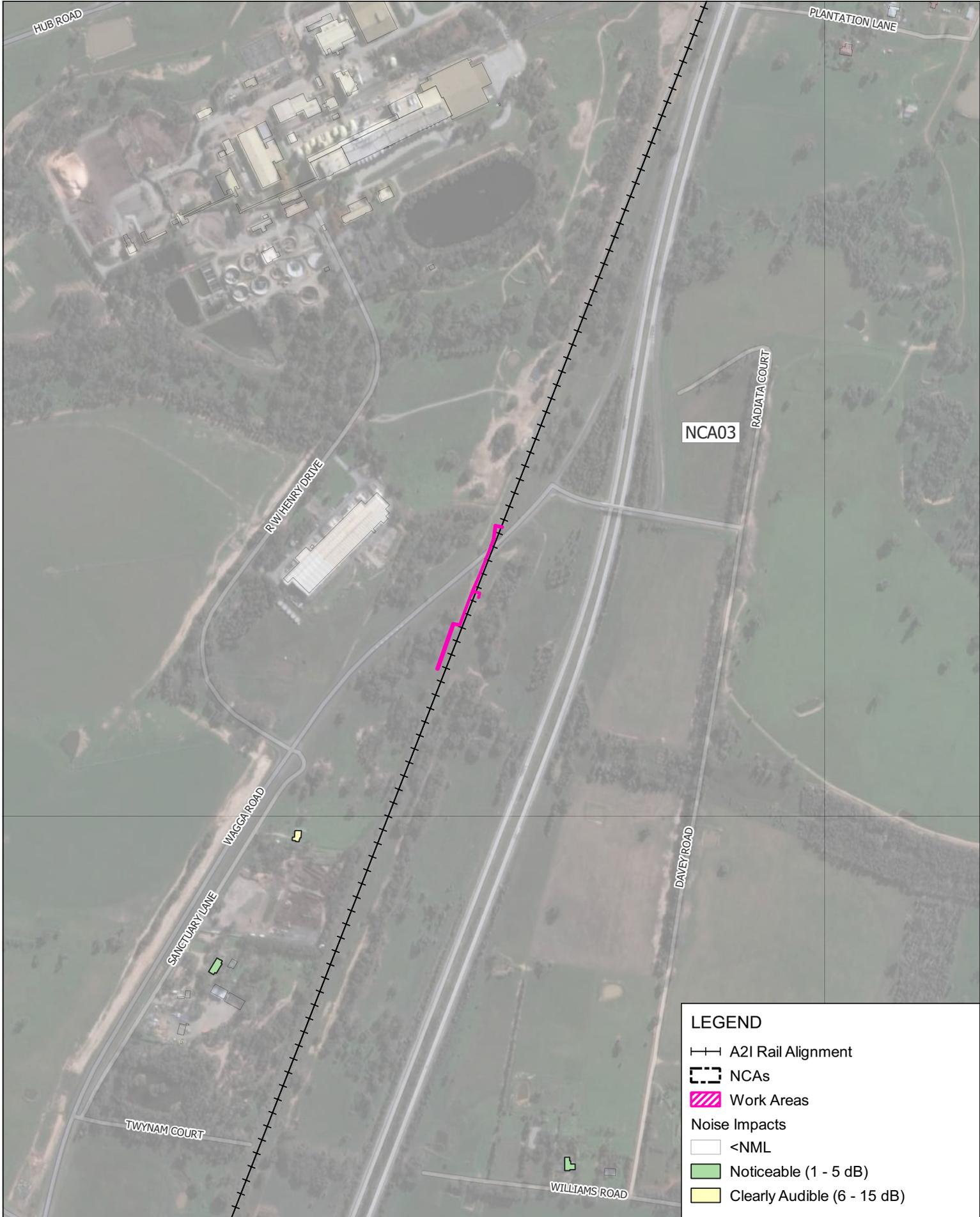


Data Source:  
 ESRI World Imagery

DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.010 Drainage Work - Approved Daytime Hours**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

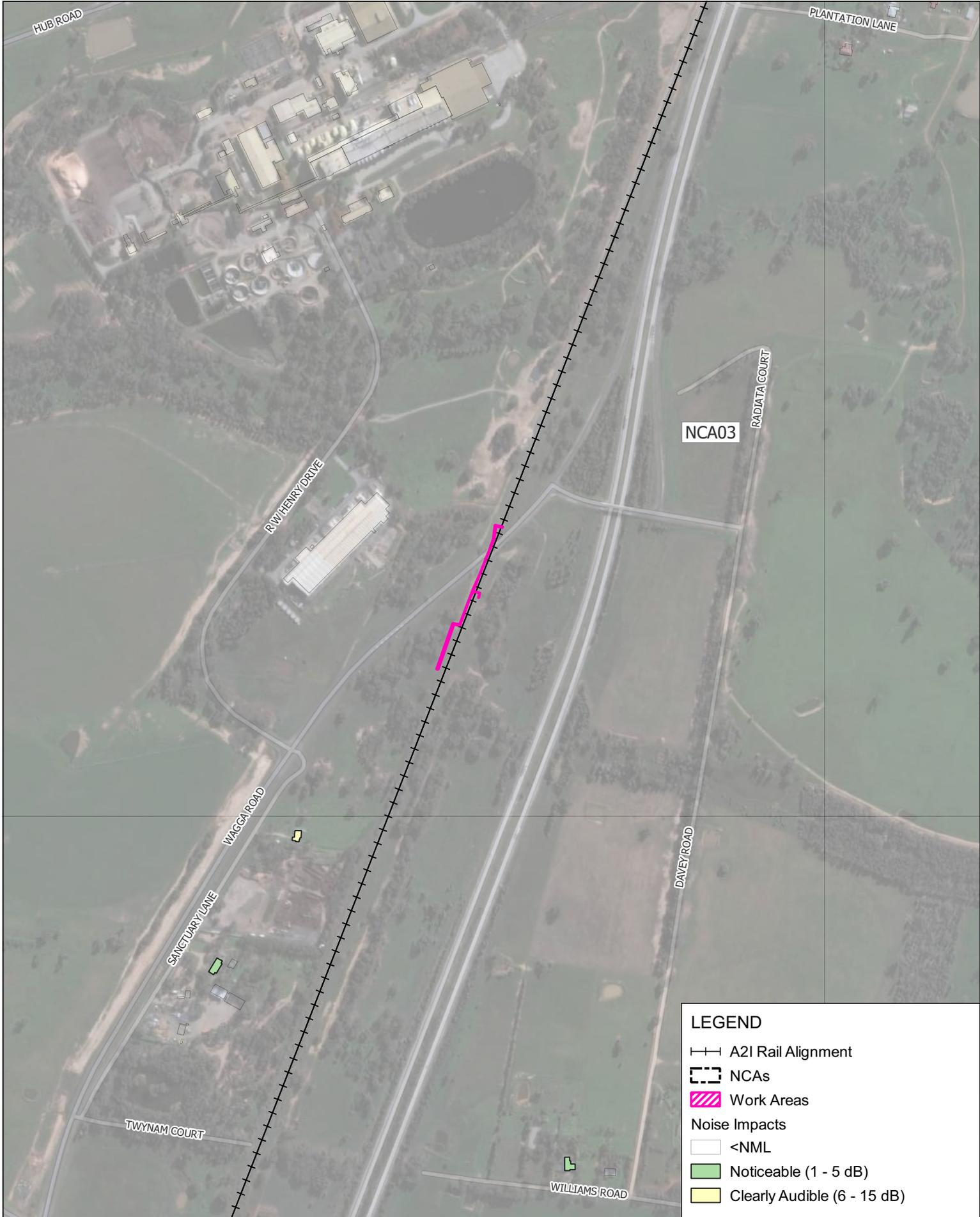


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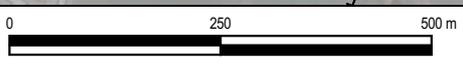
W.010 Drainage Work - Out of Hours  
 Daytime

H:\Projects-SLR\610-Svcs\610-SYD\610.031317-00001 Inland Rail A2P Enhancement\06 SLR>Data\05 Modelling\90 CNVIS\02 A2107 Analysis\Bilby Hughes Bridge\610.031317 A21 CNVIS - Bilby Hughes.ggz



**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts**
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317

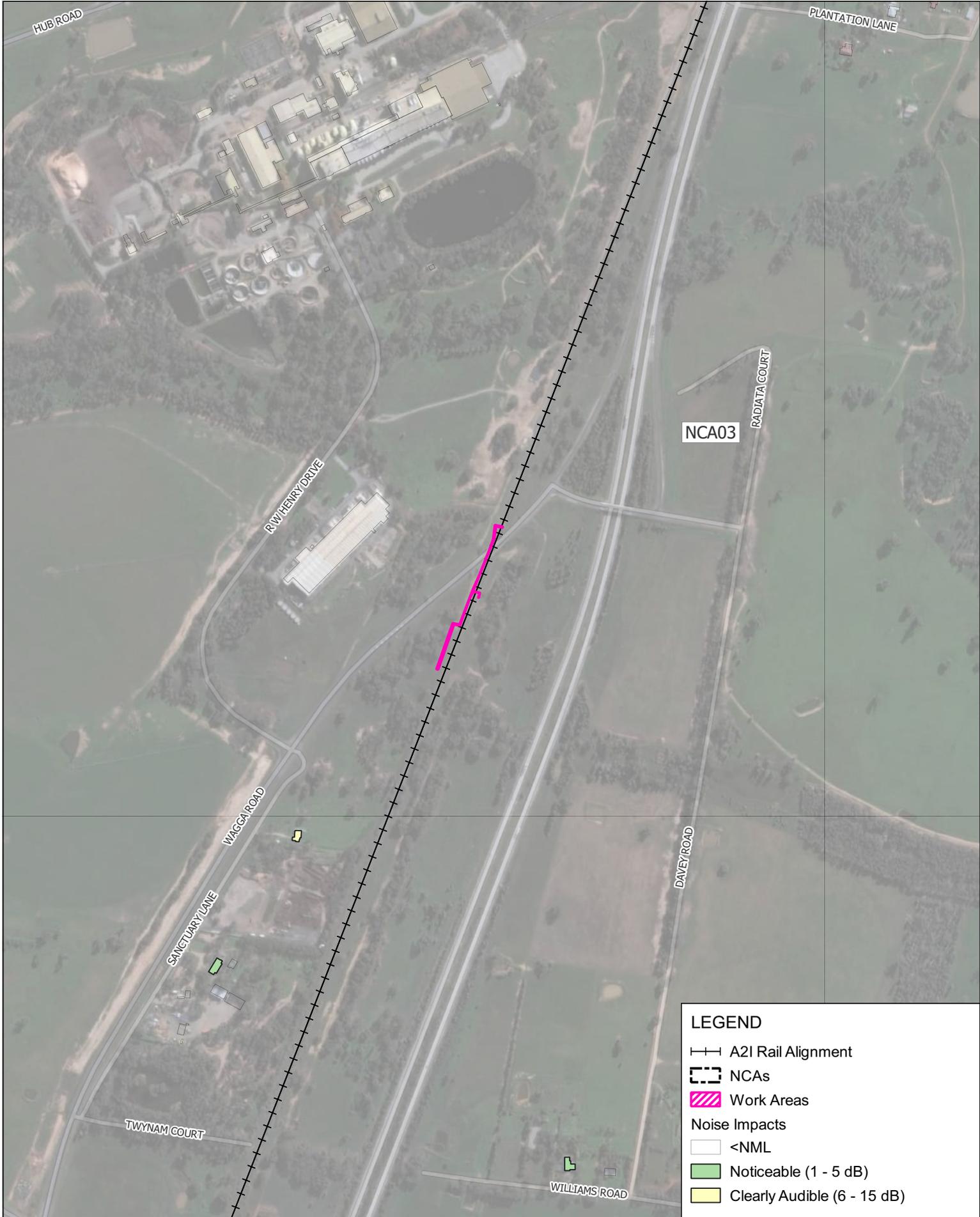


Data Source:  
 ESRI World Imagery

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W.010 Drainage Work - Out of Hours  
 Evening

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**LEGEND**

- +—+— A21 Rail Alignment
- - - - - NCAs
- ▨ Work Areas
- Noise Impacts
- <NML
- Noticeable (1 - 5 dB)
- Clearly Audible (6 - 15 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery

DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.010 Drainage Work - Out of Hours  
 Night-time**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts
- <NML



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery

DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.011 Signalling Work - Approved Daytime Hours**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts**
- <NML
- Noticeable (1 - 5 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery  
 DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

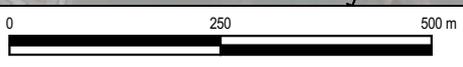
**W.011 Signalling Work - Out of Hours Daytime**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts**
- <NML
- Noticeable (1 - 5 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery  
 DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.011 Signalling Work - Out of Hours Evening**

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**LEGEND**

- A21 Rail Alignment
- NCAs
- Work Areas
- Noise Impacts**
- <NML
- Noticeable (1 - 5 dB)



Scale: Scale: 1:9,000  
 Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 28-May-2025  
 Project Number: 610.031317



Data Source:  
 ESRI World Imagery

DISCLAIMER: All information within this document maybe based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose .

**W.011 Signalling Work - Out of Hours  
 Night-time**



# **Appendix D    Receivers Triggering Additional Mitigation**

## **A2I | Albury to Illabo – Billy Hughes Bridge**

### **Construction Noise and Vibration Impact Statement**

**Martinus Rail**

SLR Project No.: 610.031317.00001

28 May 2025

**W.004 Earthwork**

SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	48	CO1	-	-

**W.005 Track Work - Peak**

SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196821	214 WILLIAMS RD, TABLE TOP NSW 2640	47	42	42	42	43	CO1	CO1	CO1
196844	43 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	48	CO1	CO1	CO1
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	53	CO1	CO1	CO1
196935	20 PLANTATION LANE, TABLE TOP NSW 2640	47	42	42	42	43	CO1	CO1	CO1

**W.006 Track Work - Typical**

SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196844	43 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	43	CO1	CO1	CO1
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	48	CO1	CO1	CO1

**W.007 Track Tamping**

SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196844	43 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	46	CO1	CO1	CO1
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	50	CO1	CO1	CO1

**W.009 Retaining Wall and Protection Barrier Construction**

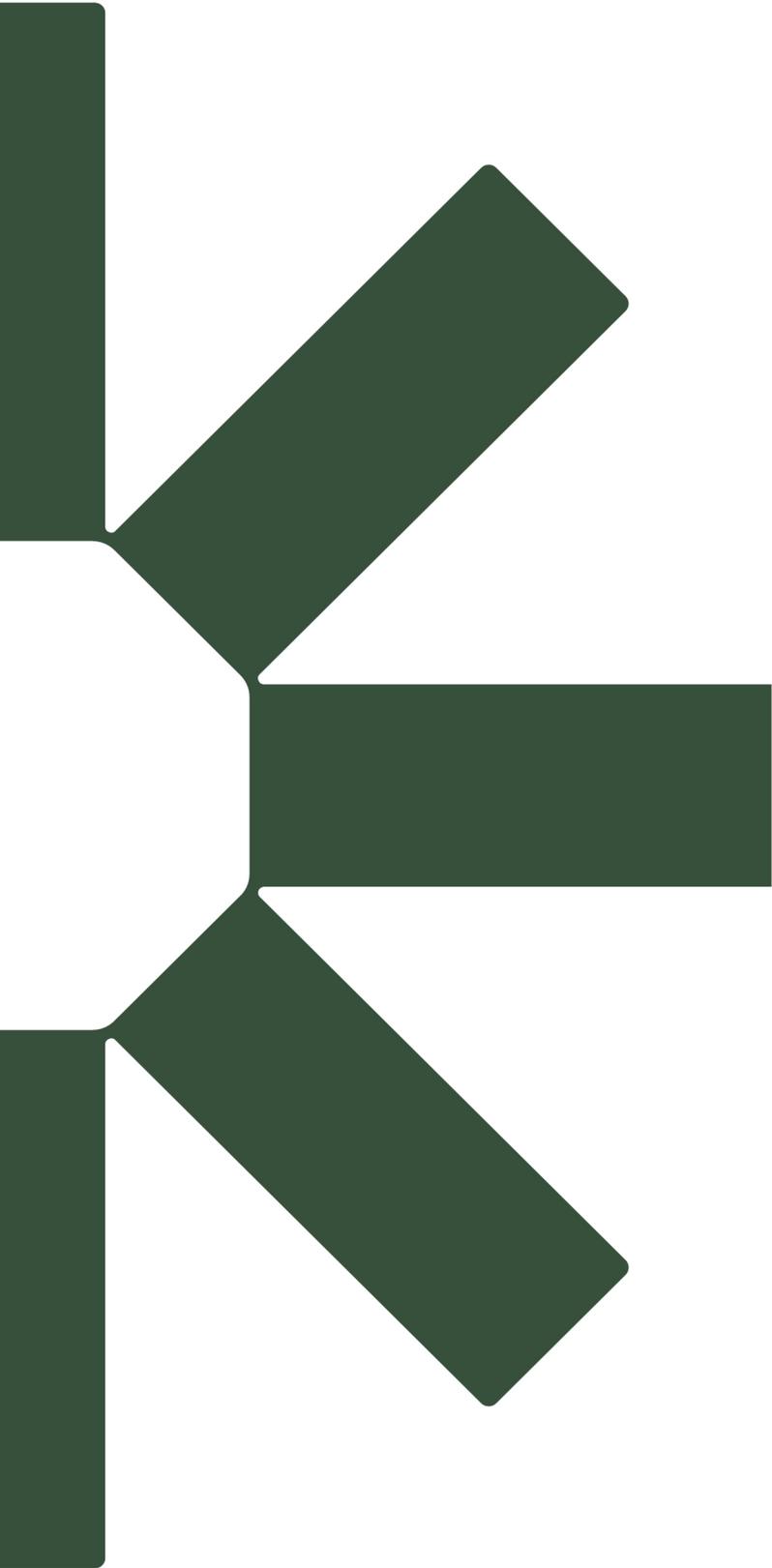
SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	48	CO1	-	-

**W.010 Drainage Work**

SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196821	214 WILLIAMS RD, TABLE TOP NSW 2640	47	42	42	42	43	CO1	CO1	CO1
196844	43 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	46	CO1	CO1	CO1
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	53	CO1	CO1	CO1

**W.011 Signalling Work**

SLR ID	ADDRESS	NML Daytime	NML Daytime OOH	NML Evening	NML Night-time	Predicted Level LAeq(15min)	Additional Mitigation Daytime OOH	Additional Mitigation Evening *(>2 consecutive rest periods)	Additional Mitigation Night *(>2 consecutive sleep periods)
196846	19 SANCTUARY LANE, ETTAMOGAH NSW 2640	47	42	42	42	43	CO1	CO1	CO1



Making Sustainability Happen



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when printed.



**BILLY HUGHES BRIDGE –  
CONSTRUCTION NOISE  
AND VIBRATION IMPACT  
STATEMENT ADDENDUM**

**A2I | Albury to  
Illabo**

CONTRACT NUMBER: 0052

PROJECT DOCUMENT NUMBER:

6-0052-210-EEC-B5-AS-0001\_ADD

## Document Control

<b>DOCUMENT TITLE:</b>	Billy Hughes Bridge – Construction Noise and Vibration Impact Statement Addendum		
<b>DOCUMENT OWNER:</b>	Chris Standing – Environment, Approvals and Sustainability Manager		
<b>PREPARED BY:</b>	Steven Dando	<b>TITLE:</b>	Approvals Advisor
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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 Project approved under Section 5.19 of the EP&A Act on 8 October 2024 and modified on 13 August 2025
Addendum	Addendum to the endorsed Construction Noise and Vibration Impact Statement
CA	Consistency Assessment
CoA	Conditions of Approval for SSI-10055
CNVIS	Construction Noise and Vibration Impact Statement
km	Kilometres
m	Metres
NML	Noise Management Levels
OOH	Out-of-hours
Project	Albury to Illabo Project approved under Section 5.19 of the EP&A Act on 8 October 2024
RBL	Rating Background Level
SLR Predict	SLR Predict, the A2I noise and vibration management tool
SSI	State Significant Infrastructure
T	Tonnes
W.001	Work Scenario 1
W.001B	Work Scenario 1B
W.002	Work Scenario 2
W.002B	Work Scenario 2B
W.004B	Work Scenario 4B
W.009B	Work Scenario 9B
W.011A	Work Scenario 11A
W.011B	Work Scenario 11B

# 1 INTRODUCTION

## 1.1 Inland Rail

Inland Rail is an approximate 1,600 kilometres (km) freight rail network that will connect Beveridge and Kagaru via regional Victoria, New South Wales and Queensland. The Inland Rail route would involve using approximately 1,000 km of existing track (with enhancements and upgrades where necessary) and 600 km of new track, passing through 30 local government areas. Inland Rail will accommodate double-stacked freight trains up to 1,800 metres (m) long and 6.5 m high.

The Albury to Illabo (A21) section (the Project) forms a key component of the Inland Rail program. It is a 185 km section of existing rail corridor located in regional NSW between the towns of Albury and Illabo. Works would include track realignment, lowering and/or modification within the existing rail corridor, modification, removal or replacement of bridge structures (rail, road and/or pedestrian bridges), raising or replacing signal gantries, level-crossing modifications and other associated works.

Precinct	Enhancement sites
Albury Precinct	Murray River bridge
	Albury Station pedestrian bridge
	Albury Yard clearances
	Riverina Highway bridge
	Billy Hughes bridge
	Table Top Yard clearances
Greater Hume-Lockhart	Culcairn pedestrian bridge
	Culcairn Yard clearances
	Henty Yard clearances
	Yerong Creek Yard clearances
	The Rock Yard clearances
Wagga Wagga	Uranquinty Yard clearances
	Pearson Street bridge
	Cassidy Parade pedestrian bridge
	Edmonson Street bridge
	Wagga Wagga Station pedestrian bridge
	Wagga Wagga Yard clearances
	Bomen Yard clearances
	Harefield Yard clearances
Junee	Kemp Street bridge
	Junee Station pedestrian bridge
	Junee Yard clearances
	Olympic Highway underbridge
	Junee to Illabo clearances



FIGURE 1: PROJECT ENHANCEMENT SITES

## 1.2 Purpose of this Addendum

This Construction Noise and Vibration Impact Statement Addendum (Addendum) has been prepared to identify and assess revised work areas required to support and enable the wider scope of activities associated with the Billy Hughes Bridge enhancement site (Billy Hughes), as shown in Figure 2 through Figure 6 below. This Addendum will form part of the endorsed Construction Noise and Vibration Impact Statement (CNVIS) (Doc No: 6-0052-210-EEC-B5-AS-0001) for Billy Hughes. This Addendum should be reviewed in conjunction with the CNVIS for Billy Hughes, including adopted Rating Background Levels (RBL), Noise Management Levels (NML) and assessment criteria in accordance with the Conditions of Approval (CoA) (SSI-10055).

The following scenarios are considered in this CNVIS Addendum:

- W.001B – revised work area (Figure 2) for the site establishment work scenario (W.001);
- W.002B – revised work area (Figure 3) for compound operation scenario (W.002);
- W.004B – revised work area (Figure 2) for the earthworks scenario (W.004);
- W.009B – revised equipment list for the retaining wall and protection barrier construction scenario (W.009) in the work area (Figure 4) assessed in the endorsed CNVIS;
- W.011A – revised work area (Figure 5) for signalling enabling works scenario;
- W.011B – revised work area (Figure 6) for installation of signalling infrastructure.

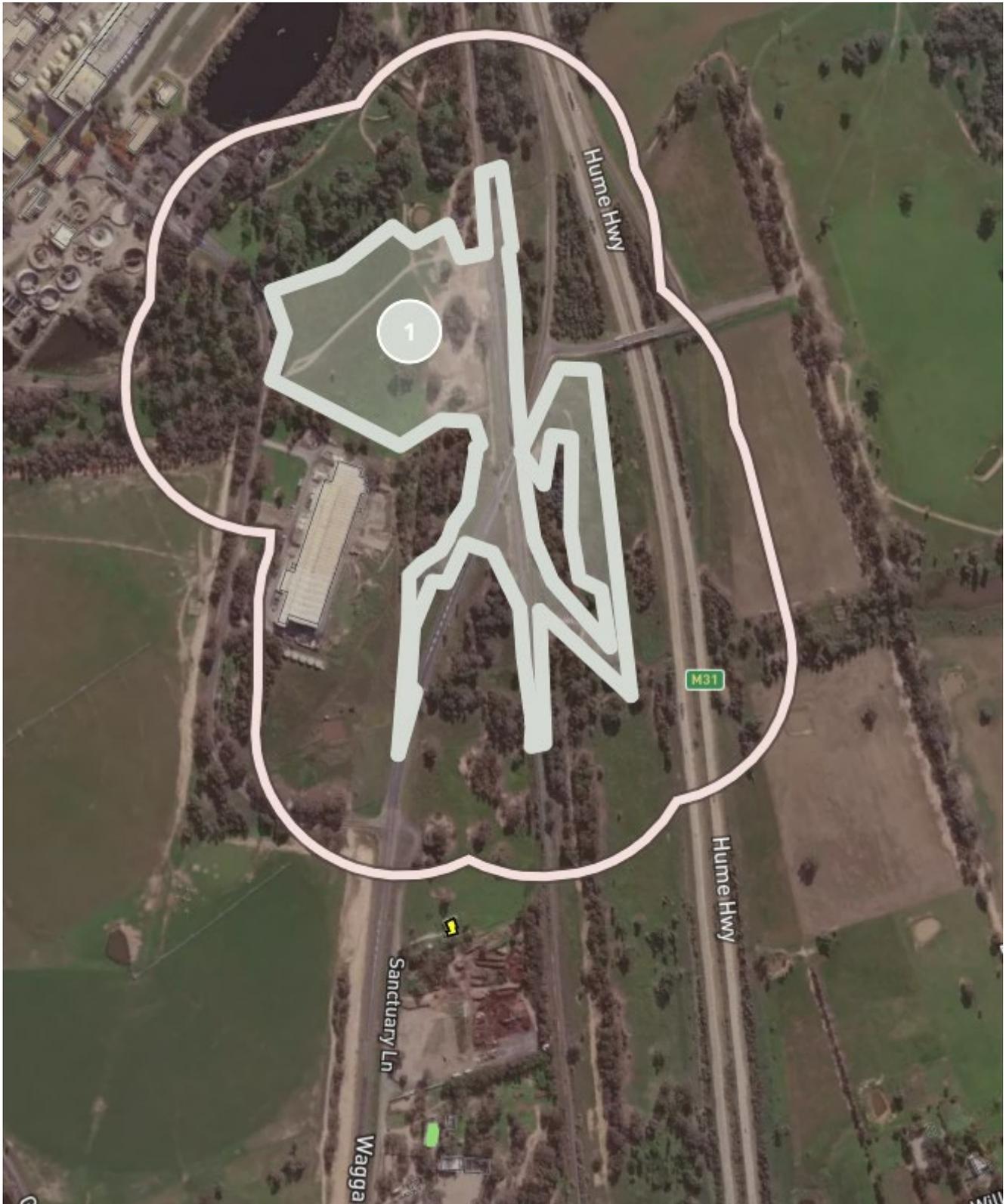


FIGURE 2: REVISED WORK AREA REQUIRED FOR BILLY HUGHES (W.001B AND W.004B)



FIGURE 3: REVISED WORK AREA REQUIRED FOR BILLY HUGHES (W.002B)



FIGURE 4: CNVIS WORK AREA REQUIRED FOR BILLY HUGHES WITH UPDATED LIST OF EQUIPMENT (W.009B)



FIGURE 5: REVISED WORK AREA REQUIRED FOR BILLY HUGHES (W.011A)



FIGURE 6: REVISED WORK AREA REQUIRED FOR BILLY HUGHES (W.011B)

## 2 NOISE ASSESSMENT

The potential construction noise levels from the proposed works have been predicted using SLR Predict, the A21 project-specific noise and vibration tool. This CNVIS Addendum assesses the work scenarios identified in Table 2.

**TABLE 2: WORK SCENARIO DESCRIPTION**

ID	Scenario	Description	Total Lw
W.001B	Site establishment	Site compound delivery and set up, access Road and laydown construction	114
W.002B	Compound operation	Operation of the site compound and delivery of materials / equipment	114
W.004B	Earthworks	Earthworks / Bulk excavation Stockpiling	116
W.009B	Retaining wall and protection barrier construction	Deflection wall construction Soil nail wall construction	119
W.011A	Signalling work – signalling enabling activities	Access for cable pulling and testing works	106
W.011B	Signalling work – installation of signalling infrastructure	Installation of signalling infrastructure	101

### 2.1 Site establishment activities (W.001B)

#### 2.1.1 Scope

The revised work area (Figure 2) consists of the work area identified in the endorsed CNVIS, additional area considered as part of the approved Project and additional work area identified in the Billy Hughes Bridge Consistency Assessment (CA) (Doc No: 6-0052-210-EAP-B5-AS-0001) following further construction planning.

#### Methodology

- Site compound delivery and set up
- Haul road and laydown construction

#### Plant and equipment

- Articulated dump truck
- Crane – mobile
- Elevated work platform
- Excavator – slasher
- Front end loader
- Generator
- Hand tools (electric)
- Hand tools (power)
- Light vehicle
- Roller – non-vibratory
- Tractor – slasher
- Truck – medium rigid (20T)
- Truck – truck & dog
- Watercart

### Construction hours

- Standard approved construction hours:
  - 7am to 6pm Monday to Friday, inclusive
  - 7am to 6pm Saturday
- Daytime out-of-hours (OOH)
  - 8am to 6pm Sunday and Public Holidays

### 2.1.2 Assessment

The revised work area has been assessed utilising SLR Predict. The highest noise generating items of plant and equipment in this work scenario (front end loader and articulated dump truck) have been considered as a worst-case scenario, with 100% utilisation within a 15-minute assessment period.

### 2.1.3 Results

The SLR Predict results are presented in Appendix A, for daytime out of hours, as the most affected period (site establishment will not be undertaken during evening or night out of hours). Table 3 provides a summary of the exceedances identified through various assessments. It compares the following:

- W.001 exceedances identified in the Billy Hughes CNVIS
- W.001B exceedances identified in the SLR Predict results for the revised work area shown in Figure 2.

**TABLE 3: EXCEEDANCE COMPARISONS FOR W.001B**

ASSESSMENT RESULTS (DAY OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.001 CNVIS	W.001B SLR Predict – revised work area
Total Lw (dBA)	115	114
Noticeable (1-5 dB)	0	1
Clearly Audible (6-15 dB)	0	1
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 3 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.001B.

## 2.2 Compound operation activities (W.002B)

### 2.2.1 Scope

The revised work area (Figure 3) consists of the work area identified in the endorsed CNVIS and additional compound area considered as part of the approved Project.

#### Methodology

- Operation of site compound
- Delivery of materials/equipment

### Plant and equipment

- Centrifugal fan
- Compressor
- Crane franna (20T)
- Front end loader
- Generator
- Hand tools (electric)
- Light vehicles
- Truck – medium rigid (20T)
- Truck – truck & dog
- Watercart

### Construction hours

- Standard approved construction hours:
  - 7am to 6pm Monday to Friday, inclusive
  - 7am to 6pm Saturday.
- Daytime OOH:
  - 8am to 6pm Sunday and Public Holidays
- Evening OOH:
  - 6pm to 10pm Monday to Sunday (including Public Holidays)
- Night OOH:
  - 10pm to 7am Monday to Saturday
  - 10pm to 8am Sunday (including Public Holidays)

## 2.2.2 Assessment

The revised work area has been assessed utilising SLR Predict. The highest noise generating items of plant and equipment in this work scenario (front end loader and compressor) have been considered as a worst-case scenario, with 100% utilisation within a 15-minute assessment period.

## 2.2.3 Results

The SLR Predict results are presented in Appendix B, for nighttime out of hours, as the most affected period. Table 4 provides a summary of the exceedances identified through various assessments. It compares the following:

- W.002 exceedances identified in the Billy Hughes CNVIS
- W.002B exceedances identified in the SLR Predict results for the revised work area shown in Figure 4.

**TABLE 4: EXCEEDANCE COMPARISONS FOR W.002B**

ASSESSMENT RESULTS (NIGHT OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.002 CNVIS	W.002B SLR Predict – revised work area
Total Lw (dBA)	113	114
Noticeable (1-5 dB)	0	1
Clearly Audible (6-15 dB)	0	1
Moderately Intrusive (16-25 dB)	0	0

ASSESSMENT RESULTS (NIGHT OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.002 CNVIS	W.002B SLR Predict – revised work area
Highly Intrusive (>25 dB)	0	0

Table 4 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.002B.

## 2.3 Earthworks (W.004B)

### 2.3.1 Scope

The revised work area (Figure 2) consists of the work area identified in the endorsed CNVIS, additional area considered as part of the approved Project and additional work areas identified in the Billy Hughes Bridge CA (Doc No: 6-0052-210-EAP-B5-AS-0001). Two additional pieces of plant / equipment are also considered likely to be used in this scenario, compared to that assessed in the endorsed CNVIS (posi track, bobcat).

#### Methodology

- Bulk excavation
- Stockpiling

#### Plant and equipment

- Articulated Dump Truck
- Backhoe
- Crane (mobile)
- Excavator – Tracked (20T)
- Front End Loader
- Generator
- Grader
- Hand tools (electric)
- Light vehicles
- Plate Compactor
- Roller – Vibratory
- Telescopic Handler
- Truck – Medium Rigid (20T)
- Truck – Vacuum (NDD)
- Watercart
- Posi track
- Bobcat

### Construction hours

- Standard approved construction hours:
  - 7am to 6pm Monday to Friday, inclusive
  - 7am to 6pm Saturday.
- Daytime out-of-hours (OOH)
  - 8am to 6pm Sunday and Public Holidays.
- Evening OOH:
  - 6pm to 10pm Monday to Sunday (including Public Holidays)
- Night OOH:
  - 10pm to 7am Monday to Saturday
  - 10pm to 8am Sunday (including Public Holidays)

### 2.3.2 Assessment

The revised work area has been assessed utilising SLR Predict. The highest noise generating items of plant and equipment in this work scenario (front end loader and grader) have been considered as a worst-case scenario with 100% utilisation within a 15-minute assessment period.

### 2.3.3 Results

The SLR Predict results are presented in Appendix C, for night time out of hours, as the most affected period. Table 5 provides a summary of the noise exceedances identified through various assessments. It compares the following:

- W.004 exceedances identified in the Billy Hughes CNVIS (original earthwork scenario)
- W.004B exceedances identified in the SLR Predict results for the revised work area shown in Figure 2.

**TABLE 5: EXCEEDANCE COMPARISONS FOR W.004B**

ASSESSMENT RESULTS (NIGHT OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.004 CNVIS	W.004B SLR Predict – revised work area
Total Lw (dBA)	117	116
Noticeable (1-5 dB)	0	0
Clearly Audible (6-15 dB)	1	2
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 5 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.004B.

## 2.4 Retaining wall and protection barrier construction (W.009B)

### 2.4.1 Scope

A revision of the work area is not required for this work scenario at the Billy Hughes Bridge enhancement site. However, it was necessary to update the list of plant and equipment following further construction planning.

### Methodology

- Deflection wall construction
- Soil nail wall construction

### Plant and equipment

- Compressor
- Concrete pencil vibrator
- Concrete pump truck
- Tracked Hydraulic Drilling Rig
- Scissor Lift
- Excavator – Tracked 20T
- Generator
- Hand tools (electric)
- Hydraulic/pneumatic tools
- Light Vehicle
- Loader
- Plate Compactor
- Roller – smooth drum
- Saw – concrete
- Telescopic handler
- Truck – medium rigid (20T)
- Watercart

### Construction hours

- Standard approved construction hours:
  - 7am to 6pm Monday to Friday, inclusive
  - 7am to 6pm Saturday.
- Daytime out-of-hours (OOH)
  - 8am to 6pm Sunday and Public Holidays.

## 2.4.2 Assessment

The updated list of equipment has been assessed utilising SLR Predict. The list of equipment and respective utilisation was replicated in SLR Predict, with 'Tracked Hydraulic Drilling Rig' added to the plant and equipment list with 30% utilisation within a 15-minute assessment period.

## 2.4.3 Results

The SLR Predict results are presented in Appendix D, for daytime out of hours, as the most affected period. Retaining wall and protection barrier construction will not be undertaken during evening or night out of hours.

Table 6 provides a summary of the exceedances identified through various assessments. It compares the following:

- W.009 exceedances identified in the Billy Hughes CNVIS (original retaining wall and protection barrier construction work scenario)
- W.009B exceedances identified in SLR Predict for the revised list of equipment.

TABLE 6: EXCEEDANCE COMPARISONS FOR W.009B

ASSESSMENT RESULTS (DAY OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.009 CNVIS	W.009B SLR Predict – revised equipment list
Total Lw (dBA)	119	119
Noticeable (1-5 dB)	0	1
Clearly Audible (6-15 dB)	1	1
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 6 shows that there are minimal changes in the number of residential receivers with NML exceedances resulting from the revised list of equipment for W.009. One additional receiver would experience a noticeable level of noise (1-5 dB exceedance) compared with the CNVIS, though the CNVIS highlights this receiver as being impacted by other activities at the Billy Hughes Bridge enhancement site. The proposed scenario would result in a similar level of impact to affected receivers as that considered in the endorsed CNVIS.

## 2.5 Signalling enabling activities (W.011A)

### 2.5.1 Scope

The revised work area (Figure 5) required for Billy Hughes forms part of the wider scope associated at the Billy Hughes Bridge enhancement site and will enable signalling activities. The revised work area, which consists of the work area identified in the endorsed CNVIS and additional work areas identified in the Billy Hughes Bridge CA (Doc No: 6-0052-210-EAP-B5-AS-0001).

#### Methodology

- Access for cable pulling and testing works

#### Plant and equipment

- Hand tools (electric)
- Light vehicles

#### Construction hours

- Standard approved construction hours:
  - 7am to 6pm Monday to Friday, inclusive
  - 7am to 6pm Saturday.
- Daytime out-of-hours (OOH)
  - 8am to 6pm Sunday and Public Holidays.
- Evening OOH:
  - 6pm to 10pm Monday to Sunday (including Public Holidays)
- Night OOH:
  - 10pm to 7am Monday to Saturday
  - 10pm to 8am Sunday (including Public Holidays)

## 2.5.2 Assessment

The revised work area has been assessed utilising SLR Predict. The highest noise generating items of plant and equipment in this work scenario (light vehicles and powered hand tools) have been considered as a worst-case scenario with 100% utilisation within a 15-minute assessment period.

## 2.5.3 Results

The SLR Predict results are presented in Appendix E, for nighttime out of hours, as the most affected period. Table 7 provides a summary of the exceedances identified through various assessments. It compares the following:

- W.011 exceedances identified in the Billy Hughes CNVIS (original signalling work scenario)
- W.011A exceedances identified in the SLR Predict results for the revised work area shown in Figure 5.

**TABLE 7: EXCEEDANCE COMPARISONS FOR W.011A**

ASSESSMENT RESULTS (NIGHT OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.011 CNVIS	W.011A SLR Predict – revised work area
Total Lw (dBA)	113	106
Noticeable (1-5 dB)	1	0
Clearly Audible (6-15 dB)	0	0
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 7 shows a decreased number of receivers experiencing a noticeable level of noise (1-5 dB exceedance). There are no other changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.011A.

## 2.6 Installation of signalling infrastructure (W.011B)

### 2.6.1 Scope

The revised work area (Figure 6) required for Billy Hughes forms part of the wider scope associated at the Billy Hughes Bridge enhancement site and will enable signalling activities. The revised work area consists of the work area identified in the endorsed CNVIS and additional work areas identified in the Billy Hughes Bridge CA (Doc No: 6-0052-210-EAP-B5-AS-0001).

#### Methodology

- Installation of signalling infrastructure

#### Plant and equipment

- Crane (mobile)
- Directional drill
- Elevated work platform
- Excavator – Tracked (20T)
- Generator
- Hand tools (electric)
- Light vehicle

- Telescopic handler
- Truck – medium rigid (20T)
- Truck – vacuum (NDD)
- Wacker packer

**Construction hours**

- Standard approved construction hours:
  - 7am to 6pm Monday to Friday, inclusive
  - 7am to 6pm Saturday.
- Daytime out-of-hours (OOH)
  - 8am to 6pm Sunday and Public Holidays.
- Evening OOH:
  - 6pm to 10pm Monday to Sunday (including Public Holidays)
- Night OOH:
  - 10pm to 7am Monday to Saturday
  - 10pm to 8am Sunday (including Public Holidays)

**2.6.2 Assessment**

The revised work area has been assessed utilising SLR Predict. The highest noise generating items of plant and equipment in this work scenario (truck – vacuum (NDD) and directional drill) have been considered as a worst-case scenario with 100% utilisation within a 15-minute assessment period.

**2.6.3 Results**

The SLR Predict results are presented in Appendix F, for nighttime out of hours, as the most affected period. Table 8 provides a summary of the exceedances identified through various assessments. It compares the following:

- W.011 exceedances identified in the Billy Hughes CNVIS (original signalling work scenario)
- W.011B exceedances identified in the SLR Predict results for the revised work area shown in Figure 6.

**TABLE 8: EXCEEDANCE COMPARISONS FOR W.011B (DIRECTIONAL DRILL)**

ASSESSMENT RESULTS (NIGHT OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.011 CNVIS	W.011B SLR Predict – revised work area (directional drill)
Total Lw (dBA)	113	101
Noticeable (1-5 dB)	1	0
Clearly Audible (6-15 dB)	0	0
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 8 shows a decreased number of receivers experiencing a noticeable level of noise (1-5 dB exceedance). There are no other changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.011B.

TABLE 9: EXCEEDANCE COMPARISONS FOR W.011B (VACUUM TRUCK)

ASSESSMENT RESULTS (NIGHT OOH)	NUMBER OF RESIDENTIAL RECEIVERS WITH NML EXCEEDANCE	
	W.011 CNVIS	W.011B SLR Predict – revised work area (vacuum truck)
Total Lw (dBA)	113	109
Noticeable (1-5 dB)	1	0
Clearly Audible (6-15 dB)	0	0
Moderately Intrusive (16-25 dB)	0	0
Highly Intrusive (>25 dB)	0	0

Table 9 shows a decreased number of receivers experiencing a noticeable level of noise (1-5 dB exceedance). There are no other changes in the number of residential receivers with NML exceedances resulting from the revised work area for W.011B.

## 3 VIBRATION ASSESSMENT

### 3.1 Site establishment activities (W.001B)

There are no vibration intensive plant and equipment proposed as part of W.001B; therefore, no vibration impacts are expected.

### 3.2 Compound operation activities (W.002B)

There are no vibration intensive plant and equipment proposed as part of W.002B; therefore, no vibration impacts are expected.

### 3.3 Earthworks (W.004B)

A 7-13 tonne vibratory roller is proposed for use in the W.004B scenario. The W.004 scenario does not result in the potential exceedance of the cosmetic damage or human comfort criteria at any identified structures, as shown in Figure 4 of the CNVIS (Doc No. 6-0052-210-EEC-B5-AS-0001).

This CNVIS Addendum considers the change in equipment location resulting from the expanded work areas assessed in scenario W.004B. A review of the vibration results for scenario W.004B can be found in Appendix C. The criteria for human comfort is potentially exceeded at one non-residential property.

### 3.4 Retaining walls and protection barrier construction (W.009B)

There are no vibration intensive plant and equipment proposed as part of W.009B; therefore, no vibration impacts are expected.

### 3.5 Signalling enabling activities (W.011A)

There are no vibration intensive plant and equipment proposed as part of W.011A; therefore, no vibration impacts are expected.

### 3.6 Installation of signalling infrastructure (W.011B)

There are no vibration intensive plant and equipment proposed as part of W.011B; therefore, no vibration impacts are expected.

## 4 CONCLUSION

### 4.1 Mitigation and management measures

As this Addendum forms part of the endorsed CNVIS for Billy Hughes the same mitigation and management measures apply as noted in Section 8 of the CNVIS.

### 4.2 Additional mitigation measures

As noted in Figure 7 to Figure 9 and under Appendix A to Appendix F, the SLR Predict results include a section on all applicable additional mitigation measures. These additional mitigation measures will be implemented where appropriate.

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	CO1, CO2
			>2 consecutive rest periods	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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	Any	CO1, CO2, RO
			>2 consecutive sleep periods	CO1, CO2, RO, AO, AltA

FIGURE 7: ADDITIONAL MITIGATION MEASURES MATRIX - NOISE

Vibration - Additional Mitigation Measures Matrix			
Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

FIGURE 8: ADDITIONAL MITIGATION MEASURES MATRIX - VIBRATION

Additional Mitigation Measures	
Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

Receiver Types			
Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building

FIGURE 9: ADDITIONAL MITIGATION MEASURES MATRIX - NOTES



# APPENDICES

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# APPENDIX A

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## SLR Predict Results (W.001B)



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

## **Consultation with Affected Receivers**

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	Copy of W.001 B - BHB - Revised working area
Stage	A2I Construction
Permit Number	NA
Start Date	2025-10-10
End Date	2025-10-24
Assessment Period	Day - out of hours

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: Scenario W.001 (Height: Ground)</b>	Total: 114		
Articulated Dump Truck 100% operation	109	1	No
Front End Loader 100% operation	113	1	No

**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.

## Assessment Results



		Residential	Non-Residential
	Highly Intrusive	0 property	0 property
	Moderately Intrusive	0 property	0 property
	Clearly Audible	1 property	0 property
	Noticeable	1 property	0 property

### Legend

- Project Boundary
- Work Areas
- Barriers

Results by Receiver

Address	Land Use	Noise Catchment Area	Construction Noise Management Level, dBA	Predicted Noise Level, dBA	Predicted Noise Level Above Noise Management Level, dB	Noise Category
19 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	52	10	Clearly Audible
43 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	46	4	Noticeable

## Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

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 consecutive rest periods	CO1, CO2
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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	Any consecutive sleep periods	CO1, CO2, RO, AO, AltA

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



# APPENDIX B

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## SLR Predict Results (W.002B)



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

## **Consultation with Affected Receivers**

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	Copy of Revised working area W.002B - BHB
Stage	A2I Construction
Permit Number	NA
Start Date	2025-10-10
End Date	2025-10-24
Assessment Period	Night - out of hours

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: W.002B</b> (Height: Ground)	Total: 114		
Compressor 100% operation	109	1	No
Front End Loader 100% operation	113	1	No

**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.

## Assessment Results



		Residential	Non-Residential
	Highly Intrusive	0 property	0 property
	Moderately Intrusive	0 property	0 property
	Clearly Audible	1 property	0 property
	Noticeable	1 property	0 property
	Above Sleep Disturbance	1 property	0 property
	Above Sleep Awake	0 property	0 property

### Legend

	Project Boundary
	Work Areas
	Barriers

**Results by Receiver**

<b>Address</b>	<b>Land Use</b>	<b>Noise Catchment Area</b>	<b>Construction Noise Management Level, dBA</b>	<b>Predicted Noise Level, dBA</b>	<b>Predicted Noise Level Above Noise Management Level, dB</b>	<b>Noise Category</b>
19 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	53	11	Clearly Audible Above Sleep Dist
43 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	45	3	Noticeable

## Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

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 consecutive rest periods	CO1, CO2
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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	Any consecutive sleep periods	CO1, CO2, RO, AO, AltA

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



# APPENDIX C

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## SLR Predict Results (W.004B)

## SLR Predict Results W.004B (Noise)



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

## **Consultation with Affected Receivers**

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	Copy of BHB - Revised working area W.004B
Stage	A2I Construction
Permit Number	NA
Start Date	2025-10-10
End Date	2025-10-24
Assessment Period	Night - out of hours

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: Scenario W.004B</b> (Height: Ground)	Total: 116		
Front End Loader 100% operation	113	1	No
Grader (large) 100% operation	113	1	No

**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.

## Assessment Results



		Residential	Non-Residential
	Highly Intrusive	0 property	0 property
	Moderately Intrusive	0 property	0 property
	Clearly Audible	2 properties	0 property
	Noticeable	0 property	0 property
	Above Sleep Disturbance	1 property	0 property
	Above Sleep Awake	0 property	0 property

### Legend

	Project Boundary
	Work Areas
	Barriers

Results by Receiver

Address	Land Use	Noise Catchment Area	Construction Noise Management Level, dBA	Predicted Noise Level, dBA	Predicted Noise Level Above Noise Management Level, dB	Noise Category
19 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	53	11	Clearly Audible Above Sleep Dist
43 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	48	6	Clearly Audible

## Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

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 consecutive rest periods	CO1, CO2
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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	Any consecutive sleep periods	CO1, CO2, RO, AO, AltA

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building

## SLR Predict Results W.004B (Vibration)



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

## **Consultation with Affected Receivers**

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	BHB - Revised working area W.004B (vibration)
Stage	A2I Construction
Permit Number	NA
Start Date	2025-10-10
End Date	2025-10-24
Assessment Period	Vibration

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: Scenario W.004B</b> (Height: Ground)	Total: 109		
Roller - vibratory (7-13t) 100% operation	109	1	No

**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.

## Assessment Results



		Residential	Non-Residential
	Cosmetic Damage	0 property	0 property
	Human Comfort	0 property	1 property
	Cosmetic Damage for Unsound Heritage	0 property	0 property

### Legend

	Project Boundary
	Work Areas
	Barriers

### Results by Receiver

Address	Land Use	Vibration Category
70 R W HENRY DR, ETTAMOGAH NSW 2640	IND	Human Comfort

## Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

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
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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	Any >2 consecutive sleep periods	CO1, CO2, RO
			CO1, CO2, RO, AO, AltA	

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



# APPENDIX D

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## SLR Predict Results (W.009B)



## Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

### Consultation with Affected Receivers

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	SD Revised working area W.009B - BHB
Stage	A2I Construction
Permit Number	NA
Start Date	2025-10-10
End Date	2025-10-24
Assessment Period	Day - out of hours

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: W.009B (Height: Ground)</b>	Total: 119		
Compressor 50% operation	109	1	No
Concrete pencil vibrator 100% operation	103	1	No
Concrete pump truck 100% operation	108	1	No
Elevated Work Platform - Scissor Lift 30% operation	98	1	No
Excavator - Tracked (20T) 50% operation	105	1	No
Generator - diesel/ petrol 100% operation	103	1	No
Hand tools (electric) 75% operation	102	2	No
Hydraulic / Pneumatic Tools 75% operation	116	1	No

**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.

## Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
Light Vehicle (accelerating) 25% operation	95	2	No
Loader - skidsteer (1T) 50% operation	110	1	No
Compactor (plate) 100% operation	104	1	No
Saw - concrete 25% operation	118	1	No
Truck - medium rigid (20T) 25% operation	103	2	No
Water Cart 75% operation	107	1	No
Telescopic Handler 50% operation	99	1	No
Tracked Hydraulic Drilling Rig 30% operation	109	1	No
Roller - static 100% operation	107	1	No

**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.

### Assessment Results



		Residential	Non-Residential
	Highly Intrusive	0 property	0 property
	Moderately Intrusive	0 property	0 property
	Clearly Audible	1 property	0 property
	Noticeable	1 property	0 property

#### Legend

-  Project Boundary
-  Work Areas
-  Barriers

## Results by Receiver

Address	Land Use	Noise Catchment Area	Construction Noise Management Level, dBA	Predicted Noise Level, dBA	Predicted Noise Level Above Noise Management Level, dB	Noise Category
19 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	50	8	Clearly Audible
43 SANCTUARY LANE, ETTAMOGAH NSW 2640	RES	NCA03	42	43	1	Noticeable

### Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

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 consecutive rest periods	CO1, CO2
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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	Any consecutive sleep periods	CO1, CO2, RO, AO, AltA

**Vibration - Additional Mitigation Measures Matrix**

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

**Additional Mitigation Measures**

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

**Receiver Types**

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



# APPENDIX E

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## SLR Predict Results (W.011A)



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

## Consultation with Affected Receivers

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	Billy Hughes Bridge CNVIS Addendum (Signalling W.011a)
Stage	A2I Construction
Permit Number	N/A
Start Date	2025-10-15
End Date	2025-10-15
Assessment Period	Night - out of hours

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: Work Area 1</b> (Height: Ground)	Total: 106		
Light Vehicle (accelerating) 100% operation	95	3	No
Hand tools (electric) 100% operation	102	2	No

**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.

### Assessment Results



	Residential	Non-Residential
Highly Intrusive	0 property	0 property
Moderately Intrusive	0 property	0 property
Clearly Audible	0 property	0 property
Noticeable	0 property	0 property
Above Sleep Disturbance	0 property	0 property
Above Sleep Awake	0 property	0 property

### Legend

	Project Boundary
	Work Areas
	Barriers

## Results by Receiver

Address	Land Use	Noise Catchment Area	Construction Noise Management Level, dBA	Predicted Noise Level, dBA	Predicted Noise Level Above Noise Management Level, dB	Noise Category
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*No results*

## Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

### 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	>2 consecutive rest periods	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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	>2 consecutive sleep periods	CO1, CO2, RO, AO, AltA

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



# APPENDIX F

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## SLR Predict Results (W.011B)



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

Prior to detailed noise/vibration modelling being undertaken, work activities are reviewed and considered in relation to industry best practice, consistent with the requirements of the CNVMP. Consideration is first given to eliminating the noise/vibration emissions so far as reasonably practicable. Where elimination is not practicable, efforts are made to reduce the risk as far as practical by implementing noise and vibration management measures as outlined in the overarching CNVIS and CNVMP.

Examples of these measures include selecting the quietest equipment and processes to complete the works, considering staging and periods of respite to minimise prolonged periods of noise and vibration exposure, and maximising distances between construction activities and sensitive receivers.

## Consultation with Affected Receivers

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	Billy Hughes Bridge CNVIS Addendum (Signalling W.011b)
Stage	A2I Construction
Permit Number	N/A
Start Date	2025-10-15
End Date	2025-10-15
Assessment Period	Night - out of hours

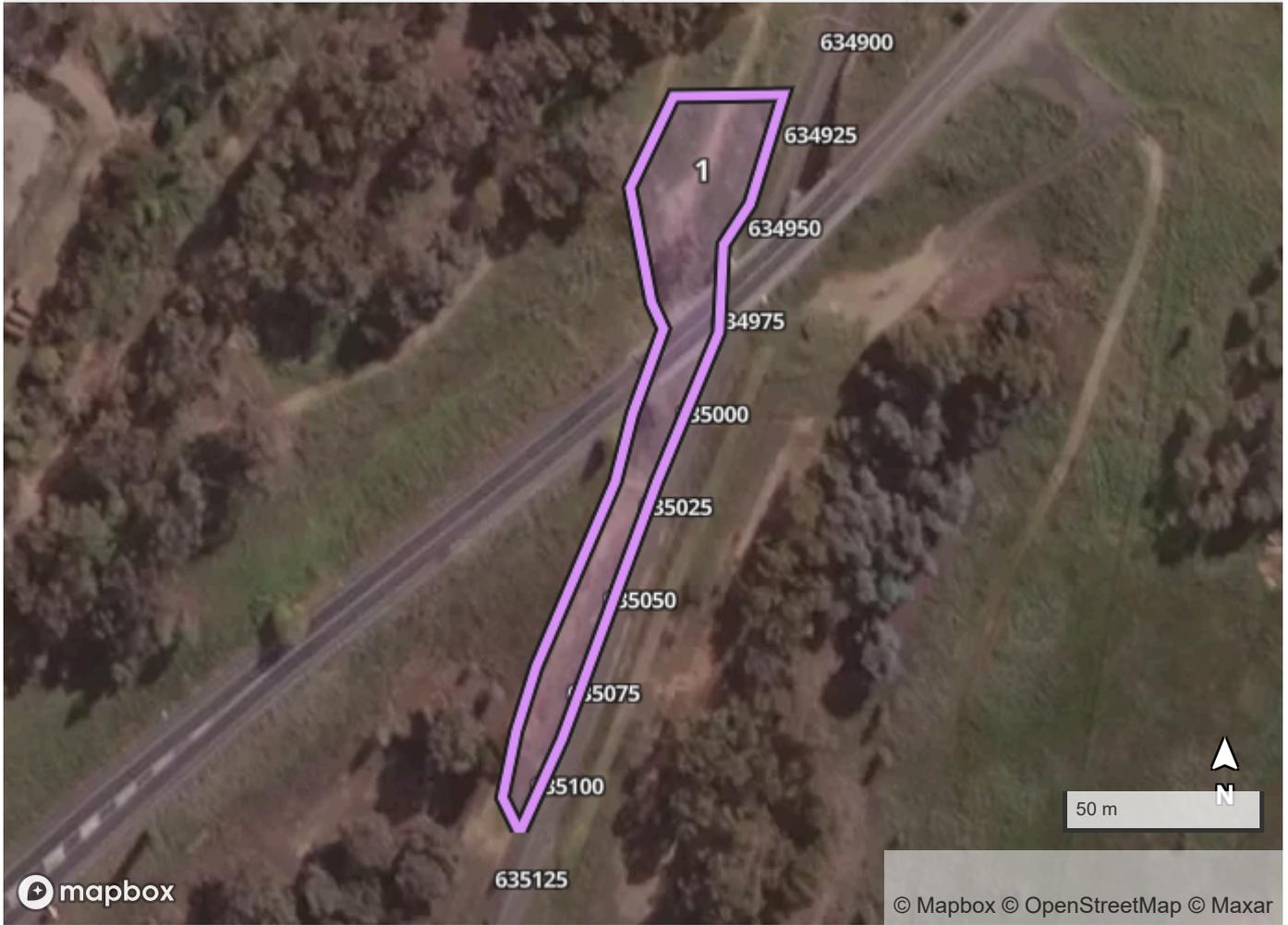
### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: Work Area 1</b> (Height: Ground)	Total: 101		
Directional Drill 100% operation	101	1	No

**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.

### Assessment Results



	Residential	Non-Residential
Highly Intrusive	0 property	0 property
Moderately Intrusive	0 property	0 property
Clearly Audible	0 property	0 property
Noticeable	0 property	0 property
Above Sleep Disturbance	0 property	0 property
Above Sleep Awake	0 property	0 property

### Legend

- Project Boundary
- Work Areas
- Barriers

## Results by Receiver

Address	Land Use	Noise Catchment Area	Construction Noise Management Level, dBA	Predicted Noise Level, dBA	Predicted Noise Level Above Noise Management Level, dB	Noise Category
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*No results*

### Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

Airborne Noise - Additional Mitigation Measures Matrix				
Time Period	Exceedance of NML	Perception	Duration	Communication Category/Management Measure
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	>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	>2 consecutive rest periods	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	CO1, CO2
			>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	>2 consecutive sleep periods	CO1, CO2, RO, AO, AltA

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

**Note 3:** RO are not applicable to non-residential receivers. RO may comprise of pre-purchased movie tickets, dinner vouchers or similar. RO can also be provided by limiting high noise generating works and allowing at least a one-hour respite period between blocks of work. Where possible, the timing of this respite should be discussed with the impacted community.

### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
IND	Industrial	OLI	Other Library
OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



# Construction Noise and Vibration Impact Statement (CNVIS)

This report presents the outcomes of detailed noise/vibration modelling relating to specific construction activities proposed on site in accordance with the methodology outlined in the *Construction Noise and Vibration Management Plan (CNVMP)* and overarching *Construction Noise and Vibration Impact Statement (CNVIS)*.

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## Consultation with Affected Receivers

In accordance with CoA E78, the CNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the Work. Details of this consultation are provided in the overarching CNVIS for each enhancement site.

### Assessment Details

Author Name	
Author Email	noiseassessments@martinus.com.au
Author Organisation	Martinus Rail
Project Name	A2I - Albury to Illabo
Assessment Name	Billy Hughes Bridge CNVIS Addendum (Signalling W.011b)
Stage	A2I Construction
Permit Number	N/A
Start Date	2025-10-15
End Date	2025-10-15
Assessment Period	Night - out of hours

### Equipment Details

Plant/Equipment	Equipment Sound Power Level (Unadjusted), dBA	Number of Units	Temporary Noise Barrier
<b>1: Work Area 1</b> (Height: Ground)	Total: 109		
Truck - vacuum (NDD or non-destructive digger) 100% operation	109	1	No

**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.

### Assessment Results



	Residential	Non-Residential
Highly Intrusive	0 property	0 property
Moderately Intrusive	0 property	0 property
Clearly Audible	0 property	0 property
Noticeable	0 property	0 property
Above Sleep Disturbance	0 property	0 property
Above Sleep Awake	0 property	0 property

### Legend

- Project Boundary
- Work Areas
- Barriers

Results by Receiver

Address	Land Use	Noise Catchment Area	Construction Noise Management Level, dBA	Predicted Noise Level, dBA	Predicted Noise Level Above Noise Management Level, dB	Noise Category
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*No results*

## Recommended Mitigation Measures

This assessment has been conducted with regard to the relevant CNVIS and CNVMP. To manage noise and vibration impacts, project specific mitigation measures may be considered such as reviewing construction staging methodology to identify opportunities to schedule intensive works during less sensitive time periods and by providing a clear process for community engagement and complaints. Likewise, the requirements and actionable items within the overarching CNVIS and CNVMP should be considered and adopted where appropriate. Following the consideration of project specific noise mitigation measures, additional noise mitigation measures to be explored are described in the Inland Rail NSW Construction Noise and Vibration Framework (CNVF) and summarised below.

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	>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	>2 consecutive rest periods	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	>2 consecutive sleep periods	CO1, CO2, RO, AO
	>25	Highly intrusive	>2 consecutive sleep periods	CO1, CO2, RO
	>25	Highly intrusive	>2 consecutive sleep periods	CO1, CO2, RO, AO, AltA

### Vibration - Additional Mitigation Measures Matrix

Time Period	Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
OOHW Daytime Period Sunday 8am-6pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Evening Period Mon-Sun 6pm-10pm	Any	CO1, CO2	CO1, CO2, RO
OOHW Night Period Mon-Sat 10pm-7am Sun 10pm-8am	Any	CO1, CO2, RO	CO1, CO2, RO, AltA

### Additional Mitigation Measures

Measure	Abbreviation
Communication (Category 1) <sup>1</sup>	CO1
Communication (Category 2) <sup>2</sup>	CO2
Respite Offer <sup>3</sup>	RO
Alternative Accommodation	AltA
Agreement with Owners	AO

**Note 1:** CO1: Communication to provide information on the OOHW via methods such as letter box drop, email, newsletter, media advertisements and/ or website prior to the works commencing.

**Note 2:** CO2: Communication should be personalised (e.g. door knock, meeting, telephone call). Contact with these residents should commence early to enable feedback to be considered by the proposal.

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### Receiver Types

Code	Description	Code	Description
RES	Residential	OED	Other Educational
COM	Commercial	OHO	Other Hotel
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OOA	Other Outdoor Active Recreation	OME	Other Medical
OOP	Other Outdoor Passive Recreation	OPW	Other Place of Worship
OCC	Other Child Care	OPB	Other Public Building



**MARTINUS** 

## Appendix B Summary of Additional Receivers

**Table 1 Overview of NML Exceedances – Billy Hughes Bridge – Within Approved CIZ**

ID	Scenario	Number of Receivers																	
		HNA <sup>1</sup>	With NML exceedance (dB) <sup>2</sup>																
			Approved			Out of Hours											Sleep Disturbance	Sleep Awakening	
			Daytime			Daytime OOH				Evening				Night-time				>Screening Level	>65 dB
	1-10	11-20	>20	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	>Screening Level	>65 dB		
<b>Residential Receivers</b>																			
W.001	Site Establishment / Demobilisation	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.003	SAQP	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	-	1	-	-	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.006	Track Work - Peak	-	2	-	-	2	2	-	-	2	2	-	-	2	2	-	-	2	-
W.007	Track Work - Typical	-	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	1	-
W.008	Track Tamping	-	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	2	-
W.009	Piling Work	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.011	Retaining Wall and Protection Barrier Construction	-	1	-	-	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.012	Drainage Work	-	1	-	-	2	1	-	-	2	1	-	-	2	1	-	-	3	-
W.013	Signalling Work	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-
<b>Other Sensitive Receivers</b>																			
W.001	Site Establishment / Demobilisation	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.003	SAQP	n/a	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.006	Track Work - Peak	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.007	Track Work - Typical	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.008	Track Tamping	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.009	Piling Work	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.011	Retaining Wall and Protection Barrier Construction	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.012	Drainage Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.013	Signalling Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a

Note 1: Highly noise affected, based on ICNG definition (i.e. predicted LAeq(15minute) noise at residential receiver is greater than 75 dBA).

Note 2: Based on worst-case predicted noise levels



**Table 2 Overview of NML Exceedances – Billy Hughes Bridge – Proposed Additional Work Areas**

ID	Scenario	Number of Receivers																	
		HNA <sup>1</sup>	With NML exceedance (dB) <sup>2</sup>																
			Approved			Out of Hours										Sleep Disturbance	Sleep Awakening		
			Daytime			Daytime OOH				Evening				Night-time				>Screening Level	>65 dB
	1-10	11-20	>20	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25				
<b>Residential Receivers</b>																			
W.001	Site Establishment / Demobilisation	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.003	SAQP	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	-	1	-	-	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.006	Track Work - Peak	-	2	-	-	2	2	-	-	2	2	-	-	2	2	-	-	2	-
W.007	Track Work - Typical	-	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	1	-
W.008	Track Tamping	-	1	-	-	1	1	-	-	1	1	-	-	1	1	-	-	2	-
W.009	Piling Work	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.011	Retaining Wall and Protection Barrier Construction	-	1	-	-	-	1	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.012	Drainage Work	-	1	-	-	2	1	-	-	2	1	-	-	2	1	-	-	3	-
W.013	Signalling Work	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-
<b>Other Sensitive Receivers</b>																			
W.001	Site Establishment / Demobilisation	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.003	SAQP	n/a	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.006	Track Work - Peak	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.007	Track Work - Typical	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.008	Track Tamping	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.009	Piling Work	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.011	Retaining Wall and Protection Barrier Construction	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.012	Drainage Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.013	Signalling Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a

Note 1: Highly noise affected, based on ICNG definition (i.e. predicted LAeq(15minute) noise at residential receiver is greater than 75 dBA).

Note 2: Based on worst-case predicted noise levels

**Table 3 Difference in NML Exceedances – Billy Hughes Bridge**

ID	Scenario	Number of Receivers																	
		HNA <sup>1</sup>	With NML exceedance (dB) <sup>2</sup>																
			Approved			Out of Hours											Sleep Disturbance	Sleep Awakening	
			Daytime			Daytime OOH				Evening				Night-time				>Screening Level	>65 dB
	1-10	11-20	>20	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	1-5	6-15	16-25	>25	>Screening Level	>65 dB		
<b>Residential Receivers</b>																			
W.001	Site Establishment / Demobilisation	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.003	SAQP	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.006	Track Work - Peak	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.007	Track Work - Typical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.008	Track Tamping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.009	Piling Work	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.011	Retaining Wall and Protection Barrier Construction	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.012	Drainage Work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.013	Signalling Work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Other Sensitive Receivers</b>																			
W.001	Site Establishment / Demobilisation	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.002	Compound Operation	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.003	SAQP	n/a	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.004	Earthwork	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.006	Track Work - Peak	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.007	Track Work - Typical	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.008	Track Tamping	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.009	Piling Work	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.011	Retaining Wall and Protection Barrier Construction	n/a	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
W.012	Drainage Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a
W.013	Signalling Work	n/a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/a	n/a

## Appendix C Aboriginal Heritage Assessment

8 February 2026

**INLAND RAIL: ALBURY TO ILLABO (A2I) – BILLY HUGHES BRIDGE CIZ EXTENSION**  
**HERITAGE ASSESSMENT: MEMORANDUM OF FINDINGS**

**1 INTRODUCTION**

OzArk Environment & Heritage (OzArk) has been engaged by Martinus Rail (MR, the client), on behalf of Australian Rail Track Corporation (ARTC, the proponent), to provide this memorandum regarding the proposed expansion of the Inland Rail Albury to Illabo (A2I) Construction Impact Zone (CIZ) at Billy Hughes Bridge, Wagga Road. The additional area required to complete the A2I works was not included in the original assessment covered by the Environmental Impact Statement (EIS) (**Figure 1-1**). This area is located in the Albury Local Government Area (LGA).

**Figure 1-1: Aerial of the proposed CIZ Extension.**



## 1.1 BACKGROUND - PREVIOUS HERITAGE ASSESSMENT / APPROVALS

The A2I section of the Inland Rail project requires the modification of the existing track and associated overhead structures to a sufficient height and width to support the safe running of double-stacked freight trains. In 2022, GML Heritage prepared a *Statement of Heritage Impact* (SOHI) and an *Aboriginal Cultural Heritage Assessment Report* to support the Environment Impact Statement (EIS) for the A2I section of the Inland Rail project

The A2I section of the Inland Rail project is Critical State Significant Infrastructure (CSSI) and was approved on 8 October 2024 (Infrastructure Approval). The approval covered all works proposed within the approved CIZ.

As per Condition of Approval (CoA) A15 for the A2I project, ancillary facilities not specifically listed in the A2I EIS and associated documentation (as listed in CoA A1) can be established, if " they have no impacts on heritage items (including areas of archaeological sensitivity)" (A15(c)).

It is of note that the CIZ extension area is within the Zone 3 'Site Investigation Zone' previously assessed by GML (2022: Fig 4.13), but not within the approved CIZ.

The following memo will assess whether CoA A15 can be met in terms of the proposed CIZ extension at Billy Hughes Bridge as shown in red on **Figure 1-1**.

Additionally, this memo will clarify any test excavation requirements under CoA E60 which states "*Test excavation and, if necessary, salvage, is required prior to any ground disturbance of the Potential Archaeological Deposit (PAD) located at the Murray River Bridge and Billy Hughes Bridge enhancement sites, as identified in documents listed in Condition A1 in consultation with RAPs and LALC*".

## 2 APPROACH

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OzArk has prepared this Heritage Memorandum of Findings with reference to the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (Due Diligence Code), Heritage Council's *Investigating Heritage Significance, A guide to identifying and examining heritage items in NSW* and the *Historical Archaeology Code of Practice* to assess whether Aboriginal objects or items of historic significance may be harmed by the proposed CIZ extension. This assessment will inform a Consistency Assessment as per CoA A15.

## 3 PROPOSED ACTIVITY

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The CIZ extension will facilitate the construction of permanent works including fauna crossing poles and other fauna connectivity measures, improve site access throughout construction. Following the completion of construction works, the extension will allow safe storage of plant and equipment from the danger zone during drainage scope works.

The study area for this CIZ extension covers approximately 0.6 hectares, as shown on **Figure 1-1**.

## 4 ABORIGINAL CULTURAL HERITAGE ASSESSMENT

### 4.1 AHIMS SEARCH

On 7 August 2025, an extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken over a 500 metre (m) x 500 m area centred on the study area (GDA, Zone: 55, Eastings: 498550 - 499551, Northings : 6015334 - 6016329) (see **Appendix 1**). Three sites were recorded within the search area comprising two artefact scatters with potential archaeological deposits located east of the CIZ (60-3-0070 [AWH 1 PAD 10] and 60-3-0080 [AWH 11 PAD 9]), and one artefact scatter (60-3-0005 [One Tree Hill;TS7]), located to the northwest. It is considered highly likely that the two PAD with artefacts sites recorded as part of the Albury Wodonga Highway upgrade (sites 60-3-0070 and 60-3-0080) would have now been destroyed as part of that project, despite the fact that the AHIMS database has not been updated in terms of their status. It is further noted that the artefact scatter of site 60-3-0005 is highly likely to be plotting incorrectly considering that One Tree Hill (as the site is named) is in fact located 3.3 km's south southwest of the Billy Hughes enhancement site.

No previously recorded sites or PADs are located within the CIZ extension. The closest plotted site is approximately 65 m east of the northeastern most CIZ extension area (**Figure 5-1**).

**Figure 5-1: View of previously recorded sites near to the CIZ extension.**



## 4.2 PREVIOUS ASSESSMENT

As part of the Response to Submissions (RtS) phase of the EIS, Heritage NSW queried the lack of PAD designated in the Billy Hughes Zone 3 assessment area (HNSW letter dated 13.9.2022). GML responded to this in the A2I Submissions report, (GML 2023: 2-6). In this response, GML provided additional reasoning and evidence for their assessment that no PAD was present in Zone 3, particularly the northwest section. In a letter dated 21/11/2023, Heritage NSW acknowledged that the matters they had previously raised had been satisfactorily dealt with. It is unclear why Condition E60 retained mention of any PAD within the Billy Hughes enhancement site zone, considering the matter had been dealt with in the RtS phase.

## 4.3 LANDFORM

The CIZ extension is within gentle foot slopes of the surrounding low rolling hill landform, situated approximately 220 m above sea level (Australian Height Datum). The CIZ extension is situated 89 m south of Eight Mile Creek at its closest point and therefore is within landforms with identified archaeological sensitivity as set out in the *Due Diligence Code of Practice*. As such, a visual inspection was undertaken.

## 4.4 VISUAL INSPECTION

The visual inspection was undertaken by OzArk Principal Archaeologist Dr Jodie Benton on Thursday 19 June 2025 (**Figure 5-2** and **Figure 5-3**).

The CIZ extension areas have all been heavily disturbed by the construction of the railway, Billy Hughes Bridge and Wagga Road. These disturbances afforded good visibility with some exposures present mostly on vehicle tracks and within the railway corridor. Vegetation has been cleared near to existing infrastructure with low grasses present albeit some semi-mature/juvenile tree species were present just beyond the extension.

GML's (2022, 2023) previous assessment noted the area surrounding Billy Hughes as highly disturbed which is consistent with the 2025 inspection results.

No Aboriginal sites were recorded and the inspection concluded that the CIZ extension has low archaeological potential.

## 4.5 CoA E60 APPLICABILITY TO CIZ EXTENSION

As described in **Section 1.1**, CoA E60 requires test excavation and salvage (if applicable) be undertaken if the PAD at the Billy Hughes enhancement site was to be disturbed by A2I proposed activities. As explained in **Section 4.2**, the issue of PAD at the Billy Hughes enhancement site was dealt with in the RtS phase and there should be no requirement for testing or salvage at Billy Hughes as a result of that information exchange. It appears to be referenced in Condition E60 in error. E60 should in fact refer only to the Murray River Bridge enhancement site, at the PAD along Townsend Street.

As E60 is not specifically relevant to the CIZ at the Billy Hughes enhancement area, it is likewise not relevant to the CIZ extension proposed here. To confirm this, the visual inspection described in Section 4.4 has confirmed that no PAD exists within the CIZ extension areas assessed.

Figure 5-2: View of the CIZ extension at the time of inspection.

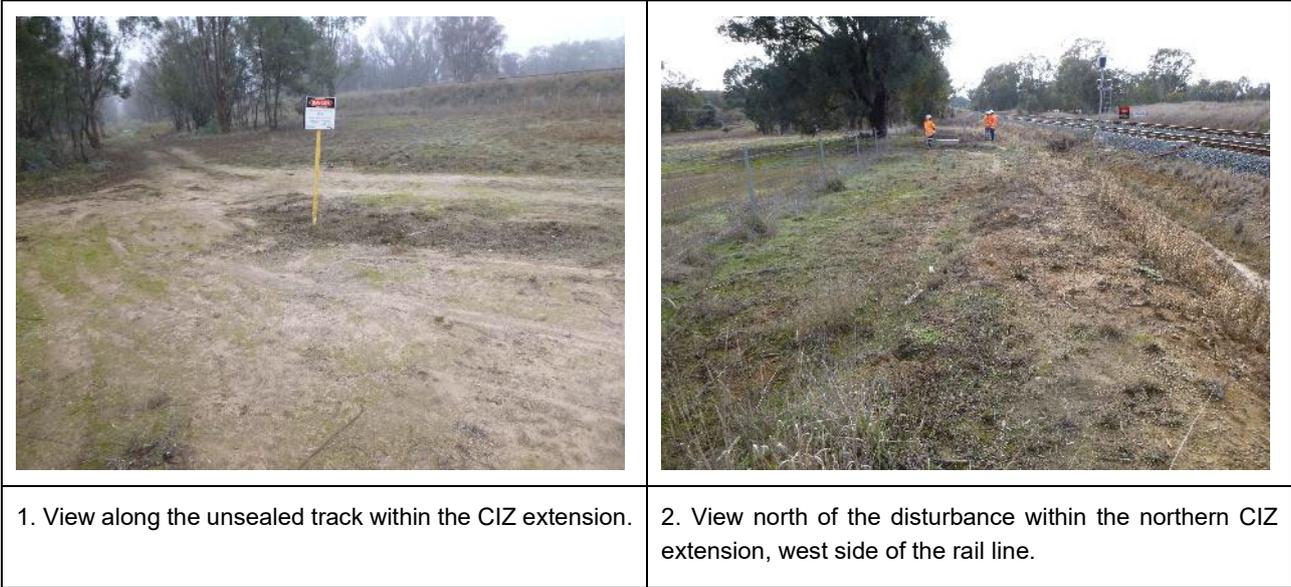
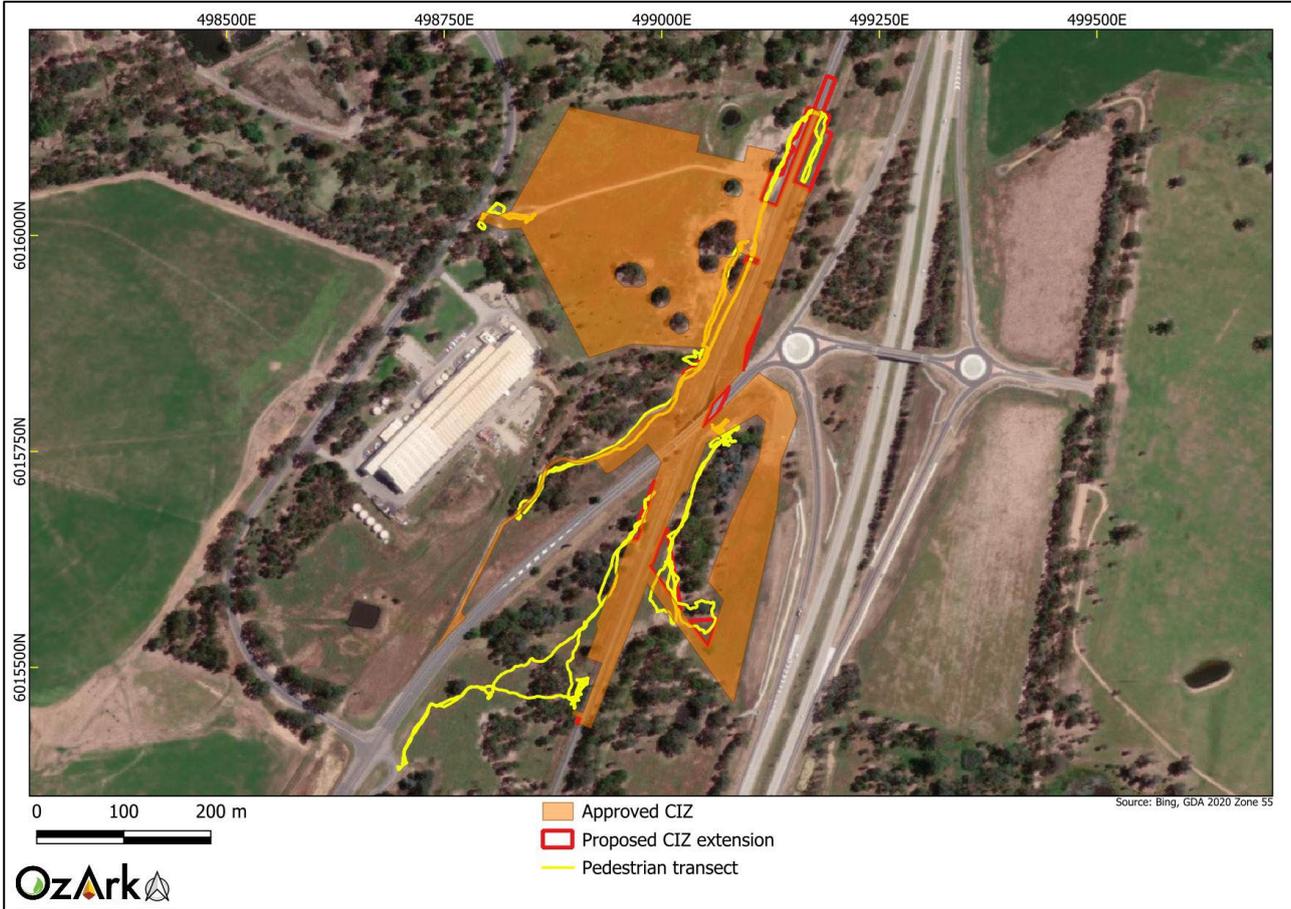


Figure 5-3: Pedestrian coverage of the CIZ extension.



## 5 CONCLUSION – ABORIGINAL HERITAGE

The assessment for Aboriginal heritage using the Due Diligence Code has determined that the proposed CIZ extension has a low likelihood of harming Aboriginal objects or landscape features with archaeological sensitivity (see **Table 6-1**).

No previously recorded Aboriginal sites are within the study area, and it was determined that due to land use disturbance as well as distance to watercourses, there is a low likelihood of intact, subsurface archaeological deposits. As documented in **Table 6-1**, no further archaeological investigation is required.

The works may proceed with caution and in the unlikely event that Aboriginal objects are encountered, refer to the Cultural Heritage Unexpected Find Procedure in Appendix A of the *Inland Rail A2P Albury to Illabo Construction Management Plan*.

**Table 6-1: Due Diligence Code of Practice application**

Step	Reasoning	Answer
Step 1 Will the activity disturb the ground surface or any culturally modified trees?	The activities of ARTC will involve minor excavation to install railway signalling infrastructure. The proposal activity is not an exempt activity or a low impact activity.	Yes
<b>If the answer to Step 1 is 'yes', proceed to Step 2</b>		
Step 2a Are there any relevant records of Aboriginal heritage on AHIMS to indicate presence of Aboriginal objects?	AHIMS indicated that there are no Aboriginal sites within the study area.	No
Step 2b Are there other sources of information to indicate presence of Aboriginal objects?	There are no other sources of information to indicate that Aboriginal objects are likely in the study area.	No
Step 2c Will the activity impact landforms with archaeological sensitivity as defined by the Due Diligence Code?	Landforms with identified archaeological sensitivity are present in the study area.	Yes
<b>If the answer to any stage of Step 2 is 'yes', proceed to Step 3</b>		
Step 3 Can harm to Aboriginal objects listed on AHIMS or identified by other sources of information and/or can the carrying out of the activity at the relevant landscape features be avoided?	Visual inspection concluded that there are no known Aboriginal objects in the CIZ extension. There is a low likelihood of subsurface archaeological deposits within the CIZ extension.	No.
<b>Conclusion</b>		
<b>Proceed with caution</b>		

## 6 NON-ABORIGINAL HERITAGE ASSESSMENT

### 6.1 DESKTOP SEARCH

A desktop search was conducted on the following databases to identify any potential previously recorded heritage within the study area. The results of this search are summarised in **Table 6-1**.

**Table 6-1: Historic heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
National and Commonwealth Heritage Listings	3 July 2025	Albury LGA	No sites within study area.
State Heritage Register	3 July 2025	NSW	No sites within study area.
Local Environment Plan (LEP)	3 July 2025	Albury LEP 2010	No LEP items within or near to the study area

A search of the Heritage Council of NSW administered heritage databases and Albury LEP 2010 returned no heritage items within the study area. The closet heritage item to the CIZ extension is LEP item "Maryvale" (I310) located approximately 635 m northwest of the CIZ extension.

**Figure 7-1: Aerial showing nearby LEP items**



## 6.2 VISUAL INSPECTION

Visual inspection of the CIZ extension study area confirmed that no previously unidentified items of historical significance are present, and there is a low likelihood of significant historic archaeological deposits.

## 7 CONCLUSION – HISTORIC HERITAGE

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The assessment for historic heritage has determined that there will be no likely impacts to historic heritage as a result of the proposed CIZ extension. There are no heritage items located within the proposed CIZ extension area, and nearby LEP items will not be impacted.

The works may proceed with caution with no further management measures. In the unlikely event that historic objects are encountered, refer to the Cultural Heritage Unexpected Find Procedure in Appendix A of the *Inland Rail A2P Albury to Illabo Construction Management Plan*.

## 8 REFERENCES

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DECCW 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Department of Environment, Climate Change and Water, Sydney.

Department of Planning and Environment 2023. *Assessing heritage significance. Guidelines for assessing places and objects against the Heritage Council of NSW criteria*.

GML Heritage 2022. *Inland Rail – Albury to Illabo, Aboriginal Cultural Heritage Assessment Report*. Report prepared for ARTC.

GML Heritage 2022. *Inland Rail – Albury to Illabo, Non-Aboriginal Heritage, Statement of Heritage Impact*. Report prepared for ARTC.

GML Heritage 2023. *Albury to Illabo: Response to Submissions - Appendix E Detailed response to ACH matters*. Report prepared for ARTC.

NSW Heritage Council 2006. *Historical Archaeology Code of Practice*. Department of Planning and Environment, Sydney.

**APPENDIX 1: AHIMS SEARCH**



**AHIMS Web Services (AWS)**  
Extensive search - Site list report

Your Ref/PO Number : Billy Hughes  
Client Service ID : 1031442

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
60-3-0080	AWH 11 PAD 9	AGD	55	499036	6015329	Open site	Valid	Artefact: 23		99657
	<u>Contact</u> Searle	<u>Recorders</u>	Mr.Terence J. Kelly,Mr.Stephen Pollock							
60-3-0005	One Tree Hill:TS7:	AGD	55	498711	6015983	Open site	Valid	Artefact: -	Permits 2334 Open Camp Site	230
	<u>Contact</u>	<u>Recorders</u>	ASRSYS							
60-3-0070	AWH 1 PAD 10	GDA	55	499260	6016050	Open site	Valid	Artefact: 5	Permits 2246,2334	99657
	<u>Contact</u> Colin Clark	<u>Recorders</u>	Mr.Terence J. Kelly							

**\*\* Site Status**  
**Valid** - The site has been recorded and accepted onto the system as valid  
**Destroyed** - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.  
**Partially Destroyed** - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground  
**Not a site** - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 07/08/2025 for Imogen Crome for the following area at Datum :GDA, Zone : 55, Eastings : 498550.0 - 499551.0, Northings : 6015334.0 - 6016329.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 3  
 This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 1

## Appendix D Unexpected Finds Procedure (Heritage and Human Remains)

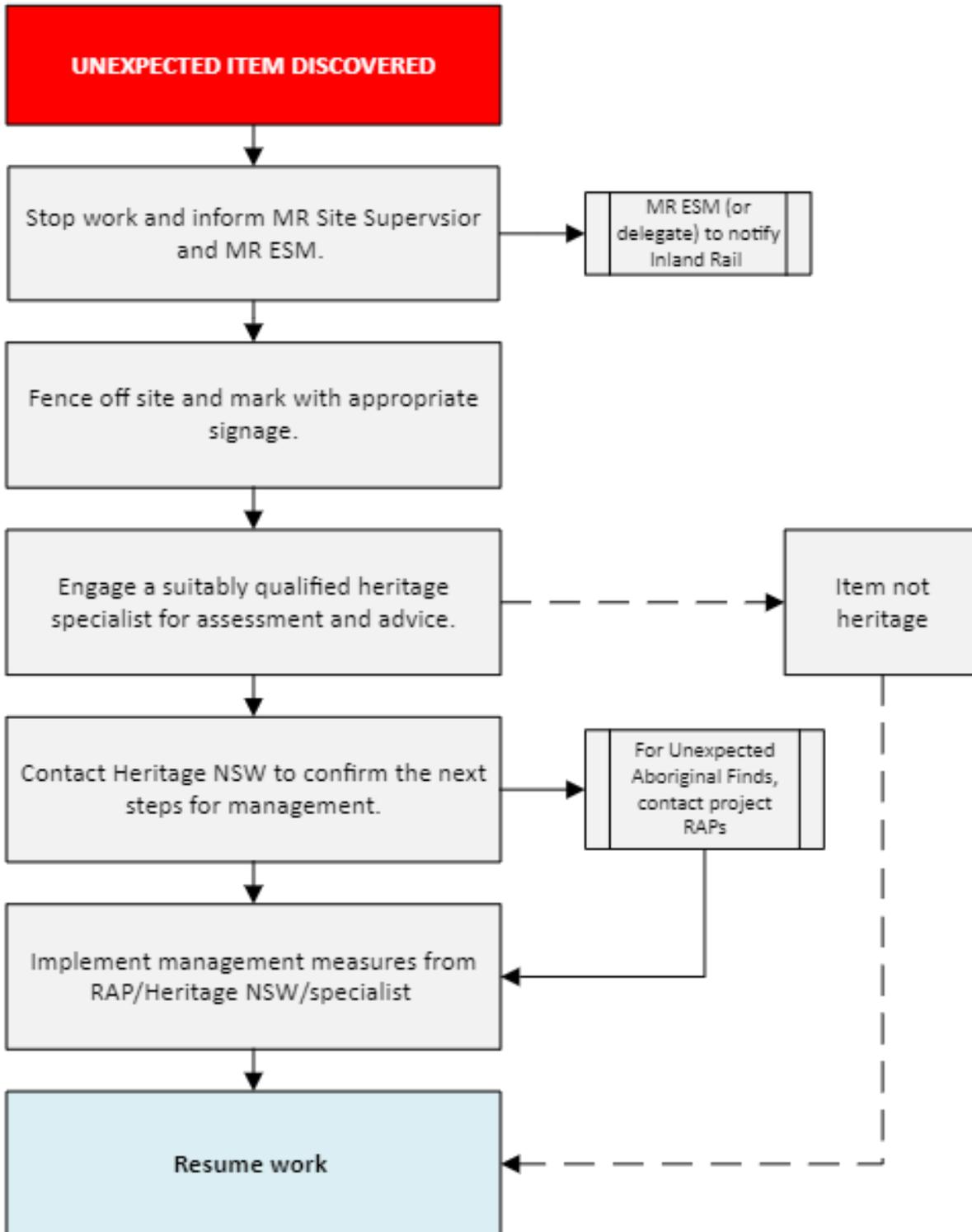
**ABORIGINAL AND NON-ABORIGINAL HERITAGE: UNEXPECTED FINDS PROCEDURE**

An Aboriginal artefact is anything that is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal bone (if showing signs of modification; i.e. smoothing, use). Human bone (skeletal remains) may also be uncovered while onsite.

A historic artefact is anything that is the result of past activity not related to Aboriginal occupation. This includes pottery, wood, glass and metal objects as well as the built remains of structures, sometimes heavily ruined.

In the event of an unexpected heritage find, the following protocol will apply:

1. All ground-disturbance work in the vicinity of the find must cease immediately. The Site Supervisor is to be made aware of the object(s) and is to notify the MR Construction Manager and MR ESM. The MR ESM (or delegate) will notify the relevant Inland Rail (IR) representative.
2. The find will be temporarily fenced off as quickly as possible to ensure no damage/further damage to the object(s). Signage on the fencing is to state that the area is subject to environmental protection, that no ground disturbance is allowed, and should include relevant contact details for the MR ESM.
3. The MR ESM (or delegate) will contact a suitably qualified heritage specialist to assess the find. The heritage specialist will then determine the need for further investigation or management. The heritage specialists assessment may be undertaken using good quality images, with a scale and several angles, however, if photographic evidence does not allow for certainty, then a site visit from the suitably qualified heritage specialist will be required.
4. If the find is an Aboriginal object, the MR ESM (or delegate) and/or heritage specialist will contact the RAPs to attend the site to inspect the find and to determine, in consultation, the next steps for management. These measures will include registration of the object in the Aboriginal Heritage Information Management System within a reasonable time.
5. The MR ESM (or delegate) and/or heritage specialist will also contact Heritage NSW (phone 02 9873 8500) to confirm the next steps for management.
6. Ground disturbance work in the vicinity of the find can only continue under supervision of a suitably qualified heritage specialist, having regard to any advice from Heritage NSW and RAPs.



Flow Chart: Unexpected heritage finds

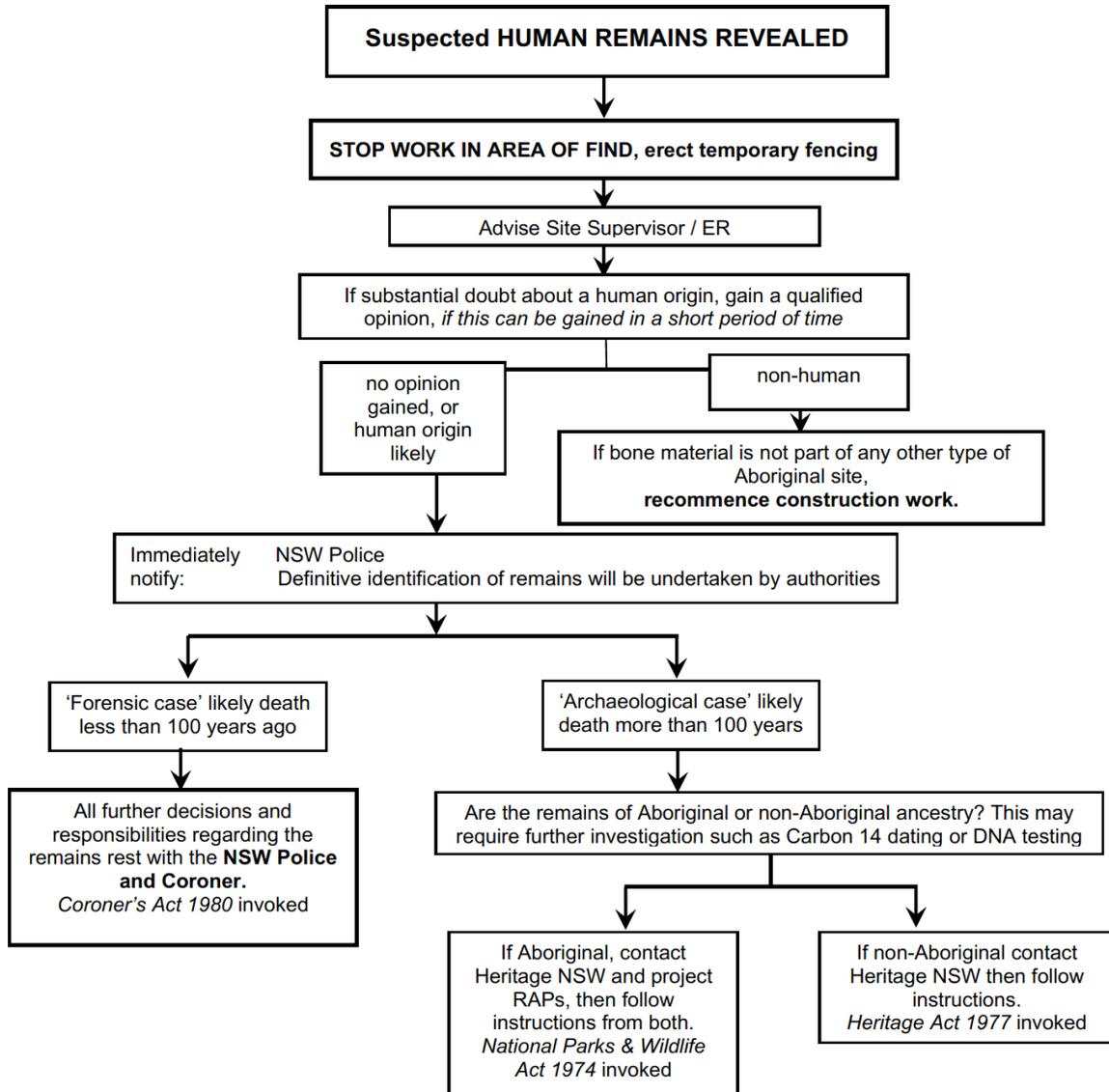
#### UNEXPECTED HUMAN REMAINS PROCEDURE

The procedure related to the discovery of suspected human skeletal material is based on Requirement 25 of the *Code of Practice for Archaeological Investigation of Aboriginal objects in NSW* (DECCW 2010b) and the *Skeletal Remains: Guidelines for the management of human skeletal remains under Heritage Act 1977* (NSW Heritage Office 1998). A flow chart is supplied below.

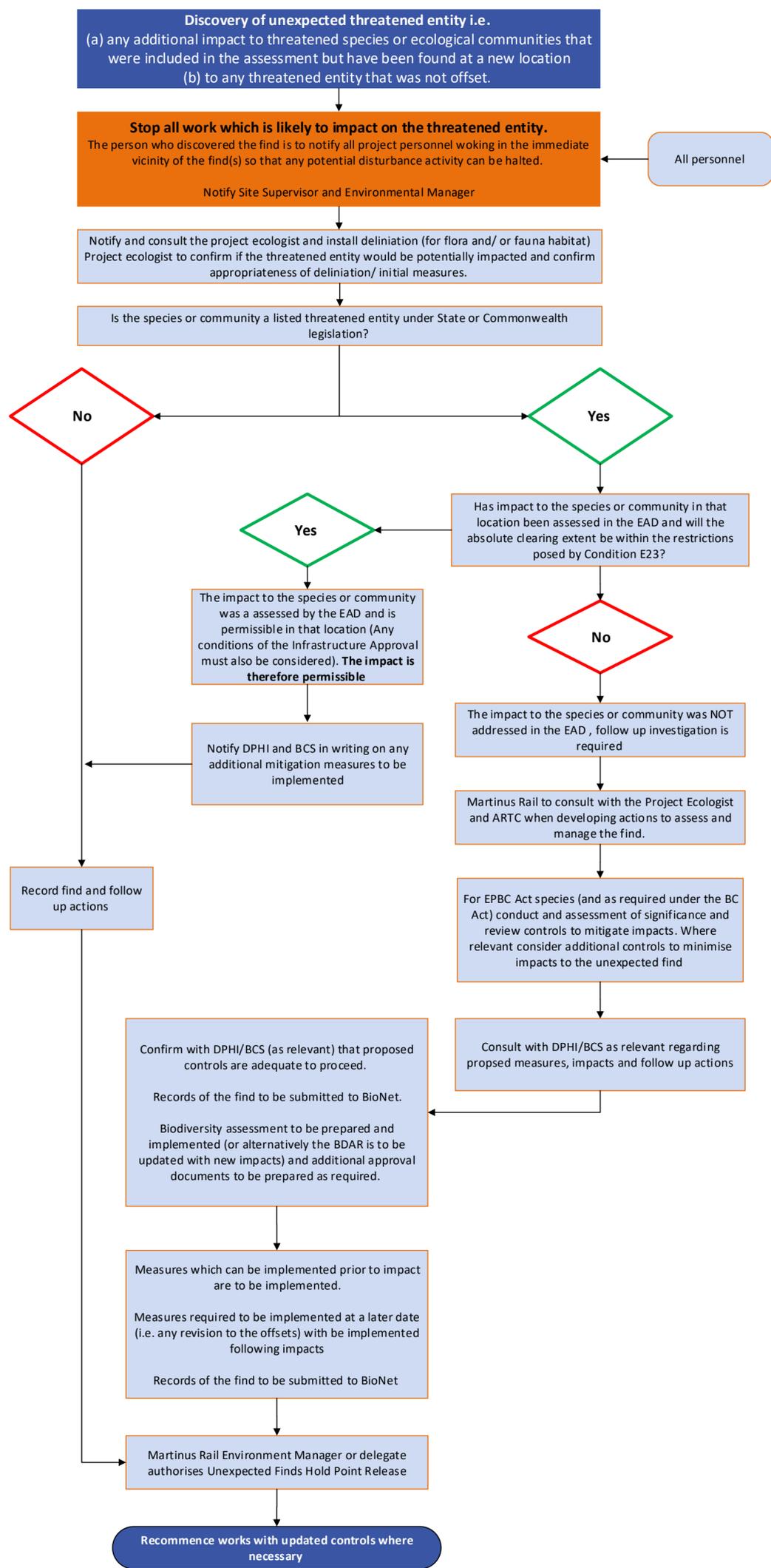
If known, or suspected skeletal remains are encountered during the construction and/or operation of the project, the following procedure will be followed:

1. The area will be temporarily fenced immediately to ensure no damage/further damage to skeletal material. No skeletal material that remains in place should be disturbed from its location;
2. Works in the vicinity are to be stopped immediately;
3. The Site Supervisor is to be made aware of the skeletal material and is to notify the MR Environmental Manager and MR Construction Manager. Inland Rail Representatives are to be contacted at this stage;
4. Attempt to determine if the bones are animal or human. May require photos of the bones to be sent to the MR Heritage Consultant to determine if the remains are likely to be human or not;
5. If a qualified opinion concludes the bones are not human in origin and are unlikely to be part of an archaeological site works may recommence;
6. If no qualified opinion can be gained or the bones are suspected of being human, undertake the following:
  - i) MR will contact Police, allowing Police to conduct an assessment to determine if the remains are part of a forensic case (less than 100 years old), or are archaeological (more than 100 years old);
  - ii) If the remains are assessed as 'archaeological', there then needs to be an attempt to determine if they are Aboriginal or non-Aboriginal;
  - iii) Inland Rail will contact the relevant stakeholders, including Heritage NSW (phone 02 9873 8500) and RAPs (if the remains are Aboriginal);
  - iv) All further activities will be determined by Heritage NSW and the RAPs (if the remains are Aboriginal);
  - v) No work may recommence in the area of the find until Heritage NSW provides the approval to do so.

Flow Chart: Suspected Human remains



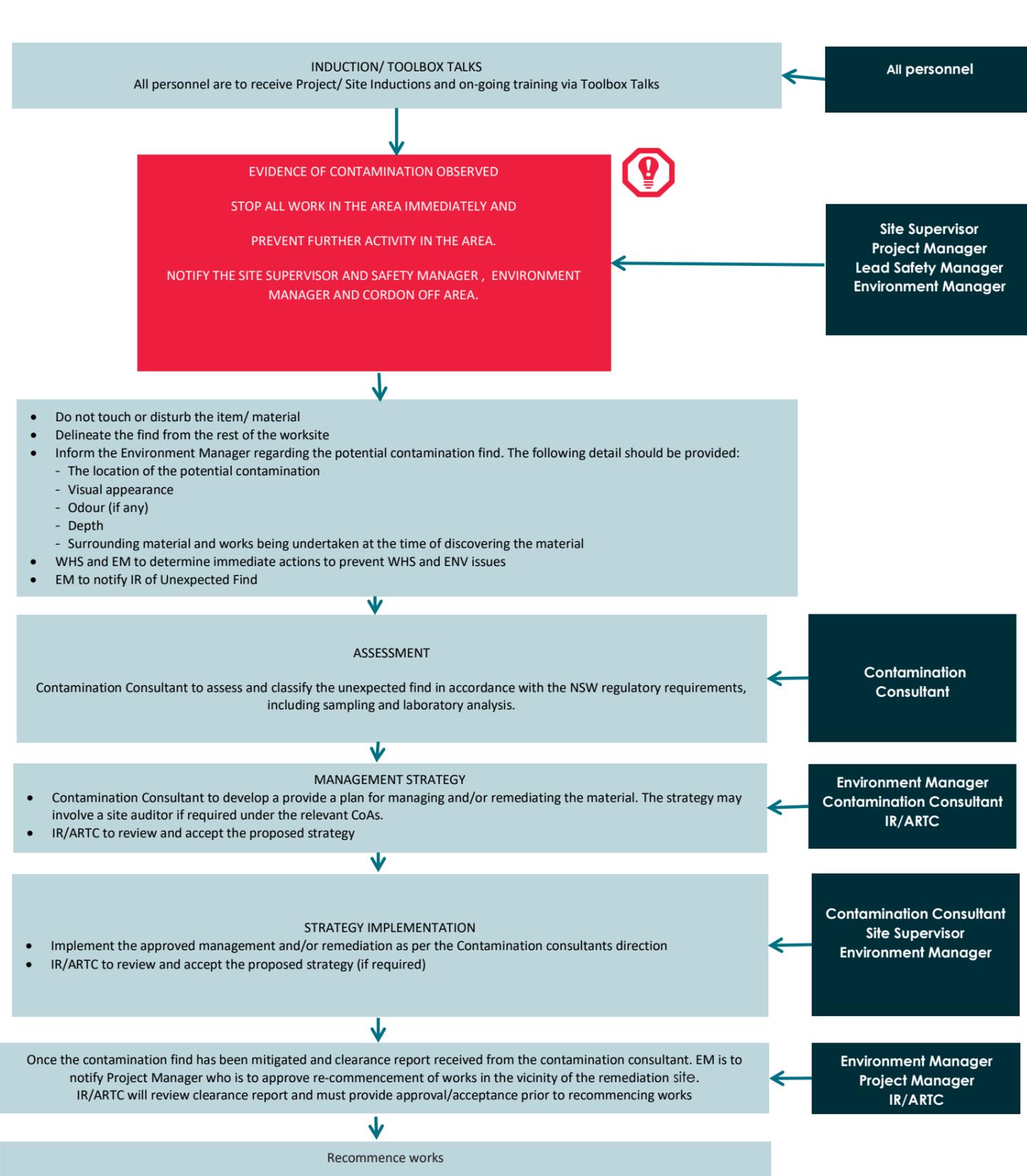
## Appendix E Unexpected Finds Procedure (Flora and Fauna)



## Appendix F Unexpected Finds Procedure (Contamination)

# UNEXPECTED FINDS PROCEDURE

## MANAGEMENT AND RESPONSIBILITY



### Asbestos

An unexpected find occurs when Asbestos Containing Material (ACM) not identified in the Asbestos Register is found on site. In the event of an unexpected find the below steps are to be followed:

1. The area is to be demarcated, works in the area to cease and workers notified
2. Notify the Site Supervisor first. Site Supervisor will then notify the Project Manager, Safety Manager and Environment Manager.
3. Notify IR/ARTC within five (5) business days after the discovery.
4. Control dust by with dust suppression
5. A certified occupational hygienist is to be engaged to provide recommendations to manage the area
6. Occupational hygienist arrange for testing of the suspected ACM and monitoring of the area (if required)
7. The area is to be made safe as per the certified

### Contamination Consultant

Works undertaken in relation to Contamination to investigate, assess, remediate or validate remediation or land use suitability shall be undertaken by a suitably qualified person holding valid 'Site Contamination' certification under the Certified Environment Practitioners Scheme (CEnvP) - Environment Institute of Australia and New Zealand or Certified Professional Soil Scientist – Contaminated Site Assessment and Management under the Soil Science Australia Certification Scheme.

With relevant qualifications and experience in keeping with the National Environmental Protection (Assessment of Site Contamination) Measure 1999 Amendment 2013 (ASC NEPM 2013).



### Procedure

- 1) Potential contaminated soil/material encountered during construction activities. STOP ALL WORK AND NOTIFY IMMEDIATELY
- 2) Undertake a site/area contamination investigation. The Environment Manager (EM) is to assess the situation and if considered necessary, commission a suitably qualified contamination specialist to undertake a contamination investigation in the area of the find.
- 3) The consultation specialists in consultation with the EM will determine the appropriate management measures to be implemented. This may include leaving contamination undisturbed if it does not pose unacceptable risks to human health or the environment, capping of contamination, treatment or offsite disposal. If the material is to be disposed of offsite, ensure the waste facility is appropriately licensed. Contaminated material requiring off-site disposal is to be classified in accordance with the Waste Classification Guidelines – Part 1: Classification of Waste, NSW EPA 2014. Maintain records to demonstrate waste material was appropriately managed
- 4) If the material is determined to be Acid Sulfate Soil (ASS) or Potential Acid Sulfate Soil (PASS), an Acid Sulfate Soil Management Plan would be prepared and implemented in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, August 1998).
- 5) Prior to any contamination investigation, management or remediation activities appropriate work method documentation encompassing safety and environmental risk management will be prepared for review and approval by the EM and IR
- 6) If required a Remedial Action Plan (RAP) will be prepared in accordance with legislative requirements
- 7) If material is to be treated and reused or left in situ ensure appropriate records are maintained and location of material (survey) is undertaken and provided to IR
- 8) Once the contamination find has been mitigated and clearance report received from the contamination consultant. This report is to be submitted to IR/ARTC for acceptance prior to recommencement of work
- 9) EM is to notify Project Manager who is to approve re-commencement of works in the vicinity of the remediation site.

## Appendix G Verification of Absence of Plant Community Type 277



# Habitat

Innovation & Management

David Lamb  
Site Environmental Lead  
Inland Rail Project Team  
Martinus

October 14, 2025

Dear David

**SUBJECT – Verification of Absence of Plant Community Type 277, Billy Hughes Bridge, Inland Rail, A21.**

This letter presents the findings of a site assessment undertaken on 30 September 2025 by Carl Tippler, Director and Principal Ecologist at Habitat Innovation and Management, at the Billy Hughes Bridge site to verify the absence of a small patch of PCT 277 – Blakely’s Red Gum – Yellow Box Woodland of the NSW South Western Slopes Bioregion, which had been previously mapped as present within the site in the Biodiversity Development Assessment Report (BDAR) (WSP 2024) (Figure 1 and 2).

Upon inspection, it was confirmed that this area has been subject to removal and ground disturbance of 39.9 m<sup>2</sup> by a previous, unidentified contractor for reasons unknown. The patch had been delineated around a single mature Yellow Box (*Eucalyptus melliodora*), which has since been removed. The surrounding soil surface has been mechanically scalped to bare earth, and early-stage regrowth dominated by *Austrostipa scabra* (Rough Spear-grass) is now evident in scattered patches, interspersed with exotic species including Capeweed (*Arctotheca calendula*) and Wild Oats (*Avena fatua*).

At the time of assessment, approximately 90% of the area was bare earth, with scattered recolonisation by the native grass, *Austrostipa scabra* (Rough Spear-grass), and exotic species including Capeweed (*Arctotheca calendula*), Plantain (*Plantago lanceolata*), St John’s Wort (*Hypericum perforatum*), Fleabane (*Conyza spp.*) and Rye Grass (*Lolium spp.*) (Figure 3).

One Yellow Box (*Eucalyptus melliodora*), seedling approximately 1.2 m high was present in the area.

No other native canopy or understorey species characteristic of PCT 277 are present. The regrowth within this disturbed area represents early-stage colonisation following mechanical disturbance, rather than recovery of the original ecological community.

The current vegetation does not meet the diagnostic criteria for PCT 277 – Blakely’s Red Gum – Yellow Box Woodland, nor for the listed ecological community “White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland” recognised under the *NSW Biodiversity Conservation Act 2016* (NSW) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Under these definitions, the community must exhibit:

- A canopy dominated by one or more of *Eucalyptus albens* (White Box), *E. melliodora* (Yellow Box), or *E. blakelyi* (Blakely's Red Gum).
- A native grassy understorey dominated by perennial C<sub>4</sub> tussock species such as *Themeda triandra*, *Rytidosperma spp.*, or *Austrostipa spp.*, and,
- A structurally and floristically diverse native groundcover with a predominance of native forbs and graminoids.

Given the absence of diagnostic canopy species, dominance of exotic herbaceous weeds, and loss of native structure and function, the area no longer satisfies either the State or Commonwealth definitions of Box Gum Woodland.

Accordingly, it is concluded that PCT 277 is no longer present at this location and does not constitute a biodiversity constraint. In addition, any threatened species associated with PCT 277, such as Superb Parrots (*Polytelis swainsonii*) and Squirrel Gliders (*Petaurus norfolcensis*) should not be considered as present or potentially present.

It is recommended that this 34.9 m<sup>2</sup> be omitted from the native vegetation and threatened species habitat mapping for the Billy Hughes Bridge site as shown in Figure 4.

Kind regards



Carl Tippler  
Director – Principal Ecologist  
Habitat Innovation and Management  
0400 216206

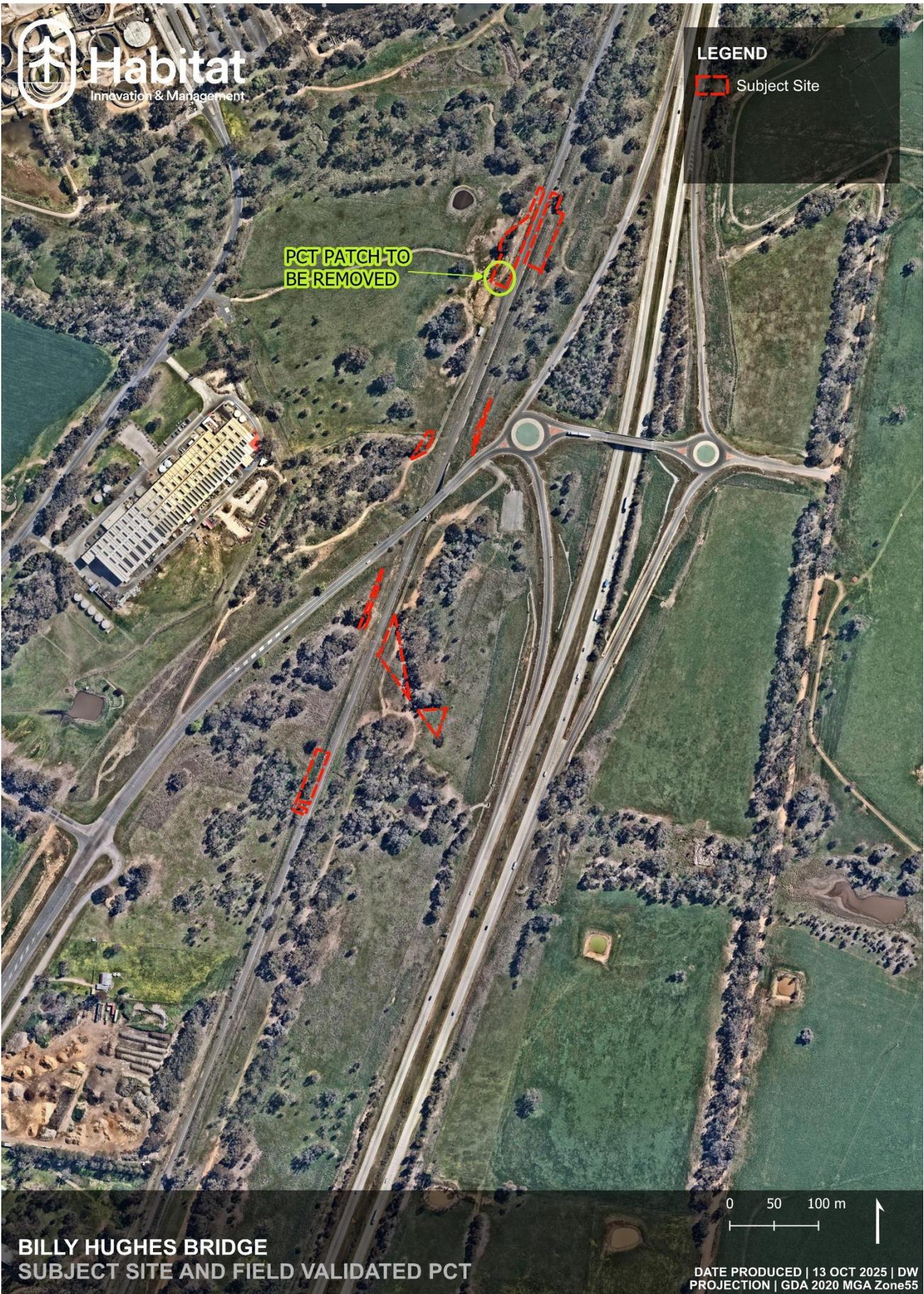


Figure 1: Broader Billy Hughes Bridge subject site.

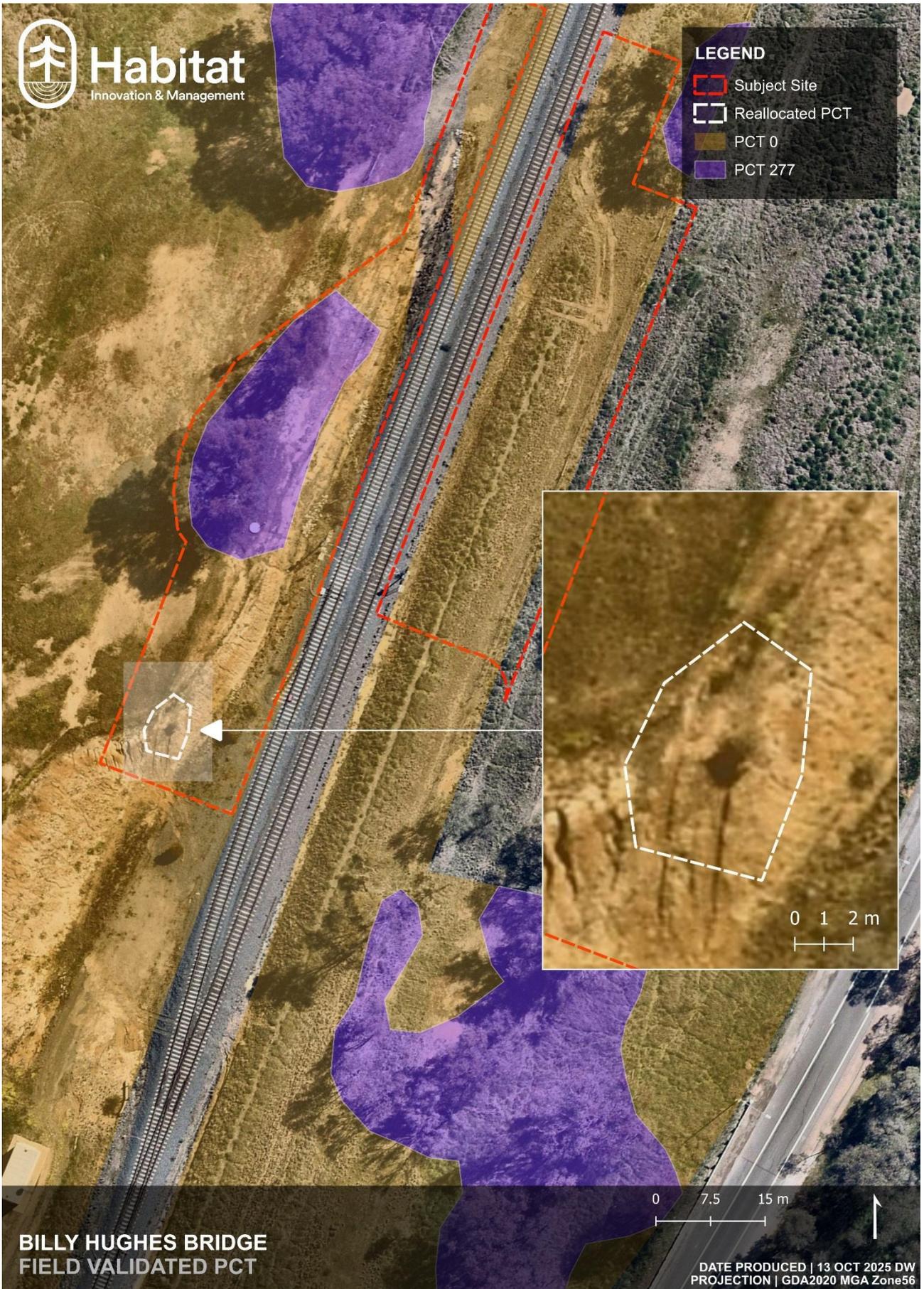


Figure 2: Area of mapped PCT 277 from BDAR.



Figure 3: Area of removed PCT 277 showing vegetation cover on September 30, 2025.

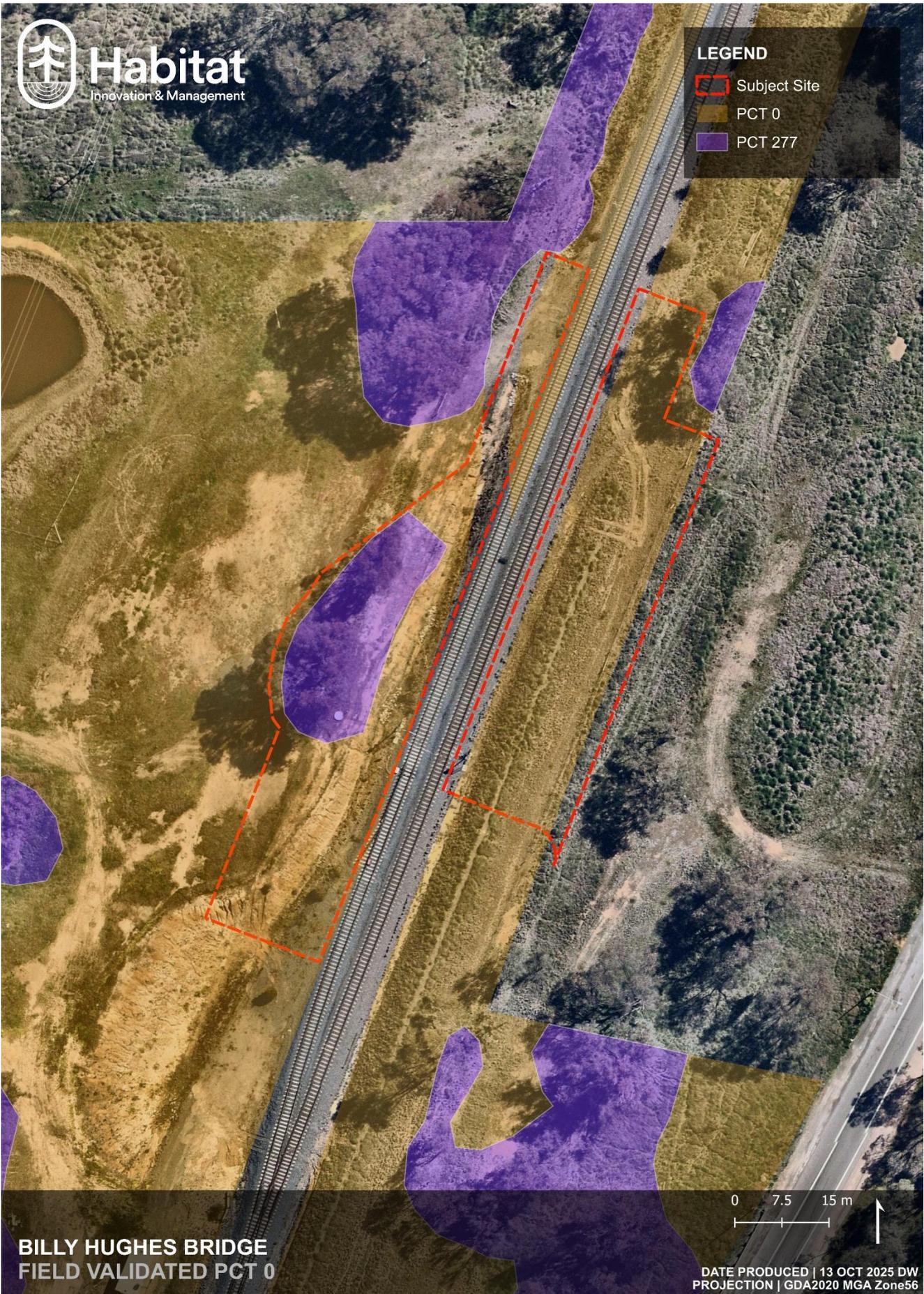


Figure 4: Remapped native vegetation extent.