EIS CONSISTENCY ASSESSMENT REPORT (MINOR) EDMONDSON STREET UTILITY ADJUSTMENTS

A2I | Albury to Illabo

Document Control

DOCUMENT TITLE	**EIS CONSISTENCY ASSESSMENT REPORT (MINOR) EDMONDSON STREET UTILITY ADJUSTMENTS**
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Table of Contents

Appendices

List of tables

List of figures

Glossary

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

TERM	DEFINITION
Action Management Plan	*EPBC Act:* 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.
AHD	Australian Height Datum
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
BARM	Biodiversity Assessment Report Memo (undertaken by East Coast Ecology, October 2024)
CBD	Central Business District
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CBMP	Construction Biodiversity Management Plan
CHMP	Construction Cultural Heritage Management Plan
CNVIS	Construction Noise and Vibration Impact Statement (undertaken by SLR Consulting, January 2025)
CNVMP	Construction Noise and Vibration Management Plan
CSWMP	Construction Soil and Water Management Plan
CTTAMP	Construction Traffic, Transport, and Access Management Plan
CWCHMMP	Construction Waste, Contamination and Hazardous Materials Management Plan
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 Barrick Australia Ltd v. Williams [2009] NSWCA 275)
Compatible	Macquarie Dictionary: Capable of existing in harmony. Capable of orderly, efficient integration with other elements in a system.
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.

EAD	Environmental Assessment Documentation
EIS	Environmental Impact Statement
IRPL	Inland Rail Pty Ltd (subsidiary of ARTC)
LEP	Local Environment Plan
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
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	Construction work for the Albury to Illabo (A2I) section of the Inland Rail—program requires the relocation or adjustment of utilities due to conflicts with the location of infrastructure.
SHR	State Heritage Register
WWNAHA	Wagga Wagga Non-Aboriginal Heritage Assessment (undertaken by Ozark Environment and Heritage Management, November 2024)

1 Introduction

1.1 Background

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);

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.

For the purposes of this consistency assessment, 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.

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 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

Construction work for A2I requires the relocation or adjustment of utilities due to conflicts with the location of infrastructure. The Utilities Management Framework (UMF) (Appendix D1 of the EIS) describes the utility works that form part of the approved Project.

The Proposed Change relates to the construction footprint and methodology for utility works at:

- The Edmonson Street bridge enhancement site;

The UMF states that utility relocation and adjustment works would generally be contained within the construction boundary and were assessed as part of the EIS. It also states that due to ongoing consultation with utility providers and confirmation of the final treatment solution during detailed design, there may be instances where a utility needs to be relocated outside of the construction boundary. Accordingly, this Consistency Assessment report (CA) will focus on the areas outside the currently approved construction boundary, or where utility relocation and adjustment works differ from what was specified in the UMF. The Proposed Changes are outlined in more detail in the sections below.

2.1.1 Edmondson Street bridge

The utility works at the Edmondson Street bridge enhancement site include the relocation or protection of the following services:

- High- and low-pressure gas mains;
- Overhead 66kV electrical cables;
- Underground LV electrical and light poles;
- Overhead fibre optic cables.

The UMF proposed a work plan, subject to ARTC and utility owner validation, for the above works. Changes to the UMF work plan are described in Table 2.1. The additional area required to complete these works are shown in Figure 2-1.

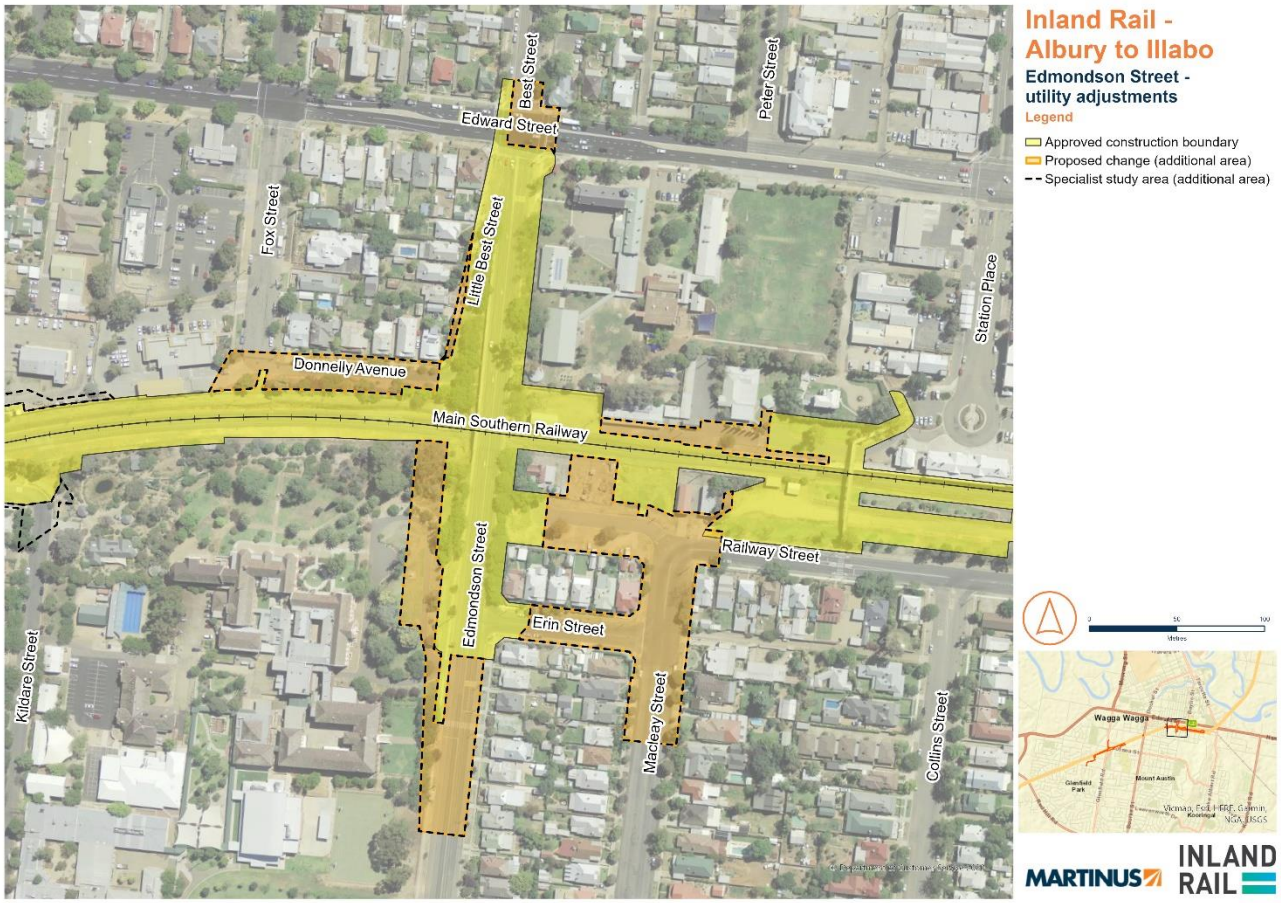


Figure 2-1: Additional area for the Proposed Change in relation to the approved EIS construction boundary

Table 2.1: Proposed Change compared to approved Project

UTILITY AUTHORITY OWNER	ASSET DESCRIPTION	LOCATION	ENHANCEMENT SITE	TREATMENT	EIS WORK PLAN	PROPOSED WORK PLAN
APA Group	PE 110mm Low pressure gas distribution pipe	Wagga Wagga	Edmondson Street bridge	Relocate	Relocate and lower beneath footing of new retaining wall	No change
APA Group	PE 110mm Low pressure gas distribution pipe	Wagga Wagga	Edmondson Street bridge	Relocate	To be relocated west of proposed bridge, underbored beneath the rail and crossing beneath Edmondson Street works to connect into existing network at Railway Street.	The gas main is to be relocated east of the proposed bridge. The underbore will travel beneath the railway, under, Railway St, MacLeay St and Erin St before connecting into the existing network on Edmondson St.
APA Group	Steel 150mm High pressure critical gas pipe	Wagga Wagga	Edmondson Street bridge	Relocate	Relocate and lower beneath footing of new retaining wall.	
Essential Energy (EE)	Overhead HV 66kV electrical cables	Wagga Wagga	Edmondson Street bridge	Relocate	To be relocated approx. 10 m east of existing/proposed bridge as per Essential Energy request.	Relocated west instead of east.. Inland Rail obtained an easement for the works which is partially outside the construction boundary. Essential Energy requires vegetation removal in the easement which involves clearing an area outside that assessed under the EIS.
Essential Energy	Underground LV electrical and light poles	Wagga Wagga	Edmondson Street bridge	Relocate	To be relocated dependent on final street lighting design at detailed design stage.	No change.
Essential Energy	Overhead optic fibre cable	Wagga Wagga	Edmondson Street bridge	Relocate	To be relocated north of existing/proposed bridge.	To be relocated west of the existing bridge.
Essential Energy	Light pole	Wagga Wagga	Edmondson Street bridge	Relocate	To be relocated dependent on final street lighting design at detailed design stage.	No change.

2.1.2 Methodology

Work Plan

The methodology for the treatment of utilities within the construction boundary was outlined in Attachment A of Appendix D1 of the EIS. The EIS work plan is compared to the proposed detailed design work plan in Table 2.1 above. Only activities under Item 1 are proposed to be undertaken as Low Impact Works. All other activities (Items 2-8) are proposed to be undertaken as construction under either Stage A or Stage B.

The works at Edmondson Street would involve the following activities:

1. Site establishment activities (January 2025) undertaken as Low Impact Works
    a. Site mobilisation and installation of site compound facilities (i.e., site/lunch sheds, portable toilets) at Railway Street
    b. Minor trimming and clearing of vegetation to accommodate for site compound facilities (i.e., laydown area, parking for construction vehicles) at Railway Street
    c. Geotechnical investigations, to confirm utility depths, to be undertaken along Erin Street and Macleay Street
    d. Contamination investigation works
    e. Preparation of area for future auger bore works at Railway Street and east of Best Street (north of the site compound)
2. Auger bore activities (February 2025)
    a. MR excavations/connections undertaken north and south of the site compound
    b. Auger bore works undertaken along north and south connection between the site compound
    c. Trimming and clearing of vegetation undertaken along Edmondson Street (north and south of the Edmondson Street bridge)
3. APA and Accredited Service Provider Level 1 (ASP1) activities (March 2025)
    a. APA mobilises existing site locations (north and south of site compound)
    b. APA high pressure works commence
    c. ASP1 mobilises existing site locations (along Edmondson Street bridge)
4. APA and ASP1 activities (April 2025)
    a. APA high pressure works continue
    b. APA performs HP HDD, pipe string and installation works west and east of the Edmondson Street bridge
    c. ASP1 carries out new pole location installation works along the west side of Edmondson Street bridge
5. APA and ASP1 activities (May 2025)
    a. APA carries out HP installation works inside concrete sleeve
    b. APA performs MP HDD, pipe string and installation works at Erin Street and Macleay Street
    c. Conductor works commence along the west side of Edmondson Street bridge
6. APA activities (June 2025)
    a. APA high pressure works continue
    b. APA medium pressure works commence along Erin Street and Macleay Street
7. APA and 66kV activities (July 2025)
    a. APA cutover HP gas main works commence along the west side of Edmondson Street bridge
    b. APA cutover MP gas main works commence at Erin Street and Macleay Street
    c. 66kV cutover works commence southwest of Edmondson Street bridge
8. APA and Edmondson Street detour activities (August 2025)
    a. APA demobilise from site
    b. Edmondson Street works commence

Construction boundary

Consultation with utility asset owners was initially undertaken by Inland Rail during preparation of the Environmental Assessment Documentation (EAD). These discussions identified indicative adjustment requirements for existing utilities to enable construction of the reference design considered by the EAD. Further detailed design and consultation with utility owners has resulted in the variations outlined in Table 2.1 and the requirement to adjust the construction boundary. This is consistent with Section D.1 of the UMF which states “consultation with utility providers is ongoing and confirmation of the final treatment solution would occur during detailed design”.

Plant and equipment

Plant and equipment required for these works includes:

- Franna
- Light vehicles
- EWP
- Chainsaws
- Mulcher
- Tipper trucks
- Excavators
- Excavator with hammer attachment
- Dump trucks
- Vacuum trucks
- Road saw
- Plate compactor
- Horizontal directional drill
- Auger bore
- Pipe cutting and welding equipment

2.2 Need

The UMF determined the location of utilities within the rail corridor, or that would cross the rail corridor, based on the concept design. The location was confirmed based on Dial Before You Dig plans, and third-party data and field observations. Table 2.1 above shows the utility works in the Edmondson Street bridge enhancement site area identified as part of the EIS.

The UMF states that these utility relocations and adjustments would generally be contained within the proposal site and were therefore considered as part of the environmental impact assessment undertaken, however, consultation with utility providers would be ongoing and confirmation of the final treatment solution would occur during detailed design. Therefore, there may be instances were a utility needs to be relocated outside of the construction boundary. Table 27-2 of Chapter 27 of the EIS lists utilities as an uncertainty that would be resolved during detailed design. It is stated that this uncertainty would be resolved by undertaking utilities investigations, including intrusive investigations, and consultation and agreement with service providers.

Detailed design undertaken since the preparation of the UMF has confirmed the type, location and method for treatment of the utilities described in Appendix D1 of the EIS. These design refinements respond to additional investigations and utility owner consultation as allowed for in Table 27-2 of the EIS.

2.2.1 Utilities Management Framework

To identify potential impacts associated with works outside the approved construction boundary, the risk-based process contained in the UMF has been applied to the Proposed Change. This ensures consistency with the UMF approach, which contains the following steps:

1. Confirm utilities requiring relocation or protection works;

   Major utilities within the rail corridor were identified in the UMF as potentially requiring protection, adjustment or relocation works. During detailed design, further assessment was undertaken to confirm the Edmondson Street bridge enhancement site utilities that require relocation, or protection works where they are in conflict with the Project. These are outlined in Table 2.1.

2. Confirm preferred approach and design refinement;

   The UMF outlines the need to confirm the treatment approach for each utility service impacted by the Project. The UMF nominated treatments approaches were reviewed during detailed design to confirm whether diverting, adjusting, relocating or wrapping/protecting is the most appropriate method. This review also included the construction methods used to treat each utility.

3. Detailed assessment;

   This step builds on the previous two, with direct input from the utility owners. Work plan packages were issued to Essential Energy and APA to confirm whether the proposed treatment approach is acceptable, or whether further refinement is required to meet the relevant utility owner's specification.

4. Ongoing consultation with asset owners and relevant stakeholders;

   As outlined in the steps above, ongoing consultation with APA and Essential Energy has occurred to both determine a suitable design and to liaise on construction works with the potential to directly or indirectly impact utilities would be coordinated. Ongoing consultation with the utility asset owners has been undertaken since the EIS was prepared, and the final details of the utility scope in this area have been determined. To identify potential impacts associated with these works, a risk-based approach has been adopted and is contained within the utilities management framework (UMF).

5. Construction management;

   Work activities, including utility works, would be managed in accordance with the Project approval and all applicable environmental documents developed for the Project.

2.3 Location and setting

The Proposed Change is located in Wagga Wagga and relates to the Edmondson Street bridge enhancement site to the west of the Wagga Wagga Railway Station on the Main Southern Railway Line.

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

2.4 Construction hours

Work activities will be timetabled to be carried out during the approved standard construction hours, where possible. The approved construction hours as follows:

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

As outlined in 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.

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 owners in relation to determining a suitable design and to coordinate construction impacts on existing operational utilities.

Consultation with each of the affected landowners where works are proposed outside the construction boundary would be undertaken prior to commencement of works.

Where vegetation removal is proposed on land not owned by Inland Rail, consultation will be carried out with the property owner including confirming any revegetation/rehabilitation requirements. This will be undertaken in accordance with the Community Communication Strategy (IRPL, 2024), prior to the removal of vegetation.

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.

4 Environmental assessment

4.1 Environmental risk review

An environmental risk review of the proposed activities has been undertaken, including consideration of the UMF, and is provided below in Table 4.1. Assessments of potential impacts are provided in greater detail for:

- traffic and transport (Section 4.2)
- noise and vibration (Section 4.2)
- non-Aboriginal heritage (Section 4.4)
- biodiversity (Section 4.5)
- flooding risk (Section 4.6)
- soils and contamination (Section 4.7)
- air quality (Section 4.8), and
- visual and light spill (Section 4.9).

Table 4.1: Consistency assessment review

ISSUE	Y/N	NOTES
Are works required outside the IR property acquisition boundary, or land not previously impact on by Project works?	Y	Road reserve – all through council via s138 process No acquisition required – will be temporary only to complete works. Easement for the 66kV works which is outside the construction boundary. This has already been finalised Land Registry Service (LRS) IR has registered the easement and would be handed over to EE.
Will the works result in any changes to form or functionality of the approved Project?	N	The Proposed Change would not impact on the form of functionality of the approved Project. The utility works are an essential component of the broader A2I Project as they enable key works at the Edmondson Street bridge enhancement site.
Are there any potential impacts on traffic and transport associated with the works?	Y	The Proposed Change would result in minor and short-term traffic and transport impacts in that they would require temporary closure of small sections of public footpaths and roads during the construction phase. These impacts are therefore considered in greater detail in Section 4.2.
Are there any potential noise and vibration impacts associated with the works?	Y	The Proposed Change would result in short-term noise and vibration impacts. These impacts are considered in greater detail in Section 4.3.
Are there any potential impacts on known Aboriginal heritage items or sites located in the vicinity of the works?	N	There are no known Aboriginal heritage items or sites located within the Proposed Change area.
Are there any potential impacts on non-Aboriginal heritage items or sites located in the vicinity of the works?	Y	The Proposed Change is located in proximity to known non-Aboriginal heritage items and sites. These impacts are therefore considered in greater detail in Section 4.4.
Are the works within 50m of an EEC or threatened species?	Y	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?	Y	Trimming and clearing of vegetation (0.81 ha) is required within the scope of works for the Proposed Change. The impacts associated with trimming and clearing of vegetation are considered in greater detail in Section 4.5.
Are the works within 40m of a waterway or water body?	N	There are no waterways located within the Proposed Change area. The nearest waterway, being the Murrumbidgee River, is located approximately 1,200m away from the Proposed Change.

Are the works located on flood prone land?	Y	The Proposed Change is located in flood prone land. The impacts associated with a flooding risk, are discussed in greater detail in Section 4.6.
Are the works located on bushfire prone land?	N	The Proposed Change is not located on bushfire prone land.
Do the works involve ground disturbance of more than 2 hectares?	N	The additional construction impact zone required as part of 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?	Y	The Proposed Change is located in an area of low salinity hazard. The impacts associated with salinity are discussed in greater detail in Section 4.7.
Are the works in an area of known acid sulfate soil risk?	Y	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 4.7.
Will works require temporary or permanent placement of surplus spoil material?	Y	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?	Y	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 4.7.
Are there any potential air quality impacts associated with the works?	Y	The Proposed Change would result in potential minor and short-term air quality impacts. These impacts are discussed in greater detail in Section 4.8.
Are there any potential landscape and visual impacts associated with the works?	Y	The Proposed Change would result in landscape and visual impacts. These impacts are discussed in greater detail in Section 4.9.
Will works result in any operational impacts further to those detailed in the approved Project?	N	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.

4.2 Traffic and transport

4.2.1 Existing environment

As noted in Section 2.3, the Edmondson Street bridge enhancement site is located to the west of the Wagga Wagga Railway Station on the Main Southern Railway Line.

Edmondson Street provides access across the existing rail line south to north. On the northern side of the rail line is Wagga Wagga central business district (CBD), as well as residential areas to the west, south of the rail line are residential areas. Edmondson Street carries a relatively high volume of traffic at 10,448, 2% being heavy vehicles (HV).

There is existing pedestrian and public transport infrastructure located within the Edmondson Street bridge enhancement site, with footpaths present on most roads.

4.2.2 Impact assessment

The Proposed Change would result in minor and short-term traffic and transport impacts, with temporary closures of small section of public footpaths and roads required during the construction works.

The footpath and road closures will be set up as per the Traffic Guidance Schemes (TGS) and will be implemented during the construction hours (as noted in Section 2.4). There are no 24/7 footpath or road closures anticipated for these construction works.

4.2.3 Conclusion

These 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.

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. Consistent with the adopted standards and guidelines, sensitive receivers in the work areas include residential dwellings, schools and education institutions, places of worship, childcare centres, medical facilities, commercial property and industrial premises.

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 Impact assessment

Noise catchment areas

Noise catchment areas (NCA) 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 January 2025 Doc No: 6-0052-210-EEC-W0-AS-0001_A) was undertaken for the Wagga Wagga Utilities Works scope, including that considered as part of the Proposed Change (refer to Appendix A). The Proposed Change area is surrounded by a combination of residential and commercial receivers. The corresponding NCAs, approximate number of receivers and noise management levels (NMLs) are noted below in and Table 4.3, and shown in Figure 4-1.

Table 4.2: NCAs and background noise information

ENHANCEMENT SITE	NCA ID	APPROXIMATE NUMBER OF RECEIVERS IN NCA	DESCRIPTION	RBL (DBA)		
				Day	Evening	Night
EDMONDSON ST BRIDGE	NCA 10	6,141	The urban areas of western Wagga Wagga include industrial land uses located in the vicinity of the proposal site, with residential properties further from the rail corridor and in the west. Noise sources in this area include the Hume Highway, rail corridor and industrial areas of Wagga.	46	45	38
WAGGA WAGGA YARD CLEARANCES	NCA 11	5,922	The urban areas of eastern Wagga Wagga have industrial land uses located directly to the north and east of the proposal site; however, numerous residential properties are adjacent to the southern side of the rail corridor. Residential properties extend to the north and south at a greater distance. Noise sources in this area include the Hume Highway, rail corridor and industrial areas of Wagga Wagga and Bomen.	48	47	37

Table 4.3: NCAs and noise management levels

NCA ID	NOISE MANAGEMENT LEVEL (NML)			
	APPROVED HOURS (RBL + 10 DB)	OUT OF HOURS		
		Daytime (RBL + 5 dB)	Evening (RBL + 5 dB)	Night-time (RBL + 5 dB)
NCA 10	56	51	50	43
NCA 11	58	53	52	42

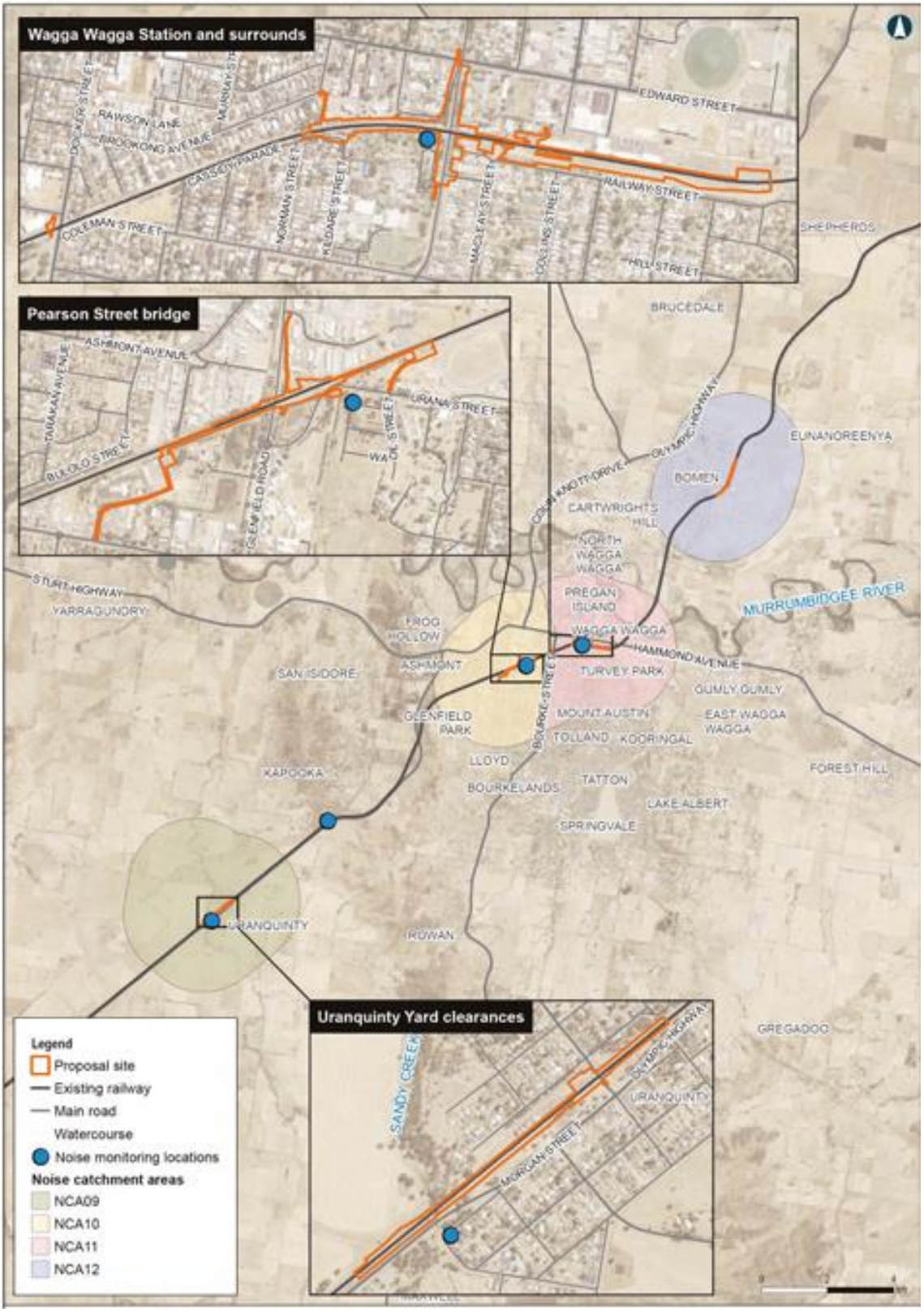


Figure 4-1: EAD mapped NCA 11 in relation to the Proposed Change at Wagga Wagga Station and surrounds

4.3.3 Construction hours

Construction hours for the Edmondson Street bridge enhancement site are as discussed in Section 2.4, with the following also noted:

'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).

In accordance with CoA E73, where 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 Out of Hours Work Protocol except as permitted by an EPL.

Predicted noise levels

A summary of the predicted worst-case noise levels for each activity of the Proposed Change (as referred to in Section 2.1.2), has been provided by the CNVIS, and includes the following:

- For the site establishment activities, three 'moderately intrusive' impacts are predicted at closest residential receivers to the works. No 'moderately intrusive' impacts are expected for site compound operation at residential receivers and no 'highly intrusive' impacts are expected for these work scenarios at residential and other sensitive receivers.
- Noise generating activities from the site compound operation during approved daytime hours are generally predicted to be below the NML for other sensitive receivers. However, the childcare centre at 6 Station Place is predicted to experience minor noise impacts ('clearly audible').
- 'Highly intrusive' noise impacts are predicted to the nearest residential and other sensitive (i.e., educational receivers) receivers for the auger bore, APA, APS1, and 66kV activities during approved daytime hours. The highest noise levels and impacts would be experienced by adjacent receivers when noisy construction work is conducted nearby.
- For work associated with the APA and Edmondson Street detour activities, 'highly intrusive' impacts are predicted at the nearest residential receivers during all assessment periods.
- For work associated with APA and Edmondson Street detour activities, generally minor impacts ('noticeable' to 'clearly audible') are predicted for other sensitive receivers during OOHW. South Wagga

Public School is predicted to experience 'highly intrusive' impacts during approved daytime hours. It is noted that other sensitive receivers should only be considered impacted 'when in use'.

Ground-borne noise

Ground-borne construction noise impacts from the Proposed Change are not anticipated as vibration intensive work with the potential to generate perceptible ground-borne noise, is not included in the scope of work. Vibration intensive work for the Proposed Change 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 in the CNVIS assessment.

Vibration impacts

Wagga Wagga Railway Station and yard is listed on the State Heritage Register and Kildare Catholic College and South Wagga Public School are Local Heritage Items. The entirety of the Proposed Change area in addition to the residential area surrounding Edmondson Street Bridge is part of the Wagga Wagga Conservation Area and is shown in Figure 4-2.

The minimum working distances for vibration intensive work, and as per the listed plant and equipment part of the scope of works, are listed below in Table 4.4 below.

Table 4.4: Recommended minimum working distances from vibration intensive equipment

PLANT ITEM	RATING/DESCRIPTION	MINIMUM DISTANCE			
		Cosmetic Damage			
		Residential and Light Commercial	Heritage Items	Industrial and Heavy	Human Response (NSW EPA Guideline)
Small Hydraulic Hammer	300kg (5 to 12-tonne excavator)	2m	5m	1m	7m
Medium Hydraulic Hammer	900kg (12 to 18-tonne excavator)	7m	15m	4m	23m

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

Cosmetic damage assessment

When using the medium hydraulic hammer, one residential building (2 Kildare Street), located near the Proposed Change area, is located within the Wagga Wagga Conservation Area and has the potential to fall within the cosmetic damage minimum working distance for residential structures and is located within vibration-sensitive distances. One commercial building (10 Cheshire Street), located near the Proposed Change area, has the potential to fall within the cosmetic damage minimum working distance for light commercial structures.

However, when using the small hydraulic hammer all receivers are beyond the minimum working distances for cosmetic damage. Therefore, the smaller, less vibration intensive hydraulic hammer will be used for the construction works, and will be completed in accordance with CoA E74.

As per CoA E120, before commencement of any work, a structural engineer must undertake condition surveys of all building, structures, utilities and the like identified in the documents CoA A1 as being at risk of damage.

As per CoA 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. Advice must be sought on methods and locations for installing equipment as per CoA E81.

As per CoA E80, where vibration generating works are required within the minimum working distances and considered likely to exceed the criteria, different construction methods with lower source vibration levels (i.e alternative equipment) will be investigated and implemented, where feasible. Attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels of the item. Works will cease if the monitoring indicates vibration levels are likely to, or do, exceed the relevant cosmetic damage criteria.

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 as per CoA E120.

Human comfort assessment

Twelve residential receivers have the potential to fall within the human comfort minimum working distances and occupants of these buildings may be able to perceive vibration impacts at times when medium hydraulic hammers are in use nearby. Where impacts are perceptible, they would likely only be apparent for relatively short durations when vibration intensive equipment is in use nearby.

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 (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 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.

Section 4.11 provides a summary of environmental management measures associated with these works.

4.4 Non-Aboriginal heritage

4.4.1 Existing environment

Potential non-Aboriginal heritage impacts were assessed within Chapter 11 of the EIS, Technical Paper 3 (Non-Aboriginal heritage) and the Wagga Wagga Non-Aboriginal Heritage Assessment (WWNAHA) (Ozark) (Appendix B).

The study area for EIS Technical Paper 3 (Non-Aboriginal heritage) included the length of the existing railway corridor from Albury to Illabo, with a specific focus on the 14 enhancement sites, including heritage items and conservation areas within and in the vicinity of the enhancement sites that could be directly or indirectly impacted by the Project.

The Proposed Change intersects or is adjacent to the curtilage for the heritage items listed in Table 4.5 and shown in Figure 4-2.

Table 4.5: Heritage items that intersect or are adjacent to the Proposed Change

NAME	HERITAGE LISTING	ENHANCEMENT SITE	DISTANCE FROM PROPOSED CHANGE
Wagga Wagga Railway Station and Yard Group	State listed heritage (SHR 01279)	Edmondson Street	Within curtilage (partial)
Wagga Wagga Heritage Conservation Area (WWHCA)	LEP listed heritage	Edmondson Street	Within curtilage (entirely)
Wagga Wagga Railway Station	LEP listed heritage (I98)	Edmondson Street	Within curtilage (partial)
Edward and Best Streets, former corner store	LEP listed heritage (I262)	Edmondson Street	Immediately adjacent
Mt Erin Convent, chapel, high school & grounds	LEP listed heritage (I260)	Edmondson Street	Within curtilage (partial)
Best Street railway gatehouse (former)	LEP listed heritage (I254)	Edmondson Street	Within curtilage (partial)

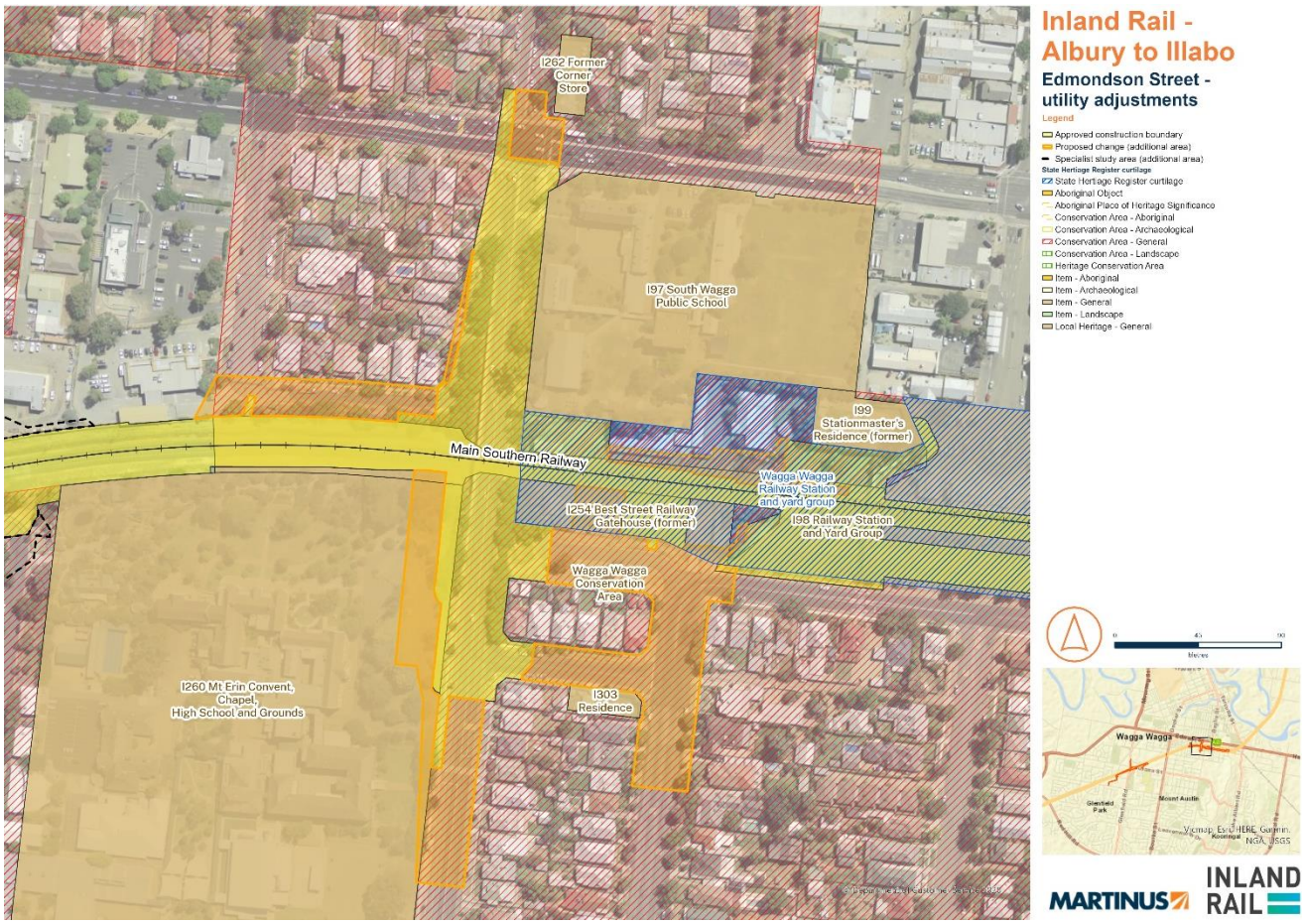


Figure 4-2: Heritage items/curtilages that intersect or are adjacent to the Proposed Change

4.4.2 Impact assessment

Interaction with Wagga Wagga Heritage Conservation Area

The EIS concluded that the Project would have an overall minor impact to the heritage significance of the conservation area. The Proposed Change interacts with the WWHCA, as scope of works include gas main realignment, power line realignment and vegetation trimming and removal. As noted in the WWNAHA, the Proposed Change would not negatively impact on the heritage characteristics of the WWHCA, although consultation with the Wagga Wagga City Council (WWCC) is recommended.

Edward and Best Streets former corner store (I262)

The Proposed Change would occur adjacent to the former corner store (I262), during the 66kV electricity transmission line works. The Proposed Change would not cause any negative impact to the visual amenity of the former corner store (I262), as many overhead powerlines already run through the area.

Mt Erin Convent, chapel, high school & grounds (Mt Erin complex) (I260)

The EIS concluded that the Project would have an overall minor impact on the complex. Although the Project would remove plantings and construct new infrastructure (including a relocated powerline), these features would not change the overall character of the complex. The Proposed Change would involve trimming and removal of vegetation within the Mt Erin complex; however, the vegetation/grounds are not listed as part of the significance of the listing. The vegetation clearance would not alter the overall character of the Mt Erin Complex and has been deemed a minor impact.

Best Street railway gatehouse (former) (I254)

The EIS concluded that the Project would have a minor impact on the overall heritage significance of the Wagga Wagga Railway Station and Yard Group, which takes into account the impacts to the Best Street railway gatehouse (former). The Proposed Change does not interact with the railway gatehouse, and therefore no impacts to the LEP listed heritage item are expected.

Wagga Wagga Railway Station and Yard Group (SHR 01279) & Wagga Wagga Railway Station (I98)

The EIS concluded that the Project would have a minor impact on the overall heritage significance of the Wagga Wagga Railway Station and Yard Group, which takes into account the impacts to the Wagga Wagga railway station.

Northern side of the rail line

There would be no permanent above ground alterations in this area and no impact to State heritage listed fabric or potential archaeological deposits. The prior high levels of development in this area will have removed any potential archaeological remains had they ever been present.

Southern side of the rail line

The eastern area partially overlaps with the Best Street Gatehouse as well as the Wagga Wagga Railway Station curtilage. This area has no heritage values and is not in proximity of any heritage fabric. The incursion into State listed heritage item would be temporary and would not alter any viewsheds of vistas of the Wagga Station and its associated buildings of heritage significance. This area also overlaps with the Wagga Wagga Railway Station (I98), with the conclusions of 'no impact to heritage values' applies to this listing as well (WWNAHA, Ozark). The western area adjacent to the Best Street railway gatehouse remains excluded from impact, as it contains no structures associated with the heritage significance of the Wagga Wagga Railway Station and Yard Group. Therefore, there would be no impacts to the heritage significance of the SHR listed Wagga Wagga Railway Station and Yard Group.

4.4.3 Conclusion

The Proposed Change involves disturbance of the ground through underboring and trenching, movement of underground and overhead power lines, and vegetation trimming and removal.

Some of these works are partially located within Local Environmental Plan (LEP) and State Heritage Register (SHR) curtilages as noted above. However, the Proposed Change avoids all heritage fabric, archaeological deposits and any values identified in the significance documentation attached to the listings and are confined to areas that have been previously disturbed (WWNAHA, Ozark).

Therefore the Proposed Change scope of works would not result in an increase on the level of impact assessed as part of the A2I EAD and would not impact the Project's ability to comply with relevant conditions of approval or updated management measures.

The WWNAHA had made recommendations to be implemented during the construction works, with these management measures discussed in Section 4.11.

Section 4.11 provides a summary of environmental management measures associated with these works.

4.5 Biodiversity

4.5.1 Existing environment

The subject area is located in the NSW South-western Slopes bioregion, including 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.

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).

Vegetation

A Biodiversity Assessment Report Memo (BARM) (East Coast Ecology, October 2024) was undertaken for which includes the Proposed Change scope of works. The BARM has identified vegetation within the Proposed Change area to consist of mature trees, landscaped gardens, and council managed green spaces adjacent to rail corridor and are described as:

- Miscellaneous ecosystems – Ornamental Plantings (MEOP)
  - With historical and ongoing residential and community use at Edmondson Street, vegetation is comprised of ornamental native and exotic species planted for aesthetic purposes and was therefore determined to have limited ecological function. MEOP includes areas that are not consistent with the definition of a PCT and are not required to be assessed for ecosystem credits, as noted in the BARM.
  - MEOP's extent is approximately 0.40 ha.
- Miscellaneous ecosystems – Highly Disturbed area with no or limited Native Vegetation (MEHD)
  - Due to a long history of disturbance from agricultural, infrastructure (rail and road) and industrial use at Edmondson Street, vegetation is comprised of no or limited native species and is dominated by exotic species and provides limited ecological function. MEHD includes areas that are not consistent with the definition of a PCT and are not required to be assessed for ecosystem credits, as noted in the BARM.
  - MEHD's extent is approximately 0.41 ha.

Threatened flora

As noted in the BARM, BioNet and Protected Matters Search Tool (PMST) searches revealed ten threatened flora species occur, or have the potential to occur, within a 5km radius of the Proposed Change area. The BARM determined that habitat is substantially degraded that all potential flora species are unlikely to occur within the Proposed Change area.

Threatened fauna

As noted in the BARM, BioNet and PMST searches revealed thirty-three threatened fauna species occur, or have the potential to occur, within a 5km radius of the Proposed Change area.

The degraded vegetation within the Proposed Change area 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). 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 Proposed Change area.

Migratory species

As noted in the BARM, database searches revealed eight migratory terrestrial species, or their habitat, are known to occur within the Proposed Change area. These species are unlikely to occur due to the lack of suitable habitat in the Proposed Change area (i.e. ornamental tree dominated) and these species do not breed in Australia.

4.5.2 Impact assessment

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 Proposed Change, and in the broader landscape. Further, it is considered

unlikely that any threatened species would occupy the additional area for the Proposed Change area due to evidence of ongoing disturbance (railway, roads, residential housing). As such, no threatened flora or fauna are likely to be significantly impacted.

4.5.3 Conclusion

The Proposed Change will require the removal/ trimming of:

- 0.40 ha of MEOP; and
- 0.41 ha of MEHD.

There would be no impacts to threatened species, populations or ecological communities are expected as a result of the Proposed Change. Although outside the assessed construction boundary for the Project, the biodiversity impacts are considered consistent with the initial assessment (WSP, 2023), and no further offsets (ecosystem or species) would be required subject to the implementation of the mitigation measures outlined in Table 4.11.

Section 4.11 provides a summary of environmental management measures associated with these works.

4.6 Flood risk

4.6.1 Existing environment

The Proposed Change area is located within the Murrumbidgee catchment of the Murray-Darling Basin. The Murrumbidgee catchment extends from the Kosciuszko National Park in eastern NSW to Balranald in western NSW, with inflows primarily sourced from the Great Dividing Range (EIS, Chapter 18). There are no watercourses located within the Proposed Change area.

The frequency of flood events is generally referred to in terms of their annual exceedance probability (AEP). For example, for a 5% AEP flood, there is a five per cent probability (or a one in 20 chance) that there would be floods of a greater magnitude in any given year. For a 1% AEP flood, there is a one per cent probability (or a one in 100 chance) that there would be floods of greater magnitude each year. The probable maximum flood (PMF) is the largest flood that could be expected to occur at a particular location, usually estimated from probable maximum precipitation.

4.6.2 Impact assessment

The Proposed Change area is located within flood prone land, with existing flood conditions shown in Table 4.6 below.

Table 4.6: Existing flood conditions

ENHANCEMENT SITE	EXISTING FLOOD CONDITIONS	DRAINAGE	FLOOD RISK WITHIN AND AROUND THE ENHANCEMENT SITE FOR EVENTS UP TO THE 1% AEP	PMF FLOOD DEPTH
Edmondson Street bridge	Peak flood depth of 0.15-0.3m within the rail corridor in the 1% AEP. Rail corridor within the study area categorised as ‘flood storage’ and ‘floodway’ in the 1% AEP.	Surface water discharges into Council drainage system at the Edmondson Street bridge	5% AEP and greater events	Greater than 0.75m in overland flooding events.

Construction activities on flood-prone land, including earthworks, concrete works, compounds, stockpiles, have the potential to temporarily affect flooding behaviour. Without the implementation of appropriate management measures, potential impacts include:

- cause damage to construction sites, machinery, plant and equipment
- detrimentally impact downstream watercourses through increased flow rates in drainage lines, changes in scour, bank erosion and transport of sediments
- obstruct the passage of floodwater and overland flow, which could exacerbate existing flooding conditions and pose a safety risk to the public.

Considering the limited duration and scope of the works (estimated 18 months for total Project scope at Edmondson), the limited peak flood depth of 0.15-0.3m within the rail corridor in a 1% AEP and the existing elevation of the areas adjacent to the rail corridor within the Proposed Change area no significant impacts to flood behaviour are anticipated for events up to and including the 1% AEP.

4.6.3 Conclusion

Construction activities at the Proposed Change area would be short term and would be prepared with consideration of flooding behaviour. Where temporary obstruction of overland flows or drainage systems cannot be avoided, further consideration of flood risk would be undertaken to develop the staging of works to ensure proper management of a flood event at all stages of construction. The Proposed Change area has been designed to minimise the duration of onsite work, which would enable increased flexibility when scheduling works around forecast rain periods (EIS, Chapter 8). The mitigation measures outlined in Table 4.11 would also be implemented for the duration of works. Considering the limited duration and scope of the works (estimated 18 months for total Project scope at Edmondson), the limited peak flood depth of 0.15-0.3m within the rail corridor in a 1% AEP and the existing elevation of the areas adjacent to the rail corridor within the Proposed Change area no significant impacts to flood behaviour are anticipated for events up to and including the 1% AEP which is consistent with the flood risk/behaviour of the approved works.

Section 4.11 provides a summary of environmental management measures associated with these works.

4.7 Soils and contamination

4.7.1 Existing environment

The Proposed Change area is located within the Wagga Wagga precinct at an elevation of about 190 to 200 m Australian Height Datum (AHD) at the south of the Murrumbidgee River. The topography generally slopes to the north to the Murrumbidgee River; however, there are localised high points along the Olympic Highway that drain to various tributaries of the Murrumbidgee River (EIS, Chapter 20).

Existing soil characteristics within the Proposed Change area are shown in Table 4.6 below.

Table 4.7: Existing soil characteristics

ENHANCEMENT SITE	LANDSCAPE	SOIL	CHARACTERISTICS
Edmondson Street bridge	Becks Lane soil landscape	Moderately deep red and brown Chromosols and Dermosols.	High erosion hazard, steep slopes, localised foundation hazards and mass movement, stoney and strongly acid soils on ridges and upper slopes.
	Lloyd soil landscape to the eastern end of the site	Eastern end of the site likely comprises red Chromosols and brown Sodosols.	

Saline soils

The Proposed Change area is located on land mapped as having 'low' land salinity hazard.

Acid sulfate soils

The Proposed Change area is located within areas described as low probability of acid sulfate soils (ASS).

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

The Proposed Change area is located within Areas of Environmental Concern (AEC) noted as AEC 36 and AEC 37. Description of the AECs and potential contaminants of concern are shown in Table 4.8 below and in Figure 4-3.

Table 4.8: Description of AEC and potential contaminants of concern

ENHANCEMENT SITE	AEC	DESCRIPTION OF AEC	POTENTIAL CONTAMINANTS OF CONCERN
Edmondson Street bridge	AEC 36	Potential USTs, formerly storage of firefighting storage tanks and former fuel store (not part of the site)—Former District Engineers Office, workshop and branch depot.	TRH, BTEX, PAHs, PFAS and asbestos
	AEC 37	Former gang shed - historical storage of gas cylinders, grease and drums, transformers, rail components and battery acid containers, and potential asbestos in buildings.	TRH, BTEX, PAHs, and asbestos

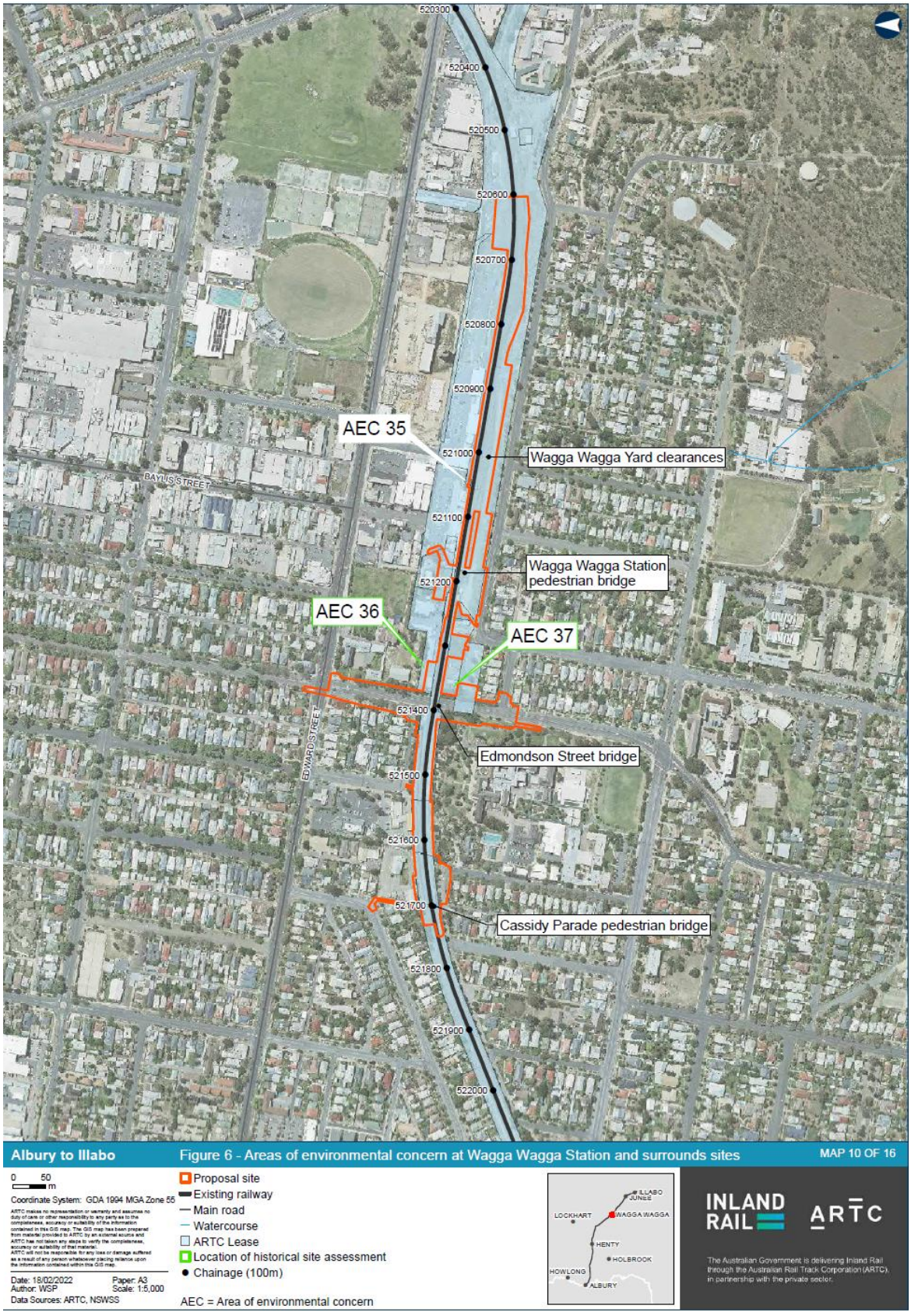


Figure 4-3: EAD areas of environmental concern for Wagga Wagga enhancement sites (refer to AEC 36 and AEC 37)

4.7.2 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 (see Section 4.11) and risks associated with dust are discussed further in Section 4.8.

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 low within the context of the continuing railway land use; however, some discrete areas of medium risk have been identified, such as areas of waste within the rail corridor, fill used in the construction of the existing rail line and structures containing hazardous materials (such as lead paint and asbestos).

Based on the intensity of historical activities observed within the rail corridor, including the presence of operational facilities, development in the surrounding area, and the Proposed Change area's proximity to the Wagga Wagga train station, the Proposed Change area is considered to have a higher likelihood of contamination being present. The mitigation measures outlined in Section 4.11 include further investigation of the area, which would confirm the requirement for further management actions. A Sampling, Analysis, and Quality Plan (SAQP) is currently being developed for all sites across the alignment and would be utilised to inform the scope of any site investigations required prior the commencement of works.

4.7.3 Conclusion

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

Section 4.11 provides a summary of environmental management measures associated with these works.

4.8 Air quality

4.8.1 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 monitoring Wagga Wagga North, with the results summarised in Table 4.9 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 4.9: Background air quality (2016 to 2020)

MONITORING STATION	POLLUTANT	AVERAGING PERIOD	AIR QUALITY IMPACT ASSESSMENT CRITERIA	YEAR*				
				2016	2017	2018	2019	2020
Wagga Wagga North	PM_{10} (g/m^3)	Maximum 24-hour average	50	**114.7**	**171.6**	**127.2**	**251.7**	**259.4**
		Annual average	25	20.7	20.4	**26.9**	**34.7**	21.9
	$PM_{2.5}$ (g/m^3)	Maximum 24-hour average	25	Not available	**40.8**	**90.2**	**129.4**	**559.5**
		Annual average	8	Not available	**8.5**	**8.9**	**11.0**	**12.9**

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

4.8.2 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.

4.8.3 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.

Section 4.11 provides a summary of environmental management measures associated with these works.

4.9 Landscape and visual

4.9.1 Existing environment

The Proposed Change area is located at the boundary of the upper slopes of the South-western Bioregion, characterised by steep, hilly and undulating ranges and granite basins, with open forests and woodlands.

A feature of the landscape and visual catchment across the Proposed Change area, includes the operational rail corridor of the Main South Line. This corridor has largely been cleared of native vegetation and generally consists of grassland with a few scattered trees.

4.9.2 Impact assessment

Landscape character

Landscape character impacts will occur, primarily due to the scale of the works occurring during construction and/or due to the higher sensitivity of the landscape character unit, such as:

- Construction work within and external to the rail corridor, which requires the trimming and removal of vegetation, local diversions and temporary impacts to areas of open space;
- Construction work within non-Aboriginal heritage sites, such as Wagga Wagga Conservation Heritage Area (Section 4.4 details impacts to non-Aboriginal heritage items and sites).

The landscape character impact for the Proposed Change area is noted as high to moderate adverse impact (EIS, Chapter 17) specifically for the Wagga Wagga Railway Station heritage landscape and Edmondson Street bridge landscape.

Viewpoints

The Proposed Change area would result in a moderate visual impact at one viewpoint, north along Edmondson Street.

Night-time visual

There would be night activity during rail possessions, and during extended construction hours, along the Proposed Change area. This would include task lighting, construction vehicle headlights and lighting associated with site offices, storage and laydown areas.

Minor-to-moderate night-time visual impacts are expected within the Proposed Change area, due to light spill and sky glow from the construction works.

4.9.3 Conclusion

Impacts to landscape character (excluding non-Aboriginal heritage), viewpoints, and night-time visual are considered to be short-term and minor with the implementation of appropriate mitigation measures as outline in Section 4.11. For a detailed consideration on the impact of the Proposed Change area to non-Aboriginal heritage items and sites refer to Section 4.4.

Section 4.11 provides a summary of environmental management measures associated with these works.

4.10 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 4.10, which determined that there would be no impacts on matters of national environmental significance and no referral is required.

Table 4.10: 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	The Proposed Change would not have a direct or indirect impact on listed threatened species or communities. 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. 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). 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. 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.
Any impacts on listed migratory species?	No	Database searches undertaken as part of the BARM (Appendix C) revealed eight migratory terrestrial species, or their habitat, are known to occur within a five (5) kilometre buffer of the Proposed Change. The biodiversity assessment concludes that 'these species are unlikely to occur and do not breed in Australia'. 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.

FACTOR	IMPACT (YES/NO)	IMPACT DESCRIPTION
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).

4.11 Environmental management measures

The UMF (Table D-5) specifies a number of example mitigation measures. These mitigation measures have been superseded by the Project UMMs and CoAs. Table 4.11 outlines the relevant UMMs and CoAs, called EMM's in this document, that will be implemented as management measures for the Proposed Change.

Table 4.11: Management measures for the Proposed Change

ID	MEASURE
General	
EMM1	All personnel (including sub-contractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. The environmental component of the induction will cover the applicable elements of the EAD, CoA and UMM and as a minimum: ▸ Requirements of due diligence and duty of care; ▸ Key conditions of licences, permits and approvals. This includes the EPL and ensuring all workforce involved in the carrying out their activities are aware of their environmental responsibilities regulated by this licence; ▸ Potential environmental emergencies on site and the emergency response procedures; ▸ Reporting and notification requirements for pollution and other environmental incidents; ▸ Specific environmental management requirements and responsibilities; ▸ Information relating to the location of environmental constraints, including cultural heritage, no-go zones and sensitive receivers; ▸ Key environmental aspects, issues and measures; ▸ Complaints handling. The induction will also include information about the surrounding community, the key stakeholders and any location specific sensitivities. The induction will provide information on what to do if approached by a member of the public or media, and an outline of Project personnel and sub-contractor responsibilities and obligations relating to the community.
EMM2	The induction will also include information about the surrounding community, the key stakeholders and any location specific sensitivities. The induction will provide information on what to do if approached by a member of the public or media, and an outline of Project personnel and sub-contractor responsibilities and obligations relating to the community.
EMM3	An induction register will be maintained as a record of all environment inductions and kept on-site. Pre-start briefing records will be maintained and available to demonstrate how environment risks are being communicated to the site team on a daily basis where required.
Traffic and transport	

ID	MEASURE
EMM4	During construction, all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.
EMM5	Safe pedestrian and cyclist routes must be provided and maintained across and around work sites during construction. In circumstances where pedestrian and cyclist access and routes are restricted or removed due to construction activities, a nearby alternative access or route must be provided which complies with the relevant standards before the restriction or removal of the impacted access.
EMM6	The Proponent must maintain existing access to properties during the entirety of work where practicable.
Noise and vibration	
EMM7	Avoid simultaneous operation of noisy plant within discernible range of noise sensitive receivers where possible.
EMM8	Where practical optimise vehicle routes to avoid or minimise the need for reversing of construction vehicles.
EMM9	In consultation with contractors and suppliers, aim to source plant and equipment with the lowest available noise and vibration emissions that can practically complete the works. This will include consideration of minimising the use of equipment that generates impulsive, tonal or irregular noise and the consideration of battery and/or electrical powered items of plant and equipment.
EEM10	Non-tonal movement alarms will be considered where relevant for all plant and equipment.
EMM11	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.
EMM12	Condition surveys will be completed before and after construction works where buildings or structures, utilities or road infrastructure are within the minimum vibration working distances.
EMM13	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.
EMM14	Where vibration levels are predicted to approach the criteria for cosmetic building damage or limits for critical or sensitive areas, attended vibration measurements shall be undertaken at the commencement of vibration generating activities to confirm that vibration limits are within the acceptable range.
Heritage	
EMM15	In the event any unexpected heritage finds are encountered during the undertaking of the Proposed Change, the discovery will be managed in accordance the Project's Unexpected Heritage Finds Procedures.
EMM16	Exclusion zones will be established for retained heritage items or structures prior to construction.
EMM17	Exclusion zones will be inspected regularly during construction to ensure protection of heritage items.
EMM18	All personnel who carry out works with the potential to impact Aboriginal or non-Aboriginal heritage sites/items including employees, contractors and utility staff will undergo site induction training relating to cultural heritage management issues prior to working onsite. The induction training will address site and/or construction activity specific impacts relating to cultural heritage management including: ▸ The requirements and contents of this Plan, including identified heritage items and their location; ▸ Relevant legislation and guidelines;

ID	MEASURE
	▸ The relevant management and mitigation measures; ▸ Making the personnel working on site aware of and explaining the procedures to follow in the event of any unexpected heritage finds or the discovery of human remains during construction works; ▸ Outlining responsibilities and obligations under the National Parks and Wildlife Act 1974 and Heritage Act 1977 relating to Aboriginal and non-Aboriginal cultural heritage management. An induction register will be maintained as a record of all environment inductions. Pre-start briefing records will be maintained and made available to demonstrate how environmental risks are being communicated to the site team on a daily basis where required.
EMM19	The Project will not destroy, modify, or otherwise physically affect any heritage items outside of the CSSI construction boundary.
Biodiversity	
EMM20	In the event any unexpected threatened species or ecological communities are encountered during the undertaking of the Proposed Change, the discovery will be managed in accordance the Project's Unexpected Threatened Species Finds Procedure.
EMM21	Construction workforce will be supplied with sensitive area maps (showing clearing boundaries and exclusion zones), including updates as required.
EMM22	All personnel must drive to the conditions, speed limits and road rules. Any fauna strikes must be reported to IRPL as soon as possible.
EMM23	Works within the Tree Protection Zones of retained trees within or immediately adjacent to the disturbance area will be planned with consideration of the tree protection measures outlined in AS4970-2009 Protection of Trees on Development Sites. Where practicable, appropriate measures will be implemented to minimise the impact of the works on the long-term health of these trees.
EMM24	The Project's fauna handling and rescue procedure would be implemented for: ▸ All activities conducted by site personnel (including sub-contractors) that have the potential to encounter fauna that will need to be relocated or removed from site; and ▸ Vegetation clearing and land disturbance
EMM25	Handling of fauna may be necessary for fauna to be relocated or, if injured, taken to a vet or wildlife carer.
EMM26	A wildlife licence and/or scientific licence must be held by any staff handling fauna and should be undertaken by the Project Ecologist or a person skilled in handling the species or fauna encountered.
EMM27	Pre-clearance surveys will be carried out prior to construction by a suitably qualified ecologist. Verification that the area cleared is correct and within the boundary and GUS data is to be provided to IRPL.
EMM28	At the completion of clearing, the Project ecologist will prepare a Post-Clearing Report.
Flood and bushfire risk	
EMM29	Site personnel to monitor Bureau of Meteorology (BoM) weather forecasts on a regular (weekly) basis for significant rainfall events. In the event that a potential 5% AEP or greater flood event all feasible and reasonable fuels, chemicals, equipment and plant items to be removed from site or elevated above flood levels (0.3m).
EMM30	Where temporary obstruction of overland flows or drainage systems cannot be avoided, further consideration of flood risk would be undertaken to develop the staging of works to ensure proper management of a flood event at all stages of construction.
Soils and contamination	
EMM31	A Sampling, Analysis, and Quality Plan would be prepared to inform the scope of site investigation works. Sampling will be undertaken prior to ground disturbance.

ID	MEASURE
EMM32	Before undertaking any work and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with Managing Urban Stormwater: Soils and Construction Vol 1 4th ed. by Landcom, 2004 (The Blue Book)
EMM33	Construction materials such as fuels, chemicals, vehicles and equipment will be appropriately stored to minimise the introduction of contaminants to the existing soil, groundwater and surface water runoff.
EMM34	In the event of a spill incident of chemicals, fuels or other hazardous substances, the Spill Response Procedure will be followed.
EMM35	Spill kits will be placed at strategic and accessible locations.
EMM36	Where visible dust is generated from onsite activities, watering (water cart or water sprays) and/or other appropriate measures will be implemented.
EMM37	The discovery of previously unidentified contaminated material will be managed in accordance with the Unexpected Finds Procedure for Contamination.
Air Quality	
EMM38	Where visible dust is generated from onsite activities, watering (water cart or water sprays) and/or other appropriate measures will be implemented.
Land use and property	
EMM39	Agreement will be reached with affected landowners for any direct temporary or permanent impacts to property (i.e. those within which physical works are proposed to occur) prior to commencement of works.
EMM40	If soils suspected to be contaminated are unexpectedly found, the Project must engage a suitably experienced and qualified contaminated land consultant to undertake further investigation to determine the type and extent of any contamination.
EMM41	Where the results of site investigations indicate that the contamination poses unacceptable risks to human health or the environment under either the present or proposed land use, the Project must engage a suitably experienced and qualified contaminated land consultant to develop and implement any necessary remediation measures.
EMM42	If remediation if required, a Site Audit Statement and a Site Audit Report must be prepared by a NSW EPA Accredited Site Auditor.
Waste	
EMM43	The resource management hierarchy principles established under the Waste Avoidance and Recovery Act 2001 of avoid/reduce/reuse/recycle/dispose will be applied.
EMM44	All waste generated during construction must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.

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 in accordance with the EAD, particularly the UMF, which involves adjustment and relocation of utilities.	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 does not constitute a modification and is not a radical transformation of the Project as a whole and is not an entirely new Project.	No
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.	The Proposed Change, as considered in Chapter 2 is considered "consistent with" the Infrastructure Approval. The Proposed Change is considered to be consistent with the impacts contemplated by the EAD outlined in CoA 1 of the Infrastructure Approval.	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?	No consistency assessments have been completed for the Project to date. Therefore, the Proposed Change is considered "consistent with" the Project, including any potential cumulative impacts. Any subsequent consistency assessments would be subject separate consideration for potential cumulative impacts.	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.~~

8 Certification

Author

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

Name: Simon Fisher	**Signature:** 
Position: Environment Lead	**Date:** 16/01/2025
Organisation: Martinus Rail	

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.

Name: Accepted	**Signature:**
Position: Belinda Jones - Australian Rail Track Corporation	
Organisation: Jan 28, 2025, 3:47 PM GMT+10:00	

Name:	**Signature:**
Position: (Manager)	**Date:**
Organisation:	

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.

Environment Lead

Appendix A Construction Noise and Vibration Impact Statement

A2I | Albury to Illabo – Wagga Wagga Utility Work

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 Platypus, 120 High Street, North Sydney NSW 2060, Australia

SLR Project No.: 610.031317.00001

Client Reference No.: R08

6 January 2025

Revision: v1.1

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
V1.1	6 January 2025	Brandon Nguyen Khuong	Steven Luzuriaga	
V1.0	19 December 2024	Brandon Nguyen Khuong	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.

Table of Contents

Tables in Text

Figures in Text

Appendices

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
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	Deutches 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
L_{Aeq}	Equivalent continuous noise level, providing a representation of the cumulative level of noise exposure over a defined period.
$L_{Aeq(15hour)}$	The equivalent continuous noise level for the 15-hour daytime period of 7.00 am to 10.00 pm
$L_{Aeq(9hour)}$	The equivalent continuous noise for the 9-hour daytime period of 10.00 pm to 7.00 am
$L_{Aeq(1hour)}$	The equivalent continuous noise for the busiest 1-hour period.

L_{Amax}	The maximum noise level during the measurement or assessment period. The L_{AFmax} or Fast is averaged over 0.125 of a second and the L_{ASmax} 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 Areas
NML	Noise Management Level
NSW	New South Wales
NPfI	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	The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the: a) Inland Rail – Albury to Illabo Environmental Impact Statement (ARTC, August 2022) b) Albury to Illabo Response to Submissions (ARTC, November 2023) c) Albury to Illabo Preferred Infrastructure Report (ARTC, November 2023) d) Albury to Illabo Preferred Infrastructure Report Response to Submissions (ARTC, February 2024) e) Inland Rail – Albury to Illabo (SSI-10055) Response to request for additional information – Air Quality Assessment (letter dated 1 May 2024) f) Part 1 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024) g) Part 2 - Revised Technical Paper 8: Biodiversity Development Assessment Report (WSP, February 2024)	**The CNVMP**
A2	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.	**The CNVMP**
C9	The Construction Noise and Vibration Sub-plan must include, but not limited to: a) measures to reduce construction to standard ICNG hours where sensitive land uses are likely to be noise affected for more than 3 months; b) an approach to assess and manage construction fatigue from noise impacts on sensitive receivers on an ongoing basis; 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; d) mitigation for construction traffic noise impacts from additional construction traffic and road diversions; 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 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.	**The CNVMP**
E68	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.	**The CNVMP, Section 3.0, Figure 1** **Figure 2**
E69	Work must be undertaken during the following hours: a) 7:00am to 6:00pm Mondays to Fridays, inclusive; b) 7:00am to 6:00pm Saturdays; and c) at no time on Sundays or public holidays.	**Section 2.2**

CoA	Requirement	Reference
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 the hours of 8:00 am to 6:00 pm Monday to Friday; b) between the hours of 8:00 am to 1:00 pm 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.	**Section 2.2.1**, **Section 8.2**
E71	Notwithstanding Conditions E69 and E70, work may be undertaken outside the hours specified in the following circumstances (a, b, or c): a) Safety and Emergencies, including: i. for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or 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. 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. b) Work, that meets the following criteria: i. construction that causes $L_{Aeq(15\ minute)}$ noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land use(s); and ii. construction that causes L_{AFmax} 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 iii. construction that causes: • 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 *Assessing Vibration: a technical guideline* (DEC, 2006), or • 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 Assessing Vibration: a technical guideline* (DEC, 2006). c) By Approval, including: 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 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 iii. negotiated agreements with directly affected residents and sensitive land use(s).	**Section 2.3**
E72	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.	**The CNVMP, Section 2.4**

CoA	Requirement	Reference
	The Protocol must include: 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: i. the ER and AA review all proposed out-of-hours activities and confirm their risk levels, ii. low risk activities can be approved by the ER in consultation with the AA, and iii. high risk activities that are approved by the Planning Secretary; b) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria; 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; 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 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. This condition does not apply if the requirements of Condition E71 are met.	
E73	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: 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 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 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 d) work undertaken in a rail possession for operational or safety reasons. *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.*	**Section 2.3**
E74	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration objectives: a) construction 'Noise affected' NMLs established using the Interim Construction Noise Guideline (DECC, 2009); b) vibration criteria established using *the Assessing vibration: a technical guideline* (DEC, 2006) (for human exposure); c) Australian Standard AS 2187.2 - 2006 "*Explosives - Storage and Use - Use of Explosives*"; d) BS 7385 Part 2-1993 "*Evaluation and measurement for vibration in buildings Part 2*" as they are "applicable to Australian conditions"; and e) the vibration limits set out in the *German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures* (for structural damage).	**The CNVMP, Section 4.0**, **Section 8.0**

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. *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.*	
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 $L_{Aeq(15\ minute)}$: 40 dB(A); and b) night (10:00 pm to 7:00 am) — internal $L_{Aeq(15\ minute)}$: 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.	**Section 4.2.3**
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.	**Section 8.0**
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 $L_{Aeq,8h}$ of 85 dB(A) for any employee working at a location near the CSSI.	**Section 8.6**
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.	**This report, Section 8.5**
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.	**Section 8.0**
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.	**Section 6.1, Section 8.0**
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. *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.*	**Section 8.0**
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:	**Section 8.0, Section 8.2**

CoA	Requirement	Reference
	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.	
E119	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.	**Section 8.0, Section 8.2, Section 9.0**
E120	Before commencement of any work, a structural engineer must undertake condition surveys of all buildings, structures, utilities and the like identified in the documents listed in Condition A1 as being at risk of damage. The results of the surveys must be documented in a Condition Survey Report for each item surveyed. Copies of Condition Survey Reports must be provided to the owners of the items surveyed, and no later than one (1) month before the commencement of construction.	**Section 6.1**
E121	After completion of construction, condition surveys of all items for which condition surveys were undertaken in accordance with Condition E120 of this approval must be undertaken by a structural engineer. The results of the surveys must be documented in a Condition Survey Report for each item surveyed. Copies of Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than three (3) months following the completion of construction.	**Section 6.1**
E122	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.	**Section 6.1**

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 utility work at the Edmondson Street Bridge, Pearson Street Bridge and Cassidy Footbridge enhancement sites in Wagga Wagga, 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 utility work associated with the Edmondson Street Bridge, Pearson Street Bridge and Cassidy Footbridge enhancement sites. 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 utility work associated with the Edmondson Street Bridge, Pearson Street Bridge and Cassidy Footbridge enhancement sites.

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 utility work associated with the Edmondson Street Bridge, Pearson Street Bridge and Cassidy Footbridge. Work at these sites includes:

- Establishment of temporary site facilities, including site office/shed and materials laydown areas
- Site Compound Operation
- Vegetation Clearing
- Utility Work (eg Gas, 66kV Electricity, Water) - Investigation and excavation, underbores and protection works.

Further details of work activities are outlined in **Section 5.1**. The work areas are surrounded by a combination of urban and suburban residential, commercial, industrial, educational and medical receivers. Additionally, there are several childcare centres, places of worship, hotels, libraries and public buildings at various setbacks from the main areas of work. The Project location, work areas and surrounding receivers are shown in **Figure 1** and **Figure 2**.

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 Wagga Wagga utilities work.

The noise catchment areas (NCAs) used are consistent with the NCAs described in the EIS and are shown in **Figure 1** and **Figure 2** with the receiver classifications and approximate noise monitoring locations. 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** and **Figure 2.**

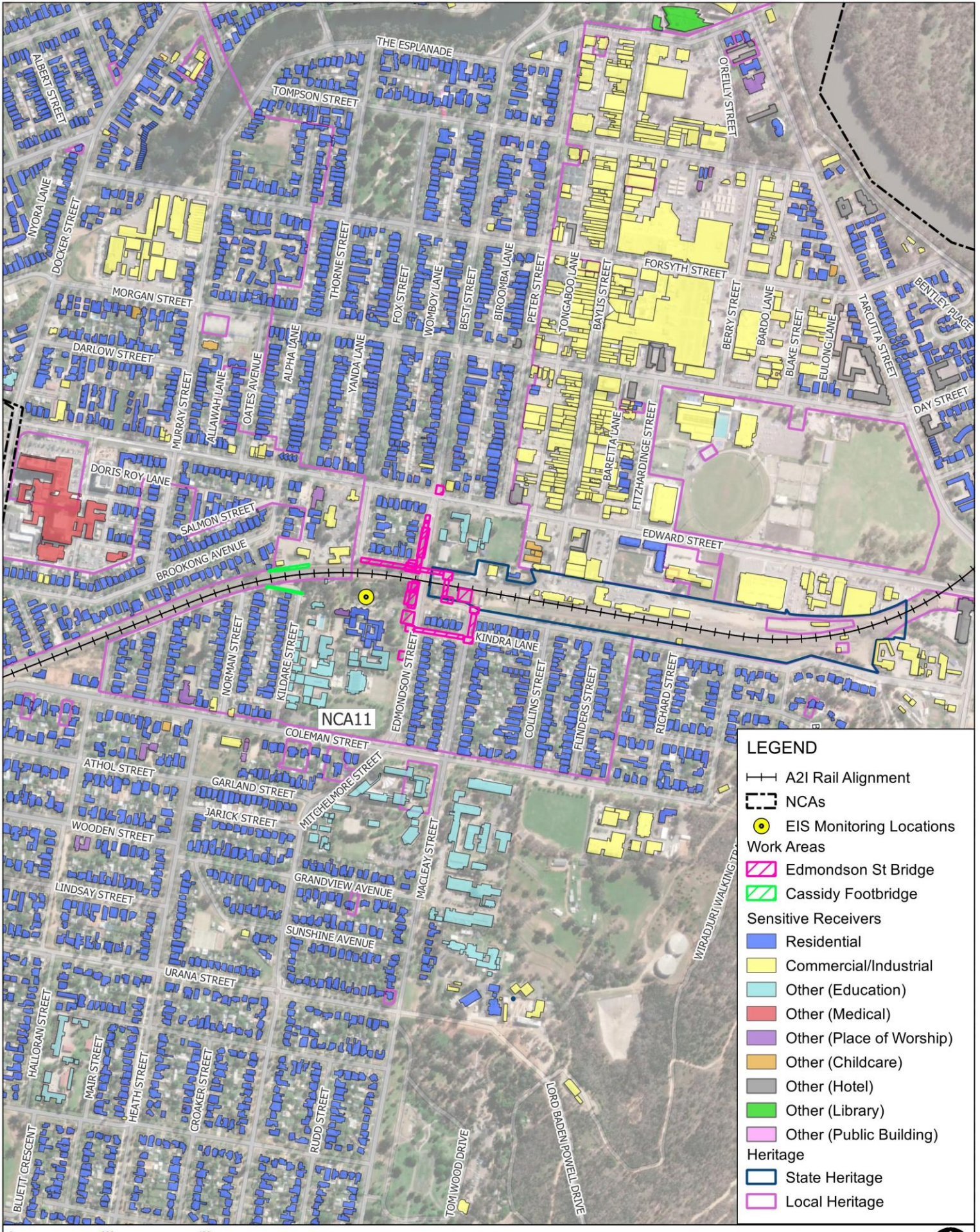
3.1 Background Noise Levels

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 Wagga Wagga utilities work are summarised in **Table 1**.

Table 1 Background Noise Levels

Noise Monitoring Location	NCA	Rating background Level (RBL) dBA NPfI defined time periods[1]		
		Daytime period	Evening period	Night-time period
11	10	46	45	38
12	11	48	47	37

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).



Scale: Scale: 1:10,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 18-Dec-2024
Project Number: 610.031317

SLR

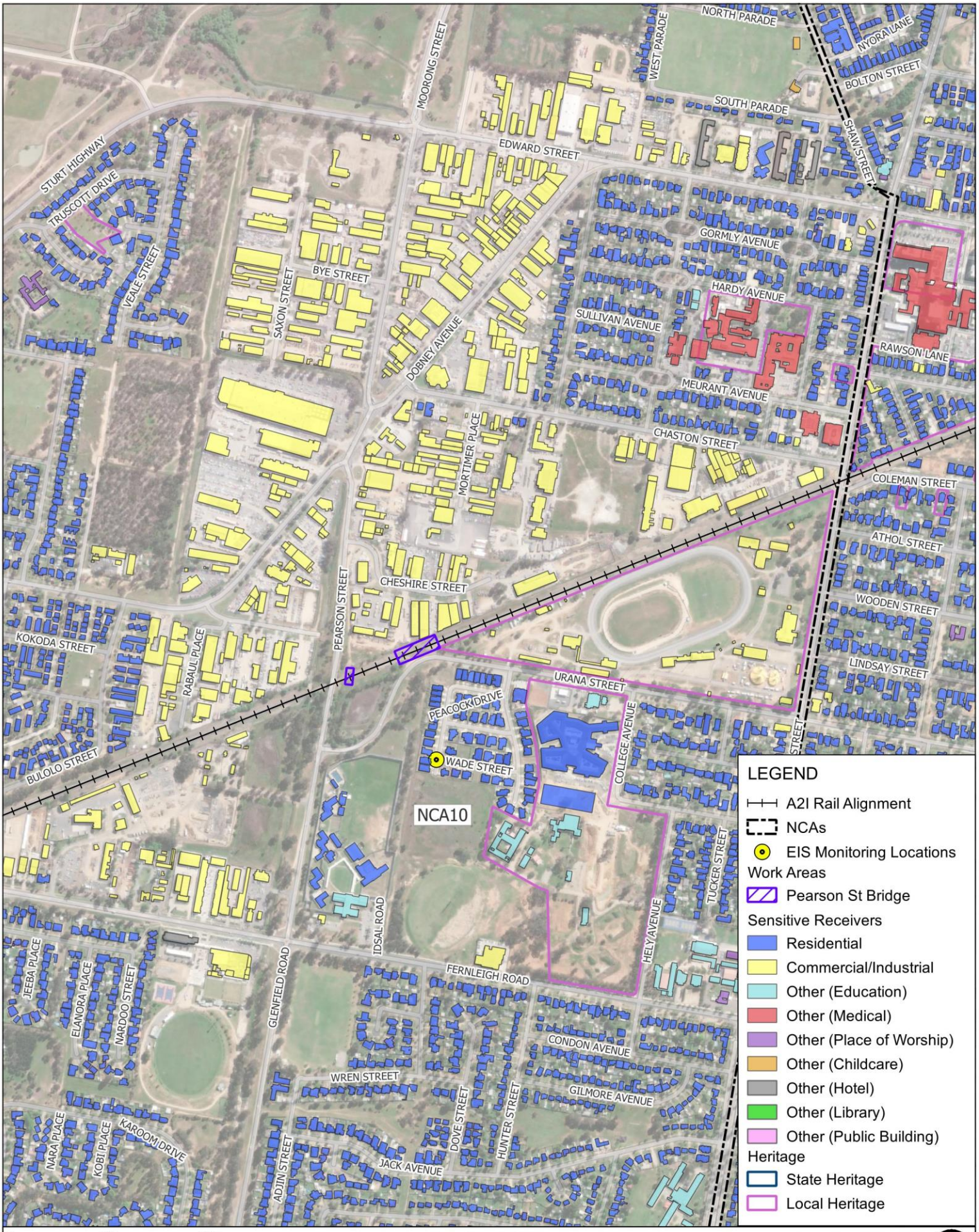
Data Source:
ESRI World Imagery

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

H:\Projects-SLR\610-SnvSYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\01 CADGIS\QGIS\SLR610031317_Wagga_Utility.qgz



Scale: Scale: 1:10,000
Coordinate System: GDA2020 / MGA zone 55

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Receiver Classifications and Noise Monitoring Locations

FIGURE 2

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\01 CAD\GIS\QGIS\SLR610031317_Wagga_Utility.qgz

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

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 ($L_{Aeq(15minute)}$ - dB)				Sleep disturbance Screening Level (RBL +15dB or 52 dB)	Sleep Awakening Reaction Level
	Approved Hours (RBL +10dB)	Out of Hours[1,2]				
		Daytime (RBL +5dB)	Evening (RBL +5dB)	Night-time (RBL +5dB)		
NCA10	56	51	50	43	53	65
NCA11	58	53	52	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 L_{Amax} 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**.

The ICNG references *AS2107:2016 Acoustics – Recommended design sound levels and reverberation times for building interiors* for criteria for 'other sensitive' receivers which are not listed in the guideline. Neither the ICNG nor AS2107 provide criteria for child care centres so the Association of Australian Acoustical Consultants *Guideline for Child Care Centre Acoustic Assessment* (GCCCAA) has been referenced.

Table 4 NMLs for 'Other Sensitive' Receivers

Land Use	Noise Management Level $L_{Aeq(15minute)}$ (dB) (Applied when the property is in use)	
	Internal	External
ICNG 'Other Sensitive' Receivers		
Classrooms at schools and other educational institutions	45	55[1,5]
Hospital wards and operating theatres	45	65[2]
Places of worship	45	55[1]
Active recreation areas (characterised by sporting activities which generate noise)	-	65
Passive recreation areas (characterised by contemplative activities that generate little noise)	-	60

Land Use	Noise Management Level $L_{Aeq(15minute)}$ (dB) (Applied when the property is in use)	
	Internal	External
Commercial	-	70
Industrial	-	75
Non-ICNG 'Other Sensitive' Receivers		
Hotel – daytime & evening[3]	50	60[1,5]
Hotel – night-time[3]	35	45[1,5]
Child care centres – activity areas[4]	40	50[1,5]
Child care centres – sleeping areas[4]	35	45[1,5]
Library[3]	45	55[1]
Public Building[3]	50	60[1]
Aged Care	Considered as Residential	

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: Criteria taken from AS2107.

Note 4: Criteria taken from Association of Australian Acoustical Consultants Guideline for Child Care Centre Acoustic Assessment.

Note 5: 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 ($L_{Aeq(15minute)}$ – dBA)		
	Daytime[1]	Evening[2]	Night-time[2]
Residential	n/a	40	35

Note 1: Daytime ground-borne noise NMLs are not specified in the ICNG of 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[1] ($m/s^{1.75}$)	
		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^2) 1–80 Hz

Location	Assessment period	Preferred values		Maximum values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Continuous vibration					
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
Impulsive vibration					
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

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
3	Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 **and** are of great intrinsic value (eg heritage listed buildings)	3	3 to 8	8 to 10	8	20[1]

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

Table 10 includes heritage structures from the State Heritage Register, Local Heritage Items and Local Environment Plan that are within 100 m of any construction work areas at Edmondson St Bridge, Cassidy Footbridge or Pearson St Bridge.

Table 10 Heritage Items Nearby Construction Work Areas

Heritage Item	Listing	Nearest Work Location	Construction/Condition
Wagga Wagga Showground, Kyeamba Smith Hall and Grandstand[1]	Local Environment Plan I246	Pearson Street Bridge	The Wagga Wagga Showground includes a number of early and mid-20th century buildings, including the 'Neil Skeers' Grandstand, the 'Kyeamba Smith' Hall and several other contemporary buildings. The Wagga Wagga Showground camping grounds are adjacent to the Pearson Street Bridge works. The Grandstand and the Hall appear to be in fair condition.
Cassidy Parade and Brookong Avenue footbridge	ARTC s170 4280661	Cassidy Footbridge	This pedestrian bridge has been constructed from cast concrete with a steel pipe and wire railing fence. The pedestrian bridge appears to be in good condition
Mount Erin Convent Chapel, High School, and Grounds	Local Environment Plan I260	Edmondson Street Bridge and Cassidy Footbridge	This complex comprises of a number of buildings, many of which date to the late 19th century.
Wagga Wagga Railway Station and Yard Group	State Heritage Register 01279, ARTC s170 4280250	Edmondson Street Bridge	The Wagga Wagga Railway Station is a substantial and ornate structure, built in the Victorian Free Classical style. West of the station building is the Wagga Wagga footbridge ('Mothers Footbridge'), which was built in 1936. It is a simple steel girder bridge with a
Best Street Railway	State Heritage Register 01279, Local	Edmondson Street Bridge	

Heritage Item	Listing	Nearest Work Location	Construction/Condition
Gatehouse (former)	Environment Plan I254		steel post-and-rail safety barrier and straight lateral bracing post). The footbridge is in fair condition.
Station Master's Residence (former)	State Heritage Register 01279, Local Environment Plan I99	Edmondson Street Bridge	Immediately west of the station building is the Wagga Wagga Railway Museum. The museum is a single-storey brick building with a corrugated iron sheet clad roof. Southwest of the station building is the former Best Street gatehouse. It has a T-shaped floorplan and has been constructed from brick— English bond— with a corrugated iron roof (partially missing). The building is in poor condition, with evidence of fire damage, ongoing squatting, and general disrepair.

Note 1 The Grandstand and Hall are further than 100 m from the Pearson Street Bridge work area, although some buildings within the camping ground Wagga Wagga Showground camping ground may fall within 100 m of the work areas.

The Mount Erin Convent Chapel, Highschool and Grounds, Wagga Wagga Railway Station and Yard group, Best Street Railway Gatehouse and Station Master's Residence are within the Wagga Wagga Conservation Area. The Wagga Wagga Conservation Area also encompasses many 19th and early 20th century buildings, including the residential dwellings at 2 Kildare St and 1 Norman St nearby the Cassidy Footbridge works.

Further information on the heritage items in **Table 10** are provided in the Construction Cultural Heritage Management Plan (CCHMP). No structures nearby the work areas identified in this CNVIS are flagged as structurally unsound in the CCHMP.

Pre- and post-condition surveys of heritage structures are to be conducted in accordance with CoA E120 and E121 when relevant (ie if the heritage buildings are within the minimum working distances for heritage items for nominated vibration-intensive equipment) refer to **Section 4.3.3** and **Section 6.1**.

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 11**.

Table 11 Guideline Values for Short Term Vibration on Buried Pipework

Line	Pipe Material	Guideline value at the Pipe[1,2] (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[3]	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.

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 12**. 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 12 Recommended Minimum Working Distances from Vibration Intensive Equipment

Plant Item	Rating/Description	Minimum Distance			
		Cosmetic Damage			Human Response (NSW EPA Guideline)[2]
		Residential and Light Commercial (BS 7385)	Heritage Items[1] (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
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[2]	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 13**.

Table 13 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	$L_{Aeq(15hour)}$ 60 (external)	$L_{Aeq(9hour)}$ 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	$L_{Aeq(1hour)}$ 55 (external)	$L_{Aeq(1hour)}$ 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 Scenario

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 (L_W) are provided in **Table 14**. A summary of construction work periods and schedule required for each scenario is shown in **Table 15**, as per the working hours defined in the CNVMP. The locations of the various work scenarios are shown in **Figure 3**.

Table 14 Work Scenario Descriptions

ID	Scenario	Description	Total Lw
Edmondson Street Bridge			
W.001	Site Establishment/ Demobilisation	• Site Compound delivery and set up • Haul road construction • Laydown construction	113
W.002	Compound Operation	• Operation of the site compound • Delivery of materials/equipment	104
W.003	Vegetation clearing	• Tree clearing and trimming for works	116

ID	Scenario	Description	Total Lw
W.004	Utility Work (Gas) - investigation and excavation	• Investigation and excavation prep for gas main works	117
W.005	Utility Work (Gas) - underbores	• Underbore installations	116
W.006	Utility Work (Gas) - cutovers & make good	• Works within cutover locations	112
W.007	Utility Work (66kV) (day)	• Pole excavation & preparation	115
W.008	Utility Work (66kV) (night outage 1)	• Pole installation via crane lifts	113
W.009	Utility Work (66kV) (night outage 2)	• Overhead conductor installation • Removal of old poles	109
Cassidy Footbridge			
W.010	Utility Work (Gas) protection works	• Installation of protection slab above existing gas main	113
W.011	Utility Work (water) relocations works protection works	• Excavation and install of new watermain	117
Pearson Street Bridge			
W.012	Utility Work (gas & water) - investigation and excavation	• Investigation and excavation prep for gas and watermain main works	117
W.013	Utility Work (gas & water) - underbores	• Underbore installations	111
W.014	Utility Work (gas & water) - cutovers & make good	• Works within cutover locations	112

Table 15 Scenarios and Periods of Work

ID	Scenario	Hours of Work				Indicative Start Date	Likely Duration
		Approved Hours	Out-of-Hours Work [4]				
			Day OOH[1]	Evening[2]	Night[3]		
Edmondson Street Bridge							
W.001	Site Establishment/ Demobilisation	✓	-	-	-	Jan 2025	1 month
W.002	Compound Operation	✓	-	-	-	Jan 2025	7 months
W.003	Vegetation clearing	✓	-	-	-	Jan 2025	1 month
W.004	Utility Work (Gas) - investigation and excavation	✓	-	-	-	Feb 2025	1 month
W.005	Utility Work (Gas) - underbores	✓	-	-	-	Feb 2025	1 month
W.006	Utility Work (Gas) - cutovers & make good	✓	-	-	-	Feb 2025	1 week
W.007	Utility Work (66kV) (day)	✓	-	-	-	Mar 2025	1 month
W.008	Utility Work (66kV) (night outage 1)	✓	✓	✓	✓	Mar 2025	1 week
W.009	Utility Work (66kV) (night outage 2)	✓	✓	✓	✓	Jul 2025	1 week

ID	Scenario	Hours of Work				Indicative Start Date	Likely Duration
		Approved Hours	Out-of-Hours Work [4]				
			Day OOH[1]	Evening[2]	Night[3]		
Cassidy Footbridge							
W.010	Utility Work (Gas) protection works	✓	-	-	-	Feb 2025	2 months
W.011	Utility Work (water) relocations works protection works	✓	-	-	-	Apr 2025	3 months
Pearson Street Bridge							
W.012	Utility Work (gas & water) - investigation and excavation	✓	-	-	-	Apr 2025	1 month
W.013	Utility Work (gas & water) - underbores	✓	-	-	-	May 2025	2 months
W.014	Utility Work (gas & water) - cutovers & make good	✓	-	-	-	May 2025	2 months

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

Note 2: Evening is 6 pm to 10 pm Monday – Sunday (including public holidays).

Note 3: Night is 10 pm to 7 am Monday – Saturday and 10pm to 8am Sunday (including 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.

Figure 3 Construction Work Locations (Edmondson Street and Cassidy Footbridge)

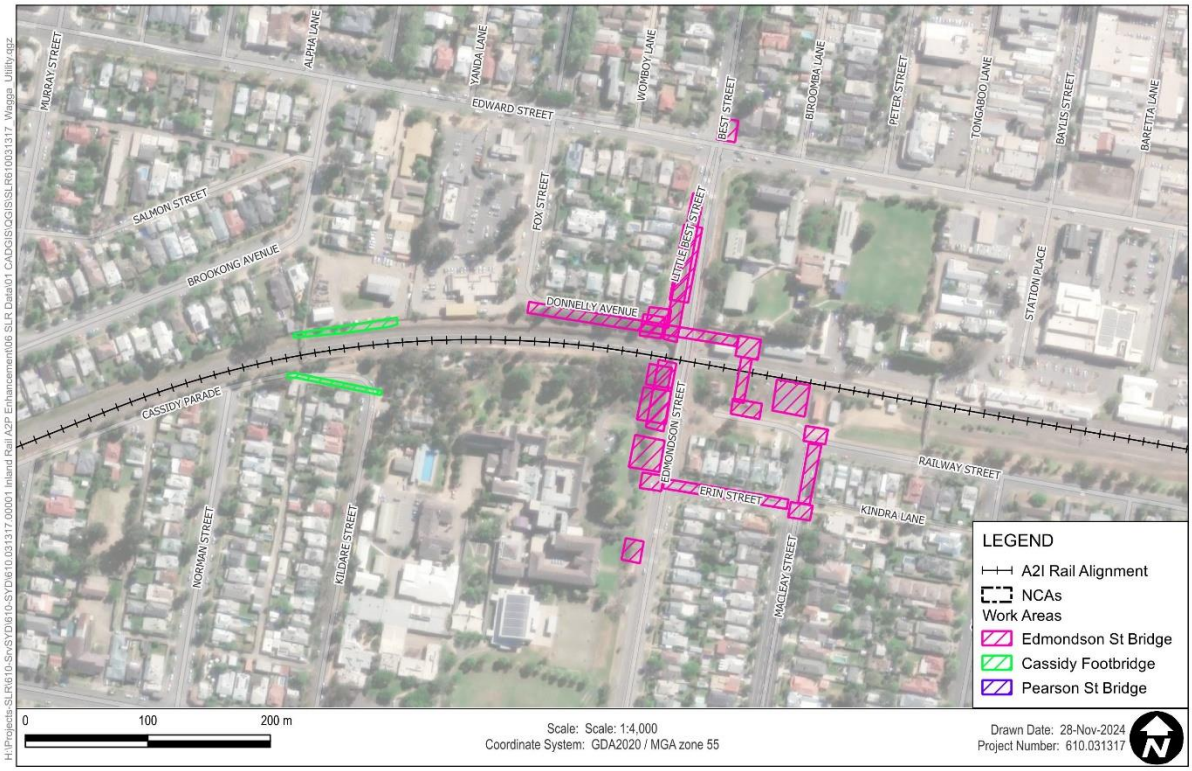
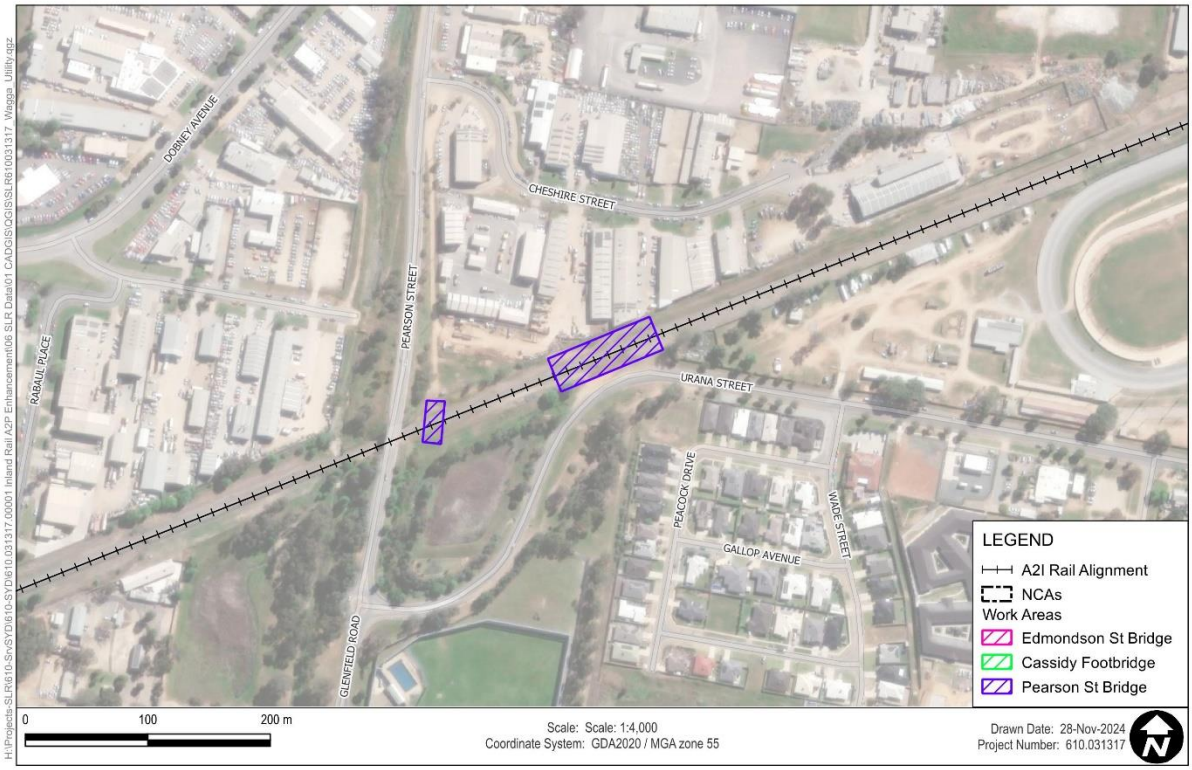


Figure 4 Construction Work Locations (Pearson Street)



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 16**. The mitigation and management measures adopted for this CNVIS are provided in **Section 8.0**.

Table 16 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 17**. 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 17** 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 15** represent a window of time where the scenarios could occur, and does not represent the entire duration of the exceedances shown in **Table 17**.

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 17 Overview of NML Exceedances

ID	Scenario	Number of Receivers																	
		HNA[1]	With NML exceedance (dB)[2]																
			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 (NCA10 – 53 dB) (NCA11 – 52 dB)	>65 dB
Residential Receivers																			
Edmondson Street Bridge																			
W.001	Site Establishment/Demobilisation	-	26	3	-	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.002	Compound Operation	-	5	-	-	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.003	Vegetation clearing	**8**	52	9	6	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	Utility Work (Gas) - investigation and excavation	**18**	60	30	11	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.005	Utility Work (Gas) - underbores	**21**	70	20	17	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.006	Utility Work (Gas) - cutovers & make good	**7**	40	19	3	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.007	Utility Work (66kV) (day)	**6**	48	5	6	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.008	Utility Work (66kV) (night outage 1)	**6**	39	7	5	41	39	7	5	44	44	8	5	242	150	44	13	175	35
W.009	Utility Work (66kV) (night outage 2)	**5**	28	7	3	25	28	7	3	34	30	5	5	113	81	30	10	117	25
Cassidy Footbridge																			
W.010	Utility Work (Gas) protection works	**-**	33	6	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.011	Utility Work (water) relocations works protection works	**5**	58	10	4	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
Pearson Street Bridge																			
W.012	Utility Work (gas & water) - investigation and excavation	-	27	7	-	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.013	Utility Work (gas & water) - underbores	-	19	-	-	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.014	Utility Work (gas & water) - cutovers & make good	-	22	-	-	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

ID	Scenario	Number of Receivers																	
		HNA[1]	With NML exceedance (dB)[2]																
			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 (NCA10 – 53 dB) (NCA11 – 52 dB)	>65 dB
Other Sensitive Receivers																			
Edmondson Street Bridge																			
W.001	Site Establishment/Demobilisation	n/a	7	-	-	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.002	Compound Operation	n/a	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.003	Vegetation clearing	n/a	3	5	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	Utility Work (Gas) - investigation and excavation	n/a	9	7	-	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.005	Utility Work (Gas) - underbores	n/a	12	8	-	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.006	Utility Work (Gas) - cutovers & make good	n/a	6	3	-	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.007	Utility Work (66kV) (day)	n/a	9	2	-	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.008	Utility Work (66kV) (night outage 1)	n/a	3	4	1	3	4	1	-	1	-	-	-	3	1	-	-	n/a	n/a
W.009	Utility Work (66kV) (night outage 2)	n/a	4	2	-	1	3	2	-	-	-	-	-	1	-	-	-	n/a	n/a
Cassidy Footbridge																			
W.010	Utility Work (Gas) protection works	n/a	17	3	-	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.011	Utility Work (water) relocations works protection works	n/a	17	7	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
Pearson Street Bridge																			
W.012	Utility Work (gas & water) - investigation and excavation	n/a	3	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.013	Utility Work (gas & water) - underbores	n/a	2	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.014	Utility Work (gas & water) - cutovers & make good	n/a	2	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

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:

Edmondson Street Bridge

- 'Highly intrusive' noise impacts are predicted at the nearest residential receivers for *W.003* through to *W.009* during approved daytime hours. The highest noise levels and impacts would be experienced by adjacent receivers when noisy construction work is conducted nearby.
- For other sensitive receivers, 'highly intrusive' impacts are predicted for *W.003*, *W.008* and *W.0011* during approved daytime hours. A maximum of one other sensitive receivers (those closest to the works) are predicted to be affected at this level for these work scenarios. It is noted that other sensitive receivers should only be considered impacted 'when in use'.
- For work associated with *W.008* and *W.009*, 'highly intrusive' impacts are predicted at the nearest residential receivers during all assessment periods. The addresses of the residential receivers impacted by night-time works are provided in **Appendix D**.
- For work associated with *W.008* and *W.009*, generally minor impacts ('noticeable' to 'clearly audible') are predicted for other sensitive receivers during OOHW. South Wagga Public School is predicted to experience 'highly intrusive' impacts during approved daytime hours. It is noted that other sensitive receivers should only be considered impacted 'when in use'.
- For scenario *W.001*, three 'moderately intrusive' impacts are predicted at closest residential receivers to the works. No 'moderately intrusive' impacts are expected for *W.002* at residential receivers and no 'highly intrusive' impacts are expected for these work scenarios at residential and other sensitive receivers.
- Noise generating activities from the Compound Operation (*W.002*) during approved daytime hours are generally predicted to be below the NML for other sensitive receivers. However, the childcare centre at 6 Station Place is predicted to experience minor noise impacts ('clearly audible').
- Highly noise affected receivers are predicted in all scenarios except *W.001* and *W.002* (ie *W.003* to *W.009*). It is predicted that work from scenarios *W.004* and *W.005* will result in greatest number of receivers experiencing HNA levels.
- Noise levels above the screening level for sleep disturbance and sleep awakening criteria are predicted for *W.008 and W.009*. 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**.

Cassidy Footbridge

- During approved daytime hours, 'highly intrusive' noise impacts are predicted at one residential receiver for *W.010* and four residential receivers for *W.011*. The highest noise levels and impacts would be experienced by adjacent receivers when noisy construction work is conducted nearby.
- One other sensitive receiver is predicted to experience 'highly intrusive' noise impacts during *W.011*. No 'highly intrusive' impacts are predicted for *W.010.*

- OOHW at Cassidy Footbridge are not anticipated.

Pearson Street Bridge

- No 'highly intrusive' noise impacts are predicted for residential or other sensitive receivers for all of the Pearson Street bridge work scenarios (ie *W.012*, *W.013* and *W.014*).
- OOHW at Pearson Street Bridge are not anticipated.

Review of the predictions shows that both the sleep disturbance screening level and sleep awakening reaction level are likely to be exceeded when night work occurs near residential receivers. It should be noted that sleep disturbance is only expected to occur during utility works (W.008 and W.009) and will require outages during off-peak hours between 10pm – 5am. 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.

The receivers which would potentially be affected by sleep awakening impacts are generally the same receivers where 'moderately intrusive' and 'highly intrusive' night-time impacts have been predicted (refer to **Appendix C**). These receivers may be eligible for respite offers (RO), agreements with owners (AO) or alternative accommodation (AltA), refer **Section 8.3**.

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 as vibration intensive work with the potential to generate perceptible ground-borne noise, is not included in the scope of work. 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 18**.

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 18**.

Table 18 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.004	**Edmondson Street Bridge** Utility Work (Gas) - investigation and excavation	Small Hydraulic Hammer: 300 kg (5 to 12 t excavator)	2 m	5 m	1 m	7 m
W.011	**Cassidy Footbridge** Utility Work (water) relocations works protection works	Medium Hydraulic Hammer: 900 kg (12 to 18 t excavator)	7 m	15 m	4 m	23 m
W.012	**Pearson Street Bridge** Utility Work (gas & water) - investigation and excavation					

Vibration offset distances have been determined from the TfNSW CNVG-PTI minimum working distances for cosmetic damage and human comfort (see **Table 12** and the assessment is summarised in **Figure 5** and **Figure 6**). 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 18**, a vibration impact assessment must be conducted prior to the commencement of work.

Figure 5 Medium Hydraulic Hammer - Minimum Working Distances (Edmondson Street and Cassidy Footbridge)

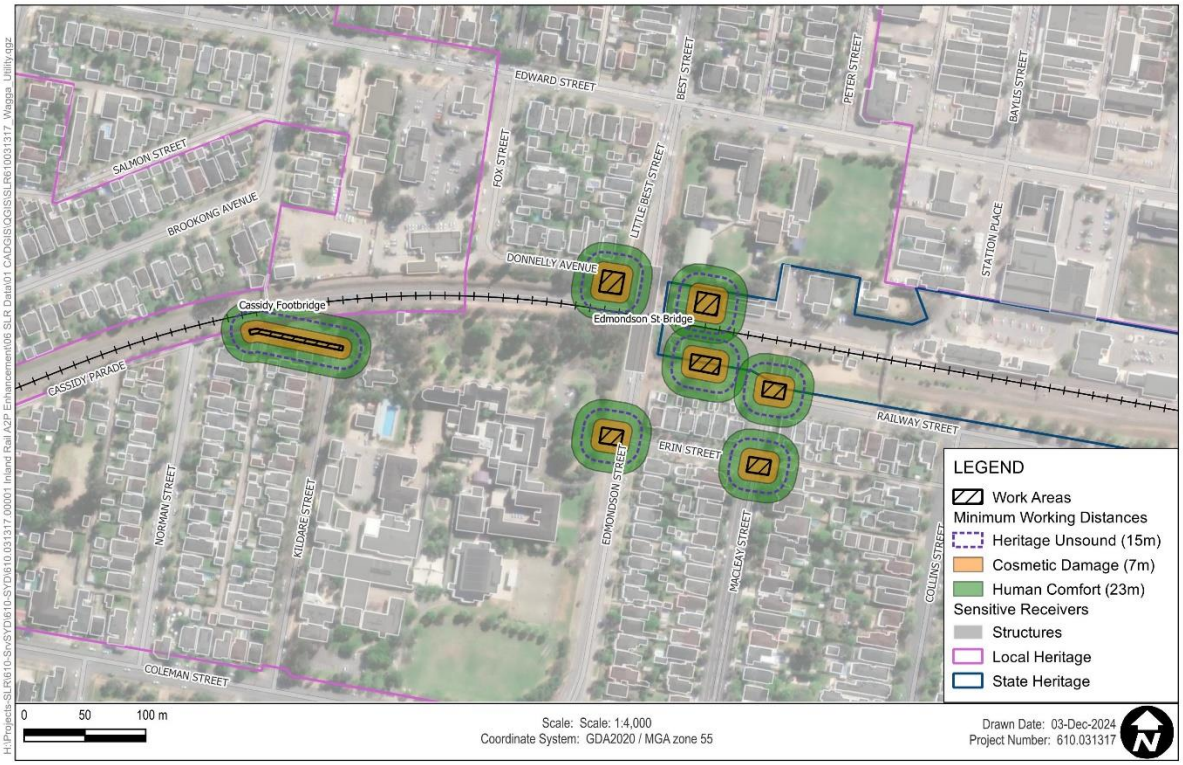


Figure 6 Medium Hydraulic Hammer - Minimum Working Distances (Pearson Street)

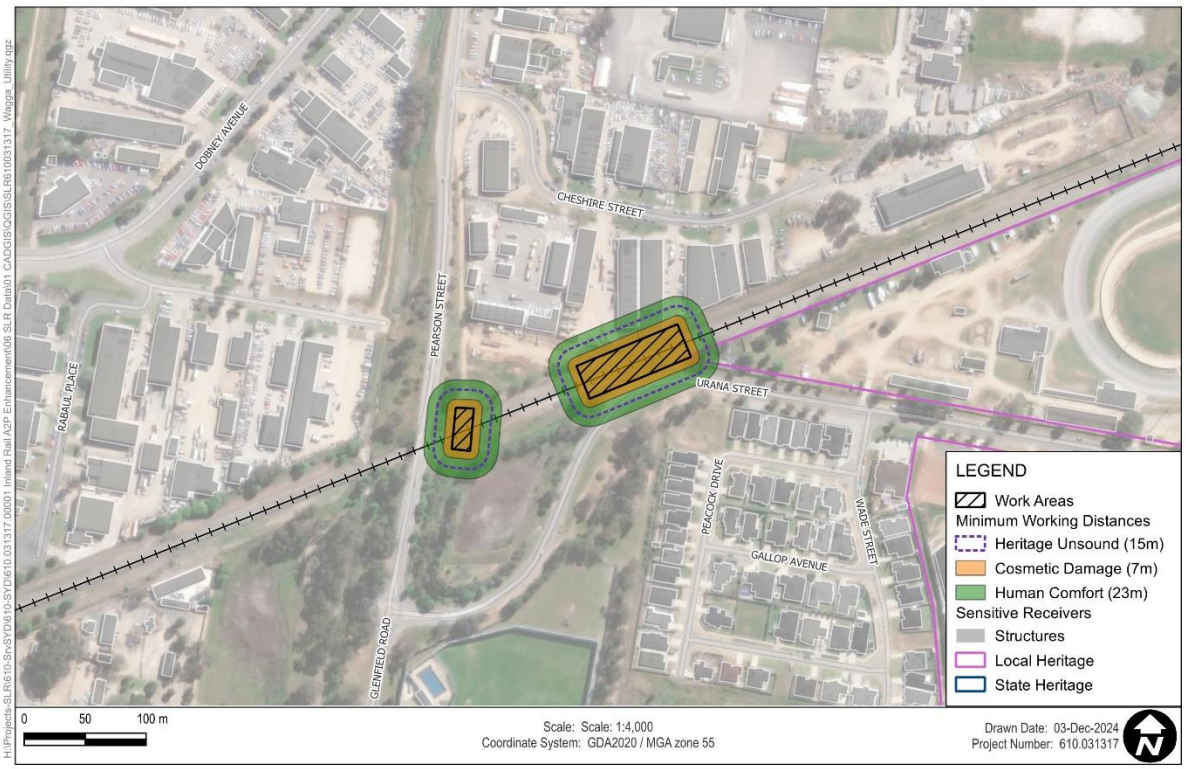


Figure 7 Small Hydraulic Hammer - Minimum Working Distances (Edmondson Street and Cassidy Footbridge)

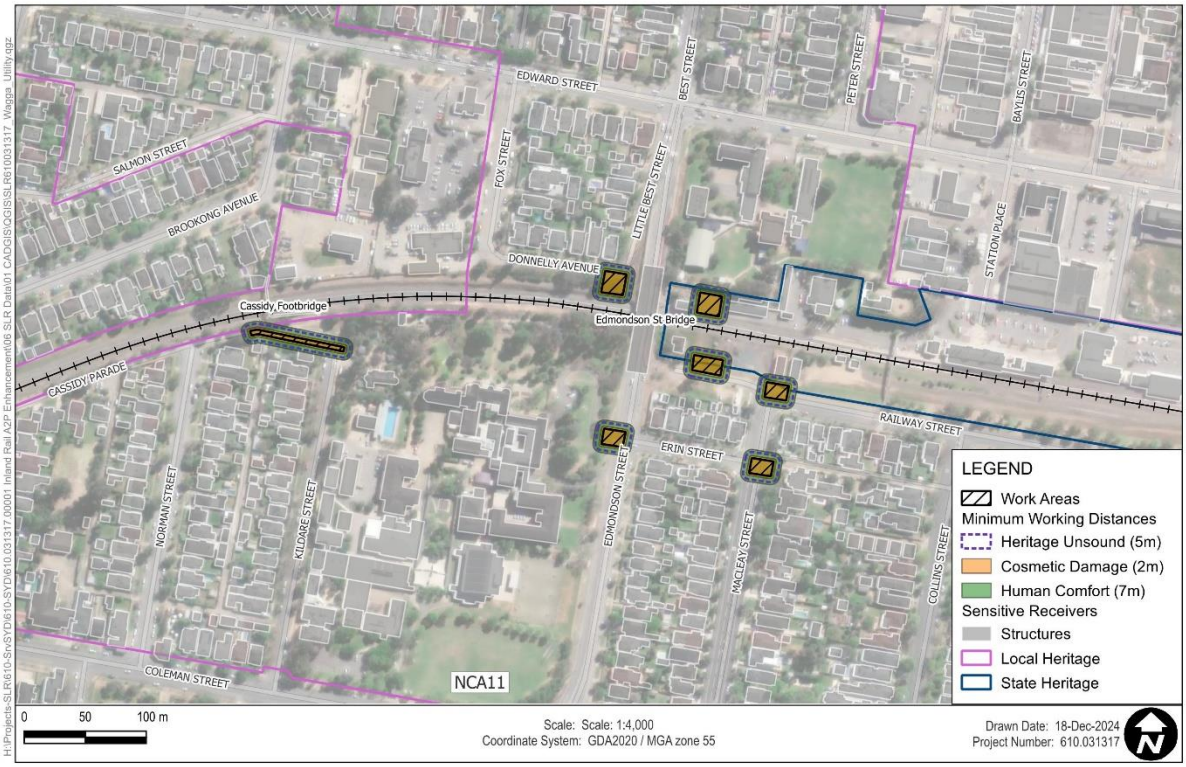
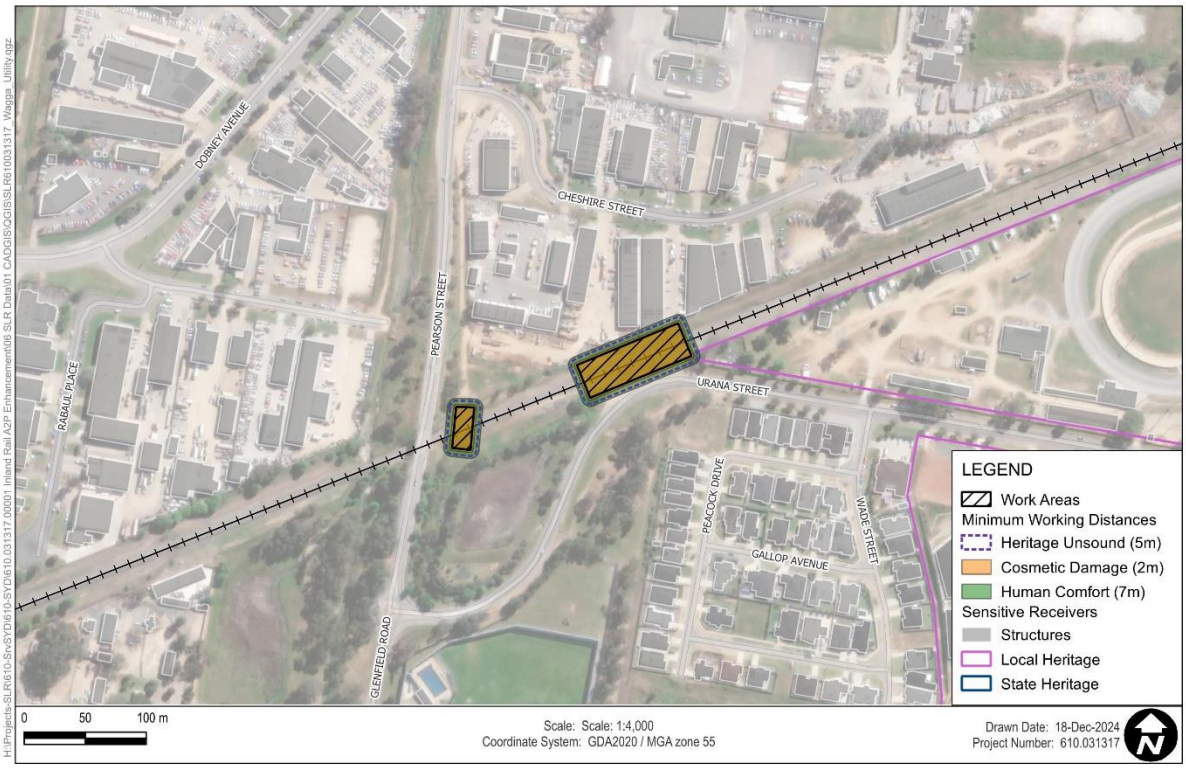


Figure 8 Small Hydraulic Hammer - Minimum Working Distances (Pearson Street)



6.1 Cosmetic Damage Assessment

Figure 5 shows that the residential building at 2 Kildare St and the garage at 1 Norman St have the potential to fall within the cosmetic damage minimum working distance for residential structures during *W.011*. **Figure 5** also shows that four sheds/structures within the Wagga Wagga Station Yard have the potential to fall within the cosmetic damage minimum working distance for residential structures during *W.004*.

Figure 6 shows that one nearby commercial building (10 Cheshire St) has the potential to fall within the cosmetic damage minimum working distance for light commercial structures during *W.012*. If the commercial building at 10 Cheshire St is classified as a Line 1-type item from BS 7385 Part 2 (reinforced or framed structure/industrial or heavy commercial structure) then the minimum working distance for cosmetic damage is 4 m. The structure at 10 Cheshire St falls within the minimum working distance of 4 m for reinforced or framed structure/industrial or heavy commercial structure.

Figure 7 and **Figure 8** depicting the minimum working distances for the small hydraulic hammer suggests that all receivers are beyond the minimum working distances for cosmetic damage. Therefore, the smaller, less vibration intensive hydraulic hammer will be prioritised where the required works can be feasibly and reasonably be completed with the smaller machinery.

Offset distances from specific vibration intensive plant to the nearest receivers and building construction should be confirmed before commencing vibration intensive work during construction.

As per CoA E120, before commencement of any work, a structural engineer must undertake condition surveys of all building, structures, utilities and the like identified in the documents CoA A1 as being at risk of damage. For this CNVIS, conditions surveys (based on the medium hydraulic hammer) are required for:

- 2 Kildare St
- 10 Cheshire St
- Garage at 1 Norman St
- Four structures within the Wagga Wagga Station Yard

After completion of construction, condition surveys of all items for which condition surveys were undertaken in accordance with CoA E120 must be undertaken by a structural engineer.

The results of the surveys must be documented in a Condition Survey Report for each item surveyed. Copies of Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than one month before the commencement of construction and three months following the completion of construction.

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

The following structures are within the Wagga Wagga Conservation Area or are heritage listed and fall within the ‘Heritage Unsound’ minimum working distance for a medium hydraulic hammer:

- 2 Kildare St
- Dwelling and garage at 1 Norman St

- Cassidy Footbridge
- 2 Donnelly Av
- 4 Donnelly Av
- 23 Macleay St
- 25 Macleay St
- Five structures within the Wagga Wagga Station Yard

As discussed in **Table 10**, Cassidy Footbridge is in good condition and the dwellings on Donnelly Ave and Macleay St are likely to be occupied and therefore not expected to be structurally unsound. For these structures, cosmetic damage due to vibration is not anticipated.

One structure within the Wagga Wagga Railway Yard falls within the heritage unsound but does not fall within the buffer area for cosmetic damage when using a medium hydraulic hammer. This structure is approximately 12 m offset from the track and already subjected to train vibration and is therefore not expected to be structurally unsound.

As per CoA 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. Advice must be sought on methods and locations for installing equipment as per CoA E81.

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 as per CoA E120.

Buried Pipework and Utilities

This CNVIS involves direct work on Gas, Water and Electrical utilities. This work will be undertaken in accordance with the asset owner's guidelines to ensure there are no adverse vibration impacts to the utilities. No other buried pipework or utilities have been identified in this CNVIS at risk of impact from construction vibration.

6.2 Human Comfort Assessment

Figure 5 shows that shows that 12 residential receivers have the potential to fall within the human comfort minimum working distances. **Figure 6** shows that three nearby commercial buildings have the potential to fall within the human comfort minimum working distances. Occupants of these buildings may be able to perceive vibration impacts at times when medium hydraulic hammers are in use nearby. Where impacts are perceptible, they would likely only be apparent for relatively short durations when vibration intensive equipment is in use nearby.

Similarly, **Figure 7** and **Figure 8** depicting the minimum working distances for the small hydraulic hammer suggests that all receivers (except 2 Kildare Street) are beyond the minimum working distances for human comfort. Therefore, the smaller, less vibration intensive hydraulic hammer will be prioritised where the required works can be feasibly and reasonably be completed with the smaller machinery.

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 19**.

Table 19 Construction Traffic Assessment

Traffic Route	Road Type	Predicted Construction Traffic Noise (Both Directions) LAeq (Period)		Exceed base criterion? Day[1] (7am – 10pm)	Potential Increase > 2dB	Potential Noise Impact
		Existing	Existing + Proposed			
Wagga Wagga Precinct						
Pearson Street bridge						
Edward Street (Sturt Highway)	Arterial	58.9	59.4	No	No	No
Moorong Street (Olympic Highway)	Arterial	63.6	64	Yes	No	No
Pearson Street	Sub-arterial	58.5	58.9	No	No	No
Urana Street	Sub-arterial	54.5	55.4	No	No	No
Cheshire Street	Local	49.2	51.5	No	Yes	No
Alan Turner Depot Access Road	Local	53.4	54.6	No	No	No
Fernleigh Road	Local	61	61.3	Yes	No	No
Wagga Wagga Station/Yard, Edmondson Street bridge and Cassidy Footbridge						
Edward Street (Sturt Highway)	Arterial	60.2	61.1	Yes	No	No
Fox Street	Local	62.6	63.1	Yes	No	No
Mitchelmore Street	Sub-arterial	56.2	57.4	No	No	No
Edmondson Street	Sub-arterial	57.7	58.8	No	No	No
Norman Street	Local	62.2	62.6	Yes	No	No
Coleman Street	Sub-arterial	53.3	55.9	No	Yes	No
Cassidy Parade	Local	59.1	60.1	Yes	No	No
Erin Street	Local	51.9	55.4	Yes	Yes	Yes
Station Place	Local	49.3	53.7	No	Yes	No
Brookong Avenue	Local	57.6	59.4	Yes	No	No

Note 1: Freeway/arterial/sub-arterial roads: $L_{Aeq(15hour)}$ 60dBA(external)
Local roads: $L_{Aeq(1hour)}$ 55dBA (external)

Note 2: Freeway/arterial/sub-arterial roads: $L_{Aeq(9hour)}$ 55dBA(external)
Local roads: $L_{Aeq(1hour)}$ 50dBA (external)

The EIS found that construction traffic associated with the Wagga Wagga work stages on public roads is generally likely to comply with the road traffic noise goals. The exception is Erin Street during the daytime period, where construction traffic noise is likely exceed the base criterion by 0.4 dB. This level of exceedance is considered negligible (ie not

perceptible by the average listener). Therefore, noise impacts are unlikely to negatively affect the relevant receivers.

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, impacts 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.

Some sections of the Wagga Wagga utility work will require minor temporary (short-term) traffic control diversions. These will be set up and removed within the shift (eg 8am to 5pm). There are no 24/7 diversions anticipated for this CNVIS.

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

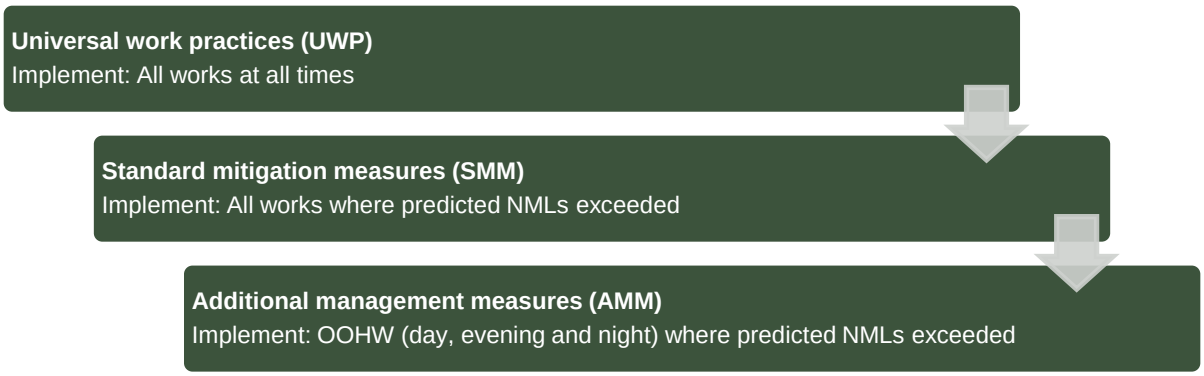
8.0 Mitigation and Management Measures

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 20 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 20 Site Specific Mitigation Measures

Measure	Reference / Notes
Project Planning	
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 **Section 2.2.** Some unavoidable OOHW will be required due to road and rail traffic management restrictions, as outlined in **Section 2.3**.	Best practice CoA E69 CoA E71
For gas utility works (W.005), coordination between Martinus Rail and the local council has been undertaken to revise investigation and excavation methodology to minimise construction noise exposure and reduce the duration of construction to residents along Erin Street and MacLeay Street.	Best practice
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
Scheduling	
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 **Section 8.2**.	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 **Section 8.5**.	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
Site Layout	
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	

Measure	Reference / Notes
Training	
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.	
Plant and Equipment Source Mitigation	
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.	
Tonal reversing alarms (beepers) will be replaced with non-tonal alarms (squawkers) on all equipment in use (subject to occupational health and safety requirements).	
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.	
Alternative construction methods have been considered for activities including vegetation clearing (eg electric / hydraulic chainsaws). Alternative methods will be considered for hydraulic hammers (eg smaller sized equipment, refer **Section 6.0**). Use of these methods will depend on the specific circumstances and therefore the worst-case scenario is included for the purpose of this CNVIS.	Best practice
Construction Traffic	
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 (ie trucks are fully loaded on each trip).	
Screening	
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.	

Measure	Reference / Notes
Implementation of temporary noise barriers for highly intensive noise activities, such as saw cutting or rock breaking.	
Community Consultation	
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 exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier.	Best practice CoA E79
Personalised communication and respite offers will be provided to all receivers that are predicted to be highly noise affected (HNA).	Best practice
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
Monitoring	
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 CoA E81
Noise and vibration monitoring will be undertaken in accordance with the CNVMP and Monitoring Program.	
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 **Section 8.7** for details of monitoring requirements.	
Vibration	
Where vibration generating works are required within the minimum working distances and considered likely to exceed the criteria: • Different construction methods with lower source vibration levels (ie alternative equipment) will be investigated and implemented, where feasible (refer **Table 12**). • Attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels of the item. Works will cease if the monitoring indicates vibration levels are likely to, or do, exceed the relevant cosmetic damage criteria. Note: Small hydraulic hammers will be prioritised to reduce vibration impacts to surrounding receivers.	Best practice CoA E80
Vibration intensive works required within the minimum working distance 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 to **Section 8.2**.	Best practice CoA E70

Measure	Reference / Notes
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. Heritage status of all 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. This CNVIS should be updated prior to the commencement of works to include the location of vibration-sensitive heritage items that fall within the minimum working distance for unsound heritage structures.	Best practice CoA E120 CoA E121 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:

Edmondson Street Bridge

- W.003 – Vegetation clearing

- W.004 – Utility Work (Gas) - investigation and excavation
- W.005 – Utility Work (Gas) – underbores
- W.007 – Utility Work (66kV) (day)
- W.009 – Utility Work (66kV) (night outage 2)

Cassidy Footbridge

- W.011 – Utility Work (water) relocations works protection works

Pearson Street Bridge

- W.012 Utility Work (gas & water) - investigation and excavation

In accordance with CoA E71, W.009 requires 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 21**. The additional mitigation measures for airborne noise are shown in **Table 22**. The additional mitigation measures for construction vibration are shown in **Table 23**.

Table 21 Additional Mitigation Measures

Mitigation/Management Measure	Abbreviation
Communication (Category 1)[1]	CO1
Communication (Category 2)[2]	CO2
Respite Offer[3]	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 22 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[1]	CO1, CO2, RO
OOHW Night Period	Monday – Saturday 10pm – 7am Sunday 10pm – 8am (including public holidays)	<5	Noticeable	Any	CO1
		5-15	Clearly audible	Any	CO1
		16-25	Moderately intrusive	Any	CO1, CO2
				>2 consecutive sleep periods[1]	CO1, CO2, RO,AO
		>25	Highly intrusive	Any	CO1, CO2, RO
				>2 consecutive sleep periods[1]	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 23 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

Time Period		Duration	Exceedance of 'preferred' value	Exceedance of 'maximum' value
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 22**.

As outlined in **Section 5.2**, 'highly intrusive' impacts at nearest residential receivers and some other sensitive receivers are predicted for most work scenarios due to the proximity to the work. The addresses of the 'highly intrusive' impacted receivers are provided in **Appendix D**.

Both work scenarios that are scheduled for OOHW for Edmondson Street Bridge, ie, *W.008* and *W.009*, are predicted to create highly intrusive noise levels at residential receivers. Should these works occur for more than two consecutive sleep periods in a row, additional mitigation measures as outlined in as in **Table 22** must be provided to affected sensitive receivers. 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

Figure 5 identifies 12 receivers with the potential to fall within the minimum working distances for Human Comfort. It is noted that one of these 12 receivers (2 Kildare St) has the potential to fall within the cosmetic damage minimum working distance for residential structures.

Figure 6 identifies three nearby commercial buildings have the potential to fall within the human comfort minimum working distances. It is noted that one of these receivers (10 Cheshire St) has the potential to fall within the cosmetic damage minimum working distance for residential structures.

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 23**) for vibration activities is required, given the impacts will be limited to approved daytime hours only.

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 3,081 of which were in the Wagga Wagga precinct. 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 Wagga Wagga, 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 24** below.

Table 24 Key Stakeholders for this CNVIS

Precinct Area	Receiver Type	Level of Engagement	Distance from Work Site (m)
Wagga Wagga Precinct			
Wagga Wagga City Council	Council	Consult	Various
Wagga Wagga Base Hospital	Health	Consult	350
Calvary Riverina Hospital (private)	Health	Consult	800
Pearson Street bridge			
Wagga Show Campground and Wagga & District Greyhound Club	Active Recreation	Consult	10
Peacock Drive, Bulolo Street, Gallop Avenue and Wade Street	Residential	Consult	Various
Edmondson Street Bridge and Cassidy Parade Bridge			
Kildare Catholic College	Educational / Residential	Consult	30
South Wagga Public School	Educational	Consult	5
Edmonson, Erin and Macleay Streets	Residential	Consult	Various
Kildare, Norman, Little Best, Best Streets and Cassidy Parade	Residential	Consult	Various
The Penthouse	Residential	Consult	Various
Erin Earth - 1 Kildare Street, Wagga Wagga	Educational	Consult	20

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.

8.7.1 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 25**, 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 25** (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 Procore. Noise monitoring data will be made available to the AA and ER for information, upon request.

8.7.2 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 25**, 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 25 Indicative Monitoring Locations

Location	Type	Monitoring	Timing
Noise Monitoring			
Edmondson Street Bridge • 6 Little Best St, Wagga Wagga • 96 Railway St, Turvey Park • Kildare Catholic College **Cassidy Footbridge** • 2 Kildare St, Turvey Park **Pearson Street Bridge** • 8B Peacock Dr, Turvey Park	Activities based noise monitoring	• Confirming that actual noise levels are consistent with predicted noise impacts and that the effectiveness of actions and mitigation measures implemented are satisfactory • In response to a noise related complaint(s) (determined on a case-by-case basis) • Following implementation of mitigation measures or noise attenuation because of exceedance of predicted noise levels	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 • In response to a specific noise related complaint and • During noise verification monitoring when it is possible to isolate the noise from one piece of plant or equipment.	case-by-case basis
Vibration Monitoring			
Edmondson Street Bridge • 2 Donnelly Ave, Wagga Wagga • 96 Railway St, Turvey Park • 23 MacLeay St, Turvey Park **Cassidy Footbridge** • 2 Kildare St, Turvey Park • 1 Norman St, Turvey Park **Pearson Street Bridge** • 10 Cheshire St, Wagga Wagga	Activities based vibration monitoring	• Confirming that vibration levels are below criteria and that the effectiveness of actions and mitigation measures implemented are satisfactory • In response to a vibration related complaint(s) (determined on a case-by-case basis)	Throughout vibration generating activities being undertaken within minimum working distances to 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 (ie Edmondson Street Bridge, and Cassidy Footbridge enhancement sites).

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 – Wagga Wagga Utility Work

Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

6 January 2025

Doc No:
6-0052-210-EEC-W0-AS-0001_A

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 2×10^{-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

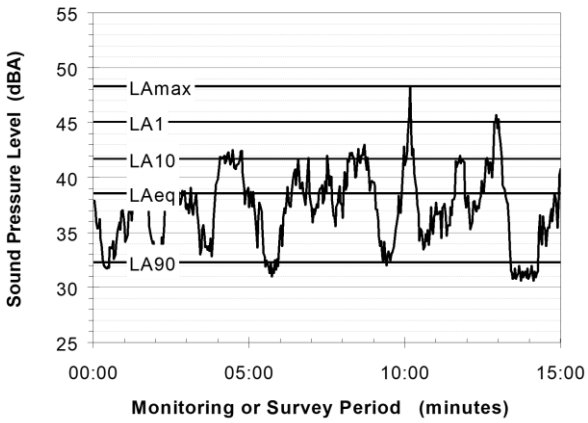
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10^{-12} W.

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:

- L_{A1} The noise level exceeded for 1% of the 15 minute interval.
- L_{A10} The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.
- L_{A90} 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.
- L_{Aeq} 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.
- L_{Amax} The A-weighted maximum sound pressure level of an event measured with a sound level meter.

5. Frequency Analysis

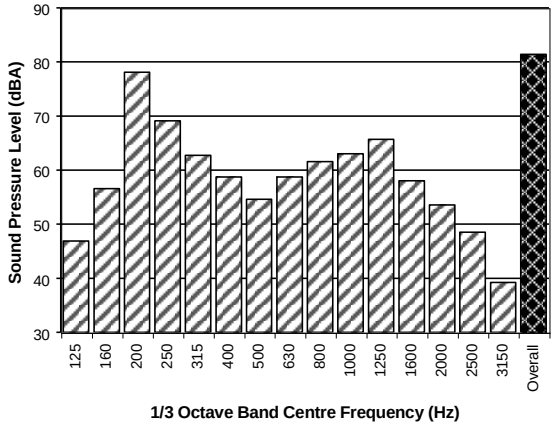
Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

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/Vo), where Vo 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

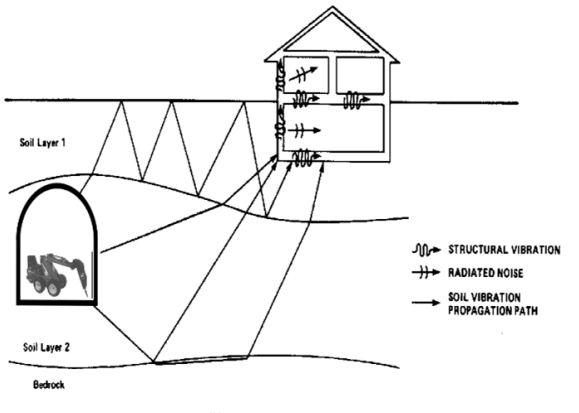
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience 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 – Wagga Wagga Utility Work

Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

6 January 2025

Doc No:
6-0052-210-EEC-W0-AS-0001_A

Equipment		Total Lw (dBA)	Articulated Dump Truck	Backhoe (with auger)	Chainsaw[1]	Cherry picker	Concrete agitator truck	Crane (mobile)	Crane Franna	Dynamic Track Stabiliser	Elevated Work Platform	Excavator - Tracked (20 tonne)	Excavator - Tracked (3-5 tonne)	Excavator 10-15T + Hammer[1]	Front End Loader	Grader	Hand tools (electric)	Light Vehicle	Plate Compactor	Saw – Concrete[1]	Tracked Hydraulic Drilling Rig[1]	Truck - Medium Rigid	Truck - road truck	Truck - Vacuum (NDD)	Tub Grinder/Mulcher[1]	Watercart	Welding Equipment
Sound Power Level (Lw)[2]			109	106	105	105	109	104	98	113	97	105	90	118	113	109	102	95	104	118	114	103	108	109	116	105	110
Estimated utilisation (%)			25%	100%	50%	30%	100%	30%	30%	50%	25%	50%	50%	30%	50%	50%	75%	25%	100%	25%	100%	25%	25%	100%	100%	75%	100%
ID	**Construction Scenario**																										
Edmondson Street Bridge																											
W.001	Site Establishment / Demobilisation	**113**	1						1						1	1		2								1	
W.002	Compound Operation	**104**							1									2								1	
W.003	Vegetation clearing	**116**			2						2											1			1		
W.004	Utility Work (Gas) - investigation and excavation	**117**	1						1					1				2	1	1		1		1			
W.005	Utility Work (Gas) - underbores	**116**	1	1									3					2			1	1		1			
W.006	Utility Work (Gas) - cutovers & make good	**112**							1				1				1	2	1			1					1
W.007	Utility Work (66kV) (day)	**115**							1			1							1	1		1		1			
W.008	Utility Work (66kV) (night outage 1)	**113**					1	2	2									3					1	1			
W.009	Utility Work (66kV) (night outage 2)	**109**			1	5		1			5							3									
Cassidy Footbridge																											
W.010	Utility Work (Gas) protection works	**113**					1		1				1					1	1			1		1			
W.011	Utility Work (water) relocations works protection works	**117**	1											1				1	1	1		1		1			
Pearson Street Bridge																											
W.012	Utility Work (gas & water) - investigation and excavation	**117**	1											1				1	1	1		1		1			
W.013	Utility Work (gas & water) - underbores	**111**		1									1					2				1		1			
W.014	Utility Work (gas & water) - cutovers & make good	**112**							1				1				1	1	1			1					1

Note 1: Equipment classed as 'annoying' in the ICNG and requires a 5 dB correction.

Note 2: Sound power level data is taken from the DEFRA Noise Database, AS2436 and TfNSW Construction Noise and Vibration Guideline.

Appendix C Noise Impact Maps

A2I | Albury to Illabo – Wagga Wagga Utility Work

Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

6 January 2025

Doc No:
6-0052-210-EEC-W0-AS-0001_A

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

SLR

Data Source:
ESRI World Imagery

W.001 Edmondson Street Bridge - Site Establishment/ Demobilisation - Approved Daytime Hours

APPENDIX C-1

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

SLR

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.002 Edmondson Street Bridge - Compound Operation - Approved Daytime Hours

APPENDIX C-2

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.003 Edmondson Street Bridge - Vegetation clearing - Approved Daytime Hours

APPENDIX C-3

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.004 Edmondson Street Bridge - Utility Work (Gas) - investigation and excavation - Approved Daytime Hours

APPENDIX C-4

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.005 Edmondson Street Bridge - Utility Work (Gas) - underbores - Approved Daytime Hours

APPENDIX C-5

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.006 Edmondson Street Bridge - Utility Work (Gas) - cutovers & make good - Approved Daytime Hours

APPENDIX C-6

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.007 Edmondson Street Bridge - Utility Work (66kV) (day) - Approved Daytime Hours

APPENDIX C-7

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.008 Edmondson Street Bridge - Utility Work (66kV) (night outage 1) - Approved Daytime Hours

APPENDIX C-8

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

SLR

Data Source:
ESRI World Imagery

W.008 Edmondson Street Bridge - Utility Work (66kV) (night outage 1) - Out of Hours Daytime

APPENDIX C-9

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

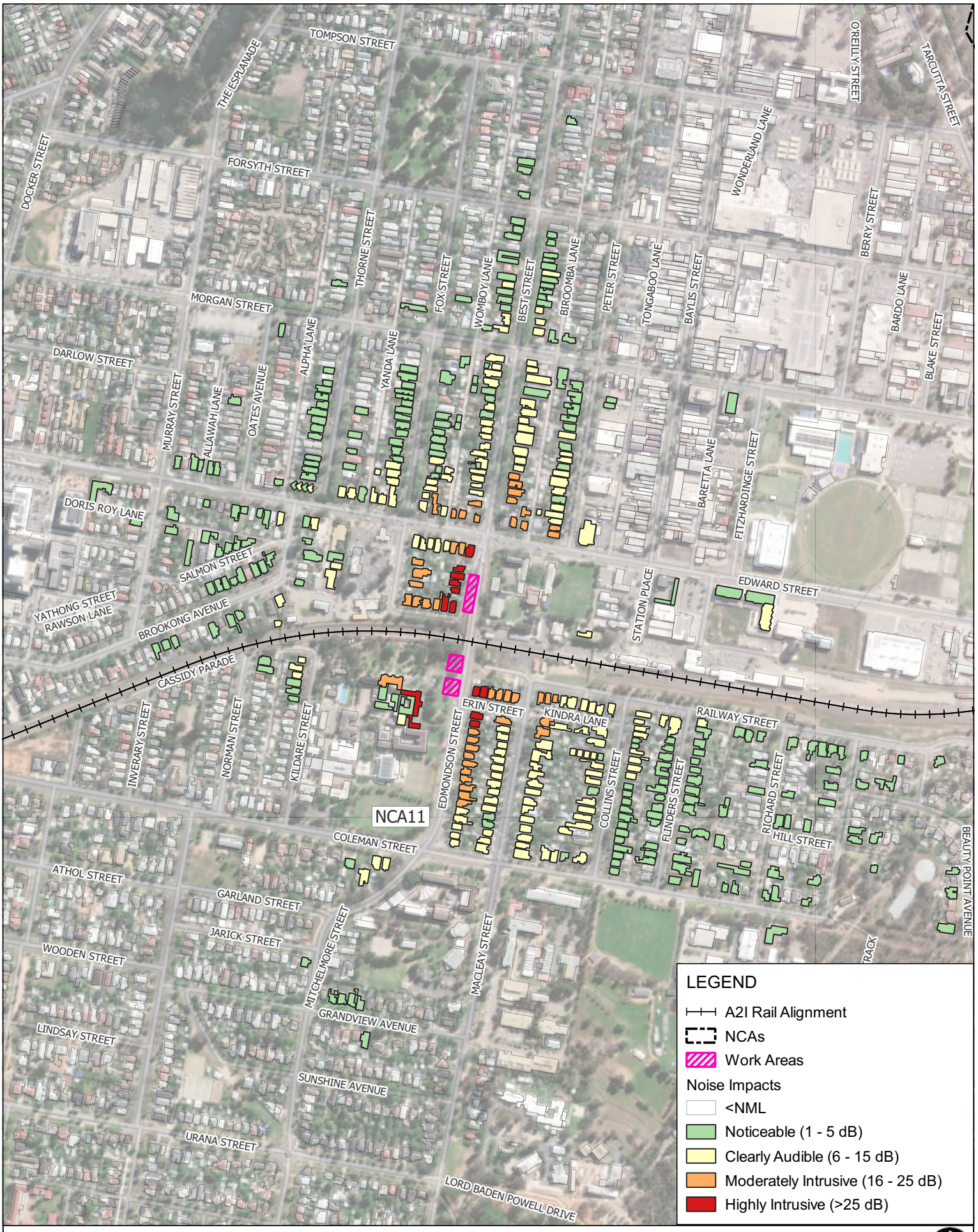
Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.008 Edmondson Street Bridge - Utility Work (66kV) (night outage 1) - Out of Hours Evening

APPENDIX C-10



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Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.008 Edmondson Street Bridge - Utility Work (66kV) (night outage 1) - Out of Hours Night-time

APPENDIX C-11

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Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

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W.009 Edmondson Street Bridge - Utility Work (66kV) (night outage 2) - Approved Daytime Hours

APPENDIX C-12

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.009 Edmondson Street Bridge - Utility Work (66kV) (night outage 2) - Out of Hours Daytime

APPENDIX C-13

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

SLR

Data Source:
ESRI World Imagery

W.009 Edmondson Street Bridge - Utility Work (66kV) (night outage 2) - Out of Hours Evening

APPENDIX C-14

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Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
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.009 Edmondson Street Bridge - Utility Work (66kV) (night outage 2) - Out of Hours Night-time

APPENDIX C-15

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
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 Cassidy Street Footbridge - Utility Work (Gas) protection works - Approved Daytime Hours

APPENDIX C-16

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

Data Source:
ESRI World Imagery

W.011 Cassidy Street Footbridge - Utility Work (water) relocations works protection works - Approved Daytime Hours

APPENDIX C-17

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

LEGEND

- A2I Rail Alignment
- NCAs
- Work Areas

Noise Impacts

- <NML
- Clearly Audible (1 - 10 dB)
- Moderately Intrusive (11 - 20 dB)

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

SLR

Data Source:
ESRI World Imagery

W.012 Pearson Street Bridge - Utility Work (gas & water) - investigation and excavation - Approved Daytime Hours

APPENDIX C-18

LEGEND

- A2I Rail Alignment
- NCAs
- Work Areas

Noise Impacts

- <NML
- Clearly Audible (1 - 10 dB)
- Moderately Intrusive (11 - 20 dB)

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
Project Number: 610.031317

SLR

Data Source:
ESRI World Imagery

W.013 Pearson Street Bridge - Utility Work (gas & water) - underbores - Approved Daytime Hours

APPENDIX C-19

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

LEGEND

- A2I Rail Alignment
- NCAs
- Work Areas

Noise Impacts

- <NML
- Clearly Audible (1 - 10 dB)
- Moderately Intrusive (11 - 20 dB)

0 250 500 m

Scale: Scale: 1:8,000
Coordinate System: GDA2020 / MGA zone 55

Drawn Date: 19-Dec-2024
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.014 Pearson Street Bridge - Utility Work (gas & water) - cutovers & make good - Approved Daytime Hours

APPENDIX C-20

H:\Projects-SLR\610-SrvSYD\610-SYD\610.031317.00001 Inland Rail A2P Enhancement\06 SLR Data\05 Modelling\90 CNVIS\03 A2I Utilities\01 Wagga\03 Analysis\SLR610031317_Wagga_Utility.qgz

Appendix D Receivers Triggering Additional Mitigation

A2I | Albury to Illabo – Wagga Wagga Utility Work

Construction Noise and Vibration Impact Statement

Martinus Rail

SLR Project No.: 610.031317.00001

6 January 2025

Doc No:
6-0052-210-EEC-W0-AS-0001_A

W.008 - Utility Work (66kV) (night outage 1)

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)
212509	9 GRANDVIEW AV, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
212780	16 GRANDVIEW AV, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
212806	20 GRANDVIEW AV, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
212810	18 GRANDVIEW AV, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
212824	22 GRANDVIEW AV, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213044	2 JARICK ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213233	4 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213265	24 BEAUTY POINT AV, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213414	3 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213467	9 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213496	18 BEAUTY POINT AV, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213519	2/11 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213533	15 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213539	17 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213609	14 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213610	61 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213627	46 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
213634	2/19A COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213673	13 RICHARD ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213683	63 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213694	14 BEAUTY POINT AV, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213696	22 RICHARD ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213701	57 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213718	4 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213735	42 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
213743	20 RICHARD ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213746	48 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213758	61 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213768	44 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
213777	56 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
213794	55 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213800	60 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
213810	23 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
213811	21 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
213821	59 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213828	29 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
213831	51-53 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
213841	54 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213884	34 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
213885	57 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213909	52 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213918	49 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
213930	33 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
213961	53 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213966	28 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213968	55 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213970	32 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
213986	13 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213994	47 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214000	5 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214007	31 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
214027	1/49 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214029	30 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214035	53 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214047	47 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214060	11 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214062	45 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214075	29 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
214092	54 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214102	51 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214106	11 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214111	28 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214132	46 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214135	17 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214146	15 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214154	27 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
214156	43 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214172	49 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214173	52 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214176	26 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214200	44 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214233	25 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
214241	25 HILL ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214254	50 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214255	47 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214258	41 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214261	43 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214264	24 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214281	42 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214307	23 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
214320	39 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214324	48 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214327	10 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214329	45 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214338	22 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214348	41 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214361	40 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214373	21 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
214395	9 RICHARD ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214399	43 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214407	37 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214410	20 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214417	44 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214427	37-39 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214429	10 RICHARD ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214439	38 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214443	19 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
214459	41 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214479	6 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214482	18 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214487	35 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214488	3 BURWOOD ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214493	3 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214504	5 BURWOOD ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214509	36 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214512	42 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214515	35 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214519	17 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
214549	16 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214551	39 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214557	33 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214567	40 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214577	15 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
214603	2 YOUNG ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214604	33 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214612	14 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214617	37 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214631	31 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214634	38 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214645	13 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	61	CO1	CO1	CO1, CO2, (RO,AO)*
214656	4 RICHARD ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214678	31 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214686	38 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214688	12 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214689	35 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214690	42 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1

W.008 - Utility Work (66kV) (night outage 1)

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)
214714	30 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214717	11 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	62	CO1	CO1	CO1, CO2, (RO,AO)*
214720	29 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
214727	3/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214730	50 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214736	52 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214747	10 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214748	29 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214754	31 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214768	56 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214778	9 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
214781	54 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214782	28 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214789	58 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214791	33 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214793	8 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214794	27 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
214826	27 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214829	32 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214831	62 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214847	7 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	64	CO1	CO1	CO1, CO2, (RO,AO)*
214850	29 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214853	26 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214865	6 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
214873	66 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214874	68 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214880	27 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214901	25 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
214904	5 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	66	CO1	CO1	CO1, CO2, (RO,AO)*
214911	72 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214915	23 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214920	30 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
214921	1 KINDRA LANE, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
214926	4 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	55	CO1	CO1	CO1
214934	25 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214939	23 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
214959	3 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	69	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
214961	74 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214975	21 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
214981	23 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
214984	23 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214990	2 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	65	CO1	CO1	CO1, CO2, (RO,AO)*
215001	76 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
215023	1 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	71	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215032	3/21 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
215072	82 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
215077	80 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
215078	84 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
215108	86 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
215126	88 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
215132	90 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
215147	12 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
215151	94 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
215160	92 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
215161	96 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
215163	1 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	64	CO1	CO1	CO1, CO2, (RO,AO)*
215180	3 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	65	CO1	CO1	CO1, CO2, (RO,AO)*
215190	5 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	66	CO1	CO1	CO1, CO2, (RO,AO)*
215201	7 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
215216	9 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	73	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215217	10 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
215219	11 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	75	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215283	8 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
215326	6 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
215356	3 NORMAN ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
215365	4 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	51	-	-	CO1
215403	1 NORMAN ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
215412	2 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
215460	48 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
215491	46 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215499	44 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215551	14 STATION PL, WAGGA WAGGA NSW 2650	58	53	52	42	57	CO1	CO1	CO1
215570	36 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215618	32 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
215654	30 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215689	6-10 STATION PL, WAGGA WAGGA NSW 2650	45	45	-	-	57	CO1	-	-
215708	2 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	82	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215717	BUILDING 3 UNIT 105 1 FLINDERS ST, WAGGA WA(	58	53	52	42	45	-	-	CO1
215724	4 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	75	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215725	6 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	64	CO1	CO1	CO1, CO2, (RO,AO)*
215731	8 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
215746	12 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	61	CO1	CO1	CO1, CO2, (RO,AO)*
215748	104 EDWARD ST, WAGGA WAGGA NSW 2650	60	60	60	45	48	-	-	CO1
215749	22 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
215750	10 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
215760	2-4 STATION PL, WAGGA WAGGA NSW 2650	45	45	-	-	49	CO1	-	-
215794	1 FLINDERS ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
215799	2 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	83	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215807	23 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
215809	104 EDWARD ST, WAGGA WAGGA NSW 2650	60	60	60	45	48	-	-	CO1
215820	21 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
215835	1 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
215836	19 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
215843	17 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
215846	4 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	83	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215849	18 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
215874	188 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
215888	15 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215892	6 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	86	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215908	3 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	64	CO1	CO1	CO1, CO2, (RO,AO)*
215924	11 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215925	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	66	CO1	-	-
215933	8 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	82	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215942	9 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
215956	188 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
215984	5 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
216006	7 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216024	12 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216026	188 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216053	6 SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216060	156 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	73	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
216073	3/12 SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216085	158 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
216088	4 SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216094	160 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	66	CO1	CO1	CO1, CO2, (RO,AO)*
216099	162 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216103	164 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216107	168 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216115	2A SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216117	166 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
216122	2 SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216127	8 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216128	170 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216165	8 SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216181	2 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
216186	127 EDWARD ST, WAGGA WAGGA NSW 2650	60	60	60	45	51	-	-	CO1

W.008 - Utility Work (66kV) (night outage 1)

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)
216200	21 MURRAY ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216226	4 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
216245	131A EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
216256	196 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216264	22 MURRAY ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216272	198 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216281	133 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
216284	6 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216292	202 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216294	206 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216298	153 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	64	CO1	CO1	CO1, CO2, (RO,AO)*
216306	23 MURRAY ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216315	8 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	52	-	-	CO1
216323	157 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
216327	208 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216333	161 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
216342	214 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216346	131A EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
216357	212 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216360	163 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216378	10 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216391	1/173 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	52	-	-	CO1
216400	222 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216401	WOMBOY 5/165 EDWARD ST, WAGGA WAGGA NSV	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
216404	8 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
216433	9 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
216434	177 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216437	12 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216448	175 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216464	179 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216471	181 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216472	173 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216480	189 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216485	12 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
216486	191 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216487	11A BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
216498	14 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216520	7 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216521	2/4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216540	14 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216547	13 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
216558	9 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216561	20 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
216564	10 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216585	16 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	55	CO1	CO1	CO1
216587	4/11 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216589	8 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216603	17 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
216605	2/11 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216624	12 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216626	22 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216642	12 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216643	18 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	57	CO1	CO1	CO1
216649	4/11 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216651	10 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216655	215-217 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216657	1/11 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216662	215A EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216668	19 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216676	11 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216678	24 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216680	219 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216683	14 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216694	12 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216697	221 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216700	20 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
216710	225 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216721	13 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216726	21 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	57	CO1	CO1	CO1
216729	26 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216733	16 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216743	14 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216774	15 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216775	28 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216781	24 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216795	15 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216798	23 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	55	CO1	CO1	CO1
216799	20 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216839	17 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216846	26 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	55	CO1	CO1	CO1
216848	30 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216874	26 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216892	21 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216924	20 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216926	28 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216932	19 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216934	32 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216952	28 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216966	23 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216985	30 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
216991	22 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216994	29 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
217012	34 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217019	30 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217027	25 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217038	32 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
217048	24 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217052	31 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
217063	27 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217067	36 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217068	32 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217090	27 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217101	34 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
217114	26 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217115	33 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
217118	40 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217125	25 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217129	34 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217154	36 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	52	-	-	CO1
217161	37 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217163	28 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217174	36 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217181	35 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
217184	70 MORGAN ST, WAGGA WAGGA NSW 2650	60	60	60	45	46	-	-	CO1
217190	26 OATES AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217199	39 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217209	40 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217223	38A FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217225	30 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217244	42 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217256	41 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217261	38B FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217271	42 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
217279	32 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217306	42 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
217311	40 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1

W.008 - Utility Work (66kV) (night outage 1)

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)
217314	46 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217323	34 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217341	44 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
217357	44 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217362	41 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	52	-	-	CO1
217382	42 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217383	102 MORGAN ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217392	2/39 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217406	46 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
217424	38 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217432	43 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
217434	44 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217445	1/48 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
217460	120 MORGAN ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217462	45 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217499	50 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217600	113 MORGAN ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217620	115 MORGAN ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217641	49 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
217650	158 MORGAN ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217660	54 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217680	51 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217743	55 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217755	60 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217759	56 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217777	57 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
217792	62 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217797	3/53 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217808	59 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
217831	64 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
217833	61 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217859	63 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217863	66 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217866	58 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217882	65 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217899	68 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217915	67 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
217942	69 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217966	2/74 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217971	73 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217992	75 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
218047	79 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
218074	78 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
218081	81 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
218105	80 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
218138	82 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
218238	84 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
218341	90 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
218375	92 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
218548	109 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
1108363	244-248 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
1108530	10 SALMON ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
1108649	24-26 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
1108869	ERIN EARTH 1 KILDARE ST, TURVEY PARK NSW 26	55	55	-	-	67	CO1	-	-
1108960	58 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
1108976	27 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
1108990	8 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	57	CO1	CO1	CO1
1109034	2/56 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
1109117	32-34 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
1110631	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	76	CO1, CO2	-	-
1110632	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	69	CO1	-	-
1110655	ERIN EARTH 1 KILDARE ST, TURVEY PARK NSW 26	55	55	55	-	59	CO1	CO1	-
1111560	4/4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
1111561	4/4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
1111562	4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
1111563	209A EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
1111585	5/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
1111586	6/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
1111587	6/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
1111588	36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
1111589	BUILDING 1 UNIT 102 1 FLINDERS ST, WAGGA WA0	58	53	52	42	48	-	-	CO1
1111673	2/48 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
1111674	54 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
1111748	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
1111750	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
1111751	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1111752	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	73	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
1111753	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1111754	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1111755	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
1111757	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
1111758	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	68	CO1	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
1111767	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	57	CO1	-	-

W.009 - Utility Work (66kV) (night outage 2)

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)
213627	46 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
213735	42 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
213746	48 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
213768	44 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
213800	60 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
213804	52 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
213810	23 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213811	21 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213814	54 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213818	50 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
213828	29 COLEMAN ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
213831	51-53 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213884	34 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
213918	49 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
213930	33 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
213970	32 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
213994	47 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214007	31 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
214029	30 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214062	45 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214075	29 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
214092	54 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214111	28 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214154	27 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	55	CO1	CO1	CO1
214156	43 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214173	52 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214233	25 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
214254	50 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
214258	41 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214264	24 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214307	23 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	57	CO1	CO1	CO1
214320	39 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214324	48 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214338	22 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214373	21 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
214407	37 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214410	20 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214417	44 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214443	19 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	58	CO1	CO1	CO1, CO2, (RO,AO)*
214459	41 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214482	18 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214487	35 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214512	42 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214519	17 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
214549	16 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214551	39 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214557	33 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214567	40 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214577	15 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	64	CO1	CO1	CO1, CO2, (RO,AO)*
214608	ERIN EARTH 1 KILDARE ST, TURVEY PARK NSW 265	55	55	-	-	57	CO1	-	-
214612	14 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
214617	37 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214631	31 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214634	38 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214645	13 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
214688	12 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214689	35 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214717	11 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	66	CO1	CO1	CO1, CO2, (RO,AO)*
214720	29 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214727	3/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214747	10 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214754	31 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214778	9 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
214791	33 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214793	8 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
214794	27 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
214829	32 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
214847	7 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
214865	6 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
214874	68 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214880	27 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214901	25 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
214904	5 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
214911	72 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
214920	30 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
214921	1 KINDRA LANE, TURVEY PARK NSW 2650	58	53	52	42	49	-	-	CO1
214926	4 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
214934	25 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214939	23 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
214959	3 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	66	CO1	CO1	CO1, CO2, (RO,AO)*
214961	74 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
214975	21 FLINDERS ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
214981	23 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	55	CO1	CO1	CO1
214984	23 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
214990	2 MACLEAY ST, TURVEY PARK NSW 2650	58	53	52	42	61	CO1	CO1	CO1, CO2, (RO,AO)*
215001	76 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
215023	1 EDMONDSON ST, TURVEY PARK NSW 2650	58	53	52	42	67	CO1	CO1	CO1, CO2, (RO,AO)*
215032	3/21 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	48	-	-	CO1
215072	82 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
215077	80 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	50	-	-	CO1
215078	84 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
215108	86 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	52	-	-	CO1
215126	88 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
215132	90 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	53	-	CO1	CO1
215151	94 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	55	CO1	CO1	CO1
215160	92 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	54	CO1	CO1	CO1
215161	96 RAILWAY ST, TURVEY PARK NSW 2650	58	53	52	42	56	CO1	CO1	CO1
215163	1 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
215180	3 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	61	CO1	CO1	CO1, CO2, (RO,AO)*
215190	5 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	62	CO1	CO1	CO1, CO2, (RO,AO)*
215201	7 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
215216	9 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	69	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215219	11 ERIN ST, TURVEY PARK NSW 2650	58	53	52	42	71	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215326	6 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
215356	3 NORMAN ST, TURVEY PARK NSW 2650	58	53	52	42	43	-	-	CO1
215365	4 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	47	-	-	CO1
215412	2 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	44	-	-	CO1
215551	14 STATION PL, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
215689	6-10 STATION PL, WAGGA WAGGA NSW 2650	45	45	-	-	53	CO1	-	-
215708	2 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	78	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215724	4 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	71	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
215725	6 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
215731	8 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
215746	12 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	57	CO1	CO1	CO1
215749	22 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
215750	10 DONNELLY AV, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
215799	2 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	79	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215835	1 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
215846	4 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	79	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215849	18 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
215874	188 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
215892	6 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	82	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215908	3 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
215925	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	62	CO1	-	-
215933	8 LITTLE BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	78	CO1, CO2	CO1, CO2, (RO)*	CO1, CO2, RO, (AO, AltA)*
215956	188 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1

W.009 - Utility Work (66kV) (night outage 2)

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)
215984	5 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
216060	156 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	69	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
216085	158 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
216094	160 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	62	CO1	CO1	CO1, CO2, (RO,AO)*
216099	162 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216103	164 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216107	168 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216117	166 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216128	170 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216181	2 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
216186	127 EDWARD ST, WAGGA WAGGA NSW 2650	60	60	60	45	47	-	-	CO1
216226	4 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
216245	131A EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
216256	196 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216281	133 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
216284	6 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216292	202 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216298	153 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	60	CO1	CO1	CO1, CO2, (RO,AO)*
216315	8 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216323	157 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	55	CO1	CO1	CO1
216333	161 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	54	CO1	CO1	CO1
216346	131A EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
216360	163 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216378	10 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216391	1/173 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
216401	WOMBOY 5/165 EDWARD ST, WAGGA WAGGA NSW	58	53	52	42	54	CO1	CO1	CO1
216404	8 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	59	CO1	CO1	CO1, CO2, (RO,AO)*
216433	9 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
216434	177 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216437	12 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216448	175 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216464	179 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216472	173 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216480	189 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216485	12 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216486	191 EDWARD ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216487	11A BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	55	CO1	CO1	CO1
216498	14 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216520	7 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216521	2/4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216540	14 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216547	13 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	56	CO1	CO1	CO1
216558	9 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
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216564	10 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216585	16 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216587	4/11 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216589	8 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
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216643	18 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
216649	4/11 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216668	19 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
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216683	14 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216700	20 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	52	-	-	CO1
216721	13 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
216726	21 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
216729	26 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216733	16 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216775	28 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
216781	24 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	47	-	-	CO1
216798	23 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216846	26 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	51	-	-	CO1
216874	26 FOX ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
216926	28 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
216934	32 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
216985	30 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
216994	29 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217038	32 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217052	31 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217101	34 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217115	33 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	50	-	-	CO1
217154	36 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
217181	35 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	49	-	-	CO1
217271	42 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217306	42 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217341	44 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217362	41 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	48	-	-	CO1
217406	46 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217432	43 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
217445	1/48 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	46	-	-	CO1
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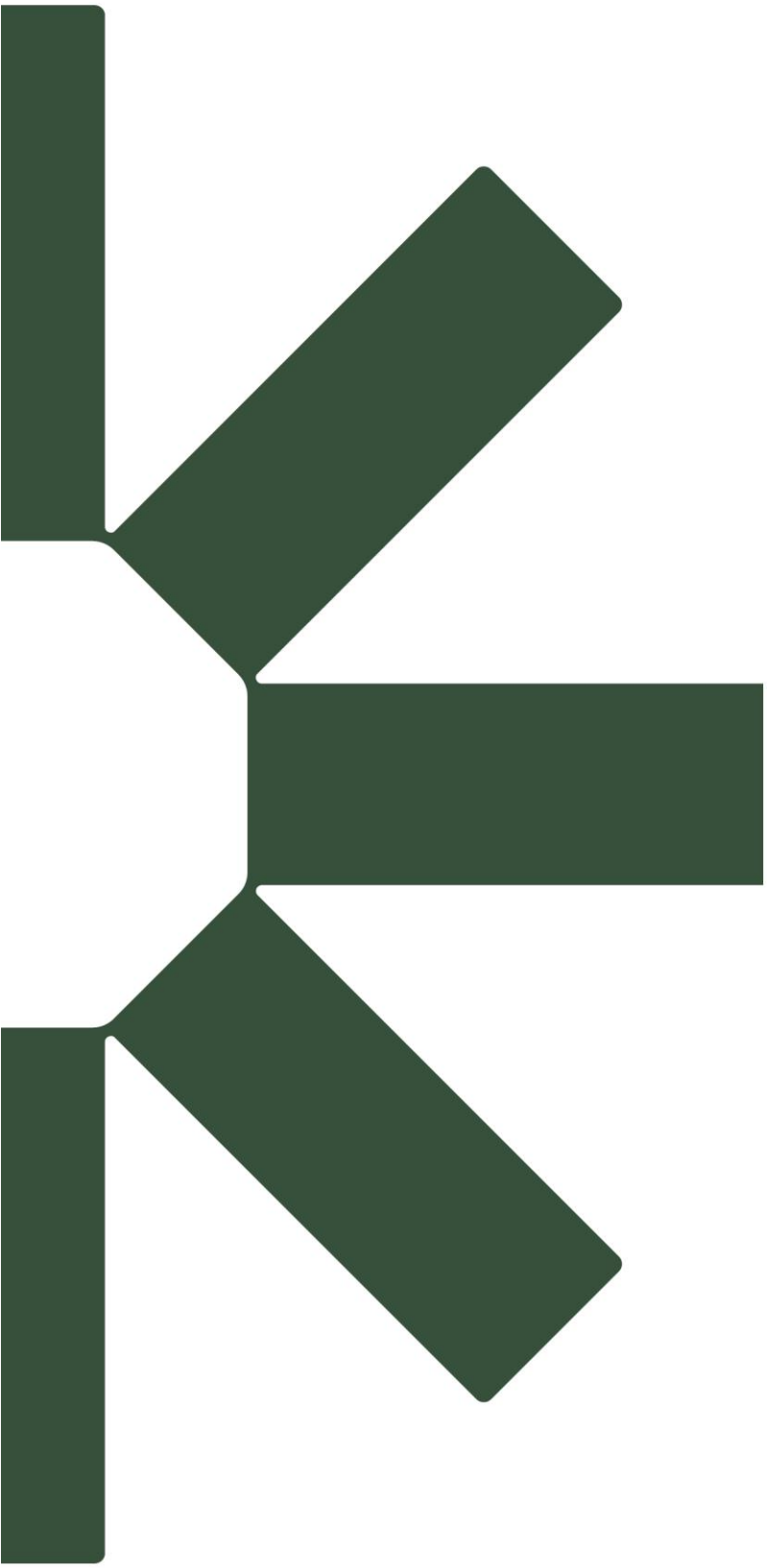
217641	49 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
217680	51 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217743	55 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217777	57 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217808	59 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217831	64 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
217863	66 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	45	-	-	CO1
217915	67 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
1108649	24-26 BROOKONG AV, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
1108869	ERIN EARTH 1 KILDARE ST, TURVEY PARK NSW 265	55	55	-	-	71	CO1, CO2	-	-
1108960	58 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
1108976	27 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	52	-	-	CO1
1108990	8 PETER ST, WAGGA WAGGA NSW 2650	58	53	52	42	53	-	CO1	CO1
1109034	2/56 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1110631	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	72	CO1, CO2	-	-
1110632	140 EDWARD ST, WAGGA WAGGA NSW 2650	55	55	-	-	65	CO1	-	-
1111560	4/4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
1111561	4/4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
1111562	4-6 THORNE ST, WAGGA WAGGA NSW 2650	58	53	52	42	43	-	-	CO1
1111585	5/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1111586	6/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1111587	6/36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	46	-	-	CO1
1111588	36 COLLINS ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
1111589	BUILDING 1 UNIT 102 1 FLINDERS ST, WAGGA WAG	58	53	52	42	44	-	-	CO1
1111674	54 BEST ST, WAGGA WAGGA NSW 2650	58	53	52	42	44	-	-	CO1
1111748	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	63	CO1	CO1	CO1, CO2, (RO,AO)*
1111752	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	69	CO1, CO2	CO1, CO2	CO1, CO2, RO, (AO, AltA)*
1111757	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	45	-	-	CO1
1111758	1 KILDARE ST, TURVEY PARK NSW 2650	58	53	52	42	66	CO1	CO1	CO1, CO2, (RO,AO)*



Making Sustainability Happen

Appendix B Non-Aboriginal Heritage Assessment Memo

View of the Best St Gatekeepers cottage in 2004, part of the Wagga Wagga Railway Station and yard group (source: Rob Nesbitt 2019)

INLAND RAIL: ALBURY TO ILABO (A2I) - NON-ABORIGINAL HERITAGE ASSESSMENT

WAGGA WAGGA UTILITIES CIZ EXTENSION

WAGGA WAGGA LOCAL GOVERNMENT AREA

NOVEMBER 2024

INLAND RAIL

Report prepared by

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For the Australian Rail Track Corporation

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Acknowledgement

OzArk acknowledge the Traditional Custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

CONTENTS

FIGURES

1 INTRODUCTION

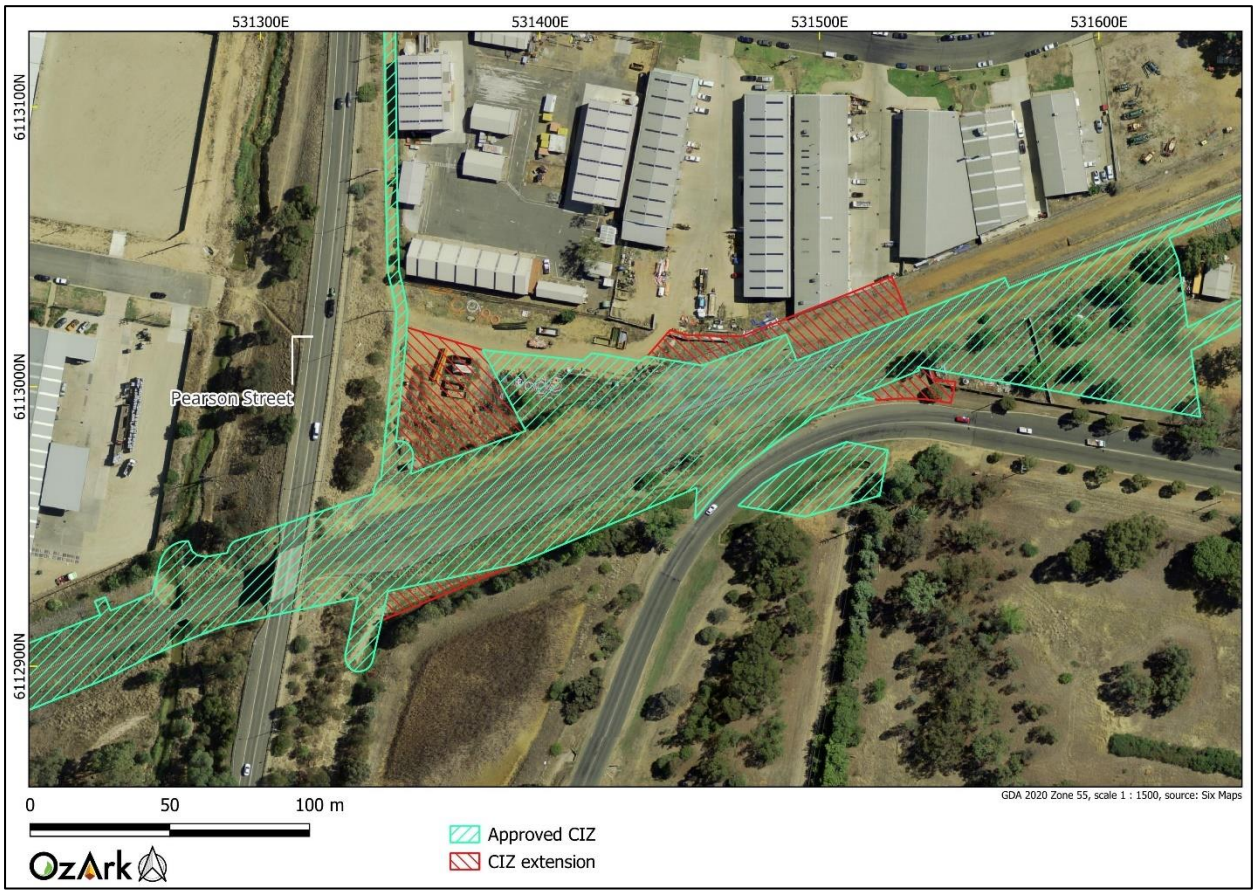
OzArk Environment & Heritage (OzArk) has been engaged by Martinus Rail (MR, the client), on behalf of Australian Rail Track Corporation (ARTC, the proponent), to complete a non-Aboriginal Heritage Assessment following a revision to the scope of works at three locations that are part of the Albury to Illabo (A2I) Inland Rail (IR) Project (the Project). These locations, that shall henceforth be referred to collectively as the Construction Impact Zone (CIZ) extension, are within the Wagga Wagga Local Government Area and comprise of:

- Cassidy Parade, Wagga Wagga (**Figure 1-1**)
- Edmonson Street, Wagga Wagga (**Figure 1-1**)
- Pearson Street, Wagga Wagga (**Figure 1-2**).

The A2I section of the Inland Rail project is Critical State Significant Infrastructure (CSSI) and was approved on 8th October 2024. The approval covered all works proposed within the CIZ. As a result of the need to relocate utilities in the Wagga Wagga area, a CIZ extension was required, the potential heritage impacts of which are addressed in this report. This additional assessment informs a Consistency Assessment for the CIZ extension, meeting the requirements of Condition of Approval (CoA) A15(c).

Figure 1-1. Map showing the Edmondson Street and Cassidy Parade existing approved CIZ and proposed CIZ extension.

Figure 1-2. Map showing the existing approved Pearson Street CIZ and proposed CIZ extension.



1.1 PREVIOUS HERITAGE ASSESSMENTS

The historic heritage impacts of the A2I project within the approved CIZ were assessed in the *Inland Rail: Albury to Illabo Non-Aboriginal Heritage Assessment* (GML 2022), which encompassed assessment of 24 locations where proposed enhancement works were being undertaken for the A2I project. This study assessed all then known potential impacts to both registered and unregistered historical heritage items, covering the CIZ shown in green hatching on **Figure 1-1** and **Figure 1-2**.

The GML study assessed both direct historic heritage impacts within the approved CIZ boundary and indirect impacts to listed historic heritage located adjacent to and within 200 metres (m) of the CIZ boundary. As the assessment beyond the approved CIZ boundary was in relation to indirect impacts (e.g. vibration, viewsheds and vistas, and curtilages) and not direct impacts as may occur within an extension to the CIZ, it was concluded that additional assessment was required to ensure that the provisions of CoA 15(c) could be met in relation to the proposed CIZ extension.

The remainder of this report provides historic heritage assessment of the three CIZ extension areas together with the management measures to be applied that will ensure compliance with CoA 15(c).

1.2 PROPOSED WORKS – CIZ EXTENSION ZONES

The extension of the CIZ is to enable Martinus Rail to undertake utility works beyond the existing approved CIZ. The required utility works vary between locations and are detailed below:

- Cassidy Parade (**Figure 1-3**)
    - The works involve a water main relocation, and the installation of a gas protection slab. The water main relocation works involve trenching and ground disturbance within the Wagga Wagga Heritage Conservation Area listed on the Wagga Wagga Local Environmental Plan 2010.
- Pearson Street (**Figure 1-4**)
    - The works involve relocation a water main, part of which will occur outside the approved CIZ. The works will not require ground disturbance within or near a heritage item.
- Edmondson Street (**Figure 1-5**)
    - The works involve relocation of APA HP & MP gas main infrastructure that will require underbore retrieval within the Wagga Wagga LEP (2010) curtilage of Item I254 “Former Best Street railway gatehouse” and State Heritage Register (SHR) item “Wagga Wagga Railway Station and yard group” (SHR#01279).
    - Clearing and trimming of tree vegetation is required within the LEP curtilage of “Mt Erin Convent, Chapel, High School & Grounds” (I260) as well as within the Wagga Wagga Conservation Area, to allow for the construction of essential distribution lines.

Figure 1-3: Cassidy Parade proposed works design (source: Martinus Rail).

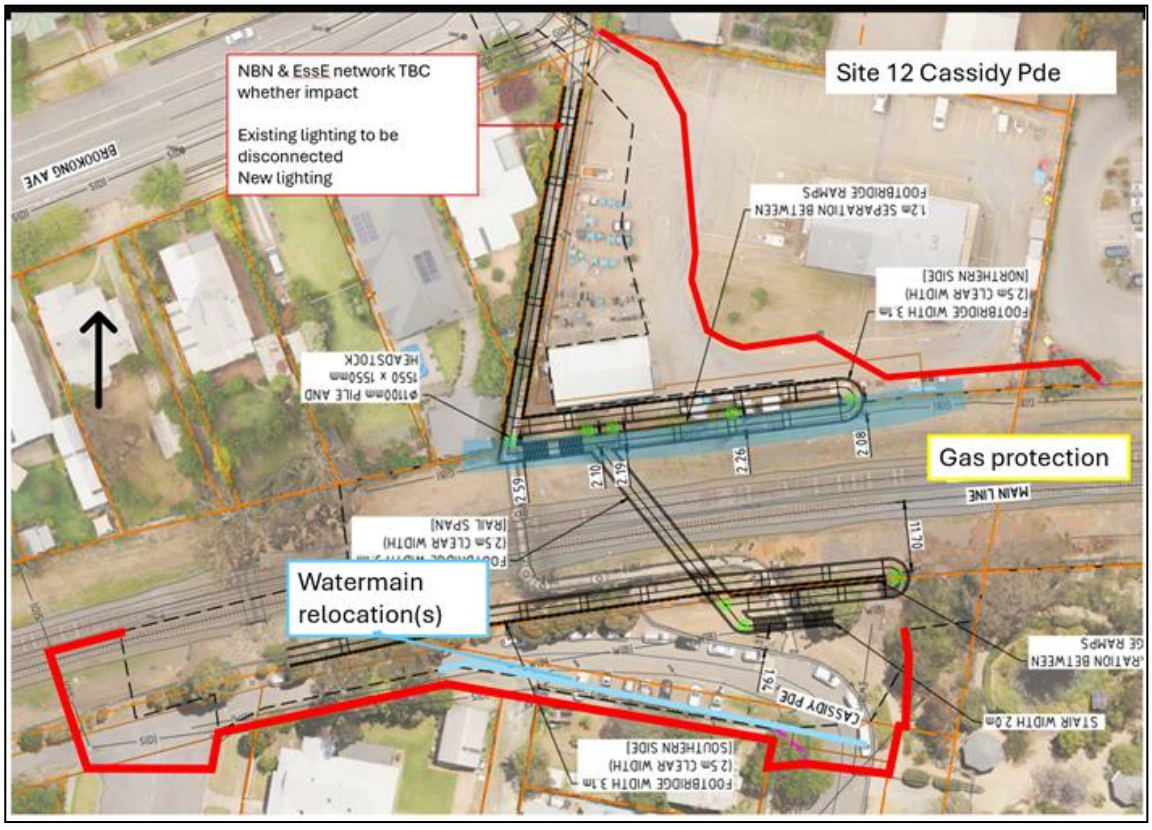


Figure 1-4: Edmondson Street proposed works design (source: Martinus).

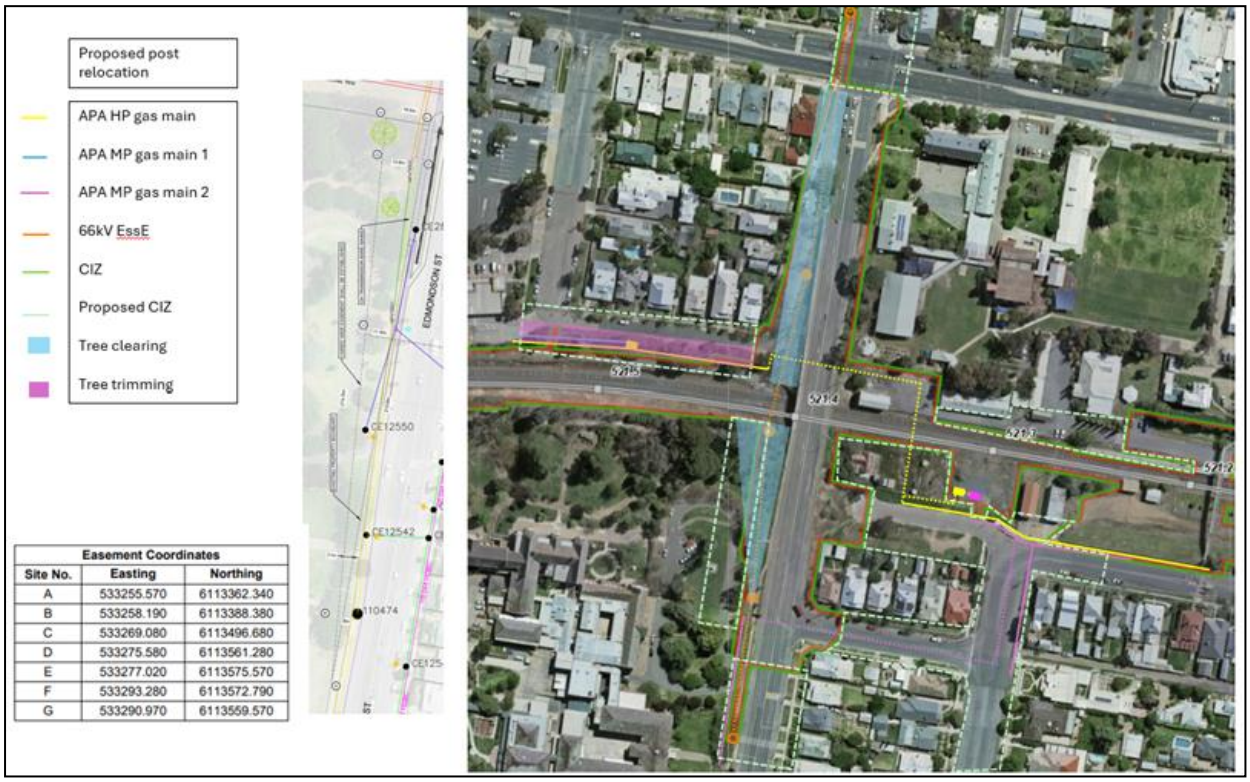
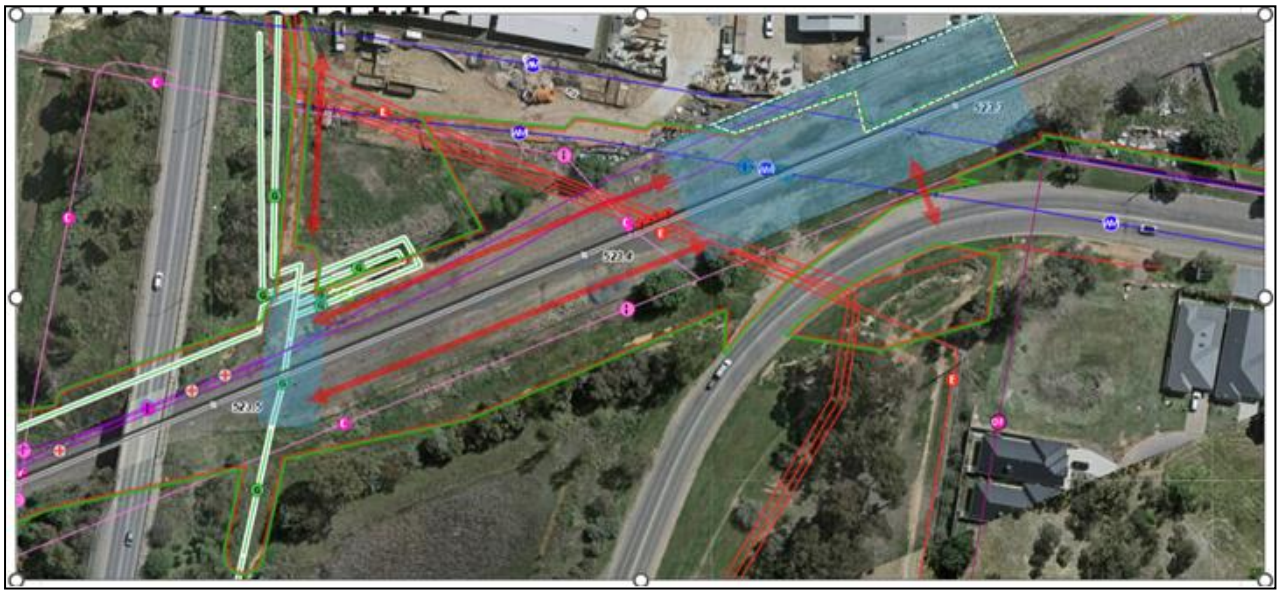


Figure 1-5: Pearson Street proposed works design (source: Martinus).



2 ASSESSMENT OF LISTED HERITAGE WITHIN THE CIZ EXTENSION

The CIZ extension involves the curtilage moving closer to several LEP listed heritage items, as well as changing its interaction with the SHR curtilage of the Wagga Wagga Railway Station and yard group. As the proposed works are primarily subsurface infrastructure movements the majority of these listed places will not be impacted by the proposed works. The assessment below documents these interactions by CIZ extension area in line with the *Guidelines for preparing a statement of heritage impact* (DPE 2023a) and Heritage Council's *Historical Archaeology Code of Practice* to assess whether these items of historic significance may be impacted by the CIZ extension.

2.1 CASSIDY PARADE

The CIZ extension at Cassidy Parade already interacts with the Wagga Wagga Heritage Conservation Area (WWHCA) listed on Schedule 5 of the Wagga Wagga LEP 2010. WWHCA, as described in the DCP, encompasses the Fitzmaurice Street commercial precinct as well as the western and southern residential precincts that form a cohesive heritage streetscape. These areas retain various buildings from the Victorian, Federation, Edwardian and Interwar period.

Interaction with the WWHCA is marginally increased on the northern side of the rail line on Brookong Avenue, and is increased on the southern side of the rail line along Cassidy Parade, as seen in **Figure 1-3** and **Figure 2-2**. As the proposed new work involves sub-surface realignment of a water main there will be no permanent alteration to the character of the WWHCA.

The Cassidy Avenue and Brookong Avenue pedestrian footbridge has already been approved for removal under the A2I CoAs and so no further consideration to this listed heritage site is considered necessary.

2.2 PEARSON STREET

No State or local heritage items are located within the CIZ extension. The CIZ extension at Pearson Street abuts the curtilage of LEP Item I246 "Wagga Wagga Showground, Kyeamba Smith Hall & grands" (**Figure 2-3**). This portion of Item I246 is within the existing approved CIZ and was assessed by GML in 2022. The proposed CIZ extension here will not increase impact to the heritage values of this listed site.

2.3 EDMONDSON STREET

The CIZ extension at Edmondson Street is the most extensive and complex of the three areas and will be considered under separate subheadings, from general to specific, from north to south.

2.3.1 LEP listed heritage

2.3.1.1 Interaction with Wagga Wagga Heritage Conservation Zone

The entirety of the CIZ extension in this area interacts with the WWHCA. The activities to take place within the CIZ extension include gas main realignment, vegetation trimming and power line realignment. The Wagga Wagga DCP 2010 guides development within the WWHCA and is primarily focused on building redevelopment with a focus on retention of the character of the area. It is not considered that the works proposed within the CIZ extension by Inland Rail will negatively impact on the heritage characteristics of the WWHCA, although consultation with Wagga Wagga City Council (WWCC) with regards to the proposed trimming of any trees under management by the WWCC within the WWHCA is recommended.

2.3.1.2 Edward and Best Streets intersection, LEP item I262, former corner store

The CIZ extension here is to facilitate the movement of a 66kV electricity transmission line. This will occur at a busy intersection with traffic lights adjacent to the LEP listed former corner store, item I262. As there are already significance above ground power provision easements through this area, the realigned 66kV easement does not cause any negative impact to the visual amenity of item I262.

2.3.1.3 Mt Erin Convent, LEP item I260

The Mt Erin Convent, chapel, high school & grounds (I260) has been assessed as a locally significant historical site, with the following summary of significance derived from the State Heritage Inventory (SHI):

> The Kildare Catholic College includes an excellent grouping of historic structures that includes some impressive individual buildings of great local historic interest. The former Presentation Convent and Chapel were built for the Presentation Nuns who taught Catholic children in Wagga Wagga from 1889. The buildings including the convent, chapel, boarding school and the 1938 high school building have associations with Catholic education and worship in Wagga Wagga. It has direct associations the Presentation Sisters who were responsible for Catholic education for many years. The buildings have local historical, historical association, aesthetic and social significance, and representativeness.
>
> It has a high degree of integrity. The siting of the building and the integrity of its aesthetic qualities also makes it a notable and attractive landmark in its local area. The place contributes positively to the streetscape of the area and contributes to the local community's sense of place. To the township and district as a place which has played an important role in the development of the Catholic community since early settlement. The place is representative of the development of educational facilities in the region,

and its fabric reflects the development that occurred in the history of education in the region in the period.

Overall, the convent, chapel, boarding school and 1938 high school buildings are assessed to be of local heritage significance.

- The Mount Erin Convent (1976)
- The Mount Erin Boarding School (1889)
- Chapel (1915)
- The Mount Erin High School (1938)

The proposed impact of the CIZ extension into the Mt Erin Convent, School and Chapel is in the northeast corner of the listed Lot and DP, in the vicinity of the entrance and driveway off Edmondson Street **Figure 1-4** and **Figure 2-2.** In this area it is proposed that trees will be removed as well as trimmed for a proposed power easement relocation, to be shifted slightly from the Edmondson Road easement into the Mt Erin property to facilitate construction of the new Edmondson Street Bridge.

Specifically, the vegetation / grounds of the Mt Erin complex are not listed as part of the significance of the listing, with the significant values being ascribed primarily to the buildings themselves and their historic functions. Consequently, minor vegetation removal to facilitate the electricity easement movement will not have a direct negative impact to the values of the listed Mt Erin Convent and buildings. Despite this, regard must be had for the overall amenity of the site and the fact that the mature vegetation does enhance the sense of place. Vegetation removal should be kept to the minimum required for safe operation within the power easement.

It is important to note that some impact to the vegetation in the northeast corner of the Mt Erin complex was already assessed as part of the heritage impact assessment (GML 2022) undertaken for the A2I Inland Rail project and is consequently approved. This acknowledged the presence of the 66vK easement and the need for the removal of some plantings. It was concluded in this report that this vegetation clearance would not alter the overall character of the Mt Wern complex and was a minor impact.

2.3.1.4 Best Street railway gatehouse (former) LEP I254

The interaction between the proposed CIZ extension and the former Best Street railway gatehouse can be seen in **Figure 2-2.** It is of note that the cottage that is the subject of this listing is situated within the western portion of the Lot and DP that is mapped as item I254. As a result of consultation with Martinus Rail over the proposed CIZ extension in this area, Martinus Rail reduced the extent so as to exclude the cottage, as can be seen in image 3, **Figure 2-1.**

The listing information for the Best Street former gatehouse is minimal, but all available data indicates it is the building itself and its former function as part of the Wagga Wagga Railway Group

that underpins its local heritage significance. Consequently, exclusion of this part of the Lot and DP from the CIZ extension ensures that this significance cannot be impacted. The only works required within the CIZ extension area east of the Best Street gatehouse is for underground gas pipeline relocation and consequently no permanent above ground changes to the visual amenity will occur in that area. The area of the CIZ extension is shown in images 1 and 2 of **Figure 2-1,** taken from the rail line. As can be seen this area is currently devoid of buildings and is used as a haphazard stockpile zone.

Figure 2-1: 2024 view of the cottage gatehouse (I254) (also see front cover image)

1. View south of the Former Best Street railway gatehouse (I254).

2. View southwest of the Former Best Street railway gatehouse (I254).

3. Aerial showing gatehouse and outbuildings excluded from CIZ extension.
KEY: Red line CIZ Extension; Blue hatch approved CIZ and pink shade LEP I254.

2.3.2 State listed heritage

2.3.2.1 Wagga Wagga Railway Station and yard group SHR 01279

There are two interaction areas between the proposed CIZ extension and the SHR curtilage of the Wagga Wagga Railway Station and yard group SHR 01279 (**Figure 2-2**).

Northern side of the rail line

The extension in this area is only required to afford access to the rail line for the purpose of the A2I Inland Rail project. The CIZ extension area is already comprised of a modern road, and there will be no permanent above ground alterations in this area and no impact to State heritage listed fabric or potential archaeological deposits. The prior high levels of development in this area will have removed any potential archaeological remains had they ever been present.

Southern side of the rail line

The eastern area is a very minor CIZ extension across a hardstand apron into a modern storage shed / garage. This area partially overlaps with the LEP Lot / DP for the Best Street Gatehouse as well as the SHR Wagga Wagga Railway Station curtilage. This area has no heritage values and is not in proximity of any heritage fabric. The incursion into the SHR curtilage will be temporary and will not alter any viewsheds of vistas of Wagga Station and its associated buildings of heritage significance. It is of note that this area also overlaps with the LEP curtilage of Wagga Wagga Railway Station (LEP I98), and the conclusions of 'no impact to heritage values' applies to this listing as well.

The western area adjacent to the Best Street railway gatehouse is the same as that discussed in **Section 2.3.1.4,** as this physical area is relevant to both the local and state heritage listings. As concluded by GML (2022), the Best Street railway gatehouse remains excluded from impact, as the CIZ extension has been limited to a section of land between the rail line and Railway Parade that contains no structures associated with the heritage significance of the Wagga Wagga Railway Station and yard group. As a consequence, there will be no impacts to the heritage significance of the SHR listed Wagga Wagga Railway Station and yard group.

Figure 2-2. Map showing the Edmondson Street and Cassidy Parade CIZ extension in relation the heritage item curtilages.

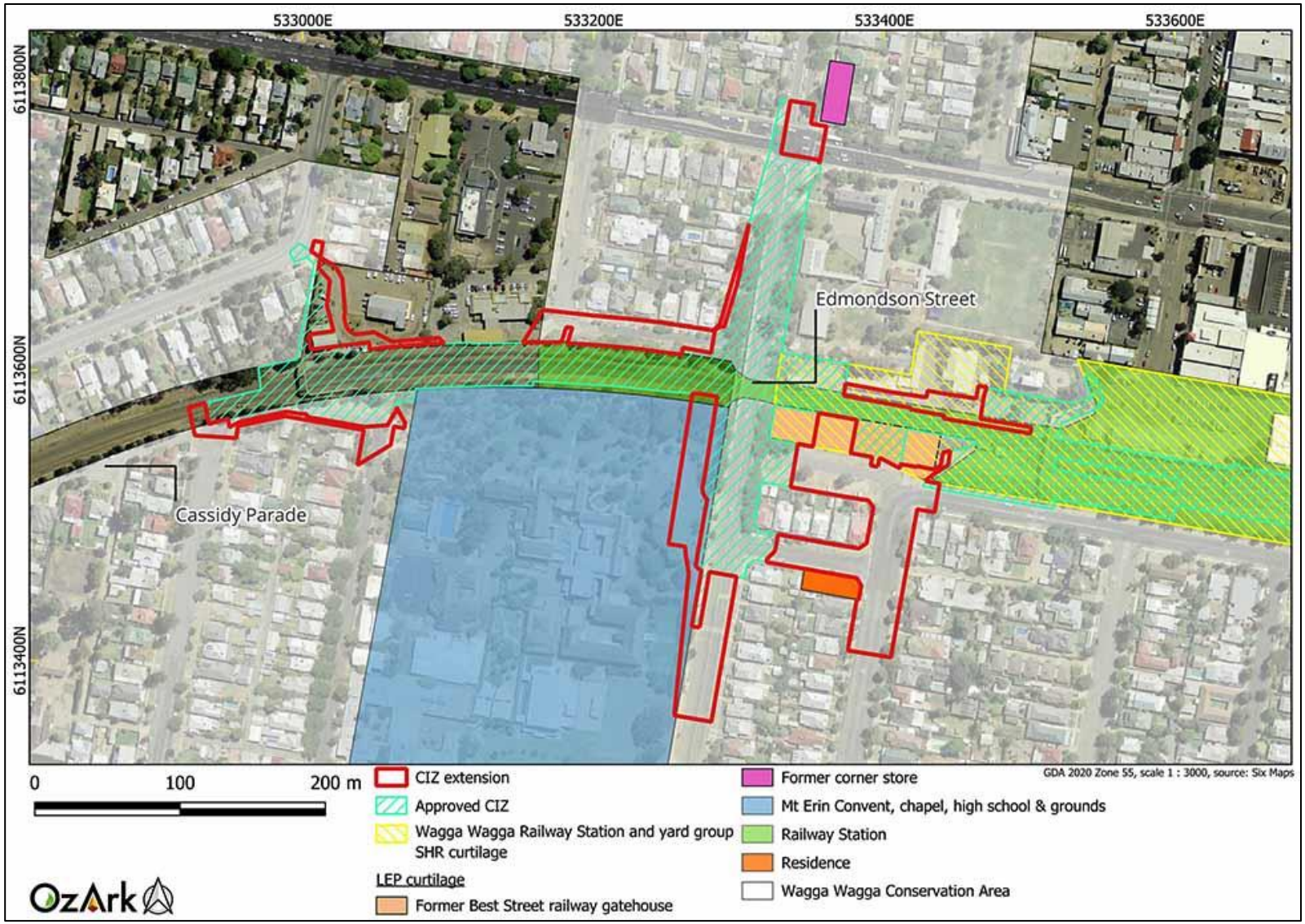
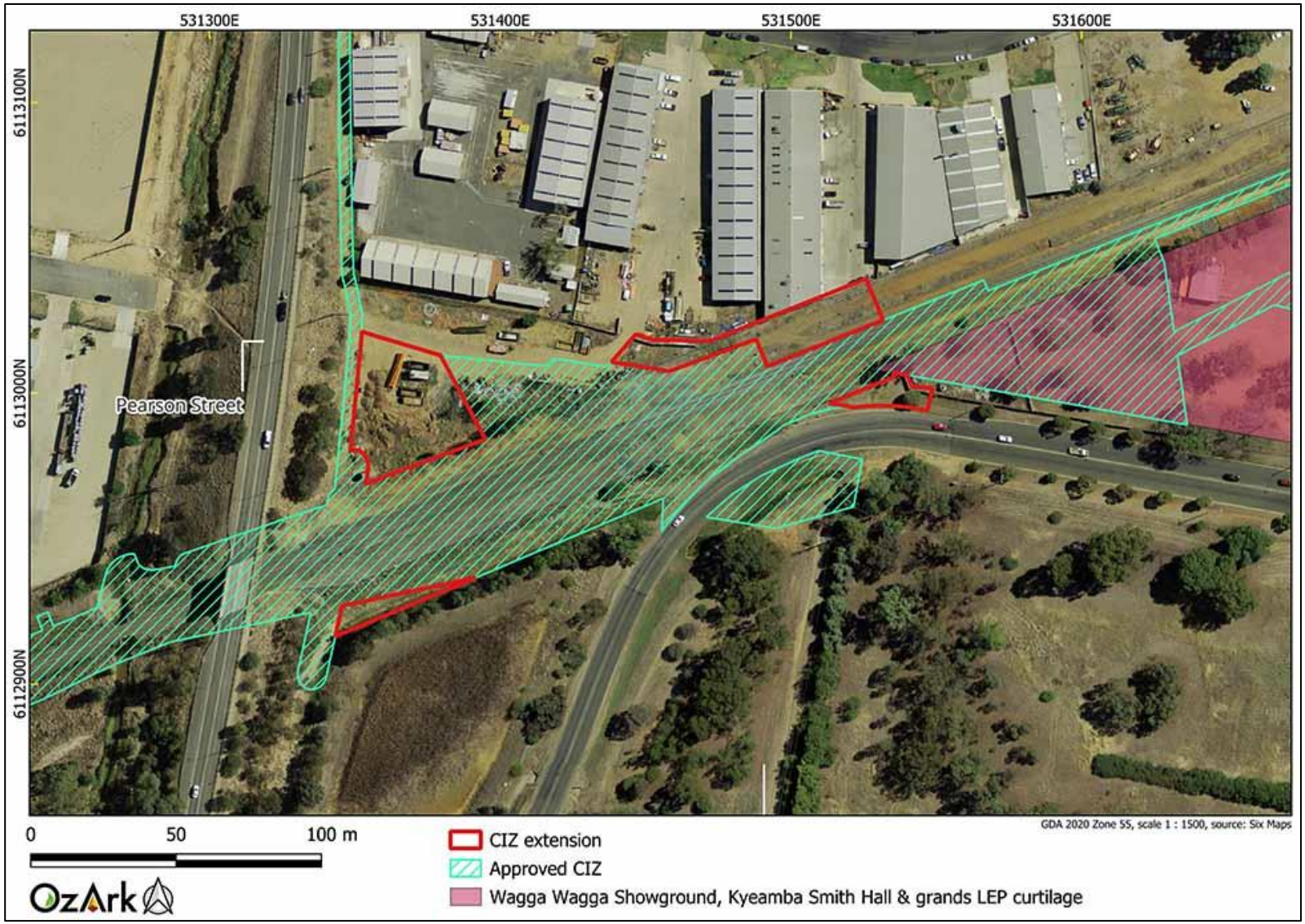


Figure 2-3. Map showing the existing approved Pearson Street CIZ extension in relation to the Wagga Wagga Showground curtilage.



3 CONCLUSIONS

The proposed works within the CIZ extension include disturbance of the ground through underboring and trenching, movement of power provision easements and vegetation trimming and removal, some partially located within LEP and SHR curtilages, as outlined in **Section 2**.

These proposed works avoid all heritage fabric, archaeological deposits and any values identified in the heritage significance documentation attached the listings and are confined to areas that have been previously highly disturbed.

As a result, it can be concluded that the impacts of the proposed CIZ extension in the Wagga Wagga local government area will have “no impacts on heritage items (including areas of archaeological sensitivity)….beyond the impacts approved under the terms of this approval” CoA 15(c).

4 MANAGEMENT MEASURES

To ensure that the proposed works within the proposed Inland Rail A2I CIZ extension in Wagga Wagga do not inadvertently impact non-Aboriginal heritage, the following recommendations should be adhered to:

- Demarcation (using barricading or flagging) of the CIZ extension footprint within listed heritage sites to ensure no inadvertent impacts beyond this
- In the unlikely event that excavation work encounters potential heritage items, the *Unexpected Heritage Finds and Human Remains Procedures*, Appendix B of the Construction Cultural Heritage Management Plan (CCHMP) should be followed.
- If further extension of the CIZ is required that interact with listed heritage sites, then further assessment would be required to ensure that the provisions of CoA 15(c) can be met.
- Other provisions as outlined in the CCHMP, specifically regarding heritage inductions for work crews, should also be followed.

REFERENCES

Burra Charter — *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. International Council on Monuments and Sites. 2013.

DPE 2023a — *Guidelines for preparing a statement of heritage impact.* Department of Planning and Environment. 2023.

DPE 2023b — *Assessing heritage significance. Guidelines for assessing places and objects against the Heritage Council of NSW criteria*. Department of Planning and Environment. 2023.

Rob Nesbitt 2019 — Nesbitt, R. 2019. "Gatekeepers cottages". *Building Wagga Wagga.* Accessed 31 October 2024. Available at: https://buildingwagga.blogspot.com/2019/03/gatekeeper-cottages.html

GML 2022 — GML Heritage. 2022. *Inland Rail – Albury to Illabo Technical Paper 3 – Non-Aboriginal Heritage.* Report to ARTC.

WW DCP 2010 — Wagga Wagga Development Control Plan 2010 as amended – Section 3 – Heritage Conservation. https://wagga.nsw.gov.au/__data/assets/pdf_file/0013/112252/Wagga-Wagga-DCP-2010-as-amended-Section-3-Heritage-Conservation-Version-27-Final.pdf

Appendix C Biodiversity Assessment Report Memo

Adrian Broger
Environmental Approvals Advisor
Martinus Rail Pty Ltd

18th October 2024

Biodiversity Memorandum: Inland Rail (Albury to Illabo)

Dear Adrian,

Martinus Rail Pty Ltd (Martinus) on behalf of the Australian Rail Track Corporation (ARTC) propose to conduct vegetation removal and trimming to accommodate utility relocation in Wagga Wagga, NSW (Proposed Change).

The Proposed Change is located outside of the construction boundary of the Albury to Illabo section of the Inland Rail program (the Project) and was not assessed as a part of the Inland Rail, Albury to Illabo Revised Technical Paper 8: Biodiversity Development Assessment Report (BDAR) (WSP, 2023).

1.1 Scope of Assessment

East Coast Ecology Pty Ltd (ECE) was commissioned by ARTC c/- Martinus to prepare a Biodiversity Memo, for the Proposed Change. The scope of this assessment was to identify and assess impacts to species and ecological communities listed as threatened under the *Biodiversity Conservation Act 2016* (NSW) (BC Act), *Fisheries Management Act 1994* (FM Act) and Matters of National Environmental Significance (MNES) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and where relevant, the requirements of the *Biosecurity Act 2015* (NSW), and relevant State Environmental Planning Policies (SEPPs).

The area assessed in this memo has been defined by representatives of Martinus, this memo has been prepared to accompany a Consistency Assessment (CA) in relation to the Proposed Change, and is hereafter referred to as the Subject Land.

1.2 The Subject Land

The Subject Land covers an area of approximately 2.37ha that adjoins the Main South Line in two distinct locations centred on Edmondson Street/ Cassidy Parade and Pearson Street (**Figure 1** - **Figure 3**).

The Subject Land is located within the suburb of Turvey Park in the Wagga Wagga Local Government Area.

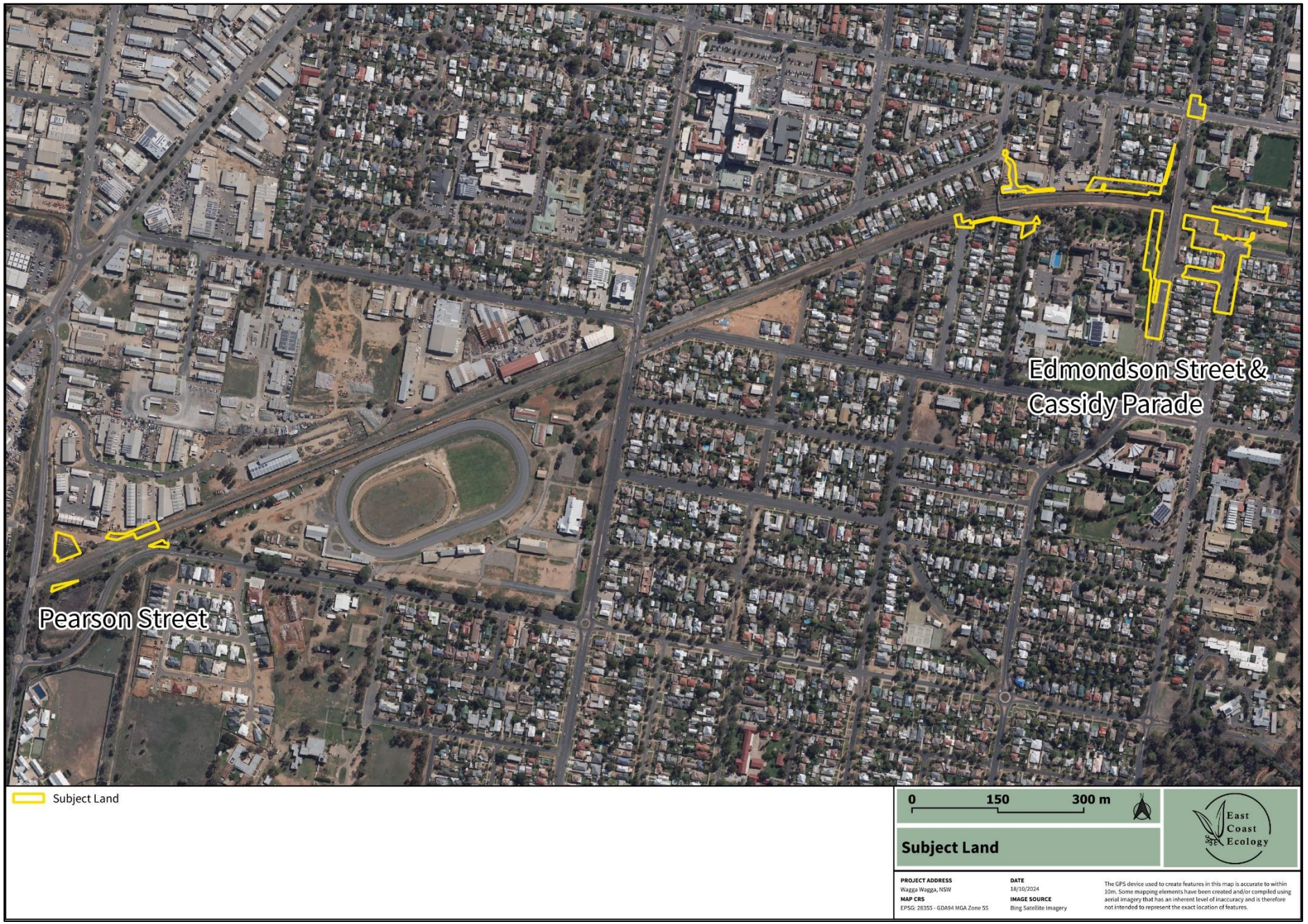


Figure 1. Location of the Subject Land.

Figure 2. Location of the Subject Land (Edmondson Street and Cassidy Parade).

Figure 3. Location of the Subject Land (Pearson Street).

2. METHODS

A thorough literature review of local information relevant to the Subject Land was undertaken. Searches using NSW Wildlife Atlas (BioNet) (NSW DCCEEW, 2024a), the Commonwealth Protected Matters Search Tool (PMST) (DCCEEW, 2024) and the Fisheries Spatial Data Portal (DPI, 2024) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records, within a 5km radius of the Subject Land.

2.1 Native Vegetation

A review of the State Vegetation Type Map (NSW DCCEEW, 2024b) was used to assist in the identification of Plant Community Types (PCTs) within and surrounding the Subject Land. The PCT of 'best-fit' was determined based on the floristic descriptions within the BioNet Vegetation Classification System database (NSW DCCEEW, 2024c).

2.2 Threatened Flora Survey Methods

Threatened flora that are known or likely to occur within the Subject Land and immediate surrounds (i.e. within 5km) were identified following a review of BioNet and the PMST. Soil mapping (NSW DCCEEW, 2024d) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened flora.

Targeted surveys were undertaken by Ecologist; Chris Keogh on the 1st October 2024, using parallel field traverses in accordance with the 'Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method' (DPIE, 2020). All vegetated areas within the Subject Land were surveyed.

2.3 Threatened Fauna Survey Methods

Threatened fauna were recorded opportunistically however, their habitats (e.g. waterbodies, rocky areas, tree hollows), were targeted during the parallel field traverses. Potential habitat constraints within the broader area (500m buffer) were assessed using Google Earth, soil landscape mapping (NSW DCCEEW, 2024d) and recent vegetation mapping (NSW DCCEEW, 2024b).

3. EXISTING ENVIRONMENT

3.1 Rivers, streams, estuaries and wetlands

No watercourses occur within the Subject Land. The Subject Land is located within the Murrumbidgee River catchment, a 9th order watercourse, which occurs approximately 1km north of the Subject Land.

3.2 Habitat Connectivity

Negligible terrestrial habitat connectivity exists between the Subject Land and the broader landscape due to historical clearing and existing infrastructure (e.g. roads, railway and built areas) (**Figure 5** - **Figure 6**).

The Subject Land may provide mobile species with minor refuge while moving throughout the landscape, however due to the degraded condition of the vegetation, it is not considered likely that threatened species would be reliant on this area as a part of their life cycle.

3.3 Karst, Caves, Crevices, Cliffs, Rocks or Other of Geological Features of Significance

The Subject Land did not contain any areas of geological significance, such as karsts, caves, cliffs or crevices. The Subject Land was not mapped as occurring on acid sulfate soils nor mapped as having risk/ probability of exhibiting occurrence of acid sulfate soils.

3.4 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or the surrounding area.

3.5 Topography, Geology and Soils

The Subject Land is mapped as occurring on the 'Becks Lane' soil landscape', characterised by, gently inclined footslopes adjacent to hills of thick slope-washed and alluvial-colluvial sands, clays and gravels, mostly derived from Ordovician metasedimentary rocks. The Subject Land occurs on gently inclined terrain, ranging from 186m above sea level (asl) to 197m asl between localities (Google Earth).

3.6 Mapped Native Vegetation Communities – NSW State Vegetation Type Map

The NSW State Vegetation Type Map (NSW DCCEEW, 2024b) indicated the absence of PCTs within or adjoining, the Subject Land (**Figure 4**). The Subject Land has been mapped as 'Not classified'.

Figure 4. NSW State Vegetation Type Map (NSW DCCEEW, 2024b).

4. RESULTS

4.1 Field-validated Native Vegetation

Due to historical agricultural, infrastructure, residential and industrial development within the Subject Land, and specifically a lack of native and/ or diagnostic species for candidate PCTs, the following vegetation community types described by WSP (2023) were assigned:

- Miscellaneous Ecosystems – 'Ornamental Plantings', and
- Miscellaneous Ecosystems – 'Highly Disturbed areas with no or limited Native Vegetation'.

These vegetation community types are consistent with vegetation types described in the approved BDAR.

Table 1. Vegetation communities identified within the Subject Land.

Community Name	Area within the Subject Land (ha)
Miscellaneous Ecosystems – Ornamental Plantings	0.40ha
Miscellaneous Ecosystems – Highly Disturbed areas with no or limited Native Vegetation	0.41ha
Total Area	**0.81ha**

4.1.1 Community type Miscellaneous Ecosystems – Ornamental Plantings

Due to the Subject Land's historical and ongoing residential and community use at Edmondson Street and Cassidy Parade, much of the vegetation is comprised of ornamental native and exotic species planted for aesthetic purposes and was therefore determined to have limited ecological function (WSP, 2023) (**Figure 5**-**Figure 6**). Ornamental Plantings includes areas that are not consistent with the definition of a PCT and are not required to be assessed for ecosystem credits, per Section 9.3 of the BAM (DPE, 2020a).

4.1.2 Community type Miscellaneous Ecosystems – Highly Disturbed areas with no or limited Native Vegetation

Due to a long history of disturbance from agricultural, infrastructure (rail and road) and industrial use, the Subject Land at Edmondson Street and Pearson Street is comprised of no or limited native species and is dominated by exotic species, and provides limited ecological function (WSP, 2023) (**Figure 5**-**Figure 6**). Highly Disturbed areas with no or limited native vegetation includes areas that are not consistent with the definition of a PCT and are not required to be assessed for ecosystem credits, per Section 9.3 of the BAM (DPIE, 2020a).

Descriptions of the vegetation types are provided in **Table 2**.and **Table 3**.

Table 2. Miscellaneous Ecosystems - Ornamental plantings vegetation identified within the Subject Land.

Miscellaneous Ecosystems – Ornamental Plantings	
Novel Vegetation Type	**Miscellaneous Ecosystems – Ornamental Plantings**
Extent	0.40ha
Description of vegetation	The vegetation within this zone was comprised of exotic and non-endemic native ornamental plantings. Vegetation was mostly planted in the street verge or nature strip and consisted of *Lagerstroemia indica* (Crepe Myrtle), *Melia azedarach* (White Cedar), *Jacaranda mimsofolia* (Jacaranda), *Melaleuca linariifolia* (Paperbark), *Callistemon viminalis* (Weeping Bottle Brush), *Lophostemon confertus* (Brush Box), *Brachychiton populneus* (Kurrajong), *Corymbia citriodora* (Lemon-scented Gum), the mid-story was absent and the ground layer was mostly exotic lawn.

Table 3. Miscellaneous Ecosystems - Highly Disturbed areas with no or limited Native Vegetation, vegetation identified within the Subject Land.

Miscellaneous Ecosystems - Highly Disturbed areas with no or limited Native Vegetation	
Novel Vegetation Type	**Miscellaneous Ecosystems - Highly Disturbed areas with no or limited Native Vegetation**
Extent	0.41ha
Description of vegetation	The vegetation within this zone was heavily comprised of exotic ground cover species such as *Plantago lanceolata* (Ribwort Plantain), *Bromus* sp. and *Arctotheca calendula* (Cape Weed). The regions this vegetation occurred, were almost entirely developed and displayed a long history of disturbance from infrastructure such as roads, rail, carparks and concrete footpaths.

Plate 1. An example of Miscellaneous Ecosystems - Ornamental Plantings within the Subject Land.

Plate 2.An example of Miscellaneous Ecosystems - Highly Disturbed areas with no or limited Native Vegetation within the Subject Land.

Figure 5. Field-validated vegetation communities (Edmondson Street and Cassidy Parade).

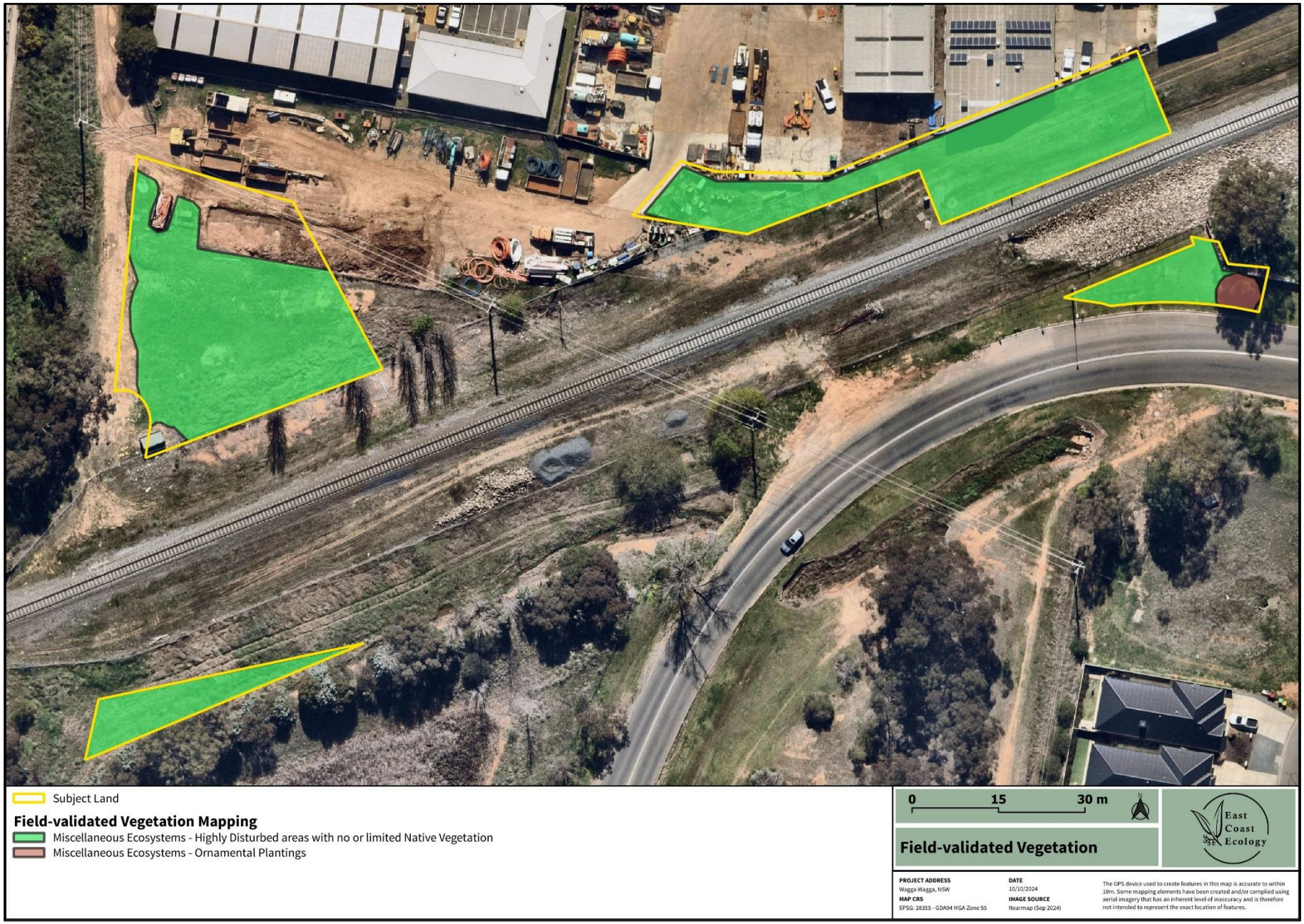


Figure 6. Field-validated vegetation communities (Pearson Street).

4.2 Threatened Flora

BioNet and PMST searches revealed ten threatened flora species occur, or have potential to occur, within a ~5km radius of the Subject Land.

Table 4. Threatened flora with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Austrostipa wakoolica	Wakool Spear-grass	E	E	Modelled Only
Brachyscome muelleroides	Claypan Daisy	V	V	1
Caladenia arenaria	Sand-hill Spider-orchid	E	E	Modelled Only
Caladenia concolor	Crimson Spider-orchid, Maroon Spider-orchid	E	V	Modelled Only
Lepidium aschersonii	Spiny Peppercress	V	V	Modelled Only
Lepidium monoplocoides	Winged Pepper-cress	E	E	Modelled Only
Prasophyllum petilum	Tarengo Leek Orchid	E	E	Modelled Only
Senecio garlandii	Woolly Ragwort	V	-	2
Swainsona murrayana	Slender Darling-pea, Slender Swainson, Murray Swainson-pea	V	V	Modelled Only
Swainsona recta	Small Purple-pea	E	E	2

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

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.

4.3 Threatened Fauna

BioNet and PMST searches revealed 33 threatened fauna occur, or have potential to occur, within a ~5km radius of the Subject Land.

Table 5. Threatened fauna with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Anthochaera phrygia	Regent Honeyeater	E	CE	1
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	3
Burhinus grallarius	Bush Stone-curlew	E	-	4
Calidris ferruginea	Curlew Sandpiper	E	CE	3
Callocephalon fimbriatum	Gang-gang Cockatoo	E	E	3

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Chthonicola sagittata	Speckled Warbler	V	-	1
Circus assimilis	Spotted Harrier	V	-	2
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	V	10
Daphoenositta chrysoptera	Varied Sittella	V	-	1
Dasyurus maculatus	Spotted-tailed Quoll	V	E	1
Epthianura albifrons	White-fronted Chat	V	-	7
Falco subniger	Black Falcon	V	-	8
Gallinago hardwickii	Latham's Snipe	V	V	17
Glossopsitta pusilla	Little Lorikeet	V	-	1
Hieraaetus morphnoides	Little Eagle	V	-	20
Hirundapus caudacutus	White-throated Needletail	V	V	1
Lathamus discolor	Swift Parrot	E	CE	5
Macrotis lagotis	Bilby	E	V	1
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	1
Myotis macropus	Southern Myotis	V	-	2
Neophema pulchella	Turquoise Parrot	V	-	1
Ninox connivens	Barking Owl	V	-	4
Petaurus norfolcensis	Squirrel Glider	V	-	107
Petaurus norfolcensis	Squirrel Glider in the Wagga Wagga Local Government Area	E	-	107
Petroica boodang	Scarlet Robin	V	-	5
Petroica phoenicea	Flame Robin	V	-	6
Phascolarctos cinereus	Koala	E	E	1
Polytelis swainsonii	Superb Parrot	V	V	30
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	83
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	1
Stagonopleura guttata	Diamond Firetail	V	V	4
Stictonetta naevosa	Freckled Duck	V	-	1
Tyto novaehollandiae	Masked Owl	V	-	1

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

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).

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.

4.4 Migratory Species

Database searches revealed eight migratory terrestrial species, or their habitat, are known to occur within the Subject Land (**Table 6**). These species are unlikely to occur due to the lack of suitable habitat in the Subject Land (i.e. ornamental tree dominated) and these species do not breed in Australia.

Table 6. Migratory terrestrial species with potential to occur in the Subject Land.

Species	EPBC Act Status
Actitis hypoleucos (Common Sandpiper)	Migratory, CAMBA, JAMBA, ROKAMBA
Calidris acuminata (Sharp-tailed Sandpiper)	Migratory, CAMBA, JAMBA, ROKAMBA
Calidris ferruginea (Curlew Sandpiper)	Critically Endangered, Migratory, CAMBA, JAMBA, ROKAMBA
Calidris melanotos (Pectoral Sandpiper)	Migratory, JAMBA, ROKAMBA
Gallinago hardwickii (Latham's Snipe)	Vulnerable, Migratory, JAMBA, ROKAMBA
Hirundapus caudacutus (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
Motacilla flava (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA

CAMBA = China-Australia Migratory Bird Agreement, JAMBA = Japan-Australia Migratory Bird Agreement, ROKAMBA = Republic of Korea-Australia Migratory Bird Agreement and Bonn = Convention on the Conservation of Migratory Species of Wild Animals

5. IMPACT SUMMARY

The proposed activity will require the removal/ trimming of:

- 0.40ha of Miscellaneous Ecosystems - Ornamental Plantings, and
- 0.41ha of Miscellaneous Ecosystems - Highly Disturbed areas with no or limited Native Vegetation.

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.

6. LEGISLATION

6.1 Matters of National Environmental Significance

Under the EPBC Act, a proponent must not take an action if that action will have, or is likely to have, a significant impact on matters protected under the EPBC Act, referred to as MNES. The EPBC Act identifies eight MNES:

- World Heritage properties
- National Heritage places
- Wetlands of international importance (those listed under the Ramsar Convention)
- Listed threatened species and communities
- Migratory species listed under international agreements
- Great Barrier Reef Marine Park
- Commonwealth marine areas
- Nuclear actions

The PMST identified the following as potentially occurring within the Subject Land or surrounding area:

- 3 Threatened Ecological Communities
- 43 Threatened species
- 8 Migratory species

No MNES have been identified in or adjoining the Subject Land.

6.2 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

The Subject Land is not situated within the 'Coastal Zone' therefore this SEPP does not apply.

6.3 *Fisheries Management Act 1994*

The FM Act aims to conserve, develop, and share the fishery resources of NSW for the benefit of present and future generations including conserving fish stocks and key fish habitats and promoting ecologically sustainable development.

The proposed activity does not require works within mapped KFH, nor did threatened aquatic species or marine vegetation protected under the FM Act occur within the Subject Land. As such, the activity would not impact upon KFH, nor are there any legislative requirements or notifications required under this Act.

6.4 *Biosecurity Act 2015*

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act,

any non-conformance by an individual is defined as guilty of an offence. No priority weeds were identified within the Subject Land at the time of the survey:

All priority weeds are to be appropriately managed in accordance with the *Biosecurity Act 2015*.

7. MANAGEMENT MEASURES AND IMPLEMENTATION

The potential impacts on biodiversity identified for the Proposed Change can be appropriately managed in accordance with the Conditions of Approval and through implementation of the updated management measures outlined in the Preferred Infrastructure Report Submissions Report for the Project.

8. CONCLUSION

The proposed activity will require the removal/ trimming of:

- 0.40ha of Miscellaneous Ecosystems - Ornamental Plantings, and
- 0.41ha of Miscellaneous Ecosystems - Highly Disturbed areas with no or limited Native Vegetation.

No impacts to threatened species, populations or ecological communities are expected as a result of the proposed activity.

Although outside the assessed construction boundary for the Project, the biodiversity impacts are considered consistent with the initial assessment (WSP, 2023), and no further offsets (ecosystem or species) would be required.

If you have any queries, please feel free to contact me.

Sincerely,

Alex Graham *BSc (Biology), Grad Dip (Bushfire Protection)*
Director/ Principal Ecologist - Accredited Biodiversity Assessor (BAAS19040)
E: alex.graham@ececology.com.au

9. REFERENCES

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024) Protected Matters Search Tool

Department of Planning, Industry and Environment (DPIE, 2020) Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method

NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (2024a) NSW BioNet Atlas

NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (2024b) NSW State Vegetation Type Map

NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (2024c) BioNet Vegetation Classification

NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (2024d) eSPADE

NSW Department of Primary Industries (DPI) (2024) Fisheries NSW Spatial Data Portal

Office of Environment and Heritage (OEH) (2018) Threatened Species Test of Significance Guidelines\

WSP (2023) Albury to Illabo Inland Rail- Revised Technical Paper 8: Biodiversity Assessment Report

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Appendix D Unexpected Heritage Finds and Human Remains Procedure

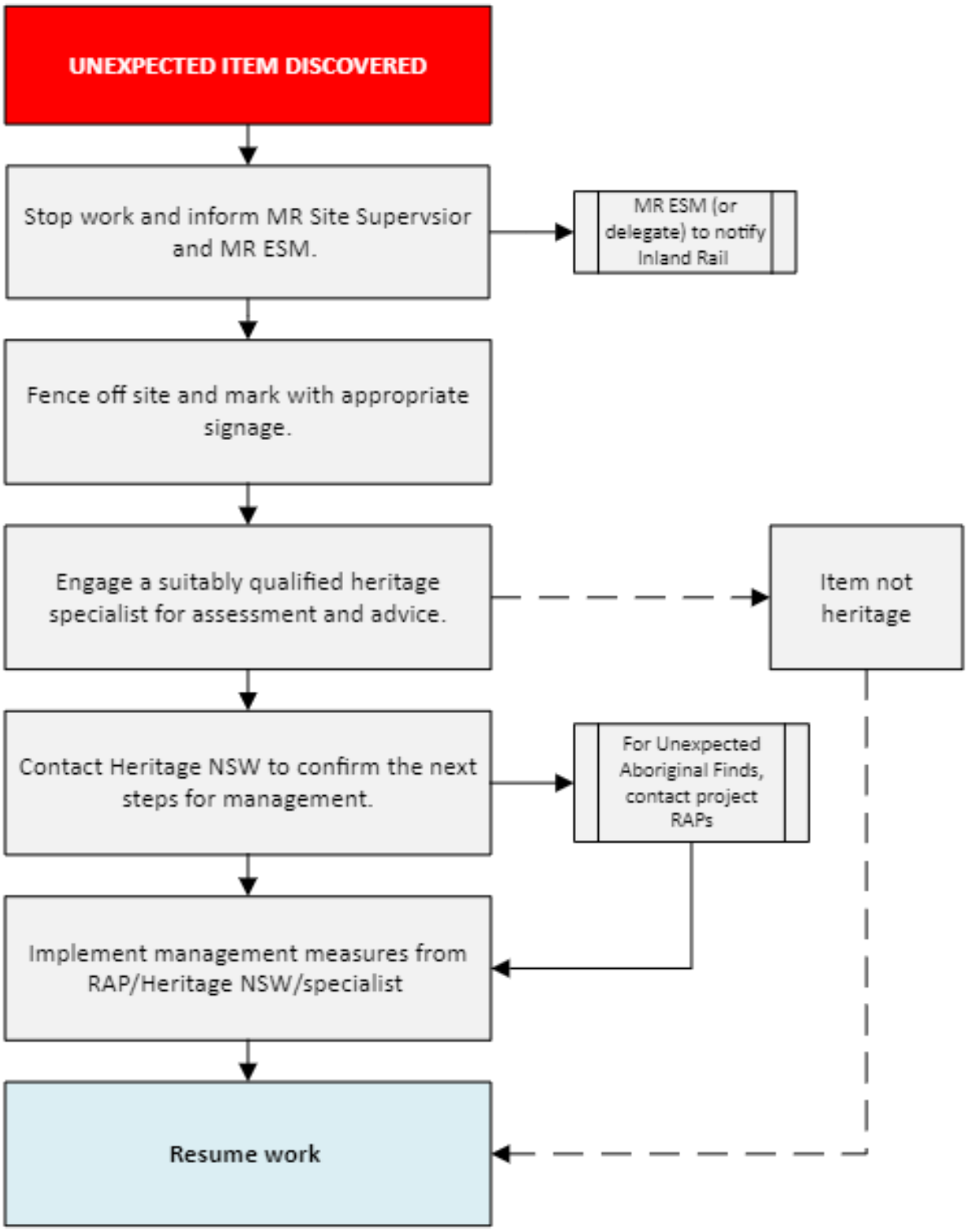
ABORIGINAL AND NON-ABORIGINAL HERITAGE: UNEXPECTED FINDS PROCEDURE

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, and to determine the need for further investigation or management. This assessment may be able to 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.
5. The MR ESM (or delegate) and/or heritage specialist will also contact Heritage NSW 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

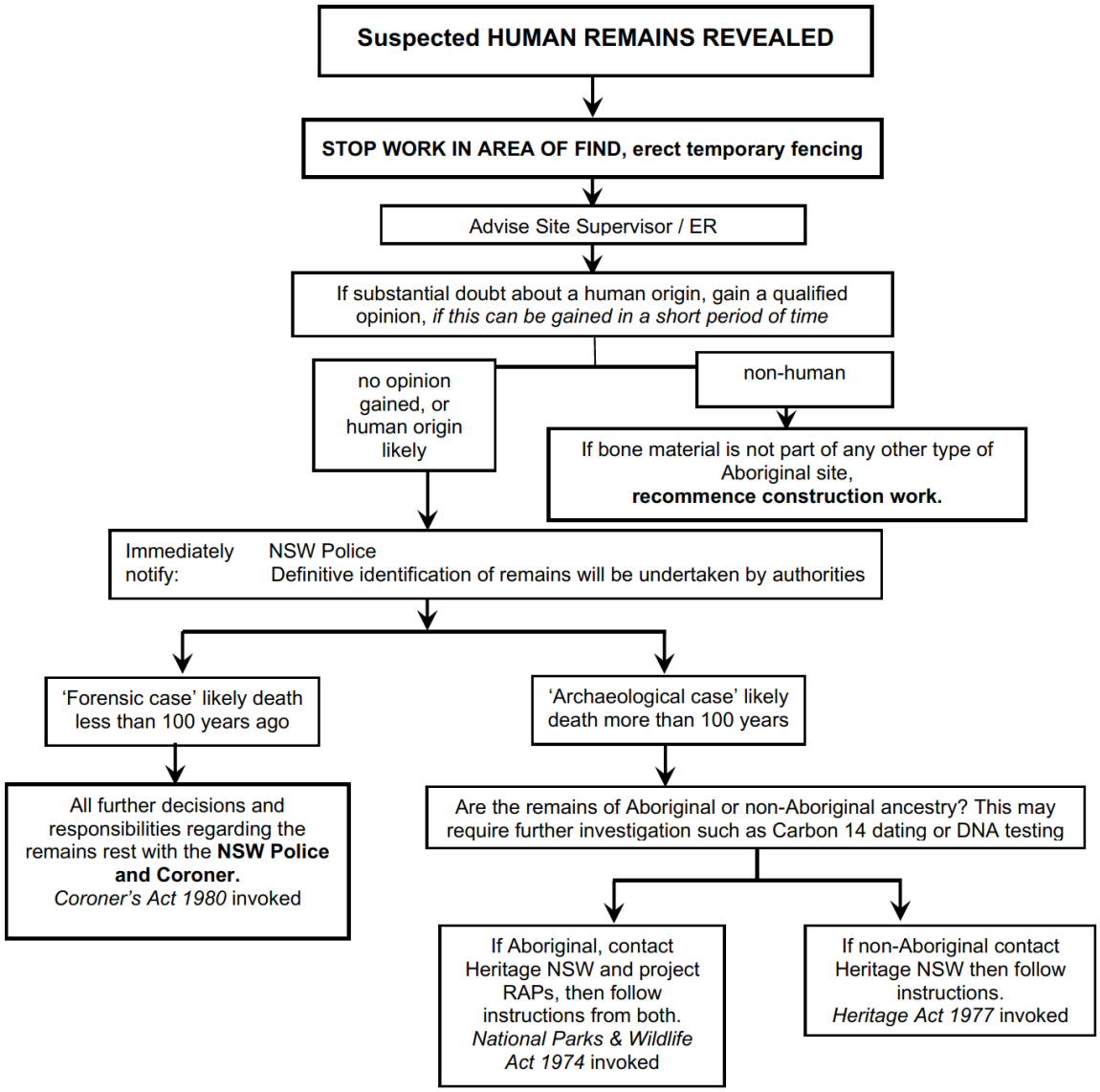
UNEXPECTED HUMAN REMAINS PROCEDURE

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 Office1998). 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 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 Flora and Fauna

Discovery of fauna or flora species or endangered ecological community

Stop all work which is likely to impact on the species or community.
The person who discovered the find is to notify all project personnel woking in the immediate vicinity of the find(s) so that any potential disturbance activity can be halted.

Notify Site Supervisor and Environmental Manager

All personnel

Notify and consult the project ecologist and install deliniation (for flora and/ or fauna habitat)
Project ecologist to confirm if the species or community would be potentially impacted and confirm appropriateness of deliniation/ initial measures.

Is the species or community a listed threatened entity under State or Commonwealth legislation?

No

Yes

Has impact to the species or community in that location been assessed in the EAD and will the absolute clearing extent be within the restrictions posed by Condition E23?

Yes

The impact to the species or community was a assessed by the EAD and is permissible in that location (Any conditions of the Infrastructure Approval must also be considered). **The impact is therefore permissible**

No

The impact to the species or community was NOT addressed in the EAD , follow up investigation is required

Martinus Rail to consult with the Project Ecologist and ARTC when developing actions to assess and manage the find.

For EPBC Act species (and as required under the BC Act) conduct and assessment of significance and review controls to mitigate impacts. Where relevant consider additional controls to minimise impacts to the unexpected find

Would the proposed action have significant impact on the species or community **(Significance Review)**

No

Yes

Record find and follow up actions

Biodiversity assessment (with the Significance Review) to be prepared and implemented (or alternatively the BDAR is to be updated with new impacts)

Measures which can be implemented prior to impact are to be implemented.

Measures required to be implemented at a later date (i.e. any revision to the offsets) with be implemented following impacts

Records of the find to be submitted to BioNet

Consult with DPHI/BCS as relevant regarding propsed measures, impacts and follow up actions

Confirm with DPHI/BCS (as relevant) that proposed controls are adequate to proceed.

Records of the find to be submitted to BioNet.

Update managemnet plans and sensitive area mapping as required

Martinus Rail Environment Manager or delegate authorises Unexpected Finds Hold Point Release

Recommence works with updated controls where necessary

Appendix F Unexpected Finds Contamination

UNEXPECTED FINDS PROCEDURE FOR CONTAMINATION

MANAGEMENT AND RESPONSIBILITY

INDUCTION/ TOOLBOX TALKS
All personnel are to receive Project/ Site Inductions and on-going training via Toolbox Talks

All personnel

EVIDENCE OF CONTAMINATION OBSERVED

STOP ALL WORK IN THE AREA IMMEDIATELY AND

PREVENT FURTHER ACTIVITY IN THE AREA.

NOTIFY THE SITE SUPERVISOR AND SAFETY MANAGER , ENVIRONMENT MANAGER AND CORDON OFF AREA.

Site Supervisor
Project Manager
Lead Safety Manager
Environment Manager

- Do not touch or disturb the item/ material
- Delineate the find from the rest of the worksite
- Inform the Environment Manager regarding the potential contamination find. The following detail should be provided:
  - The location of the potential contamination
  - Visual appearance
  - Odour (if any)
  - Depth
  - Surrounding material and works being undertaken at the time of discovering the material
- WHS and EM to determine immediate actions to prevent WHS and ENV issues
- EM to notify IR of Unexpected Find

ASSESSMENT

Contamination Consultant to assess and classify the unexpected find in accordance with the NSW regulatory requirements, including sampling and laboratory analysis.

Contamination Consultant

MANAGEMENT STRATEGY

- Contamination Consultant to develop a provide a plan for managing and/or remediating the material
- IR/ARTC to review and accept the proposed strategy

Environment Manager
Contamination Consultant
IR/ARTC

STRATEGY IMPLEMENTATION

- Implement the approved management and/or remediation as per the Contamination consultants direction
- IR/ARTC to review and accept the proposed strategy (if required)

Contamination Consultant
Site Supervisor
Environment Manager

Once the contamination find has been mitigated and clearance report received from the contamination consultant. EM is to notify Project Manager who is to approve re-commencement of works in the vicinity of the remediation site. IR/ARTC will review clearance report and must provide approval/acceptance prior to recommencing works

Environment Manager
Project Manager
IR/ARTC

Recommence works

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.